HIGHWAY RESEARCH BOARD

Special Report 77

AN ANALYSIS OF HIGHWAY-PUBLIC UTILITY LIAISON PRACTICES

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FOREWORD

This study was sponsored by the American Association of State Highway Officials, the American Right-of-Way Association, and the Bureau of Public Roads in an effort to determine how well the highway gear and the public utility gear were meshing on highway projects involving utility relocations. The objective of the study was to assemble, analyze, and evaluate all of the liaison procedures and practices of the highway departments and the utilities, when such relocations were found necessary, with the thought that in order to achieve a maximum of liaison it is necessary to pinpoint existing weaknesses in practices used by both highway and utility agencies.

The study was made possible by a grant from the Bureau of Public Roads. Enthusiastic cooperation was received from the American Municipal Association, the National Association of County Officials, and the Rural Electrification Administration in contacting members of their respective organizations. Utility liaison committees throughout the United States, composed of members of the American Right-of-Way Association, and many utility associations, such as the American Gas Association, Association of Oil Pipe Lines, American Water Works Association, American Public Power Association, the several regional and national telephone groups, including the National Telephone Cooperative Association, American Petroleum Institute, Edison Electric Institute, and the American Public Works Association, gave generously of their time in an effort to see that as many utility agencies as possible were contacted.

It is hoped that this report may point the way to improving liaison practices among the various groups to the end that highway and utility agencies may operate as a team in the performance of their common responsibilities.

DAVID R. LEVIN, *Chairman*
Committee on Land Acquisition and
Control of Highway Access and
Adjacent Areas

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INTRODUCTION

It is perhaps natural that highway improvement and the provision of public utilities to serve urban and rural communities should have been developed, as they almost invariably have been, in close proximity to each other. Many reasons account for this development. The surface transportation corridors were deemed to be also the most logical corridors for other media of communication; not only was it cheaper to so use them, but they also offered natural physical and engineering advantages.

Up until World War II, the pace of highway development and public utility improvement was such that both proceeded at a leisurely rate. Population and economic growth were modest. But after World War II, the then accumulated highway needs and the huge population growths and urban expansion all involved a substantial acceleration in the provision of highway and utility accommodations. Therefore, the problems associated with the relocation of utility facilities resulting from highway improvement became much more acute than formerly.

The advent of the Federal-Aid Highway Act of 1956, and the provision of large financial resources to develop the National System of Interstate and Defense Highways, even more dramatically focused attention on the need to improve the procedural relationships between the highway agencies and their public utility counterparts.[1] The active and forward-looking American Right-of-Way Association took the lead and began to urge highway-public utility liaison.[2] The American Association of State Highway Officials also set up a special committee to examine existing conditions and to suggest the means for improvement. The Bureau of Public Roads, of the U. S. Department of Commerce, supported these efforts.

As a result, the general principle was enunciated that proper procedural relationships between the highway agencies and the public utility groups would facilitate more efficient and timely relocation and adjustment of public utility facilities when these were involved in highway improvements. All groups concerned endorsed the principle as being in the public interest. But recognition of the principle alone, although helpful generally, would not actually improve the existing situation very much. Those responsible for the administration of the highway and utility programs recognized that the general principle had to be spelled out in great procedural detail for any substantial

[1] For purposes of this report, "utilities" includes all publicly-, cooperatively-, and privately-owned public service agencies under the jurisdiction of the regulatory bodies, as well as other similar agencies not subject to such jurisdiction, such as pipelines, etc.

[2] *Public Utilities Fortnightly*, Nov. 19, 1959, "The Importance of Utility—Highway Liaison," by Sam Houston, Chairman, National Liaison Committee, American Right-of-Way Association.

betterment to be forthcoming from its application.

Looking toward that end, the American Association of State Highway Officials, the American Right-of-Way Association, and the Bureau of Public Roads requested the Highway Research Board, of the National Academy of Sciences—National Research Council, to undertake a comprehensive study of the problem. The financial resources with which to do the study were provided by the Bureau of Public Roads. The Highway Research Board accepted the assignment.

As a means of gathering the pertinent data quickly, a questionnaire was designed and sent to all the State highway departments, hundreds of utilities of every type, including rural electrification cooperatives, and a large number of cities and counties. The form of the questionnaires was varied slightly with each class of agency involved, to make the answers more meaningful.

This report summarizes the findings of this study and makes general suggestions for improving and strengthening highway-utility liaison practice.

SCOPE OF THE STUDY

Questionnaires were submitted to all 50 State highway departments, the District of Columbia, and Puerto Rico. Returns were received from each. Copies of the utility questionnaire were submitted to the various utilities throughout the Nation through the facilities of national utility organizations, such as the American Gas Association, the American Water Works Association, American Public Power Association, American Telephone and Telegraph Company, National Telephone Cooperative Association, American Petroleum Institute, Edison Electric Institute, Rural Electric Cooperative Administration, American Public Works Association, United States Independent Telephone Association, Water Polution Control Federation, and many others, as well as by the chairman of the National Liaison Committee of the American Right-of-Way Association and its chapter liaison committee representatives throughout the United States. Some 1,987 replies were received. Tables 1 and 2 indicate the geographic and functional representation included in these returns.

Questionnaires also were submitted to the 400 key city members of the American Municipal Association, of which 87 (approximately 20 percent) submitted replies. Thirty-six States are represented by the 87 replies.

All of the 3,007 counties were sent questionnaires through the National Association of County Officials. Returns were received from 448 counties in 41 States. Table 3 indicates the States represented by these four groups.

Respondents were asked to submit separate questionnaires representing different fact situations, if variations in procedure existed in different situations, such as when the utility was located on privately-owned versus publicly-owned highway right-of-way. As such differences were identified in so few returns, no distinctions have been noted in the analysis which follows. The same was found to be true in connection

TABLE 1.—Number of Utilities Reporting, by State and Ownership

State	Privately Owned	Publicly Owned	Total
Ala.	15	13	28
Alaska	—	3	3
Ariz.	7	5	12
Ark	11	10	21
Calif.	23	57	80
Colo	15	21	36
Conn	20	10	30
Dela.	3	3	6
Fla	12	31	43
Ga.	14	27	41
Hawaii	4	7	11
Idaho	10	6	16
Ill	57	42	99
Ind.	26	31	57
Iowa	22	36	58
Kans.	22	27	49
Ky.	32	37	69
La	28	11	39
Me.	41	24	65
Md.	14	5	19
Mass.	43	21	64
Mich.	19	31	50
Minn.	33	63	96
Miss.	8	19	27
Mo.	36	38	74
Mont.	16	25	41
Nebr.	10	28	38
Nev.	5	2	7
N. H.	17	5	22
N. J.	15	10	25
N. Mex.	14	8	22
N. Y.	18	18	36
N. C.	10	28	38
N. Dak.	13	25	38
Ohio	36	25	61
Okla	26	35	61
Ore.	6	11	17
Pa	34	23	57
R. I	8	2	10
S. C.	8	21	29
S. Dak.	13	30	43
Tenn	6	22	28
Tex.	60	83	143
Utah	9	5	14
Vt.	13	2	15
Va.	11	11	22
Wash.	9	19	28
W Va.	10	5	15
Wis.	17	38	55
Wyo.	16	9	25
D. of C.	2	1	3
P. Rico	—	1	1
Total	917	1,070	1,987
	46.1%	*53.9%*	*100.0%*

TABLE 2.—Number of Utilities Reporting, by Type of Service Performed and Type of Ownership

Type	Privately Owned	Publicly Owned	Total
Power transmission	121	49	170
Power and steam	1	—	1
Power and water	4	13	17
Power and gas	34	1	35
Power, water, and gas	8	4	12
Power, water, and steam	9	1	10
Power, water, sewer (drainage, irrigation)	1	25	26
Power, water, gas, and other combinations	—	4	4
Power, gas, and steam	10	—	10
Power, telephone, and other combinations	1	—	1
Power and other combinations	—	3	3
Electric cooperatives	—	512	512
Telephone	186	79	265
Telegraph	40	—	40
Telephone and telegraph	32	—	32
Water	72	120	192
Water and gas	2	3	5
Water and sewer (drainage)	1	128	129
Water, gas, and oil	1	1	2
Water, gas, sewer (drainage)	—	5	5
Gas	133	31	164
Gas and oil	12	3	15
Oil	163	2	165
Petroleum products	51	4	55
Sewer	2	11	13
Sewer and drainage	3	59	62
Drainage	—	4	4
Irrigation	1	—	1
Railroads	28	1	29
Transportation	1	—	1
Other combinations	—	7	7
Total	917	1,070	1,987
	46.1%	*53.9%*	*100.0%*

TABLE 3.—Geographic Distribution of Respondents to Questionnaire

State	Utilities	State Highway Departments	County	Municipal
Ala.	28	1	11	1
Alaska	3	1	—	1
Ariz.	12	1	2	—
Ark.	21	1	4	—
Calif.	80	1	30	20
Colo.	36	1	7	4
Conn.	30	1	—	1
Dela.	6	1	—	—
Fla.	43	1	8	5
Ga.	41	1	15	4
Hawaii	11	1	—	1
Idaho	16	1	3	1
Ill.	99	1	24	3
Ind.	57	1	12	—
Iowa	58	1	42	2
Kans.	49	1	34	1
Ky.	69	1	6	1
La	39	1	4	1
Me.	65	1	1	1
Md.	19	1	8	2
Mass.	64	1	—	—
Mich.	50	1	21	2
Minn.	96	1	38	3
Miss.	27	1	1	1
Mo.	74	1	10	3
Mont.	41	1	4	—
Nebr.	38	1	6	—
Nev.	7	1	—	2
N. H.	22	1	—	—
N. J.	25	1	8	1
N. Mex.	22	1	1	1
N. Y.	36	1	14	3
N. C	38	1	3	5
N. Dak.	38	1	10	—
Ohio	61	1	15	—
Okla.	61	1	4	—
Ore.	17	1	11	1
Pa.	57	1	3	2
R. I.	10	1	—	—
S. C.	29	1	1	1
S. Dak.	43	1	14	1
Tenn.	28	1	6	2
Tex	143	1	22	1
Utah	14	1	3	—
Vt.	15	1	—	—
Va.	22	1	5	3
Wash.	28	1	20	1
W. Va.	15	1	1	1
Wis.	55	1	13	3
Wyo.	25	1	3	1
D. of C.	3	1	—	—
P. Rico	1	1	—	—
Total	1,987	52	448	87
No. of jurisdictions	52	52	41	36

with Federal-aid projects and others, thus little if any differences were revealed between procedures utilized on Federal-aid and on other projects.

Inasmuch as utilities were also asked to indicate whether their organization was privately, cooperatively, or publicly owned, returns were originally analyzed on this basis. Here again, little if any distinction could be noted between the three types, with one or two exceptions. For the reader's interest, however, Tables 1 and 2 show the number of privately- and publicly-owned utilities by State and by type.

A word of caution is in order as to the general tenor of the returns on some questions, indicated by the tabulations included in the body of this report. One's first impression on analyzing the returns is apt to be that cooperation between the utilities and highway departments is generally excellent, that there is little, if anything, to be desired on the part of either. Relatively few complaints or criticisms are reflected in the tabulations, unless one makes use of supplementary data and knowledge, which was done.

One final general observation: In reviewing complaints and suggestions made by the various respondents, those from county highway agencies, as a group, showed a far greater degree of

dissatisfaction with present highway-utility liaison practices than did any of the other types of respondents; some went so far as to suggest that utilities should not be permitted to occupy highway rights-of-way because of the difficulties encountered by allowing them to do so.

The following sections contain an analysis of the returns to the questionnaire from State, county, and municipal highway agencies, and from the utilities. Analyses of the returns from the State highway departments were done manually. This was also possible in the case of the returns from municipalities (87) and from counties (448). However, the larger number of replies received from utilities and other agencies (1,987) made machine tabulation desirable. Summary tables are included in the text for each subject discussed. Tabulations of the individual returns by State are included as appendices, and can be easily identified by their affixed numerals. Analytical tables for Question 2, for example, are identified as Table 2.1, Table 2.2, etc.

SUMMARY OF FINDINGS

For several years now, both highway- and utility-oriented groups have agreed that better procedural relationships involving mutual activities would be in the public interest. This involves mutual advance planning, cooperation and coordination of highway construction and utility adjustments. This study has been undertaken to achieve this general objective. By examining both highway and utility procedures, in cases where utility relocations result from highway improvements, rough spots could be identified and isolated, where the highway gear and the utility gear, so to speak, do not properly mesh.

To gather data for such a study, questionnaires were sent to the State highway departments, many types of utilities, the counties, and the cities. Completed questionnaires were received from all the State highway departments, from 1,987 utility and associated groups, from 87 cities, and from 448 counties. The resulting data constitute a representative sample of the respective groups involved.

The following represent the major findings of this study, in summary form:

1. *Organization for handling highway-utility liaison.* The highway-utility coordination function has now achieved sufficient importance to justify its being handled by a separate division or section, of both the highway department and the utility involved. Approximately one-half of the State highway departments already do so, and a number of the remainder have designated utility engineers, so-called, to handle the function. Quite in contrast, comparatively few of the utility groups have seen fit to so recognize this activity as a separate function in their organization. Exceptions to the general principle enunciated could apply to the smaller groups.

2. *First notice of highway or utility improvement.* Once a proper organizational framework is established for highway-utility coordination, the next item of importance concerns the timing of the notice given by the highway department to the utility or other groups regarding planned highway improvement, or the notice given by the utility or other agency to the highway department of planned utility or other improvements. In the case of highway improvements, almost one-half of the States so notify the utilities at the stage when highway projects are programed, approximately one-quarter do so at the preliminary engineering stage of the highway projects, and the remainder at the highway design stage. Some States regularly hold annual or periodic information meetings with utilities. The earlier the notice, the better. First contacts should be held at the most meaningful stage of planning or development. Finally, such first contact must not be one-sided; it must flow from the public utility organization to the highway department in the case of proposed utility improvements, just as it must flow from the highway department to the utility in the case of a proposed highway development. If the principle is sound in one instance, it also is applicable in the other.

3. *Utility preparatory work prior to highway authorization.* Considerable

preparatory work can be done prior to formal authorization of the highway project. The desirability of this time-relationship has been recognized by the widespread support of this practice in a majority of the agencies studied. A maximum of utility preparatory work should be encouraged prior to the right-of-way acquisition or highway construction phases. If Federal reimbursement is anticipated, this should be done only after this type of work has been duly authorized. To assist this approach generally, separate utility projects, as such, can now be programed and authorized, independent of the highway project sections involved.

Such coordination should be carried on, as a matter of fact, whether or not Federal-aid is involved.

4. *Conferences involving highway departments and utilities.* In connection with highway-utility relocations, it is generally held that conferences involving representation from all affected groups are highly desirable to facilitate better intercommunication. A substantial majority of the respondents to requests for data reported that such conferences were always or generally held, to discuss the mechanics of relocating the utility facilities to accommodate the highway improvement. More and more State highway departments are sponsoring such conferences at the several strategic stages, involving planning and programing, construction planning and right-of-way acquisition, utility planning, and utility construction. No fixed rule can be enunciated to uniformly establish the frequency of such conferences or identify their precise nature that would be equally applicable to all States and all utility groups with their varied practices and requirements. Such conferences should be frequent enough, however, to assure the most efficient operation, both by the highway department and the utilities; and early enough so that the necessary relocations and all work incident to them can be accomplished as quickly and as economically as possible. It cannot be too strongly emphasized that these conferences are highly desirable.

5. *Joint conferences involving more than one utility.* This study sought to ascertain to what extent joint conferences are held involving more than one utility and the highway departments. More than 40 percent of all highway departments and utilities reported that such joint conferences were consistently held when more than one utility was involved. Although many departments indicated that such meetings sometimes were held, the remainder asserted that they were held only when necessary, seldom, or never. Obviously, it is expedient to hold joint conferences as a time-saving device, to say nothing about facilitating coordination. Such joint sessions are particularly useful in the earliest stages of a highway improvement when considerable "common knowledge" is imparted to the highway and utility groups.

6. *Joint utility representation.* In the case of the smaller utilities, it may be asked whether it would make sense to arrange for joint utility representation. This study reveals that there are few, if any, occasions where smaller utilities pooled their interests and employed a common representative to attend relocation conferences. There must be many instances where cooperation among the utilities would be advantageous, not only in the case of the rural electrification groups, which in many instances employ a common engineering firm, but particularly also on large urban projects where facilities of many different companies may have to be relocated. This is a mechanism that cer-

tainly ought to be seriously considered by the many smaller utilities.

7. *Notification of public highway hearings and attendance by utilities.* Much good would result from utility attendance at public highway hearings. With respect to notice, more than 40 percent of the responding utilities indicated that they were notified of such hearings, but only 15 State highway departments said they gave such notices directly to utilities. There appears to be no doubt whatsoever that the utilities can obtain valuable information from these hearings, particularly as such hearings are normally held in the early planning stages prior to the development of project plans. Thus, there appears to be little reason why the utilities concerned should not be directly notified when such hearings are to take place. Most utilities probably would want to attend such hearings, once notified. Additionally, this is an area where the utilities can render invaluable assistance to the highway departments by reinforcing their assertions as to the desirability of the improvement to be constructed.

8. *Exchange of plans showing proposed highway and utility improvements.* At some stage—and the sooner, the better—it is desirable for the highway department to submit highway improvement proposals to the utility, and for the receiving utility to return such plans, with appropriate indications of their utility relocation plans. At least 90 percent of the highway departments now follow this practice, though it is obscure in some instances. It is not clear, moreover, how many of the utilities ever return such plans to the highway departments with the necessary utility data on them. Judging from the responses, this is an area in need of considerable clarification. Efforts in this area of highway-utility cooperation can pay handsome dividends.

9. *Field check of location and nature of utility facilities.* Field checks of the location and nature of utility accommodations have been deemed advisable for a variety of good reasons. More than three-fourths of the respondents indicated that such field checks were routinely made. Such checks should be made to the maximum possible extent. Sometimes, installations are found that theretofore were not known to exist. Additionally, omissions and errors in identification are often uncovered by these field checks. Necessary changes in utility facilities sometimes come to light, too.

10. *Notice to utility of changes in highway plans.* One of the chief complaints of utilities is that they cannot proceed with their plans for relocation until highway plans are finalized. This is so, they say, because of the frequency with which changes in such plans are made prior to that time, and that they often are not aware such changes are being made. This study indicates that only two States do not always let the utilities know when changes are being made, and these two indicated that they notify utilities when substantial changes take place. Regardless of the diversity of the responses received on this matter, this is obviously a very important matter involving highway-utility relationships, and appropriate but prompt notice of changes is certainly desirable. To make sure that responsible elements of both the highway and utility agencies promptly give and receive the notices, respectively, it is suggested that line responsibility therefor be allocated specifically to designated individuals in each organization. This could be the utility engineer or the utility section in the highway department, and the high-

way engineer or the highway section in the utility.

11. *Advising utilities of status of highway projects.* If the best results are to be attained from coordinated highway-utility planning, it is desirable for the highway departments to keep the utilities generally informed on the status of highway projects. The converse is also desirable; namely, that the utility keep the highway departments generally informed on the status of utility proposals. Some diversity of data emerged from this study. Practically every State highway department, and a substantial majority of the local highway departments, indicated that the utilities are kept informed. However, only one-half of the reporting utilities indicated they are kept sufficiently informed. No data are available concerning how well the utilities keep the highway departments informed on developing utility projects. It is quite obvious that both groups should keep each other well informed, in the public interest.

12. *Consultation with utilities before highway plans are finalized.* Consultation with utility groups before highway plans are finalized on some projects could possibly avoid excessive utility relocation costs. Similarly, consultation by utilities with highway departments before utility improvements are finalized might likewise involve many public savings and benefits. Here again, substantial diversity of reported data seems to be involved. More than 50 percent of the State highway departments indicated that they always discuss such matters with utilities, but the utilities stated that this is so in a much smaller percentage of the cases. The principle seems like a good one to firmly establish. Differences of highway and utility opinion as to present practices are not important. What is important is that both groups seek, from this point on, to implement the principle to the greatest possible extent.

13. *Adequacy of time allowed utilities to relocate facilities.* The most frequently-mentioned period allowed utilities to adjust their accommodations is between one and three months. In some instances, the average lead time is as great as six months. Within the established legal scope provided, it is desirable for highway departments to so adjust their administrative processes as to provide a maximum of lead time for all necessary activities precedent to actual highway construction. Given a specified lead time, it behooves the utilities to make the most efficient use of that time. They should operate with dispatch and relocation activities should be recognized in each utility organization as functions of prime importance, rather than something that should be taken care of after all other utility processes have been completed, as it unfortunately is in some instances.

14. *Notice to bidders sent to utilities.* Some States send utilities their usual notice to bidders, in connection with particular highway projects. A substantial majority of the respondents do so, according to the finding of this study. Sending such a notice to the utilities may not be too significant in and of itself, but what is significant is that the utilities be kept fully informed on a continuing basis as to the progress being made on a project so that they may shape their own relocation plans accordingly. It may also serve to alert utilities to the need for having their surveys completed, materials on hand, and the work schedule ready for relocation work. If the notice to bidders is the most direct means of so alerting the utilities, that is probably the best way

of handling it. However, the practice may vary from State to State.

15. *Name of highway contractor furnished utilities.* Close contact between the highway contractors and the utilities which must relocate their facilities is inevitable on a highway project. Accordingly, it would be most helpful if the highway department would furnish the names and addresses of the highway contractors to the affected utilities. Such a practice is far from universal today.

16. *Notification to highway contractor of relocation plans.* There are multiple parties in interest, one might say, to a highway improvement project. Good intercommunication between all the parties will result in the most efficient performance at the lowest possible public cost. Notice to the highway contractor of proposed relocation plans is just another link in the chain of desirable communication. In a substantial majority of instances such notice is furnished by the highway departments. This is indeed good practice and might well be extended to all departments.

17. *Relocation completed prior to beginning of highway construction.* If adequate coordination is achieved between the highway and utility agencies, a maximum of relocation work will have been completed prior to the beginning of the highway construction. Present practice is so varied that it is difficult to summarize it in a single sentence. The principle involved is a relatively simple one, however: To the extent that it can be done efficiently, a maximum of the utility relocation work should be accomplished prior to the beginning of the highway construction.

18. *Highway department assistance to utilities.* Utilities frequently seek assistance of various kinds from the highway departments in connection with the planning and actual relocation of their facilities. A substantial majority of the States reported that they were called upon in this manner. To the extent that a highway department can render assistance to utilities without prejudice to its own operations, such cooperation is certainly highly desirable. On the other hand, utilities that are substantial enough to carry on relocation activites themselves should not lean on highway departments needlessly, just because relocation activities are associated with a highway improvement. In all cooperative efforts that are the most successful, both parties to the activity must be fully aware of their own separate responsibilities in connection with it.

19. *Delays resulting from slowness of utility in returning plans.* Highway construction is sometimes impeded as a result of the slowness of some utilities in returning relocation plans to the highway departments. This study substantiates this finding. Although delays of this kind do not occur in every case, they obtain frequently enough to be a matter of substantial concern to some highway departments. In the interest of better cooperation between the highway and utility agencies, such delays and their causes should also be a matter of real concern to the utilities themselves. It is suggested that utilities examine their own procedures in considerable depth to ascertain whether such delays can be minimized or eliminated entirely.

20. *Delays resulting from utility inaction pending right-of-way clearance.* Delays sometimes result from utility inaction pending clearance of highway rights-of-way. Whether such delays are justifiable in particular instances is sometimes arguable; but whether justified or not, they do hinder a process

that otherwise could go forward more rapidly. In connection with State highway projects, such delays appear to be only occasional. On local highway projects they apparently occur more often. Perhaps some of this delay is unavoidable, as it may depend on factors that cannot be manipulated by either the utility or the highway agencies. That which can be diminished or eliminated entirely should be identified and treated accordingly.

21. *Approval of utility plans by highway departments.* Obviously, it is necessary for utilities seeking to relocate their physical facilities to obtain approval of the highway department for such activities. Equally obviously, applications for approval need to be reviewed adequately, and this takes time. Some improvement in present practice probably can be achieved in the approval of utility relocation plans. However, to expedite such necessary reviews and approvals utilities should seek to provide a maximum of all pertinent data necessary for an appropriate review, and as early as possible.

22. *Highway department information on utility locations.* Most of the highway departments indicated that they do receive adequate notice of proposed new utility installations that are to occupy highway right-of-way. However, only one-third of the respondents said that the utilities furnished maps showing the location of their networks. In connection with highway planning processes generally, it would be most helpful if the State had at hand Statewide, or even area-wide, maps indicating the location of particular utility systems. Although it is recognized that defense elements sometimes are involved, proper classification of the pertinent documents and appropriate personnel clearances could cope with the problem. Countless benefits and cost savings could result.

ORGANIZATION FOR HANDLING HIGHWAY - UTILITY LIAISON MATTERS

If an administrative or technical element achieves sufficient importance in an over-all operation, it needs to be handled by a separate, identifiable division, department, or section. Otherwise, difficulties will be encountered. It might be submerged under other associated matters, of far lesser importance. It might never get the important handling it rightly deserves. It might never emerge from its chaotic stage, only because it was never appropriately recognized organizationally.

Because of the obvious and emerging importance of highway-utility liaison, the first question that was asked, uniformly on all questionnaires, concerned the type of organization responsible for handling this function.

A substantial number of State highway departments (24) now have a specific division or department to handle liaison matters with the affected utilities.[3] Quite in contrast, comparatively few of the utilities or of the local street or road departments have seen fit to establish such a unit, as indicated in Table 4. One reason why special units of this type may not have been provided for in some instances may be the size of the reporting agency. Although no information is available as to the size of the individual agencies reporting, or the magnitude of their operations, it is probable that a good many of them are small organizations having infrequent utility relocation work. In such cases the establishment of a separate unit to carry on highway-utility liaison has not been found necessary or possible. As a matter of fact, it is rather encouraging to find that as much as 20 percent of both county highway departments and utilities (but not the municipalities) reporting do have such an organizational setup.

Analysis of the returns indicates that these special organizational units are generally found in the more highly urbanized States (such as California, Illinois, Indiana, Maryland, Massachusetts, Michigan, Ohio, Pennsylvania) where the problem is more frequently encountered and its magnitude is sub-

[3]Since the questionnaire returns were received Mississippi has been added to this list.

TABLE 4.—Organizations Concerned with Highway-Utility Liaison

Organization	Separate Division Has Responsibility	Division with Other Responsibilities Handles Highway-Utility Liaison						No Answer	Total
		Construction and/or Engineering	Right-of-Way	Right-of-Way and Engineering	Manager and/or Superintendent	Other	Total		
State highway department	24 *46.2%*	15 *31.5%*	10	—	—	3 *5.6%*	28 *53.8%*	—	52
Utility	445 *22.4%*	823 *41.4%*	156 *7.9%*	108 *5.4%*	246 *12.4%*	187 *9.4%*	1520 *76.5%*	22 *1.1%*	1987
County highway department	88 *19.6%*	259 *57.8%*	24 *5.4%*	5 *1.1%*	17 *3.8%*	46 *10.3%*	351 *78.4%*	9 *2.0%*	448
Municipal highway department	5 *5.7%*	70 *80.5%*	4 *4.6%*	—	—	4 *4.6%*	78 *89.7%*	4 *4.6%*	87

stantial. As far as the utilities are concerned, there seemed to be no discernible difference between privately- and publicly-owned in this respect, nor among the different types of utilities.

Among the reporting organizations where no separate organizational unit exists for carrying on liaison between the street or highway department and the affected utilities, liaison is predominantly carried on by the construction or design units, ranging from approximately 30 percent of the State highway departments to more than 80 percent of the municipalities reporting, as indicated in Table 4. A number of the utilities and the county highway departments appear to place such responsibility in an individual—a manager or superintendent—who, it is assumed, is the person in charge of all construction work. A substantial percentage of the counties reporting seem to have responsibility for this type of activity lodged in the administrative body or head of such political unit—the county judge or the county court in most instances. These are undoubtedly the smaller counties where not much liaison work is encountered. Only the State highway departments as a whole have assigned highway-utility liaison to any extent to the right-of-way division. It is possible that not many of the other reporting agencies engage in land acquisition activities to such an extent that a right-of-way division is included in their organizational setup.

Thus far, the discussion has centered wholly around the existence of a more or less formalized organization, the responsibility of which is predominantly or exclusively highway-utility liaison. Short of such separate division or department, many agencies concerned with highway or utility functions have recognized the importance of the liaison activity by designating and indentifying a position known as the "utility engineer." It is significant that 44 of the 50 State highway departments, as well as the District of Columbia and Puerto Rico, now have a utility engineer, whose duties include liaison with the utility companies when relocations must be made (Table 5). This is in contrast with the 26 States reporting the existence of such a classification on the staff in 1959[4]. Obviously, State highway departments are increasingly recognizing the importance of highway-utility liaison. The county and municipal highway departments presently recognize such a specialized classification to a far lesser extent.

TABLE 5.—Is There a Utility Engineer in the Street or Highway Department?

Organization	Yes	No	No Answer	Total
State highway department	46 *88.5%*	6 *11.5%*	—	52
County highway department	74 *16.5%*	365 *81.5%*	9 *2.0%*	448
Municipal highway department	28 *32.2%*	59 *67.8%*	—	87

Many States have utility engineers located in their district offices as well as at headquarters. They handle practical problems and not just paper work.

Although a utilities engineer on the staff of a highway department or a highway engineer on the staff of a utility does not *per se* guarantee good liaison with the utility companies or the highway departments, it does at least attest to the importance assigned to this function. Perhaps more important, such an individual can serve as the focal point for responsibility in the rather complicated procedures to be followed in connection with the relocation or removal of utility facilities. Dispersion of authority in this respect has on per-

[4] "Utilities Engineers in State Highway Organizations," by Ralph S. Lewis, Chief Administrative Research Branch, Division of Highway and Land Administration, U.S. Department of Commerce, Bureau of Public Roads (Dec. 1959)

haps more than one occasion resulted in a failure of liaison, inasmuch as each of several employees operating on a particular project assumes that one of the others has made certain checks or necessary contacts. There are many occasions, for example, where highway construction has literally unearthed the fact, totally unknown theretofore, that utility lines were located beneath the surface in the project area. A great deal of useless effort, to say nothing of time and money, would be conserved by allocating responsibility for liaison to one competent individual.

As one views the highway-utility function in perspective, it is quite obvious that one of its first desirable features is a proper organizational framework recognizing the activity. Today, every highway department and public utility organization of appreciable size should have a specialized division or department—and it can be only of modest size, incidentally—that is equipped and directed to deal with highway-utility matters.

If the highway department or utility organization is not of sufficient size to warrant such a special department, it should at least designate a nucleus of utility or highway engineers. If the highway-utility liaison activity is small enough, perhaps only a single utility or highway engineer is needed. In those cases of the most modest total operations, the function itself could be recognized, even if the individual involved has other duties as well as those of "utility or highway engineering," as the case may be.

These are but general principles. If a particular organization wishes to hide behind its generalized nature, by alleging that it is too small to come within the general framework of the principle, it could do so. But it will do so at its own risk today. The efficiencies resulting from a specialized organization, modest though it be, are so promising today that there is hardly a highway or utility organization that can continue to afford to ignore them, in the public interest.

FIRST NOTICE OF HIGHWAY OR UTILITY IMPROVEMENT

It is obvious, then, that one of the first requisites for an adequate treatment of highway-utility relationships is a proper organizational framework, both in the highway department and in the utility or other affected agency, to deal with these activities. Once this is assured, perhaps the next item of importance concerns the timing of the notice given by the highway department to utility or other groups of highway improvements, or the notice given by the utility to the highway department of utility improvements.

This study reveals that a substantial number of State highway departments are already aware of the desirability of early notice of proposed highway improvements given to utility groups. As indicated in Table 6, there is a high degree of similarity between the replies of the State highway departments and the utilities in this respect; *i.e.*, 42 percent of the former and 43 percent of the latter reported that they were notified at the program stage; 27 percent and 31 percent, respectively, at the preliminary engineering stage; and 23 percent and 21 percent, respectively, at the design stage. Only 8 percent of the State highway departments and less than 2 percent of the utilities reported notice subsequent to this stage. Higher percentages were reported for these latter stages by the counties and the municipalities.

Some of the States have inaugurated the practice of holding annual, quarterly, and in some instances monthly, meetings with the utilities to inform them of future highway improvements, thus, giving the utilities ample notice as to what is to come relocationwise. Although no definite estimates of the amount of work involved or the cost thereof can be made at this point, at least the utilities are forewarned and can take this into consideration in planning their own work load. California, for example, permits utility planners to review tentative highway planning programs, developed as much as five years in advance of construction. Subsequently, and regularly, the State furnishes utility companies with highway district area maps showing existing and proposed routes. This allows utility planners to determine when their facilities may be in conflict with highway improvements. The utilities are again

TABLE 6.—Stages at Which Utility or Other Affected Agency First Notified of Impending Highway Improvement

Organization Reporting	Program	Prelim. Engineering	Design	Final Plans	Award of Contract or Other	No Answer	Total
State highway department	22 *42.3%*	14 *26.9%*	12 *23.1%*	4 *7.7%*	—	—	52
Utility	862 *43 3%*	622 *31.3%*	414 *20.9%*	31 *1.5%*	33 *1.7%*	25 *1.3%*	1987
County highway department	87 *19 4%*	123 *27.5%*	57 *12.7%*	121 *7 0%*	51 *11.4%*	9 *2.0%*	448
Municipal highway department	30 *34.5%*	32 *36.9%*	13 *14 9%*	11 *12 6%*	1 *1.1%*	—	87

notified of route selection and adoption. Again, in the early design stages, as soon as developed, right-of-way requirements and plans are sent to all affected utility operators, to determine whether conflicts exist. The State feels that a great deal of time and money is saved through keeping the utilities thus informed.[5]

Under present procedure in Maryland, the State Roads Commission each year holds regional conferences at which time the highway program for the next two years is presented. Representatives of all publicly- and privately-owned utilities are invited to attend these conferences, as well as planning and zoning officials of the municipalities and counties involved. Schedules of the construction program, by county, for the next succeeding 12 months, as shown on maps, are announced at that time.[6] A similar practice has recently been inaugurated in Pennsylvania through the district cooperative committee.

All advance planning in Michigan is made available to the utilities and the public on at least a five-year basis. Finalized planning two years in advance of construction is coordinated through the State's utility engineers, and right-of-way acquisition is coordinated and accomplished through the right-of-way utility officer.[7] The State highway department has adopted the practice of providing utilities with strip maps of prospective highway routes in connection with the five-year program. Utilities are requested to superimpose their future expansion plans on these maps.

In other States, annual or biennial programs are issued by the highway department. However, hearings regarding these programs are not always held, nor does the State always send copies to all utilities. There is a feeling in some States that because these programs are a matter of public record, utilities can obtain copies if they so desire. These States feel that it should not be necessary for the State to send each utility a copy. In the interests of better public relations, and perhaps more important, to make sure that the utilities are aware of highway plans which may be in conflict with existing utility installations, it appears that the extra effort involved in seeing that the utilities are sent copies would be worthwhile from a monetary as well as a time-saving standpoint.

On the utility side, it is equally important that the highway department be closely advised of plans for expansion or revision of utility facilities. If it is sound, the principle should work both ways. If both the utility company and the highway department, for example, have five-year plans for modernization of their facilities, and each goes ahead without knowledge of the other's plans, the resulting loss in money, time consumed, and disruption of service could be incalculable. Although there may be a certain reluctance on the part of both the utilities and the highway departments to divulge future plans in particular circumstances, it is reasonable that each party would respect the confidence of the other[8] if liaison of this type is conducted on a continuing and mutually-profitable basis.

Particularly, those utilities operating under somewhat limited budgets can benefit from advance notice of impending highway improvements that will require relocation or removal of their

[5] "Practical Liaison at Work," Rudolf Hess, Chief Right-of-Way Agent, California Division of Highways American Association of State Highway Officials (1961)

[6] "Utility Relocation Liaison Procedure," Maryland State Roads Commission, John B. Funk, Chairman-Director (Oct 1961).

[7] "Problems, Past and Present, of the Practical Liaison at Work," Victor H. Eichhorn, Director, Right-of-Way Division, Michigan State Highway Department American Association of State Highway Officials (1961).

[8] "Highway-Utility Conflicts," Charles H. Smith, Assistant Chief, Finance Division, Office of Administration, and J. E Kirk, Chief, Engineering Correlation Branch, Right-of-Way Division, Office of Engineering, Bureau of Public Roads. American Right-of-Way Association, Eighth Annual National Seminar (1962)

facilities. This is highlighted by the answers to a question asked of the utilities, as to whether delays are ever encountered because lack of sufficient notice from the respective State highway departments ever results in budgetary problems. Although more than 80 percent replied that this seldom or never occurred, more than 200 of the responders (11.5 percent) stated that such delays occurred frequently. (See Table 6.3, Appendix B.)

Early notice is also desirable from another standpoint: Materials necessary for relocation on large-scale projects must be ordered in many instances well in advance of starting the actual work. Advance notice of such needs can assist the utility in scheduling orders for these materials. Finally, in many instances the utility may have additional plans of its own, involving other changes or upgrading of its facilities, and coordination of highway-utility plans at an early date can eliminate costly and time-consuming duplication of work.

In this connection one of the questions asked the utilities was whether or not they had sufficient time to plan their work load. The replies are summarized as follows:

Frequency	*Number*	*%*
Always	236	11.9
Generally	1373	69.1
Seldom	277	14.0
Never	44	2.2
No answer	57	2.8
Total	1987	100.0

Although approximately 80 percent of the respondents state that they are always or generally given sufficient time to plan for necessary relocations, there are still more than 300 utilities (16 percent) which feel that they are seldom or never given enough warning in this respect. Unfortunately, there appears to be no indication that the "seldom" or "no" answers are not coming from the States which have inaugurated these regular conferences, because at least a small percentage of this type of reply was received from utilities operating in each of the States.

Accordingly, certain general principles suggest themselves with respect to first notice or contact between the highway department and the utility or other group. Perhaps, to start with, it can be said that the earlier such contact is had, the better, all other things being equal. Such contact must be at a meaningful stage of planning or development, of either the highway or utility improvements. That is, if such planning is too generalized or only a gleam in the highway or public utility official's eye, it might not be worth passing on at all.

Secondly, such contact must not be one-sided; it must flow from the public utility organization to the highway department, in the case of proposed utility improvements, just as it must flow from the highway department to the utility in the case of a proposed highway development. If the principle is sound in the one instance, it is also applicable in the other.

FORMAL AUTHORIZATION FOR UTILITY TO PROCEED WITH UTILITY PREPARATORY WORK PRIOR TO FORMAL AUTHORIZATION OF HIGHWAY PROJECTS

In many instances, considerable preparatory utility engineering work can be done most efficiently prior to the right-of-way acquisition or construction phases of the highway improvement. The desirability of this time-relationship has been recognized by the widespread support of this practice.

Of the four groups of organizations reporting—State, county, and municipal highway departments, and utilities—a majority of each stated that authorization to proceed with preparatory engineering work was given prior to formal authorization of the highway project involved. This is as it should be. However, the percentage of affirmative replies given by the utilities (75.5) is substantially greater (Table 7) than that of the State highway departments (55.8). Possibly, authorization was construed as not limited to formal approval but was considered to include notice of the impending improvement and suggestions to the effect that this might be included in the utilities planning or budgeting. In any event, it is assumed that the responding utilities were not all referring to the type of preparatory work for which reimbursement might be expected in giving an affirmative answer to this question. That this misunderstanding of what was meant by the question is so is borne out by the fact that, even though the highway departments of 23 States reported that the utility was not authorized to proceed before formal authorization of physical adjustments, the answers from utilities operating in those States were preponderantly in the affirmative.

Without regard to what preliminary or preparatory work was being talked about, there was almost complete unanimity on the question of liaison during this period, the number of "no" answers to this question being negligible (Table 8). There is less unanimity as to the degree of liaison, 75 percent of the State highway departments testifying that it always took place, whereas only 32 percent of the utilities, 26 percent of the counties, and 44 percent of the municipalities.

TABLE 7.—Is Utility Authorized to Proceed with Preparatory Engineering Work Prior to Formal Authorization of Highway Project?

Organization	Yes	No	No Answer	Total
State highway department	29 *55.8%*	23 *44.2%*	—	52
Utility	1500 *75.5%*	453 *22.8%*	34 *1.7%*	1987
County highway department	270 *60.3%*	172 *38.4%*	6 *1.3%*	448
Municipal highway department	66 *75.9%*	21 *24.1%*	—	87

TABLE 8.—Is There Liaison Between Highway Department and Utility During Preliminary Engineering Period?

Organization	Always	Sometimes	Never	No Answer	Total[1]
State highway department	22 *75.9%*	7 *24.1%*	—	—	29
Utility	494 *32.2%*	988 *64.4%*	18 *1.2%*	34 *2.2%*	1534
County	70 *25.9%*	194 *71.9%*	3 *1.1%*	3 *1.1%*	270
Municipality	29 *43.9%*	37 *56.1%*	—	—	66

[1] Total number of States reporting authorization to utility to proceed with preparatory engineering work prior to formal authorization.

palities so stated. However, 878 of the utilities stating that there was liaison, reported that it "generally" took place, as against 110 who answered "seldom."

It might be noted here that, although Federal regulations do provide for reimbursement of the cost of preparatory work by the State and the utility, reimbursement cannot be made unless there has been prior written authorization to proceed with the phase of the work to be undertaken. On numerous occasions in the past, it has been found, when claims for Federal reimbursement have been submitted, that although performance of the work was satisfactory in every way reimbursement could not be made because authorization for the work had not been given prior to its commencement. Accordingly, if Federal reimbursement is expected, the State should not authorize, nor should the utility proceed with this preparatory utility work until such formal authorization has been given for it.

It is important to note here that the Bureau of Public Roads' procedures governing these matters are most flexible and practical to cover the variable situations encountered in the several States whereby authorization to proceed with utility preparatory work may be given for the entire project or for one or more utility relocations within that project. Likewise, such work may be accomplished as part of the preliminary engineering costs for the entire project or as an incidental expense to right-of-way acquisition or to construction.

From a practical standpoint, however, it is generally desirable that early preliminary discussions between the States and the utilities take place prior to this formal authorization to proceed with the actual work. The costs involved will necessarily have to be borne as an administrative expense by the State and the utility. However, these overhead costs may generally be distributed to work orders, so that in the long run a measure of reimbursement may be possible.[9]

Additionally, the Bureau of Public Roads has encouraged State highway departments to set up utility projects, apart from other phases of the work such as right-of-way acquisition or highway construction. In other words, this would mean programing the work as a separate utility project involving the facilities of one or several utility companies. By so doing, considerable economies frequently can be effected, and certainly more effective performance, without committing large sums of money which obviously might not be used for considerable periods of time. It would also facilitate accomplishment of this class of work on an area basis consistent with its essential character, instead of being confined to area limits that would have more significance for right-of-way acquisition or highway construction purposes than for utility relocation objectives.

It seems, then, that it is certainly desirable to encourage a maximum of utility preparatory work to be done prior to the right-of-way acquisition or highway construction phases of highway improvement. This should be done, however, only after this type of work has been duly authorized, if Federal reimbursement is anticipated. Moreover, separate utility projects, as such, can now be programed; this makes sense from the standpoint of both the highway department and the utility agencies involved. In this connection, wherever possible, the utilities themselves, aware of the potentialities for advancing the

[9] "Highway-Utility Conflicts," Charles H. Smith, Assistant Chief, Finance Division, Office of Administration, and J E. Kirk, Chief, Engineering Correlation Branch, Right-of-Way Division, Office of Engineering, Bureau of Public Roads. American Right-of-Way Association, Eighth Annual National Seminar (1962).

work, could take the initiative and propose the programing of utility projects for highway department consideration.

In any event, an exchange of information concerning advance construction between the highway departments and the utilities is highly desirable and in the public interest.

CONFERENCES INVOLVING HIGHWAY DEPARTMENTS AND UTILITIES

As indicated, there is general agreement that conferences involving representatives of both the highway department and the affected utilities are desirable in connection with highway-utility activities. The extent and nature of these conferences were studied.

A substantial majority of each type of respondent—State, county, and municipal highway agencies, and utilities—reported that conferences were always or generally held, at which the mechanics of relocating the utility facilities to accommodate the highway department were discussed. A few utilities, municipalities, and substantially more of the counties, reported that conferences were never held (Table 9). No State highway departments reported such a state of affairs, although some of them stated that conferences were held "when required" or "as necessary," indicating that there might be occasions when no conferences were held, if in the State's view there was no necessity therefor. On the other hand, approximately 20 percent of the utilities responding stated that conferences were seldom if ever held. Analysis of the returns did not reveal that these answers came from any particular type or types of utilities or from certain States; rather a few such answers came from almost every State and every type of utility.

TABLE 9.—Are Conferences Held with Affected Utilities or Other Affected Agencies?

Organization	Yes	Sometimes	No	No Answer	Total
State highway department	51 *98.1%*	1[1] *1.9%*	—	—	52
Utility	1573[2] *79.1%*	288[3] *14.5%*	116 *5.9%*	10 *0.5%*	1987
County highway department	318 *71.0%*	9 *2.0%*	119 *26.6%*	2 *0.4%*	448
Municipal highway department	77 *88.5%*	4 *4.6%*	6 *6.9%*	—	81

[1] One State reported "if problem indicates a need."
[2] Includes 592 who reported "always" and 981 who reported "generally."
[3] Seldom.

A sizeable number of respondents reported that conferences were held at more than one stage—preliminary engineering, design, construction, etc.—and still others that meetings took place at all stages.

It appears (Table 10) that there is very little conferring between the utilities and the highway departments during the early stages (*i.e.*, programing, route location, etc.) Examination of the detailed tabulations (Tables 10.1 through 10.4, Appendix B) indicates that a small additional percentage can be added, inasmuch as some of the respondents reported that conferences were held at more than one stage, including route location, and an additional few that conferences were held at all stages, which presumably would include this early stage. A substantially higher proportion of all answers indicated that meetings were held at the preliminary engineering or design stage.

There are still far too many instances where conferences are not held until the final plan stage or at the time of the award of contract. Granted that there may be instances involving simple relocations where there is little or no need for an earlier formal conference as such, it is logical to assume that con-

TABLE 10.—At What Stages Are Conferences with Affected Utilities or Other Agencies Held?

Organization	Program, Route Location, Etc	Preliminary Engineering, Design, Etc	Final Plans	Award of Contract	At Various Times (more than once)	All Stages	When Needed	Not Applicable	No Answer	Total
State highway department	1 1.9%	13 25.0%	8 15.4%	1 1.9%	10 19.2%	4 7.7%	15 28.9%	—	—	52
Utility	103 5.2%	697 35.1%	559 28.1%	159 8.0%	281 14.1%	26 1.3%	—	116 5.9%	46 2.3%	1987
County	35 7.8%	96 21.5%	94 21.0%	13 2.9%	64 14.2%	8 1.8%	—	119 26.6%	13 2.9%	448
Municipality	4 4.6%	24 27.6%	11 12.6%	5 5.8%	26 29.9%	6 6.9%	5 5.8%	5 5.7%	1 1.1%	87

ferences in the early stages could facilitate relocations or removals in a great many instances where this is not now possible under existing procedures.

The recently adopted regulations providing for highway-utility liaison in Maryland include provision for conferences at four strategic stages: (1) an annual planning and programing meeting, at which the highway program for the next two years is presented; (2) a joint preliminary inspection in the field when highway construction plans are approximately 30 percent complete and preliminary right-of-way plats are available, at which the location of all existing utility facilities is determined, and consideration is given to making necessary design adjustments to accommodate, relocate, or originally redesign utilities that are in conflict with the proposed road construction; (3) a field conference when utility plans are sufficiently advanced; and (4) field conferences prior to construction when utility work is to be done in advance of the highway construction to provide necessary assistance, and when utility relocation is to be done simultaneously with highway construction to discuss scheduling of the utility rearrangement.

There may be other contacts from time to time, between these stages. But on these four occasions, particularly on complicated projects, it appears desirable that actual physical meetings be held.

A third part of this question asked whether or not representatives of municipalities affected were included in conferences between the utilities and the highway departments. With the exception of the State highway departments, the answers to this question indicated that in a great many instances, they are not (Table 11). More than 25 percent of the utilities and the county and municipal highway departments

TABLE 11.—Are Representatives of Municipalities Affected Included in Conferences Between Utilities and State Highway Departments?

Organization	Always	Sometimes	No	Not Applicable	No Answer	Total
State highway department	36 *69.4%*	11 *21.1%*	2 *3.8%*	1[1] *1.9%*	2 *3.8%*	52
Utility	803 *40.4%*	25 *1.3%*	905 *45.6%*	116[2] *5 8%*	138 *6.9%*	1987
County	225 *50.2%*	16 *3.6%*	136 *30.4%*	—	71 *15.8%*	448
Municipality	51 *58.6%*	5 *5.7%*	23 *26.5%*	—	8 *9.2%*	87

[1] District of Columbia, a municipality.
[2] Answers indicated no conferences held.

gave a negative answer here. Additionally, although approximately 70 percent of the State highway departments (36) stated that municipal representatives were invited to attend these conferences, an additional 21 percent (11 States) indicated that this procedure was only followed under certain circumstances, or more specifically in some cases, only if the utility concerned was municipally owned.

Although this study is not directed to the question of liaison between the State highway departments and the municipalities involved, it would appear that advantages could accrue to all parties concerned if the city in which the relocation is to take place could be included in conferences between the State officials and the utilities. From a public relations standpoint, it would certainly be sound practice to keep the municipality informed of what is going on within its jurisdictional limits. Additionally, it is quite possible, in at least some instances, that the municipal representatives might have valuable suggestions to how the relocation might better be carried out.

For obvious reasons, conferences between the highway department and the utility or other affected groups are necessary and desirable devices to facilitate communication between them whether or not Federal reimbursement is involved. No fixed rule as to their frequency or nature can be enunciated that would be equally applicable to all States and all utility groups with their varied practices and requirements. Such conferences should be frequent enough, however, to assure the most efficient operation, both by the highway department and the utility, and early enough so that the necessary relocations and all work incident to them can be accomplished as quickly and as economically as possible.

JOINT CONFERENCES INVOLVING MORE THAN ONE UTILITY

It has been noted that ordinary conferences are frequently held, involving the facilities of several utilities to be relocated and the highway department, and that it is desirable for such meetings to be held. The question may now be asked: To what extent are joint conferences held, involving more than one utility and the highway department, and is this a desirable practice?

More than 40 percent of all highway departments and utilities reporting stated that joint conferences are consistently held when more than one utility is involved in utility facility relocations made necessary by highway improvements (Table 12). Approximately 42 percent (22) of the State highway departments stated that such conferences were sometimes held, of which 18 indicated that they were held only when necessary or under particular circumstances, and four "seldom." Only 5 (9.6%) reported that such conferences were never held.

TABLE 12.—Are Joint Conferences Held When More Than One Utility Is Involved?

Organization	Yes	Sometimes	Never	No Answer	Total
State highway department	25 *48.1%*	22[1] *42.3%*	5 *9.6%*	—	52
Utility, privately-owned	505 *55.1%*	25[2] *2.7%*	363 *39.6%*	24 *2.6%*	917
Utility, publicly-owned	459 *42.9%*	14[3] *1.3%*	505 *47.2%*	92 *8.6%*	1070
County highway department	202 *45.1%*	8 *1.8%*	215 *48.0%*	23 *5.1%*	448
Municipal highway department	64 *73.6%*	2 *2.3%*	19 *21.8%*	2 *2.3%*	87

[1] Eighteen reported "as necessary" or "under particular circumstances", 4, "seldom."
[2] Seven reported "generally", 18, "seldom."
[3] One reported "generally", 10, "seldom" and "depends on circumstances."

On the other hand, less than 3 percent of the utilities and of the county and municipal highway departments stated that conferences were seldom held, but more than 40 percent of the utilities and county highway departments and more than 20 percent of the municipal highway departments stated that these conferences were never held.

Because there were differences between the answers given by the privately-owned and the publicly-owned utilities, a breakdown is given in Tables 12.3 and 12.4, Appendix B. It will be noted that more than 10 percent more of the publicly-owned than of the privately-owned utilities reported "no conferences." Only the railroads, of the privately-owned agencies reporting, gave a preponderance of "no conferences" answers. Among the publicly-owned utilities, several—notably the telephone companies and the electric cooperatives—gave a high percentage of "no conference" answers. In fact, almost twice as many of this latter type said "no" as opposed to "yes." Analyzing the utility returns by State, it is noted that only in a few States did the publicly-owned agencies indicate a high percentage wherein such conferences were held.[10] Again (except for Wisconsin) the "no conference" answers may represent a feeling on the part of telephone and electric cooperatives that they are not consistently asked to participate in joint conferences where their facilities are involved.

Because a large percentage of the

[10] California, Connecticut, Kentucky, Michigan, New Jersey, Ohio, Pennsylvania, Virginia, and Wisconsin From other sources, it has been learned that such conferences are now frequently held in Indiana, Mississippi, New York, and Pennsylvania

State highway departments indicated that joint conferences were held only when necessary, it may be that to date they have not been found necessary in many instances. It is impossible to surmise from the utility returns whether they feel that they should be consulted in many instances where they apparently are not.

Where more than one utility is affected by particular highway improvements, it would be expedient in many cases to hold joint conferences, as a time-saving device, if nothing else, for the State highway departments, as well as a means of coordinating the work involved. Such joint meetings might be particularly useful in the earliest stages of a highway improvement, where considerable "common knowledge" is imparted to both the highway and utility groups. At the later stages, specifics of each utility facility might logically rule out extensive joint conferencing, but such a practice, again, needs to be flexible.

JOINT UTILITY REPRESENTATION

With respect to representation at highway-utility conferences or otherwise, the large- or medium-sized utilities have no apparent problem. An appropriately designated employee or section is charged with this duty. But the problem is far more difficult for the smaller utilities, whose general operations—and certainly their highway-utility relocation activities—may be so limited that separate representation by each organization is just out of the question. In such instances the question may be put as to whether it would make sense to arrange for joint utility representation.

First, an examination of present practice may be in order. Judging from the questionnaire returns there are few, if any, occasions where smaller utilities pool their interests and employ a representative to attend conferences held for the purpose of discussing necessary utility relocations. More than 80 percent of the utilities and more than 90 percent of the highway departments replied that this practice was never followed. A very small percentage of the returns from these two groups of respondents stated that joint representatives were regularly employed; less than 10 percent of the highway departments and 15 percent of the utilities reported that such representatives were used frequently or occasionally (Table 13). Additionally, there was little or no difference in the replies of the privately- and publicly-owned utilities or by type of utility.

Responses from the municipalities reporting following a similar pattern. County replies, however, indicated that this procedure may be used more frequently at this level; but even here, substantially more than 50 percent indicated that joint repesentation never took place. A substantial percentage (20.4) did indicate that this practice was followed occasionally. This may be due to the greater number of projects involving the smaller utilities at the county level.

Apparently, this solution has not been found expedient or necessary on a good many highway-utility relocations.

Certain kinds of utility agencies make extensive use of the cooperative device, however. One State highway department mentioned the fact that rural electrification administration com-

TABLE 13.—Do Smaller Utilities Ever Pool Interests and Employ a Representative on a Cooperative Basis?

Organization	Regularly	Frequently	Occasionally	Never	No Answer	Total
State highway department	1 *1.9%*	—	3 *5.8%*	48 *92.3%*	—	52
Utility	36 *1.8%*	47 *2.4%*	217 *10.9%*	1627 *81.9%*	60 *3.0%*	1987
County	15 *3 3%*	26 *5.8%*	91 *20.4%*	254 *56.7%*	62 *13.8%*	448
Municipality	2 *2.3%*	4 *4.6%*	3 *3.5%*	65 *74.7%*	13 *14.9%*	87

panies, as a rule, use one consulting engineering company. Another reported that although no instances were known where the utilities employed one representative cooperatively, small REA companies generally had contract arrangements with one larger REA, to compare plans and estimates on involved highway projects.

There must be many instances where cooperation among the utilities involved would be advantageous, not only in the case of the REA's, as previously noted, but also particularly on large urban projects where the facilities of many different companies may have to be removed or relocated. Not only is there a possibility that physical plans could be coordinated in the first instance, thereby avoiding duplication of work, but also the time spent in reviewing plans submitted by each individual company, to avoid conflicts, could be minimized. Timing of actual movement of the various facilities could also be better coordinated by the employment or selection of one person to represent all of those involved. This is a mechanism that certainly ought to be seriously considered by the smaller utilities.

Such cooperation could be carried on through the use of utility coordinating committees, by employment jointly of a consulting engineer to represent the interests of the several utilities involved, by designating one of the participating utilities to represent the others, or in some other appropriate way.

NOTIFICATION OF PUBLIC HIGHWAY HEARINGS AND ATTENDANCE BY UTILITIES

The holding of public hearings is required in connection with highway projects under Federal-aid and some State laws. There is every reason to believe that much good would result from utility attendance at such hearings. In this connection, notification practices involving the utilities and the highway departments were sought in this study.

An interesting array of answers resulted. Responses to the question asked as to whether the highway departments notified the utilities of public hearings which would affect their facilities are interesting inasmuch as a substantially higher percentage of the utilities answered in the affirmative than did the State highway departments themselves. The utilities indicated (Table 14) that they were notified more than 40 percent of the time, but only 15 States (29%) acknowledged giving such notice. The cities and counties, on the other hand, reported that the utilities were notified more than one-half the time. Analysis by type of utility reporting and the location (*i.e.*, State) sheds no light on this difference in the answers given, with the exception of the fact that in a few instances the preponderance of affirmative replies from utilities came from States where the highway department reported that it consistently advised the utilities of public hearings.[11]

As was found generally true throughout the analysis of the questionnaire returns from the utilities, a preponderance of the electric cooperatives gave negative responses; in this case, they are allegedly not notified of public hearings.

A number of State highway departments reporting that no specific notice was given the utilities of the dates of public hearings took occasion to mention that inasmuch as there was always public notice of such hearings, the utilities were also put on notice in this respect. Others seemed to think there was no need of such notice, because the utilities had been previously informed as to the details of the project.

Less than 20 percent of the State, county and municipal highway depart-

[11] California, Maine, Maryland, Massachusetts, Vermont, and Virginia

TABLE 14.—Are Utilities Specially Advised of Public Hearings Held on Highway Projects Which May Affect Their Facilities?

Organization	Yes	Sometimes	No	No Answer	Total	Do Utilities Attend Hearings?				
						Yes	Sometimes	No	No Answer	Total
State highway department	15 *28.8%*	1 *1.9%*	34 *65.4%*	2 *3.9%*	52	9 *17.3%*	28 *53.8%*	4 *7.7%*	11 *21.2%*	52
Utility	815 *41.0%*	23 *1.2%*	1117 *56.2%*	32 *1.6%*	1987	836 *42.1%*	33 *1.7%*	861 *43.3%*	257 *12.9%*	1987
County	234 *52.2%*	—	178 *39.8%*	36 *8.0%*	448	62 *13.8%*	163 *36.4%*	3 *0.7%*	220 *49.1%*	448
Municipality	47 *54.0%*	—	37 *42.6%*	3 *3.4%*	87	13 *15.0%*	52 *59.8%*	5 *5.7%*	17 *19.5%*	87

ments reported that the utilities consistently attended these public hearings, as compared with the approximately 40 percent of the latter agencies answering in the affirmative. However, a substantial number of the highway departments stated that the utilities sometimes attended.

There seems to be some question as to the need for attendance at these hearings by the utilities, because as previously mentioned some of the States gave as their reason for not notifying them of the hearings that utilities were usually well informed of the project plans prior to the hearing. However, as one State mentioned, the utilities desired to attend in order that they might be aware of public reaction to the location of the project. In any event, there appears to be some feeling that the utilities can obtain valuable information, particularly as such hearings normally take place in the early planning stages.

In the interest of good relations between the highway departments and the utilities, there appears to be little or no reason why the utilities concerned should not be notified when public highway hearings are to take place. The expenditure of time and effort involved would seem to be more than justified by the resulting benefits. For one thing, the utilities can be of considerable assistance to the highway departments in stressing the desirability of the improvement involved to the public, and in explaining the details of such construction and the ensuing advantages.

EXCHANGE OF PLANS SHOWING PROPOSED HIGHWAY AND PUBLIC UTILITY IMPROVEMENTS

It is quite obvious that at some stage —and the earlier, the better—it is desirable for the highway department to submit plans to the utility or other agencies, showing the proposed highway improvement. This will indicate, to the affected utilities, how their facilities are likely to be involved in the highway betterment. By like token, it is just as necessary for the receiving utility or other groups to return such plans (or copies of them) with indications as to what improvements the utilities plan to make in their facilities and how the relocation is to take place.

The present practice is somewhat in this direction, although there is much to be desired. At least 90 percent of all respondents indicated (Table 15) that maps or plans showing the proposed highway improvement are submitted to utilities whose facilities are affected by such improvements. All but one of the State highway departments so indicated, the exception being Colorado, where such maps or plans are submitted only if the situation is considered to need clarification. Approximately 8 percent of the utilities (152) stated that they were not sent maps or plans; analysis of individual returns (see Table 15.2, Appendix B) reveals that these "no" answers are distributed among about 60 percent of the States. Examination of the utility answers, by type of service rendered, shows about two-thirds of those answering "no" to this question are telephone companies, both private and public, electric cooperatives and water companies, predominantly publicly-owned. This may indicate a feeling on the part of the cooperatives that they are not being given sufficient information about or notice of impending relocations.

TABLE 15.—Are Maps or Plans Indicating Proposed Highway Improvement Furnished Utility?

Organization	Yes	No	Sometimes	No Answer	Total
State highway department	51 *98.1%*	—	1 *1.9%*	—	52
Utility	1802 *90 7%*	152 *7 6%*	18 *0 9%*	15 *0 8%*	1987
County	399 *89.1%*	45 *10.0%*	—	4 *0.9%*	448
Municipality	85 *97.7%*	2 *2 3%*	—	—	87

A second portion of this question inquired as to whether the utilities were requested to return the maps or plans showing the proposed utility improvement. There is a rather startling variation in the replies to this question by the State highway departments and the utilities. Just under 90 percent of the highway departments answered in the affirmative, but less than 50 percent of the utilities so indicated (Table 16). Analysis of the utility returns by State and by type reveals no pattern for this difference, the negative replies appearing rather consistently by State and by type of service being performed. There may be a lack of understanding between the highway departments and the utilities in this respect. Apparently the highway departments do not make it clear to the utilities that the plans should be returned to them.

The assumption that there may be a lack of understanding on the part of

TABLE 16.—Is Utility Requested to Return Map or Plans Indicating Location of Facilities and Proposed Relocation Plans?

Organization	Yes	No	Sometimes	No Answer	Not Applicable[1]	Total
State highway department	46 88 5%	6 11 5%	—	—	—	52
Utility	816 44 8%	979 53 2%	30 1 6%	16 0.9%	146	1987
County	103 25 6%	290 72 0%	5 1 2%	5 1 2%	45	448
Municipality	40 46 0%	46 52.9%	—	1 1.1%	—	87

[1] Utilities not furnished plans in original instance.

the utilities regarding this request for returning plans or maps with indications as to the location of utility facilities is borne out by the State highway departments' answers to the third part of this question. This asked whether satisfactory cooperation was being obtained from the utilities in this respect. Although there was a high percentage of "yes" answers (approximately 70 percent), the remaining States either qualified their affirmative answers (21.7 percent said "generally"), stated that cooperation was not satisfactory (4.3 percent), or did not answer at all (4.3 percent) (Table 17).

Assuming the desirability of submitting maps and plans to the utilities, indicating the proposed highway improvement, and requesting return of the maps with information as to the location of the utilities' facilities within the limits of the expected improvement, it is obvious that the procedure needs clarification, at least in some States and among some utility groups. Efforts in this area of highway-utility cooperation can pay handsome dividends.

TABLE 17.—Is Cooperation Satisfactory in Matter of Returning Plans Indicating Location of Facilities?

Organization	Yes	Generally	No	No Answer	Not Applicable[1]	Total
State highway department	32 69.7%	10 21.7%	2 4.3%	2 4.3%	6	52
County	104 92.0%	—	1 0 9%	8 7 1%	335	448
Municipality	36 87.8%	4 9.8%	—	1 2 4%	46	87

[1] Utility not requested to return plans.

FIELD CHECK OF LOCATION AND NATURE OF UTILITY FACILITIES

Field checks of utility facilities that may be found to exist within the rights-of-way of proposed highway improvements have been deemed advisable for a variety of reasons. Installations are sometimes found that theretofore were not known to exist. Additionally, omissions and errors in identification are uncovered by field checks. Necessary changes in utility accommodations sometimes come to light by field reviews, and other benefits result.

This study sought to document the present practice on this point. More than 75 percent of the respondents—State, county and municipal highway departments—advised that field checks were routinely made to check the location of utilities in the right-of-way required for highway construction (Table 18). All State highway departments asserted that such checks were made, although in 7 instances (13 percent of the cases) the answers indicated that this was done only when necessary, as on large or complex projects, those located on the Interstate system, etc.

In answer to the question, whether representatives of the utilities affected accompanied the State highway department representatives, about 95 percent of the latter stated that they did, either always or sometimes; approximately 30 percent of the utilities stated that they did not, that they were not given the opportunity to do so (Table 19). The respondents so reporting were distributed rather widely among the States; *i.e.*, they were not confined to those States which reported that field checks were only sometimes made. However, a substantial portion of the negative replies were received from companies which operate to a great extent with overhead lines, such as power transmission, telephone, etc., where it might not in many cases be necessary to have utility representatives accompany the State highway department personnel in order to locate the poles. A substantial percentage of those replying that they were not given the opportunity to go along on these trips were electric cooperatives, whose lines would, of course, be fairly easy to spot. Utilities nevertheless could benefit from attendance at such inspections and

TABLE 18.—Is a Field Check Made to Determine Any Errors, Omissions, or Necessary Changes to Utility Facilities, Installations Not Known to Exist, Etc.?

Organization	Yes	Sometimes	No	No Answer	Total
State highway department	45 *86.5%*	7 *13.5%*	—	—	52
County	350 *78.2%*	—	79 *17.6%*	19 *4.2%*	448
Municipality	71 *81.6%*	1 *1.1%*	13 *15.0%*	2 *2.3%*	87

TABLE 19.—Do Utility Representatives Accompany Highway Department Representatives on Field Checks?

Organization	Yes	Sometimes	No	No Answer	Total
State highway department	18 *34.6%*	31 *59.6%*	3 *5.8%*	—	52
Utility	1338 *67.3%*	13 *0.7%*	587[1] *29.5%*	49 *2.5%*	1987
County	303 *67.6%*	27 *6.0%*	102 *22.8%*	16 *3.6%*	448
Municipality	57 *65.6%*	8 *9.2%*	21 *24.1%*	1 *1.1%*	87

[1] 568 reported that they are not given opportunity to accompany State highway department representatives

should be notified when they are to take place and given the opportunity to accompany the highway department representatives.

However, as noted in Table 19.3, Appendix B, a rather high percentage of respondents representing water, gas, petroleum, oil—utilities whose facilities are generally located underground—stated that they were not given the opportunity to accompany representatives of the highway departments on these inspection trips. Granted that in some instances other means may be used to determine the existence of underground facilities, enough instances have apparently occurred in which such facilities were not known to exist until construction took place to make it appear desirable that a representative of the utility be requested to be present when the field inspection is made.

NOTICE TO UTILITY BY HIGHWAY DEPARTMENT OF CHANGE IN HIGHWAY PLANS

One of the chief complaints on the part of the utilities and other agencies who must remove or relocate their facilities as a result of highway improvements is that they cannot proceed with their plans for relocating until highway plans are finalized. This is so, they say, because of the frequency with which changes in such plans are made prior to that time, and that they are often not aware such changes are being made.

There is some dispute as to the latter contention, at least, and this is supported by the answers to the question asked of all concerned, whether or not the highway departments notify the utility of such changes. Table 20 indicates that only two States do not always let the utility know when changes are being made, and these indicate that they notify the utilities when substantial changes take place.

Approximately the same percentage of the county and municipal highway departments assert that they, too, provide the necessary notice. On the other hand, approximately 20 percent of the utilities report that they never receive notice. Analysis of the returns from utilities does not reveal that lack of notice can be specifically associated with any one State or group of States, the "no notice" answers being fairly consistently distributed among all States. It is noteworthy, however, that there were no negative answers by the utilities in six jurisdictions.[12] A comparable spread is found by type of utilities, a rather consistent number of each type reporting that no notice is given.

This difference could be due, on the one hand, to a lack of communication between the highway departments and the utilities; *i.e.*, notice may on occasion be given by word of mouth and perhaps be less than clear, although the vast majority of the States reported that notification was in the form of a letter, or that plans indicating the changes were actually furnished the utilities.

It may also be that the responsibility for notifying the utility is not clearly allocated administratively; a few of the States indicated that this was the responsibility of the division offices, utility engineer, etc. It may be true, too, that notice does not reach the proper individual or office of the utility. In any event, this appears to be an area where more cooperation and coordination are needed.

Some of the utilities have felt strongly enough on this point to be reluctant to accept plans which were not final. This may not necessarily be the answer, because it is in the preliminary stages

TABLE 20.—Is Utility Notified by Highway Department of Subsequent Change of Plans for Highway Improvement Contemplated?

Organization	Yes	Sometimes	No	No Answer	Total
State highway department	50 *96.7%*	2[1] *3.8%*	—	—	52
Utility	1510 *76.0%*	42[2] *2.1%*	387 *19.5%*	48 *2.4%*	1987
County	416 *92.8%*	2 *0.4%*	13 *2.9%*	17 *3.9%*	448
Municipality	77 *88.5%*	4 *4.5%*	3[3] *3.5%*	3 *3.5%*	87

[1] Notify on important changes only
[2] 11 "generally" notified.
[3] One city not allowed to change plans after ordinance is passed

[12] Alaska, California, New Jersey, Utah, District of Columbia, and Puerto Rico

that the utility can make a contribution to the over-all processing of relocation. At this point the utility may be in a position to give the highway department the benefit of its experience and knowledge, suggesting possible alterations in design which may result in great savings in time and money. The utility people may even be in a position to suggest ways of eliminating the need for utility relocation, if, in a particular case, the magnitude of this item is great enough to more than offset the changes suggested. In any event, the objectives of the highway improvement must continue to be served. Although the utilities may be loathe to schedule personnel and prepare orders for necessary materials at this point, they are at least put on notice by receipt of preliminary plans that a certain highway improvement will be made and that there is a definite possibility that relocation of their facilities will be necessary.[13]

[13] See "Highway-Utility Conflicts," Charles H. Smith, Assistant Chief, Finance Division, Office of Administration, and J. E Kirk, Chief, Engineering Correlation Branch, Right-of-Way Division, Office of Engineering, Bureau of Public Roads. Eighth Annual National Seminar, American Right-of-Way Association (1962).

Accordingly, it is apparent that prompt notice to the utilities and other involved groups by the highway department of any changes in highway plans is desirable. To make sure that responsible elements of both the highway and utility agencies give and receive the notices, respectively, it is suggested that line responsibility therefor be allocated specifically to designated individuals. This could be the utility engineer in the highway department, or the utility section; and the highway engineer or his equivalent in the utility, if they have such a position, or the highway section.

Obviously, the form of the notice must have flexibility, consistent with the kind of information to be imparted. If an inconsequential change is involved, and a telephone call will do the trick, it would be folly to require more. On the other hand, if a complex change in plans is involved notice thereof would need to be sufficient to alert the utilities as to what is involved.

ADVISING UTILITIES OF STATUS OF HIGHWAY PROJECTS

If the best results are to be achieved from a coordination of highway and utility planning, it seems desirable for the highway departments to keep the utilities and other affected groups generally informed on the status of highway projects with which they are to be involved. The converse is also desirable; namely, that the utility and other groups keep the highway departments generally informed on the status of utility or other projects with which they are to be involved.

Data from this study are available only with respect to the first portion of this concept. A great diversity of opinion existed as to whether the utility is kept adequately informed of the status of the highway project involving utility relocation. Practically every State highway department indicated that the utilities are kept informed, and a substantial majority of the county and municipal highway departments appear to feel the same (Table 21). However, only one-half of the utilities reported that they are kept sufficiently advised.

Analysis of the questionnaire returns from the utilities sheds little light on where the difficulty lies (see Tables 21.2 and 21.3, Appendix B). In every State at least one utility, and generally more, reported that it was not kept informed. It is noted, however, that there was a substantial number of "yes" answers returned for at least six States, indicating that the problem is not particularly acute in those areas.[14]

Analysis of utility returns by type of service performed does indicate that a substantial number reporting that they are not kept well enough informed belong to the telephone and electric cooperative groups. Further analysis reveals that of the telephone groups, a much greater percentage of the publicly-owned companies stated that they were not kept informed than the privately-owned, and of course all of the electric cooperatives fall in this publicly-owned group. Carrying the analysis a step farther, a high percentage of utilities reporting insufficient notice appears to be in the more predominantly rural States where publicly-owned telephone and electric cooperatives operate. The problem may thus possibly be localized to a seeming lack of cooperation, or understanding, between the highway departments and the cooperatives in these more rural States.

Whatever the precise reasons for this problem may be, this is another area where increased understanding and/or cooperation would be beneficial. Because the status of the highway projects will be of interest and importance to the utility groups, and because utility improvements will affect highway projects, both groups might well keep each other fully informed, in the public interest.

TABLE 21.—Is Utility Kept Informed as to Status of Highway Projects?

Organization	Yes	Sometimes	No	No Answer	Total
State highway department	49 *94.2%*	—	3 *5.8%*	—	52
Utility	1003 *50.5%*	38 *1.9%*	914 *46.0%*	32 *1.6%*	1987
County	319 *71.2%*	3 *0.7%*	116 *25.9%*	10 *2.2%*	448
Municipality	74 *85.1%*	—	12 *13.8%*	1 *1.1%*	87

[14] California, Maine, Maryland, Michigan, Virginia, and Wisconsin

CONSULTATION WITH UTILITIES BEFORE HIGHWAY PLANS ARE FINALIZED

In connection with some highway projects, consultation with utility or other groups before highway plans are finalized by the highway departments could possibly avoid excessive utility relocation costs. In States where such costs are borne by the highway departments, such consultation with utilities could be self-serving. In the other States, it would certainly serve the public interest generally.

By like token, consultation with the highway department before utility improvements are finalized would likewise involve many public benefits. This, too, could avoid excessive costs of subsequent highway improvements, or prolonged negotiations as to who is to bear the costs of later relocations.

There is great diversity in answers as to whether the utility is consulted before final highway plans are completed, in order to avoid excessive relocation costs on the part of the utility (Table 22). More than 50 percent of the States say they always discuss the matter with the utilities, and more than 60 percent of the county and 80 percent of the municipal highway departments gave the same answer. But the utilities stated that this is true in a much smaller percentage of cases; because there was a rather significant difference in the answers of the publicly-owned and the privately-owned utilities, the breakdown has been included in Table 22.2, Appendix B. There are further differences in the "generally" and "seldom" categories, but perhaps the most significant difference is in the "never" column, where less than 10 percent of the States reported affirmatively, while more than 21 percent of the privately-owned and 27 percent of the publicly-owned utilities indicate that they are never consulted. Again there appears to be no correlation State-wise; there are "never" answers for practically every State, in most instances involving both publicly- and privately-owned utilities.

Analysis of a substantial number of returns by type of utility reporting reveals that the highest proportion of answers indicating a lack of consulta-

TABLE 22.—Are Utilities Consulted Before Final Plans Are Completed to Avoid Excessive Relocation Costs?

Organization	Yes	Generally	Seldom	Never	No Answer	Total
State highway department	27 *51.9%*	12[1] *23.1%*	8[2] *15.4%*	5 *9.6%*	—	52
Utility, privately-owned	66 *7.2%*	346 *37.7%*	299 *32.6%*	195 *21.3%*	11 *1.2%*	917
Utility, publicly-owned	178 *16.6%*	378 *35.3%*	204 *19.1%*	292 *27.3%*	18 *1.7%*	1070
County	278 *62.1%*	—	6 *1.3%*	154 *34.4%*	10 *2.2%*	448
Municipality	70 *80.5%*	—	3 *3.4%*	14 *16.1%*	—	87

[1] Five reported "usually" and "occasionally" where relocations are extensive, complex, and/or unusually expensive.
[2] Two indicated utility notified "if necessary."

tion appears to come from the power transmission companies, with approximately 30 percent reporting that they are never consulted; more than 35 percent of the telephone companies and approximately 40 percent of the electric cooperatives also so reported. On the other hand, only 15 percent of the water and gas companies and some 17 percent of the oil companies, and only 6.2 percent of the water and sewer companies reported that they were never notified.

The diversity of answers here may be due to one of several circumstances. Either the utilities consider that consultation is a formality only, and that their arguments for changes are not sufficiently heeded, or the purposes of the highway efforts at cooperation are not clear. Again, it is possible that the reasons advanced against changes proposed by the utilities are not made sufficiently clear to the utility, which then assumes that there is, in effect, no consultation. It is obvious that this is a phase of the relocation problem where more effort should be made on the part of both the highway departments and the utilities to better understand each other.

If there be instances where a minor change in alignment of the proposed highway can result in a lesser adjustment of the utility facilities located in the project area, or even in the elimination of the necessity for the relocation or removal, consultation with the utility at an early stage to discuss the highway department's plans for location would result in an over-all benefit that would more than offset any additional time or effort involved.

ADEQUACY OF TIME ALLOWED UTILITIES TO RELOCATE FACILITIES

A matter of great moment to the utilities, and the subject of considerable difficulty, is the adequacy of time allowed utilities to relocate their accommodations. This study has assembled some data on this issue.

The most frequently mentioned period allowed the utilities to adjust their facilities is between one and three months (Table 23). The utilities and the county and municipal highway departments indicated that this period was available in approximately 50 percent of the relocation jobs. The State highway department figure was somewhat lower (28.9%). It was also lower for the less-than-one-month period. This is possibly due to the fact that some of the State highway departments mentioned that relocation work was done during the highway construction. Also, several of the States could not venture a time period, stating that the time allowed varied considerably depending on the amount of work involved, lead time available, etc.

An interesting fact revealed by this tabulation is that there are apparently some instances in which the average lead time is greater than six months. Three of the State highway departments[15] have apparently achieved this relatively adequate period, and about 4 percent each of the other respondents. A large proportion of answers from the utilities found in this category logically enough come from the same three States.

Both the utilities and the State highway departments were asked if the time allowed the former to locate was sufficient to allow completion of relocation. A majority of both highway departments and utilities answered either "always" or "generally." Surprisingly, perhaps, the percentage of the utilities so answering was substantially greater than the highway departments —83 percent for the former and approximately 56 percent for the latter (Table 23a). Examination of the utility returns by State and by type revealed no instances where any substantial number of respondents indicated that they never or seldom had time to complete relocation.

Because a common complaint on the part of the utilities has been that they were not allowed sufficient time to com-

[15] California, Michigan, and Texas

TABLE 23.—What Is Average Length of Time Utility Is Given to Adjust Facilities?

Organization	Less Than 1 Month	1 to 3 Months	3 to 6 Months	6 Months to 1 Year	1 to 2 Years	Varies	No Answer	Total
State highway department	5 9.6%	15 28.9%	4 7.7%	1 1.9%	2 3.8%	12 23.1%	13[1] 25.0%	52
Utility	367 18.4%	975 49.0%	199 10.0%	70 3.5%	10 0.5%	254 12.8%	112 5.8%	1987
County	81 18.1%	254 56.7%	46 10.3%	17 3.8%	1 0.2%	30 6.7%	19 4.2%	448
Municipality	13 15.0%	47 54.0%	13 15.0%	3 3.4%	—	9 10.3%	2 2.3%	87

[1] Adjustments made during construction.

TABLE 23*a*.—Is Time Allowed Utilities Sufficient to Allow Completion of Relocation?

Organization	Always	Generally	Seldom	Never	No Answer	Total
State highway department	7 *13.5%*	22 *42.3%*	18 *34.6%*	3 *5.8%*	2 *3.8%*	52
Utility	263 *13.2%*	1396 *70.3%*	173 *8.7%*	28 *1.4%*	127 *6.4%*	1987

plete plans for relocation work, the fact that the majority seemed to indicate in their answers to the questionnaire that they were at least generally allowed sufficient time is significant. Not only is this situation true of the utilities, but the highway departments also have agreed that it would be far better if they were able to give the utilities more advance notice and "lead time."

As here used, "lead time" refers to the period between the administrative authorization for the commencement of right-of-way acquisition activities and the letting of the construction contract.[16] As recently stated by one right-of-way official:

> Right-of-way acquisition may be handled in exemplary fashion and in an efficient manner; nonetheless, environing factors may negate the effect. . . . the finest right-of-way department in the world cannot function properly if there is no effectual consideration of 'lead time' for proper appraising and negotiating, tenant relocation, removal of improvements, and utility clearance.[17]

Obviously, it is highly desirable for the highway departments to give utilities and other involved groups a maximum of time to relocate and adjust their facilities. However, in spite of the desires of the highway department to provide such ample time, a lack of "lead time" generally in the highway improvement process may limit the time normally given the utilities.

In some States, certainly, this lack of lead time stems from legislative processes which limit authorizations for the expenditures of highway moneys to relatively short periods of time. If such legislative processes were liberalized in favor of the highway departments, such as is done in California, more lead time would be available and the highway departments would be enabled to provide more time for utility relocation.

Within the established legal scope provided, it is desirable, of course, for the highway departments to so adjust their administrative processes as to provide a maximum of lead time for all necessary activities precedent to actual highway construction. This would ease such important functions as right-of-way acquisition, tenant and owner relocation, utility adjustments and others.

Given a specified lead time, it behooves the utilities to make the most efficient use of that time. They should operate with dispatch, and highway relocation activities should be recognized in each utility organization as functions of prime importance, rather than something that should be taken care of after all other utility processes have been completed. If this is done reasonably well, the best use of existing lead time will have been achieved.

[16] "State Practices Pertaining to the Disposition of Improvements Located on Land Required for Highway Rights-of-Way," Subcommittee, A.A.S.H.O. Committee on Right-of-Way (1961).

[17] "Fundamentals of Right-of-Way Acquisition, Appraising and Negotiation," D. D MacBride. "Selected Papers, Right-of-Way Conference," University of Alabama (1961)

NOTICE TO BIDDERS SENT UTILITIES

Some States send utilities and other affected groups their usual notice to bidders, in connection with particular highway projects. The study sought to document the practice on this aspect of the liaison activity.

A substantial majority of the respondents—State highway departments, utilities, and county and municipal highway departments alike—indicated that copies of the notice to bidders on the highway construction project were not sent to the utilities (Table 24). Almost 40 percent of the highway departments, however, stated that copies were furnished the utility, either regularly or sometimes (in the case of major utilities only, in some States). Less than 15 percent of the utilities replied that they ever received copies of such notice. Furthermore, some 10 percent of the States took occasion to remark that the utilities were otherwise informed as to the letting. (See Table 24.1, Appendix B.)

Examination of the replies from State highway departments and utilities shows no correlation between the State highway departments stating that copies of the notice to bidders were sent the utilities and the utilities operating in those States. The percentage of negative replies from the utilities was fairly consistent as involving the several State highway departments; *i.e.*, even in those States where the highway departments indicated that they always furnished copies to the utilities, the utilities for the most part stated that they did not receive such notices. Perhaps the utilities in general took this question literally, whereas the highway departments may have answered in the affirmative when the utilities were actually informed by other means than a copy of the notice being sent them. The new Maryland procedure, for instance, provides for a prebidding information conference, which utilities and contractors are requested to attend. Although copies of the actual notice may not be sent to the utilities, such a conference would surely notify them that bids were about to be received.

Sending a copy of the notice to bidders may in and of itself be relatively unimportant. What is important in this connection is that the utilities be kept fully informed as to the progress being made on the project in order that they may make their plans accordingly. It also serves to alert the utilities to the need for having their surveys complete, materials on hand, and the work schedule ready for the relocation work. If notice to bidders is the most direct means of so alerting the utilities, that is probably the way it should be done. Generally, States have already alerted utilities by the time the notice to bidders becomes available. If so, the question may be whether an additional means of notification is desirable. This will vary from State to State.

TABLE 24.—Is Utility Sent Copy of Notice to Bidders?

Organization	Yes	Sometimes	No	No Answer	Total
State highway department	11 *21.2%*	9[1] *17.3%*	32[2] *61.5%*	—	52
Utility	274 *13.8%*	—	1667 *83.9%*	46 *2.3%*	1987
County	34 *7.6%*	1 *0.2%*	382 *85.3%*	31 *6.9%*	448
Municipality	10 *11.5%*	—	76 *87.4%*	1 *1.1%*	87

[1] Major utilities in 4 States.
[2] Utilities are otherwise informed in 5 States

NAMES AND ADDRESSES OF HIGHWAY CONTRACTORS FURNISHED UTILITIES

Close contact on the highway project is inevitable between the highway contractors and the utilities which must relocate their facilities. Accordingly, it would make considerable sense for the highway department to furnish the names and addresses of highway contractors to the affected utilities and other groups. The study reveals that this practice is far from universal.

The question was asked whether the utility is advised as to the names and addresses of highway contractors. More than 62 percent of the utilities stated that they were not so advised (Table 25). More than 40 percent of the county and municipal highway departments, and a much smaller number (21.2%) of the State highway departments gave similar answers. The lower percentage of "no" answers from the State highway departments reflects in part the fact that several States qualified their "yes" answers to the effect that utilities were so notified "when requested" or "when necessary." A further reason for the difference might be the fact that one or two States said that the utility was so notified only if relocation was not completed prior to construction. In one State, the contractor notifies the utility; in still another, the utility attends the preconstruction conference at which the contractor is necessarily present.

TABLE 25.—Is Utility Advised as to Name and Address of Highway Contractor?

Organization	Yes	Sometimes	No	No Answer	Total
State highway department	41[1] *78.8%*	—	11 *21.2%*	—	52
Utility	688 *34.6%*	16 *0.8%*	1242 *62.5%*	41 *2.1%*	1987
County	235 *52.5%*	4 *0.9%*	181 *40.4%*	28 *6.2%*	448
Municipality	49 *56.3%*	—	36 *41.4%*	2 *2.3%*	87

[1] 4 notify when requested by utility.

In some instances it would appear that formal notice of the contractor's name would not be necessary, inasmuch as preconstruction conferences with the highway contractor participating are assumedly held in most instances. In Maryland, for example, all interested bidders are invited to the prebidding conference at which utility owners are also present. Upon award of the contract, the utility is notified of the successful bidder. At least six other States indicated that the utility received notice as to the contractor at preconstruction conferences (Table 25). Eleven States reported that the contractor's name was shown on the construction plans furnished the utility.

In four States particularly, the "yes" answers were much more frequent than the "no's." [18] From this fact, it might

[18] California, Connecticut, Ohio, and Pennsylvania.

possibly be assumed that notification is a part of the general liaison procedure in some States at least. In short, the whole highway-utility liaison process in a particular State must be examined before any reasonable inferences can or should be made concerning inadequacies or shortcomings.

NOTIFICATION TO HIGHWAY CONTRACTOR OF PROPOSED RELOCATION PLANS

Obviously, there are multiple parties in interest to a highway improvement project. Good intercommunication between all the parties will result in the most efficient performance at the lowest possible public cost. Notice to the highway contractor of proposed relocation plans is just another link in the chain of desirable communication.

There is a rather high degree of uniformity in the responses to the question as to who notifies the highway contractor of proposed plans for relocation of utilities. A substantial majority of answers from all respondents—State, county and municipal highway departments, and utilities—reported that this was done by the State highway department (Table 26). As a matter of fact, all of the State highway departments asserted that where such notification was made, they were responsible. But more than 10 percent of the utilities indicated that this was done by them. A few States indicated that no formal notification was made, one giving as an explanation the fact that practically all relocation work was done prior to highway construction, and another that plans including this information were available for inspection in the highway department.

TABLE 26.—Who Notifies Highway Contractor of Proposed Plans for Relocation?

Organization	Highway Department	Utility	Highway Department and/or Utility	Neither	No Answer	Total
State highway department	45 *86.5%*	—	2 *3.8%*	4 *7.7%*	1 *2.0%*	52
Utility	1574 *79.2%*	217 *10.9%*	39 *2.0%*	—	157 *7.9%*	1987
County	295 *65.8%*	72 *16.1%*	24 *5.4%*	—	57 *12.7%*	448
Municipality	58 *66.7%*	22 *25.3%*	5 *5.7%*	—	2 *2.3%*	87 *100.0%*

RELOCATION WORK COMPLETED PRIOR TO BEGINNING OF HIGHWAY CONSTRUCTION

If adequate coordination is achieved between the highway and utility agencies, a maximum of relocation work will have been completed prior to the beginning of the highway construction. An insight into present practice on this point was sought in this study.

As indicated in Table 27, the four types of organizations reporting are in substantial agreement to the extent that between 20 and 30 percent reported that less than 10 percent of necessary relocation work is accomplished prior to the beginning of highway construction. At the other extreme, between 20 and 30 percent of the utilities and the county and municipal highway departments seem to take a more optimistic attitude in reporting that more than 75 percent of such work is accomplished before highway construction, whereas only 5 State highway departments (9.6%) reported this amount accomplished. Examination of individual returns does not indicate any correlation between the States and the utilities in this respect. In other words, the high percentage reported by the utilities does not seem to be reported in the particular States where the highway departments report that more than 75 percent of the work is done before construction. Rather, the utility returns indicate a higher percentage generally in all of the States. (See Table 27.2, Appendix B.)

More than 60 percent of the utility respondents indicated that it was generally possible to perform at least some of the relocation work prior to highway construction (Table 28). A substantial

TABLE 27.—Approximately What Percent of Utility Relocation Work Is Completed Prior to Beginning of Construction?

Organization	0 to 10 Percent	10 to 25 Percent	25 to 50 Percent	50 to 75 Percent	Over 75 Percent	Varies	No Answer	Total
State highway department	15 *28.9%*	12 *23.1%*	9 *17.3%*	6 *11.5%*	5 *9.6%*	4 *7.7%*	1 *1.9%*	52
Utility	556 *28.0%*	231 *11.6%*	242 *12.2%*	281 *14.1%*	509 *25.6%*	38 *2.0%*	130 *6.5%*	1987
County	93 *20.7%*	49 *10 9%*	74 *16.5%*	73 *16 3%*	128 *28.6%*	11 *2.5%*	20 *4.5%*	448
Municipality	19 *21.9%*	9 *10.3%*	12 *13.8%*	15 *17.3%*	25 *28.7%*	3 *3.4%*	4 *4.6%*	87

TABLE 28.—Is It Possible for Utility to Perform Any of Relocation Work Prior to Letting of Highway Construction Contract?

Organization	Always	Generally	Sometimes	Never	No Answer	Total
State highway department	—	5 *9.6%*	43 *82.7%*	4 *7 7%*	—	52
Utility	157 *7.9%*	1039 *52 3%*	482 *24 2%*	212 *10.7%*	97 *4.9%*	1987

percentage of the State highway departments (16 States) indicate that the amount of work done prior to construction depended on whether or not right-of-way was acquired or available. (See Table 28.1, Appendix B.) Another large group (14 States) stated that relocation was done ahead of time "if possible or necessary." Still others (13 States) stated that prior relocation work was accomplished when the agreements, plans, estimates, etc., were approved. Five States reported that it was general practice to get the relocation work done prior to construction, and four that this was never possible. So, for the majority of the State highway departments, whether or not the work is done before highway construction is not a matter of policy as much as expediency. This seems to be equally true of the utilities answering the question.

It is not always possible or desirable to perform utility adjustments prior to start of the highway construction. In some instances, existing utility facilities are not easily accessible before certain construction operations have taken place. In other instances, performance of utility work in advance of highway construction would mean disrupting traffic for two periods of time instead of one. Be that as it may, it seems likely that most of this work could be undertaken and in many instances completed prior to the highway construction, as is done in connection with any other phase of right-of-way clearance work.

In this connection, it may be interesting to note that in response to a question as to when the utilities were notified to proceed with physical adjustment of their facilities, more than 60 percent indicated that they were so advised prior to letting of the contract; of these, more than one-half stated that such notice was received prior to advertisement of the highway improvement. (See Table 28.3, Appendix B.) This is interesting, but the important point is how long before, and how much time this allows them to complete relocation work.

HIGHWAY DEPARTMENT ASSISTANCE TO UTILITIES

Utilities frequently seek assistance of various kinds from the highway department, in connection with the planning and actual relocation of their facilities. The extent to which such assistance is rendered is documented in this study.

A substantial majority of the State highway departments (40, 76.9%) reported that they were called upon to assist the utilities in making plans for relocation (Table 29). The percentage of utilities acknowledging such assistance is somewhat less (46.9%), but there was at least one affirmative utility reply from each State. Counties and municipalities reported an even smaller percentage of cases where help was given the utilities. The affirmative replies from the States indicated that the assistance given was either to small utilities or those not staffed to handle relocation work, or to interpret highway plans, suggest routes, or occasionally for other reasons.

Comments made by the utilities in answering this question indicate that the help rendered on many occasions is merely a matter of obtaining more information as to or clarification of what the State highway department required, or obtaining approval of the utility's proposed plans for relocation. A few utilities seemed to feel that they had difficulty in obtaining this information from the State highway departments or in getting together with their representatives. On the other hand, some utilities took occasion to report that they obtained excellent cooperation from the State.

Less than one-fourth of the State highway departments, and a lesser percentage of the utilities (16%) reported that such assistance caused any delay in the processing of the highway construction project (Table 30). Apparently, this is not a major problem area involving the utilities and highway depart-

TABLE 29.—Is Street or Highway Department Called upon to Assist Utilities in Making Plans for Relocation?

Organization	Yes	No	No Answer	Total
State highway department	40 *76.9%*	11 *21.2%*	1 *1.9%*	52
Utility	131 *46.9%*	986 *49.6%*	70 *2.5%*	1987
County	170 *38.0%*	243 *54.2%*	35 *7.8%*	448
Municipality	37 *42.5%*	48 *55.2%*	2 *2.3%*	87

TABLE 30.—If Street or Highway Department Assists in Relocation Plans, Is This a Cause for Delay?

Organization	Yes	Sometimes	No	No Answer	Not Applicable[1]	Total
State highway department	5 *12.5%*	6 *15.0%*	26 *65.0%*	3 *7.5%*	12	52
Utility	149 *16.0%*	—	741 *79.6%*	41 *4.4%*	1056	1987
County	13 *7.6%*	11 *6.5%*	139 *81.8%*	7 *4.1%*	278	448
Municipality	5 *12.8%*	4 *10.3%*	28 *71.8%*	2 *5.1%*	48	87

[1] Street or highway department not called upon to assist, or "no answer."

ments. To the extent that the assistance rendered seems to be primarily to small utilities not staffed to carry on relocation work, such delays as occur are probably unavoidable. A few States even seemed to feel that adjustments in utility facilities were actually expedited by helping the utilities in preparing their plans.

To the extent that a highway department can render assistance to utilities or other groups without prejudice to their operations, such cooperation is certainly highly desirable. On the other hand, utilities that are substantial enough to carry on relocation activities themselves should not lean on highway departments needlessly just because relocation activities are associated with a highway improvement. In all cooperative efforts that are the most successful, both parties to the activity must be fully aware of their own separate responsibilities in connection with it. Only in that way can the public interest really benefit.

DELAYS RESULTING FROM SLOWNESS OF UTILITY IN RETURNING PLANS

Progress in highway construction is sometimes impeded as a result of the slowness of some utilities in returning relocation plans to the highway department. Questionnaire responses speak for themselves on this matter.

Answers from the State, county and municipal highway departments stated flatly that there were some delays due to this cause (Table 31). About one-third of the State highway departments indicated that these delays were general; some 13 percent frequently; 29 percent occasionally; and 23 percent seldom. Some of the States indicated that it was only the smaller utilities which were slow; others, that they encountered this difficulty in dealing with the railroads; and others, that they only had trouble with one utility. Only two State highway departments stated that such delays never occurred, but approximately one-half of the county and municipal highway departments do not seem to be bothered by this problem.

As previously stated, a number of the respondents indicated that delays of this nature could quite possibly be due to the somewhat cumbersome organizational structure of some of the larger utilities, which makes the processing of papers a time-consuming endeavor. Some of the county and municipal highway departments seemed to have the opinion that the utilities—at least some of them—were not particularly interested in this type of work and tended to put it off as long as possible.

Although delays of the kind referred to do not occur in every case of a utility relocation, apparently they occur frequently enough to be a matter of substantial concern to highway departments. In the interest of better cooperation between the highway and utility agencies, such delays and their causes should also be a matter of real concern to the utilities themselves. It is suggested that utilities examine their own procedures in considerable depth to ascertain whether such delays can be minimized or eliminated entirely.

TABLE 31.—Are Delays Encountered Due to Slowness of Utility in Completing Plans?

Organization	Yes	Sometimes	Never	No Answer	Total
State highway department	16 *30.8%*	34[1] *65.4%*	2 *3.8%*	—	52
County	131 *29.2%*	36 *8.0%*	239 *53.4%*	42 *9.4%*	448
Municipality	28 *32.2%*	15 *17.2%*	41 *47.1%*	3 *3.5%*	87

[1] Seven answered "frequently", 15 "occasionally", and 12, "seldom"

DELAYS RESULTING FROM UTILITY INACTION PENDING CLEARANCE OF RIGHT-OF-WAY

Delays sometimes result from utility inaction, pending clearance of highway rights-of-way. Whether such delays are justified in particular cases is sometimes arguable, but whether justified or not they do hinder a process that otherwise could go forward more rapidly.

The extent of such delays was at least partially revealed by the questionnaire returns. A substantial percentage of the returns from State, county, and municipal highway departments indicated that delays were encountered because the utility delayed starting relocation work until the right-of-way had been cleared (Table 32). However, in connection with State highway projects, at least, these delays seemed to be infrequent, a substantial number reporting that only occasional delays were encountered, and another third that there were no delays (see Table 32.1, Appendix B). Several of the States took occasion to mention that delays were minimized by cooperative action between the highway department and the utility. At least two attributed the lack of delay to conferences regularly scheduled between the two organizations.

Of those reporting that delays occurred, some States stated that the utility was at fault only "sometimes" or "occasionally," or not at all. About two-thirds of the counties reporting seemed to take this same attitude. While a third of the responding municipalities indicated that the utility was definitely responsible for the delays occurring, and only a few qualified this by a "sometimes," almost two-thirds of the replies were to the effect that the utility was not responsible.

A number of the respondents, in stating that the utility was not to blame, indicated that it was impossible for the relocation work to be started before the right-of-way was cleared. Others stated that the relocation work was frequently included in the highway construction contract. One mentioned that clearing by the contractor was incorporated in the utility agreement; several that delays might be encountered if the utilities were forced to maintain service to buildings remaining in the area; and two or three that lack of sufficient utility personnel, funds, etc., was responsible.

TABLE 32.—Are Delays Encountered by Street or Highway Department Because Utility Defers Starting Relocation Work Pending Clearance of Right-of-Way?

Organization	Delays Are Encountered					No Delays	No Answer	Total
	Is Utility at Fault?				Total			
	Yes	Sometimes	No	No Answer				
State highway department	3 5.8%	23 44.2%	8 15.4%	—	34 65.4%	17 32.7%	1 1.9%	52
County	42 19.7%	49 23.0%	83 39.0%	39 18.3%	213 47.5%	189 42.2%	46 10.3%	448
Municipality	17 33.3%	2 3.9%	32 62.8%	—	51 58.6%	27 31.0%	9 10.4%	87

Regardless of where fault is to be allocated, the fact is that delays do occur as a result of utility inaction pending right-of-way clearance. Some of this delay is unavoidable, because it depends on factors that cannot be manipulated by either the utility or highway agencies. But much of this delay may be either diminished or eliminated entirely if a maximum of coordination and communication can be achieved between the highway and utility functions. This, certainly, should be sought after.

APPROVAL OF UTILITY PLANS BY HIGHWAY DEPARTMENTS

In the very nature of things, it is necessary for utility and other groups seeking to relocate their physical facilities to obtain the approval of the highway department for such activities. Obviously, applications for approval need to be reviewed adequately, and this takes time. Whether, in particular instances, an unreasonable length of time is involved in such reviews and approvals, is the point in question here.

Current practice is documented in the questionnaire data. Attempts to pinpoint the exact time required to obtain approval of utility relocation plans by highway departments may not be too revealing because this period is apt to vary according to the complexity of the plans submitted. However, many of the respondents did attempt to supply an average figure (Table 33).

There is wide variation in the percentage reported for the very minimum period of 1 to 2 weeks—from 12.5 percent of the utilities to more than 58 percent of the municipal highway departments. The somewhat higher percentages reported by the counties and municipalities may be due to the fact that they have repeatedly dealt with the same utility companies for a long period of time. Again, the higher figure indicated for the State highway departments (26.9%) as opposed to that of the utilities (12.5%) may result because some of the highway departments have possibly not included additional time required for Federal-aid projects. This assumption is based on the fact that in a number of instances where the States reported a longer period of time for approval, the answer specified that this included Bureau of Public Roads approval.

At the other extreme, although no State highway department reported an average time of more than two months, several indicated that approval might take that long; *i.e.*, Arkansas reported "from 2 to 10 weeks," Kentucky "from 10 to 90 days."

A substantial number of the respondents reported the average period as less than four weeks; this may be the maximum speed that can be attained in this connection. However, enough of the replies indicated that a greater period is

TABLE 33.—What Is Approximate Period Required to Obtain Approval of Utility Plans by Street or Highway Department?

Organization	1 to 2 Weeks	2 to 4 Weeks	4 to 6 Weeks	6 Weeks to 2 Months	Over 2 Months	No Approval Obtained	Varies	No Answer	Total
State highway department	14 *26.9%*	21 *40.4%*	7 *13.5%*	2 *3.8%*	—	—	8 *15.4%*	—	52
Utility	248 *12.5%*	632 *32.0%*	351 *17.7%*	182 *9.1%*	179 *9.0%*	19[1] *0.9%*	376 *18.8%*	—	1987
County	161 *35.9%*	96 *21.4%*	25 *5.6%*	15 *3.3%*	11 *2.6%*	23 *5.1%*	4 *0.9%*	113 *25.2%*	448
Municipality	51 *58.6%*	16 *18.4%*	4 *4.6%*	2 *2.3%*	1 *1.1%*	—	3 *3.5%*	10 *11.5%*	87

[1] Five reported approval given at time of field check.

normal to make it appear that there is room for improvement, at least in some cases.

There is feeling on the part of some State highway departments and utilities that an unnecessarily long time is required to obtain approval of relocation plans by the Bureau of Public Roads. Whether or not these complaints are justified may be arguable. Obviously, the more approvals required, the longer additional reviews will take. But if Federal funds are contemplated for reimbursement of relocation activities, Federal approval is required under the law. If an improvement in the Federal approval procedure will expedite relocation, that should be sought, by all means.

It is quite obvious that some improvement can be achieved in the State and Federal approval of utility relocation plans. However, to expedite such necessary reviews and approvals the utilities should seek to provide a maximum of all pertinent data necessary for an appropriate review, and at the earliest possible moment. It would be unreasonable for the utility to take several months to prepare a submission and then to expect approval to be forthcoming from both the State and the Federal Government in the course of a week, or to make a submission of inadequate data, in which case the State and/or the Bureau of Public Roads would necessarily have to delay review until the additional data were furnished. As in all other elements of proper coordination, it is necessary for *all* parties concerned—not just one of them—to cooperate.

HIGHWAY DEPARTMENT INFORMATION ON UTILITY LOCATIONS

Included in the questionnaires sent to State, county and municipal highway departments, and to utilities, were three questions bearing on whether the highway departments were kept fully informed as to the location of utility facilities, both within and outside the highway right-of-way. The first of these questions asked whether the utilities notify the State highway department and/or local highway departments of proposed new installations along public highways. Almost 90 percent of the State highway departments appear to consider that they do receive adequate notice, and an additional 7 percent reported that they were sometimes notified. A comparable percentage of the responding municipalities also stated that they were generally so informed. Only two States indicated that they were never notified.

On the other hand, only about 80 percent of the utilities and a slightly lesser percentage of the replies from the counties indicated that the highway departments were notified (Table 34). In view of the fact that a substantial majority of the State highway departments requires permits, by law, for occupation of highway rights-of-way by utilities, it appears that either the requirements in this respect are not always complied with or the question was misinterpreted. There is, in fact, a definite possibility that this latter supposition is true, inasmuch as the question referred to installations "along" highways.

Analysis of the questionnaire returns submitted by the utilities reveals that of the 333 respondents reporting that they did not notify the State highway departments of proposed installations, more than one-half (178) were electric cooperatives. Either a rather large portion of this group did not understand the question, or a sizeable number of installations have been made of which the State highway department is unaware. Perhaps some members of this group are unaware of the law pertaining to occupation of highway rights-of-way. It was impossible, incidentally, to pinpoint particular States where these conditions appeared, as some negative answers were reported by almost every State.

The second question asked whether the utilities or other agencies furnished to the highway departments maps showing the location of their facilities throughout the State. There was remarkable identity in the affirmative answers from the State highway departments and the utilities, the former totaling 38.5 percent and the latter 37.4

TABLE 34.—Do Utilities Notify State Highway Department and/or Local Subdivision of Proposed New Installations Along Highways and Streets?

Organization	Yes	Sometimes	No	No Answer	Total
State highway department	46[1] *88.5%*	4 *7.7%*	2 *3.8%*	—	52
Utility	1585 *79.8%*	6 *0.3%*	333 *16.8%*	63 *3.1%*	1987
County	319 *71.2%*	26[2] *5.8%*	78 *17.4%*	25 *5.6%*	448
Municipality	77[3] *88.5%*	2 *2.3%*	8 *9.2%*	—	87

[1] Twenty-eight noted requirement for permits where utility was locating on public right-of-way
[2] Nine replied that they were "generally" notified.
[3] Three require alteration permit.

percent. However, approximately 34 percent of the States replied that they sometimes received such maps (27 percent upon request), and only 4 percent of the utilities were in this category; whereas 54 percent of the utilities answered in the negative, but only 17 percent of the States so responded.

As indicated in Table 35, approximately the same percentage of the counties responding stated that they were furnished maps by the utilities, but a much higher percentage (78.2%) of the municipalities answered this question in the affirmative.

Replies to the third question, whether utilities or other agencies submit revisions of maps showing the location of their facilities, showed somewhat more consistency. Approximately 60 percent of the State highway departments and the utilities answered in the affirmative, except that the majority of these affirmative answers on the part of the State were qualified, indicating that they were only notified in some instances (Table 36).

A substantial percentage of those utilities reporting that they do not now submit maps showing the location of their facilities throughout the State indicated that they would be willing to do so. (See Table 35.2, Appendix B.) Enough of them replied in the negative to require explanation, which possibly can be found in the fact that some of the utility companies do not maintain scale maps or plans showing all plants in a large area, and feel that preparation of such maps would represent a costly task, particularly in view of the fact that only minor portions of it would be of any usefulness during a given period. This does not presum-

TABLE 35.—Do Utilities or Other Agencies Furnish Your Street or Highway Department Maps Showing Location of Utility Facilities?

Organization	Yes	Sometimes	Upon Request	No	No Answer	Total
State highway department	20 38.5%	9 17.3%	14 26.9%	9 17.3%	—	52
Utility	743 37.4%	—	74 3 7%	1073[1] 54.0%	97 4.9%	1987
County	158 35.3%	17 3.8%	26 5.8%	191 42.6%	56 12.5%	448
Municipality	68 78.2%	—	—	18 20 7%	1 1 1%	87

[1] 924 indicated willingness to furnish maps.

TABLE 36.—Do Utilities Submit Revisions in Maps Showing Location of Utility Facilities to State Highway Department?

Organization	Yes	Sometimes	Upon Request	No	No Answer	Total
State highway department	9 17.3%	21 40.4%	3 5.8%	17 32 7%	2 3 8%	52
Utility	1136 57.2%	—	—	562[1] 28.3%	289 14 5%	1987
County	210 46.9%	21 4 7%	—	160 35 7%	57 12 7%	448
Municipality	69 79 3%	2 2.3%	—	12 13.8%	4 4.6%	87

[1] 488 indicated willingness to submit revisions in maps.

ably indicate a lack of willingness to provide the highway department with information needed in connection with proposed highway projects. On the other hand, it may be that the utilities are overestimating the size and cost of the task.

In connection with the highway planning operation, it would be extremely desirable if the highway department had at hand State or even area-wide maps indicating the location of particular utility facilities that might possibly have some bearing on the ultimate highway location selected; that is, it might be possible to plan the highway alignment so as to avoid conflict with extensive existing utility lines. Furthermore, it might result in some time saving, as indicated by comments from some of the State highway departments to the effect that it was difficult to obtain maps or plans showing the location of utility facilities, as well as information relative to any changes in these facilities. There was even an occasional remark to the effect that, in some instances, the utilities themselves did not seem to have exact knowledge as to the location of their facilities.

There is little doubt that if the utilities maintained good plats and records of their own physical plant and furnished such data to the highway agencies in a timely manner, countless benefits and cost savings would result.

APPENDIX A

QUESTIONNAIRE FORMS

This section contains the three questionnaire forms requesting information on highway-utility liaison, as circulated, respectively, to:

(a) State highway departments.
(b) Utilities and other affected agencies.
(c) Municipal and county highway departments.

HIGHWAY RESEARCH BOARD

State .....

Request for Information on Highway-Utility Liaison
(For State Highway Department)

Circulated for Committee on Land Acquisition and Control of Highway Access and Adjacent Areas

1. If procedures vary for different types of utilities or other agencies, or for other reasons, please specify types covered by this questionnaire return. (Separate questionnaires should be submitted to indicate different procedures used.) .....
2. Is there a specific division in the State highway department to provide liaison between the highway department and the utilities or other comparable service groups? ..... Name of such division ..... If not, which existing department handles liaison? ..... Is there a liaison engineer? .....
3. At what stage is utility or other affected agency notified of the impending highway improvement? Program .....; Preliminary engineering .....; Design .....; Final plans .....; Other .....
4. What form does such notice take? Letter .....; Telephone; ..... Personal contact .....; Other .....
5. Do you authorize utility or other agency to proceed with preliminary engineering work attendant on relocation prior to formal authorization? ..... If so, what form does this authorization take? ..... Is there liaison between your department and the utility during this preliminary period? ..... To what extent? .....
6. Are conferences held with affected utilities or other affected agencies? ..... At what stage(s)? ..... Who attends such conferences? ..... Are representatives of municipalities affected included? .....
7. Are joint conferences held when more than one utility, or other affected agency, is involved? .....
8. What is considered or discussed at these conferences? Required relocation route; .....; Probable construction schedule .....; Other .....
9. Do smaller utilities pool interests and employ representative on cooperative basis? .....

10. Are utilities specially advised of public hearings held on projects which may affect their facilities? ..... Do their representatives actually attend such meetings? .....
11. Are maps or plans indicating proposed improvement furnished utility or other affected agency? ..... What is shown on map? General area .....; Route .....; Specific location .....; Other .....
12. Is utility requested to return map or plans indicating location of facilities and proposed relocation plan? ..... At what stage? ..... Is cooperation satisfactory on this matter? .....
13. Is field check made to determine any errors, omissions, or necessary changes to utility facilities, installations not known to exist, etc.? .....
14. Do utility representatives accompany highway department representatives on the different field trips required? .....
15. What arrangements are made for notifying utility of change in plans? .....
16. Is utility kept informed as to status of highway project? ..... How? .....
17. Are utilities consulted before final highway plans are completed to avoid excessive relocation costs to utilities, whenever possible, without impairing the utility of the highway? .....
18. Are utilities required to submit plans and estimates for necessary relocations (other than Federal-aid projects)? .....
19. What is average length of time allowed utility to relocate before award of highway construction contract? ..... Range .....
20. Is this period sufficient to allow utility to complete relocation? Always .....; Frequently .....; Seldom .....; Never .....
21. Is utility sent copy of notice to bidders? .....
22. Is utility advised as to name and address of contractor? ..... Of highway department field engineer in charge of project? .....
23. Who notifies contractor of proposed utility plans for relocation? .....
24. Do highway construction plans furnished highway contractor clearly show horizontal and vertical position of all utilities within or adjacent to highway right-of-way affecting proposed highway construction and is their disposition indicated? .....
25. Are highway construction plans furnished utility (1) directly? ..... or (2) through contractor? .....; by contractor (1) directly? ..... or (2) through your department? .....
26. When property must be condemned, is it possible for utility to obtain right of entry before condemnation procedures completed? ..... Is it coincident with highway department right of entry? ..... Is this authority utilized? .....
27. Is it possible for utility to perform any of relocation work prior to letting of highway construction contract? ..... Explain: .....
28. Approximately what percentage of utility relocation work is completed prior to the beginning of highway construction? .....
29. Is highway department called on to assist utility in making plans for relocation? ..... Under what circumstances? ..... Is this a cause of delay? .....

30. Are delays encountered due to slowness of utility in completing plans? .....
31. If relocation work is done by contract, what is length of time needed for utility to advertise for bids? Average ..... Range .....
32. Are delays encountered because utility defers starting pending clearance of right-of-way (grubbing, drainage, etc.) by highway department? ..... By contractor? ..... Is utility at fault? ..... Explain: .....
33. What is the approximate period required to obtain approval of utility plans by the State highway department?.....
34. Do utilities notify State highway department of proposed new installations along highways? .....
35. Do utilities or other agencies furnish your department maps showing utility facilities within your State? ..... Are you notified when changes or additions are made? .....

COMMENTS: What in your opinion are the main causes of delay, if any, in accomplishing relocation of facilities?.....
.....

SUGGESTIONS: What changes in procedure on the part of the highway department and the utilities (or other affected public service group) would in your opinion perfect liaison and eliminate delays in accomplishing utility relocations? .....
.....

Please return one copy to:

DAVID R. LEVIN, *Chairman,*
Highway Research Board
Committee on Land Acquisition
and Control of Highway Access
and Adjacent Areas,
Bureau of Public Roads,
U. S. Department of Commerce,
Washington 25, D. C.

Information furnished by:
.....
.....
.....
.....

HIGHWAY RESEARCH BOARD

State .....
Name of Company .....
.....

Request for Information on Highway-Utility Liaison
(For Utilities and Other Affected Agencies)

Circulated for Committee on Land Acquisition and Control of Highway Access and Adjacent Areas

1(a). Please state the type of service performed: (1) power transmission .....; (2) telephone .....; (3) telegraph .....; (4) water .....; (5) gas .....; (6) oil .....; (7) petroleum producers .....; (8) steam.....; (9) sewer .....; (10) drainage .....; (11) irrigation .....; (12) other .....

(b). Is it (1) privately ..... or (2) publicly owned .....

2(a). Is there a specific division in your organization to provide liaison with the State Highway Department? (1) Yes .....; (2) No .....

(b). If not, which existing department handles liaison matters? (1) right-of-way .....; (2) engineering .....; (3) other (specify) .....

3. Are you notified of the highway project before or after following stages of highway activity: (1) route location (a) before .....; (b) after .....; (2) preliminary plans (a) before .....; (b) after .....; (3) final plans (a) before .....; (b) after .....; (4) taking of bids (a) before .....; (b) after .....; (5) award of highway contract (a) before .....; (b) after .....

4(a). Are you authorized to proceed with preparatory engineering work prior to time physical adjustments are actually authorized? (1) Yes .....; (2) No .....

(b). Is there liaison between the highway department and your company during this preliminary period? (1) always .....; (2) generally .....; (3) seldom .....; (4) never .....

5(a). Are conferences held by representatives of the State Highway Department and your organization when such relocations are necessary? (1) always .....; (2) generally .....; (3) seldom .....; (4) never .....

(b). At what stages? (1) route location .....; (2) preliminary plans .....; (3) final plans .....; (4) award of highway contract .....

(c). Are representatives of municipalities affected included in such conferences? (1) Yes .....; (2) No .....

(d). Are representatives of other affected agencies included in such conferences? (1) Yes .....; (2) No .....

6. Are joint conferences held when more than one utility company or other affected agency is involved? (1) Yes .....; (2) No .....

7. What is considered or discussed at these conferences? (1) required relocation route .....; (2) probable construction schedule .....; (3) other (specify) .....

8. Do you ever pool your interests with those of other utilities affected and employ a representative on a cooperative basis? (1) regularly .....; (2) frequently .....; (3) occasionally .....; (4) never .....

9(a). Are you specially advised on public hearings held on highway projects which may affect your facilities? (1) Yes .....; (2) No .....

(b). Does your representative generally attend such hearings? (1) Yes .....; (2) No .....

10(a). If field trip is made by representatives of State Highway Department to check location of affected facilities, are your representatives given an opportunity to accompany them? (1) Yes .....; (2) No .....

(b). Do you generally send a representative on such field checks? (1) Yes .....; (2) No .....

(c). If so, what are the titles or positions of such representatives? .....

11. Are you notified by State Highway Department of subsequent change in plans for the highway improvement contemplated? (1) Yes .....; (2) No .....

12. Are you kept informed as to status of highway project by State Highway Department? (1) Yes .....; (2) No .....

13. Are you consulted before final highway plans are completed to avoid excessive relocation or adjustment costs whenever possible without adversely affecting the highway? (1) always .....; (2) generally .....; (3) seldom .....; (4) never .....

14(a). Is map indicating proposed location of highway improvement furnished you by State Highway Department? (1) Yes .....; (2) No .....

(b). At what stage of highway improvement? (1) route location .....; (2) preliminary plans .....; (3) final plans .....; (4) taking of bids .....; (5) award of contract .....

(c). What is shown on such map or plans? (1) general location .....; (2) specific location .....; (3) preliminary design features .....; (4) final design .....; (5) other .....

15. Are you requested to return such map or plans to State Highway Department indicating location of facilities and proposed relocation plan? (1) Yes .....; (2) No .....

16(a). At what stage of the highway improvement are you required to submit plans and estimates for necessary adjustments to State Highway Department? (1) route location .....; (2) preliminary plans .....; (3) final plans .....; (4) taking of bids .....; (5) award of contract .....

(b). Are such plans and estimates required for other than Federal-aid projects? (1) Yes .....; (2) No .....

17(a). Is State Highway Department ever called on to assist you in making plans for relocation? (1) Yes .....; (2) No ..... Under what circumstances? .....

(b). Is any delay encountered in so doing? (1) Yes .....; (2) No .....; Explain: .....

18. Approximately how long does it take to obtain approval of relocation plans by State Highway Department? (1) 1-2 weeks .....; (2) 2-4 weeks .....; (3) 4-6 weeks .....; (4) 6 weeks-2 months .....; (5) over 2 months .....

19. Are highway construction plans furnished you by (a) highway department? (1) directly .....; (2) through contractor .....; (b) by contractor? (3) directly .....; (4) through highway department .....

20. Do you receive copy of notice to bidders? (1) Yes .....; (2) No .....

21(a). Are you notified of name and address of highway construction contractor? (1) Yes .....; (2) No .....

(b). Of highway department field engineer in charge of project? (1) Yes .....; (2) No .....

22. Who notifies highway construction contractor of proposed plan of relocation? (1) highway department .....; (2) utility .....

23. Are you officially notified to proceed with physical adjustment of your facilities: (1) before ..... or (2) after ..... highway improvement project is advertised; (3) before ..... or (4) after ..... letting of highway contract?

24(a). What is average length of time you are given to relocate your facilities? (1) less than one month .....; (2) 1 to 3 months .....; (3) 3 to 6 months .....; (4) 6 months to 1 year .....; (5) 1 to 2 years .....; (6) over 2 years .....

(b). Is this period sufficient to allow completion of relocation? (1) always .....; (2) generally .....; (3) seldom .....; (4) never .....

25. Approximately what percentage of relocation work is done? (1) by force account method .....; (2) by contract under competitive bidding .....; (3) under continuing contract .....

26. If relocation work is done by contract, what is length of time needed for utility to advertise for bids? Average .....; Range .....

27. Is it possible for you to perform any of relocation work prior to letting of highway construction contract? (1) always .....; (2) generally .....; (3) seldom .....; (4) never ..... Explain: .....

28(a). When property must be condemned for highway purposes, is it possible for you to obtain right of entry before condemnation procedures completed? (1) Yes .....; (2) No .....

(b). Is it coincident with highway department right of entry? (1) Yes .....; (2) No .....

29. Approximately what percentage of utility relocation work is completed prior to beginning of highway construction? (1) 0 to 10 .....; (2) 10 to 25 .....; (3) 25 to 50 .....; (4) 50 to 75 .....; (5) over 75 .....

30. Are delays ever encountered because lack of sufficient notice from the State highway department results in budgetary problems within your organization? (1) frequently .....; (2) seldom .....; (3) never ..... Comment: .....

31. Do you consider that you are given sufficient time to plan your work load? (1) always .....; (2) generally .....; (3) seldom .....; (4) never .....

32. Do you notify State Highway Department of proposed utility installations along highway? (1) Yes .....; (2) No .....

33(a). Do you furnish the several State Highway Departments maps showing utility facilities within those States? (1) Yes .....; (2) No .....

(b). If not, are you willing to do so, provided the State will make practical use of such maps? (1) Yes .....; (2) No .....

34(a). Under the same conditions, do you amend such plans from time to time as changes are made? (1) Yes .....; (2) No .....

(b). If not, are you willing to do so? (1) Yes .....; (2) No .....

Please return one copy to:

DAVID R. LEVIN, *Chairman*
Highway Research Board
Committee on Land Acquisition
and Control of Highway Access
and Adjacent Areas,
Bureau of Public Roads,
U. S. Department of Commerce,
Washington 25, D. C.

Information furnished by:
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.....

HIGHWAY RESEARCH BOARD

City .....
County .....
State .....

Request for Information on Highway-Utility Liaison
(For Municipal and County Highway Departments)

Circulated for Committee on Land Acquisition and Control of Highway Access and Adjacent Areas

If procedures vary for different types of utilities, separate returns should be submitted for each type. Also, a separate return should be submitted if different procedures are followed for contract projects and force account work. If liaison practices vary for different fact situations; *i.e.,* (1) When the utility is required to move from publicly-owned right-of-way at its own expense; (2) When utility is required to move from publicly-owned right-of-way partially or wholly at the expense of the local government; (3) When property rights are being taken for which the utility must be paid compensation, a separate return should be submitted for each procedure.

1. Please indicate which of the above types is covered by this questionnaire return: (1) .....; (2) .....; (3) .....

2(a). Is there a specific division in your street and road department to provide liaison between the department and the utilities or other comparable service groups? (1) Yes .....; (2) No ..... Name of such division .....

(b). If not, which existing department handles liaison? (1) right-of-way .....; (2) engineering .....; (3) Other (specify) .....

(c). Is there a liaison engineer? (1) Yes .....; (2) No .....

3. At what stage is utility or other affected agency first notified of the impending street or road improvement? (a) Program .....; (b) Preliminary engineering .....; (c) Design .....; (d) Final plans .....; (e) Other .....

4. What form does such notice take? (1) Letter .....; (2) Telephone .....; (3) Personal contact .....; (4) Other .....

5(a). Do you authorize utility or other agency to proceed with preliminary engineering work attendant on relocation prior to formal authorization? (1) Yes .....; (2) No .....

(b). If so, what form does this authorization take? (1) Letter .....; (2) Phone .....; (3) Personal contact .....; (4) Other .....

(c). Is there liaison between your department and the utility during this preliminary period? (1) Always .....; (2) Generally .....; (3) Seldom .....; (4) Never .....

6(a). Are conferences held with affected utilities or other affected agencies? (1) Yes .....; (2) No .....

(b). At what stage(s)? (1) Location .....; (2) Preliminary plans .....; (3) Final plans .....; (4) Award of contract .....; (5) Other .....

(c). Who is represented at such conferences? .....

(d). Is your street or highway department invited to participate in conferences between State or county or municipal highway department and utilities concerning projects in your area? (1) Yes .....; (2) No .....

7. Are joint conferences held when more than one utility, or other affected agency, is involved? (1) Yes .....; (2) No .....

8. What is considered or discussed at these conferences? (1) Required relocation route .....; (2) Probable construction schedule .....; (3) Other (specify) .....

9. Do smaller utilities pool interests and employ representative on cooperative basis? (1) Regularly .....; (2) Frequently .....; (3) Occasionally .....; (4) Never .....

10(a). Are utilities specially advised of public hearings or final review by governing bodies on projects which may affect their facilities? (1) Yes .....; (2) No .....

(b). Do their representatives actually attend such meetings? (1) Always .....; (2) Generally .....; (3) Seldom .....; (4) Never .....

11(a). Are maps or plans indicating proposed improvement furnished utility or other affected agency? (1) Yes .....; (2) No .....

(b). What is shown on map? (1) General area .....; (2) Route .....; (3) Specific location .....; (4) Other .....

12(a). Is utility requested to return map or plans indicating location of facilities and proposed relocation plans? (1) Yes .....; (2) No .....

(b). Is cooperation satisfactory on this matter? (1) Yes .....; (2) No .....

13. Is field check made to determine any errors, omissions, or necessary changes to utility facilities, installations not known to exist, etc.? (1) Yes .....; (2) No .....

14. Do utility representatives accompany street or highway department representatives on the different field trips required? (1) Yes .....; (2) No .....

15. Is utility notified of change in plans? (1) Yes .....; (2) No .....

16(a). Is utility kept informed as to status of street or road project? (1) Yes .....; (2) No .....

(b). How? .....

17. Are utilities consulted before final plans are completed to avoid excessive relocation costs to utilities, whenever possible, without impairing the utility of the road? (1) Yes .....; (2) No .....

18. Are utilities required to submit plans and estimates for necessary relocations? (1) Yes .....; (2) No .....

19. What is average length of time allowed utility to relocate before commencement of construction? (1) Less than 1 month .....; (2) 1-3 months .....; (3) 3-6 months .....; (4) 6 months-1 year .....; (5) 1-2 years .....; (6) Over 2 years .....

20. Approximately what percentage of utility relocation work is completed prior to the beginning of construction? (1) 0-10 .....; (2) 10-25 .....; (3) 25-50 .....; (4) 50-75 .....; (5) Over 75 .....

21. Is utility sent copy of notice to bidders? (1) Yes .....; (2) No .....

22(a). Is utility advised as to name and address of contractor? (1) Yes .....; (2) No .....

(b). Of street or highway department field engineer in charge of project? (1) Yes .....; (2) No .....

23. Who notifies contractor of proposed utility plans for relocation? (1) Street or highway department .....; (2) Utility .....

24(a). Do street or road construction plans furnished contractor or construction departments clearly show horizontal and vertical position of all utilities within or adjacent to right-of-way affecting proposed construction? (1) Yes .....; (2) No .....

25. Are road construction plans furnished utility (1) directly? ..... or (2) through contractor? .....

26(a). When property must be condemned by municipality, is it possible for utility to obtain right of entry before condemnation procedures completed? (1) Yes .....; (2) No .....

(b). Is it coincident with street or highway department right of entry? (1) Yes .....; (2) No .....

(c). Is this authority utilized? (1) Yes .....; (2) No .....; (3) Sometimes .....

27(a). Is street or highway department called on to assist utility in making plans for relocation? (1) Yes .....; (2) No ..... Under what circumstances? .....

(b). Is this a cause of delay? (1) Yes .....; (2) No .....

28. Are delays encountered due to slowness of utility in completing plans? (1) Yes .....; (2) No .....

29. If relocation work is done by contract, what is average length of time needed for utility to advertise for bids? (1) Less than one week .....; (2) 1-2 weeks .....; (3) 2-4 weeks .....; (4) 1-2 months .....; (5) 2-3 months .....; (6) Over 3 months .....

30(a). Are delays encountered because utility defers starting pending clearance of right-of-way (grubbing, drainage, etc.) by street or highway department? (1) Yes .....; (2) No .....

(b). By contractor? (1) Yes .....; (2) No .....

(c). Is utility at fault? (1) Yes .....; (2) No ..... Explain: .....

31. What is the approximate period required to obtain approval of utility plans by the street or highway department? (1) 1-2 weeks .....; (2) 2-4 weeks .....; (3) 4-6 weeks .....; (4) 6 weeks-2 months .....; (5) Over 2 months .....

32. Do utilities notify street or highway department of proposed new installations along streets and highways? (1) Yes .....; (2) No .....

33(a). Do utilities or other agencies furnish your department maps showing utility facilities within your city? (1) Yes .....; (2) No .....

(b). Are you notified when changes or additions are made? (1) Yes .....; (2) No .....

COMMENTS: What in your opinion are the main causes of delay, if any, in accomplishing relocation of facilities? .....

.....

SUGGESTIONS: What changes in procedure on the part of the street or highway department and the utilities (or other affected public service group) would in your opinion perfect liaison and eliminate delays in accomplishing utility relocations? .....
.....

Please return one copy to:

DAVID R. LEVIN, *Chairman*
Highway Research Board
Committee on Land Acquisition
and Control of Highway Access
and Adjacent Areas,
Bureau of Public Roads,
U. S. Department of Commerce,
Washington 25, D. C.

Information furnished by:
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APPENDIX B

TABULATIONS OF INDIVIDUAL RETURNS

Note:—The tables in this appendix are grouped according to the numbers of the tables contained in the text. For example, the number to the left of the decimal point corresponds to the summary table in the text dealing with the particular question; the number to the right of the decimal point indicates a sequence within each section of the appendix.

TABLE 4.1.—Responsibility in State Highway Department for Liaison with Utilities

Separate Utilities Section [1]

Under Supervision of					
Right-of-Way Division	Construction Division	Design	Surveys and Plans	Other	Separate Status
Ark. Ind Ky. La. Mont Nebr Nev. Ohio Okla	Mich. Va.	Minn Wis.	Ala. Mo	Mass.[2] D C.[6] P Rico [8]	Ariz. Conn Del. N J. S. Dak Utah
9	2	2	2	3	6

Existing Division

Right-of-Way	Construction	Design	District	Other
Alaska Calif. Fla. Idaho Iowa Kans. Me. N C [4] Pa W. Va.	N Dak. Ore. S C [4] Wash	Ga [3,4] N. H. N. Mex. Hawaii	Colo [4] Ill. Md. Miss [4] N. Y. Tenn [4] Tex. [4,10]	R. I [5] Vt.[7] Wyo [9]
10	4	4	7	3

[1] All of these States apparently have liaison engineers.
[2] Project Division.
[3] And division offices
[4] States reporting no liaison engineer.
[5] Liaison Committee
[6] Engineering.
[7] Administrative Division.
[8] Program and Liaison Division.
[9] Advance Plan Department.
[10] Right-of-Way Division of the District office.

TABLE 4.2.—Division of Utility or Other Affected Agency Handling Liaison Between State Highway Department and Utility

(Utilities)

State	Existing Division							No Answer	Total
	Specific Division	Right-of-Way	Engineering	Manager and/or Superintendent	Right-of-Way and Engineering	Other	Total		
Ala.	7	—	16	1	1	3	21	—	28
Alaska	—	—	2	—	1	—	3	—	3
Ariz.	5	2	3	1	1	—	7	—	12
Ark	1	1	11	2	2	4	20	—	21
Calif	20	7	42	1	6	3	59	1	80
Colo	7	3	17	2	2	5	29	—	36
Conn	10	2	11	4	—	3	20	—	30
Del.	2	—	1	1	—	2	4	—	6
Fla	14	1	21	2	1	3	28	1	43
Ga.	15	—	16	2	3	5	26	—	41
Hawaii	5	—	4	—	1	—	5	1	11
Idaho	3	1	8	1	2	1	13	—	16
Ill	16	12	46	9	7	5	79	4	99
Ind	10	6	26	6	3	5	46	1	57
Iowa	7	8	25	7	4	6	50	1	58
Kans.	5	8	18	7	2	8	43	1	49
Ky.	12	4	39	7	2	4	56	—	69
La.	7	5	16	1	3	8	33	—	39
Me.	6	2	11	33	1	10	57	2	65
Md	7	2	6	1	2	1	12	—	19
Mass.	33	3	16	5	4	3	31	—	64
Mich	18	3	24	4	—	1	32	—	50
Minn	13	5	44	29	2	3	83	—	96
Miss.	8	—	11	2	2	4	19	—	27
Mo	21	3	23	10	3	12	51	2	74
Mont.	4	5	13	8	3	7	36	—	41
Nebr.	2	6	17	9	2	2	36	—	38
Nev.	2	—	1	1	3	—	5	—	7
N. H.	7	1	8	4	2	—	15	—	22
N J	7	2	11	1	—	4	18	—	25
N. Mex.	5	6	8	1	1	1	17	—	22
N. Y.	6	3	15	4	3	4	29	1	36
N C	11	3	19	3	—	2	27	—	38
N Dak.	9	6	9	10	1	4	30	—	39
Ohio	17	4	28	6	1	5	44	—	61
Okla.	12	5	27	2	4	10	48	1	61
Ore	4	1	10	2	—	—	13	—	17
Pa	12	5	22	6	5	7	45	—	57
R. I	3	2	2	—	2	1	7	—	10
S. C.	9	2	12	1	1	3	19	1	29
S Dak.	11	3	9	12	2	6	32	—	43
Tenn.	3	1	19	3	1	1	25	—	28
Tex	30	13	63	14	6	16	112	1	143
Utah	2	2	8	1	1	—	12	—	14
Vt	3	—	5	1	2	3	11	1	15
Va	7	—	11	1	1	2	15	—	22
Wash	6	1	8	6	5	1	21	1	28
W Va.	4	1	5	1	2	1	10	1	15
Wis	12	4	25	5	5	3	42	1	55
Wyo	3	2	10	6	—	4	22	—	25
D C.	1	—	1	—	—	1	2	—	3
P Rico	1	—	—	—	—	—	—	—	1
Total	445	156	823	246	108	187	1520	22	1987
		10.3%	*54.1%*	*16 2%*	*7 1%*	*12 3%*	*100.0%*		
	22 4%			*76 5%*				*1.1%*	*100 0%*

TABLE 4.3.—Is There a Specific Division in Street and Road Department to Provide Liaison Between the Department and the Utilities or Other Comparable Service Groups?

(County Highway Departments)

State	Specific Division			Existing Division							Liaison Engineer			Total
	Yes	No	No Answer	Right-of-Way	Engineering	Right-of-Way and Engineering	Manager and/or Superintendent	County Administrative Body	Other	Not Applicable	No Answer	Yes	No	No Answer	
Ala.	—	11	—	—	11	—	—	—	—	—	—	4	7	—	11
Ariz.	—	2	—	—	2 [1]	—	—	—	—	—	—	—	2	—	2
Ark	—	4	—	—	3	—	1	—	—	—	—	—	4	—	4
Calif.	9	21	—	3	14	—	—	2	1	9	1	11	19	—	30
Colo.	2	5	—	—	3	—	—	1	—	2	1	2	5	—	7
Fla	4	4	—	1	2	—	—	—	—	4	1	3	5	—	8
Ga	3	12	—	1	5	—	—	5	1	3	—	3	12	—	15
Idaho	—	3	—	1	1	—	1	—	—	—	—	—	3	—	3
Ill.	4	19	1	—	13 [2]	—	5	1	—	4	1	3	20	1	24
Ind.	1	11	—	2	—	1	3	3	1	1	1	1	11	—	12
Iowa	6	36	—	2	33	1	—	—	—	6	—	1 [3]	40	1	42
Kans	4	30	—	1	28 [4]	—	—	1	—	4	—	2	32	—	34
Ky.	1	4	1	1	2	—	—	1	—	1	1	1	5	—	6
La.	2	2	—	—	1	—	—	1	—	2	—	1	3	—	4
Me	—	1	—	—	1	—	—	—	—	—	—	—	1	—	1
Md.	1	7	—	1	4	—	1	1	—	1	—	—	8	—	8
Mich.	4	17	—	—	17	—	—	—	—	4	—	7	14	—	21
Minn.	2	36	—	—	36	—	—	—	—	2	—	2	36	—	38
Miss.	—	1	—	—	1	—	—	—	—	—	—	—	1	—	1
Mo	1	8	1	2 [5]	2	—	—	4	—	1	1	1	9	—	10
Mont.	1	3	—	—	2	—	—	1	—	1	—	1	3	—	4
Nebr	2	4	—	—	4	—	—	—	—	2	—	4	2	—	6
N. J	2	6	—	—	5	1	—	—	—	2	—	—	8	—	8
N Mex.	—	1	—	—	1	—	—	—	—	—	—	—	1	—	1
N. Y.	3	11	—	—	9	—	2	—	—	3	—	6	7	1	14
N C	1	2	—	2	—	—	—	—	—	1	—	—	2	1	3
N Dak	3	7	—	1	5	—	—	1	—	3	—	—	10	—	10
Ohio	1	14	—	1	12	1	—	—	—	1	—	3	12	—	15
Okla.	3	1	—	—	—	—	—	1	—	3	—	2	1	1	4
Ore	5	6	—	—	4	—	1	1	—	5	—	1	9	1	11
Pa.	—	3	—	—	2	—	—	—	—	—	1	—	3	—	3
S. C	—	1	—	—	—	1	—	—	—	—	—	—	—	1	1
S Dak.	4	10	—	—	6	—	4	—	—	4	—	—	14	—	14
Tenn.	2	4	—	1	—	—	—	2	1	2	—	—	6	—	6
Tex	4	17	1	2	7	—	—	7	—	4	2	5	16	1	22
Utah	2	1	—	—	—	—	—	1	—	2	—	2	1	—	3
Va	2	3	—	—	3	—	—	—	—	2	—	3	2	—	5
Wash	4	16	—	—	16	—	—	—	—	4	—	2	18	—	20
W Va.	—	1	—	—	1	—	—	—	—	—	—	—	1	—	1
Wis.	4	9	—	2	3	—	—	2	—	4	2	1	11	1	13
Wyo.	1	2	—	—	2	—	—	—	—	1	—	2	1	—	3
Total	88	356	4	24	261	5	18	36	4	88	12	74	365	9	448
	19 6%	*79 5%*	*0 9%*	*5 3%*	*58 3%*	*1.1%*	*4 0%*	*8.0%*	*0 9%*	*19 7%*	*2 7%*	*16 5%*	*81 5%*	*2 0%*	*100 0%*

[1] In Maricopa County, liaison is also handled by the right-of-way department when property rights are being taken for which the utility must be paid compensation.
[2] In Morgan County, when property rights are being taken for which the utility must be paid compensation, the department of engineering handles liaison, in other instances liaison is handled by the county superintendent of highways
[3] In Osceola County, liaison engineer only when utility is required to move from publicly-owned right-of-way at its own expense
[4] For Rush County, applies to liaison when utility is required to move from publicly-owned right-of-way at its own expense, when property rights are being taken for which utility must be paid compensation, Board of County Commissioners handles liaison.
[5] In St. Louis County, liaison is handled by right-of-way department when property rights are being taken for which utility must be paid compensation, when utility is required to move from publicly-owned right-of-way at its own expense, liaison is handled by contractor

TABLE 4.4.—Responsibility for Liaison Between City and Utilities or Other Comparable Service Groups (Municipal Highway Departments)

State	Specific Division	Existing Division				No Answer	Liaison Engineer		Total
		Engineering	Construction	Right-of-Way	Other		Yes	No	
Ala.		1						1	1
Alaska				1			1		1
Calif.	3	13	1	1	2		8	12	20
Colo		3				1		4	4
Conn.		1						1	1
Fla.		5						5	5
Ga.	1	3					2	2	4
Hawaii		1						1	1
Idaho		1						1	1
Ill		3					1	2	3
Iowa		1				1		2	2
Kans.		1						1	1
Ky						1		1	1
La.		1					1		1
Me.		1						1	1
Md		1	1				1	1	2
Mich.		2						2	2
Minn.		3						3	3
Miss.		1					1		1
Mo.		3					1	2	3
Nev.		2						2	2
N. J	1							1	1
N. Mex.		1 [1]					1		1
N. Y		2	1				2	1	3
N. C		3		1		1	1	4	5
Ore		1						1	1
Pa		1			1		2		2
S. C		1						1	1
S Dak.		1						1	1
Tenn.		1		1				2	2
Tex.		1					1		1
Va.		2			1			3	3
Wash.		1					1		1
W. Va.		1					1		1
Wis.		3					2	1	3
Wyo.		1					1		1
Total	5	67	3	4	4	4	28	59	87
	5 8%	*77 0%*	*3.4%*	*4.6%*	*4 6%*	*4.6%*	*32.2%*	*67 8%*	*100 0%*

[1] In Albuquerque, when utility is required to move from publicly-owned right-of-way at its own expense, consulting engineers handle liaison, when required to move partially or wholly at expense of local government, liaison is handled by engineering division of street department.

TABLE 6.1.—At What Stage Is Utility First Notified of Impending Improvements? (State Highway Departments)

Program			Preliminary Engineering		Design		Final Plans
Ark	Iowa	Ohio	Colo.	R. I.	Ala	Mo [1]	Kans.
Calif.	Ky [2]	Tex.	Ga	Tenn	Alaska	Mont.	Nebr.
Conn.	Me.	Va.	Minn.	Vt.	Ariz.	N Y.	S Dak.
Del.	Md	Wis	Nev.	W. Va.	La	N C.	Wash.
Fla.	Mich	Hawaii	Okla	Wyo	Mass.[3]	N. Dak.	
Idaho	N. H [4]	D C.	Ore.	P Rico [5]	Miss	S C.	
Ill.	N J [6]		Pa.	Utah			
Ind.	N. Mex [7]						
	22		14		12		4
	42.3%		*26 9%*		*23 1%*		*7.7%*

[1] Preliminary engineering if known.
[2] Municipalities only, others notified when right-of-way acquisition begun.
[3] Infrequently programing and planning
[4] Notified quarterly of impending improvements.
[5] Some types of utilities; others at design stage.
[6] Usually for freeway projects; others at preliminary engineering
[7] If possible, otherwise preliminary engineering.

TABLE 6.2.—Are You Notified of the Highway Project Before or After the Following Stages of Highway Activities?
(Utilities)

State	Route Location	Preliminary Plans	Final Plans	Taking of Bids	Award of Contract	No Answer	Total
Ala	10	7	11	—	—	—	28
Alaska	1	1	1	—	—	—	3
Ariz	4	4	3	1	—	—	12
Ark.	4	6	11	—	—	—	21
Calif.	66	10	2	1	—	1	80
Colo	15	13	6	1	—	1	36
Conn.	9	14	6	—	—	1	30
Del.	2	3	1	—	—	—	6
Fla	18	14	9	—	1	1	43
Ga.	12	17	12	—	—	—	41
Hawaii	5	4	1	—	—	1	11
Idaho	6	9	1	—	—	—	16
Ill	42	44	11	1	1	—	99
Ind.	25	16	7	1	5	3	57
Iowa	30	14	9	1	3	1	58
Kans.	17	15	16	—	1	—	49
Ky.	14	24	28	2	1	—	69
La.	13	11	15	—	—	—	39
Me.	48	8	6	1	2	—	65
Md.	6	12	1	—	—	—	19
Mass	25	29	4	1	4	1	64
Mich.	28	17	4	—	—	1	50
Minn.	47	21	25	2	—	1	96
Miss	8	5	13	—	—	1	27
Mo.	34	21	18	—	1	—	74
Mont	18	7	15	—	—	1	41
Nebr	13	9	15	—	—	1	38
Nev	4	1	1	—	—	1	7
N H.	13	8	—	—	1	—	22
N. J.	11	12	2	—	—	—	25
N Mex.	6	7	7	1	1	—	22
N. Y.	20	12	3	—	—	1	36
N. C	15	13	10	—	—	—	38
N Dak.	15	11	11	1	—	—	38
Ohio	27	24	9	1	—	—	61
Okla.	26	15	18	—	1	1	61
Ore	6	5	5	—	1	—	17
Pa.	23	26	7	1	—	—	57
R. I	6	2	2	—	—	—	10
S. C	12	5	6	3	2	1	29
S Dak.	12	16	12	1	1	1	43
Tenn.	8	9	6	2	3	—	28
Tex.	54	41	36	7	3	2	143
Utah	4	6	4	—	—	—	14
Vt.	8	5	2	—	—	—	15
Va	8	9	5	—	—	—	22
Wash.	10	12	4	—	1	1	28
W Va.	4	6	4	—	—	1	15
Wis.	41	12	1	—	—	1	55
Wyo	6	9	8	2	—	—	25
D. C	3	—	—	—	—	—	3
P Rico	—	1	—	—	—	—	1
Total	862	622	414	31	33	25	1987
	43.3%	*31.3%*	*20.9%*	*1.5%*	*1.7%*	*1.3%*	*100.0%*

TABLE 6.3.—Are Delays Ever Encountered Because Lack of Sufficient Notice from State Highway Department Results in Budgetary Problems for Utility?

(Utilities)

State	Frequently	Seldom	Never	No Answer	Total
Ala	5	11	10	2	28
Alaska	2	—	1	—	3
Ariz.	2	6	4	—	12
Ark.	6	8	7	—	21
Calif.	9	38	25	8	80
Colo	2	15	18	1	36
Conn.	4	11	14	1	30
Del	1	5	—	—	6
Fla.	7	11	20	5	43
Ga.	3	10	25	3	41
Hawaii	1	4	5	1	11
Idaho	2	9	5	—	16
Ill	10	46	36	7	99
Ind.	8	31	16	2	57
Iowa	7	28	21	2	58
Kans.	4	22	21	2	49
Ky.	16	26	24	3	69
La.	2	17	19	1	39
Me	10	36	14	5	65
Md.	1	7	11	—	19
Mass	15	20	26	3	64
Mich.	1	28	14	7	50
Minn.	4	44	45	3	96
Miss.	—	9	17	1	27
Mo.	4	31	34	5	74
Mont	4	12	23	2	41
Nebr.	2	17	19	—	38
Nev.	2	3	2	—	7
N. H.	1	9	6	6	22
N. J.	2	9	8	6	25
N. Mex.	6	11	3	2	22
N. Y.	6	14	11	5	36
N. C	1	17	15	5	38
N. Dak.	1	16	19	2	38
Ohio	9	30	21	1	61
Okla	10	20	29	2	61
Ore.	2	7	7	1	17
Pa	8	20	25	4	57
R I.	2	4	3	1	10
S. C.	1	12	14	2	29
S Dak.	5	17	19	2	43
Tenn.	2	11	13	2	28
Tex	19	49	69	6	143
Utah	2	3	6	3	14
Vt.	2	5	7	1	15
Va	—	11	10	1	22
Wash	3	11	11	3	28
W. Va.	3	8	2	2	15
Wis.	7	29	19	—	55
Wyo	3	5	17	—	25
D C.	—	3	—	—	3
P. Rico	—	—	1	—	1
Total	229	826	811	121	1987
	11.5%	*41 5%*	*41.0%*	*6.0%*	*100.0%*

TABLE 6.4.—Is Utility Given Sufficient Time to Plan Work Load?

(Utilities)

State	Always	Generally	Seldom	Never	No Answer	Total
Ala	2	19	6	—	—	28
Alaska	—	2	1	—	1	3
Ariz.	2	6	4	—	—	12
Ark	—	17	3	1	—	21
Calif	19	52	3	1	5	80
Colo	7	26	3	—	—	36
Conn.	2	23	4	—	1	30
Del.	1	3	1	—	1	6
Fla.	4	22	14	1	2	43
Ga.	2	34	3	1	1	41
Hawaii	1	8	1	—	1	11
Idaho	1	13	2	—	—	16
Ill	8	69	15	2	5	99
Ind.	3	42	8	2	2	57
Iowa	5	39	12	2	—	58
Kans.	5	38	5	—	1	49
Ky.	8	48	8	5	—	69
La	6	25	7	—	1	39
Me.	9	43	8	4	1	65
Md	1	12	6	—	—	19
Mass.	3	46	11	3	1	64
Mich	5	40	3	—	2	50
Minn	13	72	7	1	3	96
Miss.	7	16	3	—	1	27
Mo.	9	54	9	—	2	74
Mont.	10	26	3	1	1	41
Nebr.	5	27	6	—	—	38
Nev.	—	5	2	—	—	7
N. H	1	14	6	—	1	22
N J	5	15	4	—	1	25
N. Mex	1	13	5	1	2	22
N. Y.	3	22	8	—	3	36
N. C	4	28	5	—	1	38
N. Dak	7	25	5	1	—	38
Ohio	5	48	8	—	—	61
Okla.	9	42	9	1	—	61
Ore.	5	11	1	—	—	17
Pa	3	37	13	1	3	57
R. I.	1	6	1	1	1	10
S C	4	16	8	—	1	29
S. Dak	4	28	7	4	—	43
Tenn.	3	16	7	—	2	28
Tex.	27	93	14	5	4	143
Utah	1	9	2	—	2	14
Vt.	—	13	—	2	—	15
Va	2	18	2	—	—	22
Wash	3	18	6	—	1	28
W. Va.	—	11	1	1	2	15
Wis	4	45	3	2	1	55
Wyo.	6	14	4	1	—	25
D C.	—	3	—	—	—	3
P. Rico	—	1	—	—	—	1
Total	236	1373	277	44	57	1987
	11.9%	*69.1%*	*14.0%*	*2 2%*	*2.8%*	*100 0%*

TABLE 6.5.—At What Stage Is Utility or Other Affected Agency First Notified of the Impending Street or Road Improvement? (County Highway Departments)

State	Program	Preliminary Engineering	Design	Final Plans	Preliminary Engineering and Design	Design and Final Plans	Other	No Answer	Total
Ala.	1	1	1	8					11
Ariz.	1	1							2
Ark		2	2						4
Calif	8	11	3[1]	3	1	1	3		30
Colo.	3	2	2						7
Fla		1		3		1	3		8
Ga	1	4		9			1		15
Idaho		2		1					3
Ill	6	3	7	6	1		1		24
Ind	7	2		2	1				12
Iowa	21	1	4	10[2]			5	1	42
Kans.	4	11[1]	3	11[4]			4	1	34
Ky.	1	2		1			1	1	6
La.		2		1			1		4
Me							1		1
Md.	3	2		1			2		8
Mich	7	8[3]	1	3			1	1	21
Minn.	5	7	5	11		1	8	1	38
Miss.				1					1
Mo.		4		3			2	1	10
Mont.	1	2					1		4
Nebr.	1	1[6]	1	1			2		6
N. J.		2	1	2		1	2		8
N Mex			1						1
N Y	3	3	3	4			1		14
N. C	1	1		1					3
N. Dak		4		5			1		10
Ohio	1	9	3	2					15
Okla		2		2					4
Ore.	1	3	1	3			2	1	11
Pa.		1	1				1		3
S. C				1					1
S Dak	3	3	1	6[7]			1		14
Tenn.		1	1	4					6
Tex	1	11[8]	3	6			1		22
Utah	1		2						3
Va.		2	2				1		5
Wash	1	6	5	5			3		20
W Va.				1					1
Wis	5	3		3			2		13
Wyo.				1				2	3
Total	87	120	53	121	3	4	51	9	448
	19 4%	*26 8%*	*11 8%*	*27.0%*	*0 7%*	*0 9%*	*11 4%*	*2.0%*	*100 0%*

[1] In one county, when property rights are being taken for which utility must be paid compensation, utility is first notified of impending improvement at design stage, when utility is required to move from publicly-owned right-of-way at its own expense, notification is made first at either design or final plans stage

[2] In one county, notification is made first at final plans stage when utility is required to move from publicly-owned right-of-way at its own expense, when property rights are being taken for which utility must be paid compensation, notification is made at either final plans or design stage

[3] One county first notifies utility of impending road work at preliminary engineering stage, and gives a second notice at final plans stage.

[4] In one county, when property rights are being taken for which utility must be paid compensation, first notice of impending road work is given utility at preliminary engineering stage, when utility is required to move from publicly-owned right-of-way at its own expense, first notice is given at final plans stage.

[5] One county gives utility two notices of impending work—one at preliminary engineering stage, the other at final plans stage.

[6] Utility first notified at either preliminary engineering or final plans stage.

[7] In one county, when utility is required to move from publicly-owned right-of-way at its own expense, first notice is given at final plans stage, when utility is required to move partially or wholly at expense of local government, notice is given first after contract is let.

[8] One county first notifies utility at preliminary engineering or at final plans stage.

TABLE 6.6.—At What Stage Is Utility or Other Affected Agency First Notified of Impending Street or Road Program?

(Municipal Highway Departments)

State	Program	Preliminary Engineering	Design	Final Plans	Other	Total
Ala			1			1
Alaska			1			1
Calif.	9	5	3	1	2[1]	20
Colo	2	1		1		4
Conn		1				1
Fla.		2	1	1	1[2]	5
Ga		3	1			4
Hawaii		1				1
Idaho	1					1
Ill	1	2				3
Iowa		1			1[3]	2
Kans			1			1
Ky.				1		1
La.	1					1
Me.		1				1
Md	1		1			2
Mich	2					2
Minn.		3				3
Miss		1				1
Mo.			1	2		3
Nev.	1	1				2
N. J	1					1
N. Mex		1[4]				1
N. Y		2	1			3
N C	1	2	1	1		5
Ore.		1				1
Pa.	1	1				2
S. C				1		1
S. Dak				1		1
Tenn	1	1				2
Tex.	1					1
Va.	2			1		3
Wash		1				1
W Va.	1					1
Wisc.	2		1			3
Wyo.				1		1
Total	28	31	13	11	4	87
	32.2%	*35.7%*	*14.9%*	*12.6%*	*4.6%*	*100.0%*

[1] In Alhambra, Underground Utility meeting, held every two months, in Long Beach, when city engineer is authorized to prepare plans.
[2] Miami Beach gives first notice when work is authorized
[3] Dubuque officials meet with utility and discuss program to be carried on during following year.
[4] In Albuquerque, when utility is required to move at its own expense, notification is first given at preliminary plans stage, when expense is partially or wholly on local government, first notice is given at program stage.

TABLE 7.1.—Does State Authorize Utility Agency to Proceed with Preliminary Engineering Work Attendant on Relocation Prior to Formal Authorization?

(State Highway Departments)

No	Yes	Form of Authorization				
		Verbal	Written	Plans Submitted	Other	Not Indicated
Ala.	Calif.				X[1]	
Alaska	Del[2]			X		
Ariz.	Fla		X			
Ark.	Idaho		X			
Colo.	Ill.		X			
Conn.	Kans.				X[3]	
Ga	Me.[4]					X
Ind	Md.		X			
Iowa	Mass.[4]					X
Ky	Mich.					X
La.	Mo		X			
Minn.	Neb.		X			
Miss.	N H.[5]		X			
Mont.	N. J[2]		X			
Nev	N. Mex.		X			
N Y.	N. C.	X				
Ohio	N Dak.		X			
Okla.	Ore.		X			
S. C	Pa.		X			
Tenn.	R. I.		X			
Wash.	S Dak.	X				
W. Va.	Tex.		X			
Wyo.	Utah		X			
	Vt.[6]		X			
	Va.		X			
	Wis.		X			
	Hawaii	X				
	D. C.[7]		X			
	P. Rico		X			
23	29	3	20	1	2	3
44.2%	*55.8%*	*5.8%*	*38.5%*	*1.9%*	*3.8%*	*5.8%*

[1] By mutual agreement.
[2] State projects only.
[3] Request for preliminary estimate
[4] When utility indicates willingness to cooperate
[5] In the future
[6] Covered by retroactive date on final agreement.
[7] Publicly-owned utilities only.

TABLE 7.2.—Is Utility Authorized to Proceed with Preparatory Engineering Prior to Time Physical Adjustments Are Actually Authorized?

(Utilities)

State	Utility Authorized to Proceed	Is There Liaison Between Highway Department and Utility During Preliminary Period				Utility Not Authorized to Proceed	No Answer	Total
		Always	Generally	Seldom	Never			
Ala	24	10	12	2	—	4	—	28
Alaska	3	—	3	—	—	—	—	3
Ariz.	9	3	6	—	—	2	1	12
Ark.	17	4	11	2	—	4	—	21
Calif	72	47	25	—	—	7	1	80
Colo	31	11	19	—	1	5	—	36
Conn.	24	13	10	1	—	6	—	30
Del	5	2	2	1	—	1	—	6
Fla.	32	10	19	3	—	11	—	43
Ga.	32	13	17	2	—	9	—	41
Hawaii	7	4	3	—	—	2	2	11
Idaho	15	3	12	—	—	1	—	16
Ill	72	18	48	6	—	25	2	99
Ind	42	8	32	2	—	14	1	57
Iowa	41	6	30	3	1	16	1	58
Kans.	41	8	27	6	—	7	1	49
Ky.	47	19	24	3	1	21	1	69
La	33	13	17	3	—	6	—	39
Me.	50	10	35	3	2	14	1	65
Md.	18	5	12	1	—	1	—	19
Mass	31	3	26	1	1	32	1	64
Mich.	41	14	26	1	—	8	1	50
Minn.	70	21	39	9	1	23	3	96
Miss	19	10	8	1	—	8	—	27
Mo.	51	21	23	7	—	22	1	74
Mont	29	14	14	1	—	11	1	41
Nebr	28	5	21	2	—	10	—	38
Nev	6	2	4	—	—	1	—	7
N H	12	6	5	1	—	7	3	22
N. J	21	10	9	2	—	3	1	25
N. Mex.	16	3	13	—	—	6	—	22
N Y	30	7	20	—	—	4	2	36
N C	30	10	19	1	—	7	1	38
N. Dak	25	10	11	4	—	13	—	38
Ohio	51	16	33	2	—	10	—	61
Okla.	47	11	28	6	2	14	—	61
Ore.	14	5	8	—	1	3	—	17
Pa.	51	12	31	8	—	5	1	57
R. I	8	—	7	1	—	2	—	10
S. C.	18	4	12	2	—	11	—	29
S Dak.	26	5	18	3	—	15	2	43
Tenn.	21	5	10	5	1	7	—	28
Tex.	101	32	59	5	5	41	1	143
Utah	10	2	6	2	—	3	1	14
Vt.	10	5	6	1	—	3	2	15
Va.	19	13	6	—	—	3	—	22
Wash	20	10	9	1	—	6	2	28
W. Va.	13	2	9	2	—	2	—	15
Wis.	45	22	20	2	1	10	—	55
Wyo	19	6	12	—	1	6	—	25
D. C.	3	1	2	—	—	—	—	3
P. Rico	—	—	—	—	—	1	—	1
Total	1500	494	878	110	18	453	34	1987
	75 5%					*22.8%*	*1.7%*	*100.0%*

TABLE 7.3.—Is Utility or Other Agency Authorized to Proceed with Preliminary Engineering Work Attendant on Relocation Prior to Formal Authorization?
(County Highway Departments)

State	Yes	No	No Answer	Is There Liaison During This Preliminary Period?						Total
				Always	Generally	Sometimes	Never	Not Applicable	No Answer	
Ala.	7	4		1	3	3		4		11
Ariz.	1	1			1			1		2
Ark	2	2		1		1		2		4
Calif.	22	8		9	13			8		30
Colo.	6	1		2	3	1		1		7
Fla	5	3		2	3			3		8
Ga.	11	4		4	6		1	4		15
Idaho	1	2			1			2		3
Ill.	18	6		4	9	5		6		24
Ind.	7	5		1	4	2		5		12
Iowa	24	18		3	18	3		18		42
Kans.	15[1]	18	1	1[2]	11[3]	2		18	2	34
Ky.	1	5			1			5		6
La.	1	2	1			1		2	1	4
Me			1						1	1
Md.	5	3		1	3	1		3		8
Mich.	13	7	1	5	8			7	1	21
Minn.	23	14	1	7	15[4]	1		14	1	38
Miss.	1				1					1
Mo	5	5			3	1[5]		5	1	10
Mont	3	1			3			1		4
Nebr.	5	1		3	2			1		6
N. J.	6	2			5	1		2		8
N Mex.		1						1		1
N. Y.	8	6		2	4	2		6		14
N. C.	1	2			1			2		3
N. Dak.	2	8			2			8		10
Ohio	10	5		3	7			5		15
Okla.	3	1		1	2			1		4
Ore.	5	6		2	3			6		11
Pa.	2	1			2			1		3
S. C	1			1						1
S. Dak	8	6		3	2	1	2	6		14
Tenn.	2	4		2				4		6
Tex	12	10		6	5			10	1	22
Utah	3			1	2					3
Va	5				5					5
Wash	16	4		3	13			4		20
W. Va.		1						1		1
Wis	8	5		1	6	1		5		13
Wyo.	2		1	1	1				1	3
Total	270	172	6	70	168	26	3	172	9	448
	60.3%	*38 4%*	*1 3%*	*15 6%*	*37.5%*	*5.8%*	*0 7%*	*38 4%*	*2.0%*	*100.0%*

[1] In one county, preliminary engineering is not authorized when utility is required to move from publicly-owned right-of-way at its own expense, such work is authorized when property rights are being taken for which utility must be paid compensation.
[2] Only when utility is required to move from publicly-owned right-of-way at its own expense; there is generally liaison when property rights are being taken for which utility must be paid compensation.
[3] In one county, only when property rights are being taken for which utility must be paid compensation.
[4] In one county, there is generally liaison when utility is required to move from publicly-owned right-of-way at its own expense, there is always liaison when property rights are being taken for which utility must be paid compensation.
[5] Only when utility is required to move from publicly-owned right-of-way at its own expense.

TABLE 7.4.—Is Utility or Other Affected Agency Authorized to Proceed with Preliminary Engineering Work Prior to Formal Authorization?
(Municipal Highway Departments)

State	Yes	No	Is There Liaison During This Preliminary Period?				Total
			Always	Generally	Seldom	Never	
Ala.		1				1	1
Alaska		1				1	1
Calif.	15 [1]	5	8	6	1	5	20
Colo	4 [2]			3	1		4
Conn.	1			1			1
Fla.	5		2	3			5
Ga.	4		3	1			4
Hawaii		1				1	1
Idaho		1				1	1
Ill.	2	1	1	1		1	3
Iowa		2				2	2
Kans.	1			1			1
Ky.		1				1	1
La	1		1				1
Me.		1				1	1
Md.	2			2			2
Mich.	1	1		1		1	2
Minn.	2	1	1	1		1	3
Miss.	1		1				1
Mo.	1	2		1		2	3
Nev.	1	1		1		1	2
N. J	1		1				1
N. Mex.	1		1				1
N. Y	3 [3]		3				3
N. C	5		2	3			5
Ore.	1			1			1
Pa.	2		1	1			2
S. C.	1			1			1
S. Dak.	1				1		1
Tenn.	2		1	1			2
Tex.		1				1	1
Va	2	1		2		1	3
Wash.	1			1			1
W. Va.	1 [4]		1				1
Wis	3		1	2			3
Wyo.	1		1				1
Total	66	21	29	34	3	21	87
	75.9%	*24.1%*	*33.3%*	*39 2%*	*3.4%*	*24 1%*	*100.0%*
	100.0%						

[1] Pomona does not authorize preliminary engineer work, but it is permitted, in San Francisco, actual authorization is not extended as utility companies are required by law to remove or adjust facilities when contract is awarded, and are presumed to undertake preliminary engineering on their own initiative upon receipt of intent.
[2] In Aurora, preliminary engineering is not authorized, but is encouraged.
[3] New Rochelle "leaves work up to utility company," presumably, city does not forbid such work.
[4] Morgantown permits preliminary work if there is emergency.

TABLE 8.1.—Liaison Between Highway Department and Utility Agency During Preliminary Engineering Period
(State Highway Departments)

Yes	Communication for Planning Alignment, Plans, Related Relocation, and Regulations	As Necessary	Field Check	Other	Not Applicable [1]		
Fla. Ill.[4] Kans [5] N. H.[5] Tex [5] Utah [4] Va [4]	Calif.[2] Hawaii Idaho Md.[2] Mass [2] Mich. Nebr N. J [7] N. Dak. D. C.	Me. Mo. N Mex N C Ore Pa. P. Rico [6]	R I. S Dak. Vt. Wis.	Del.[3]	Ala. Alaska Ariz. Ark. Colo. Conn. Ga Ind.	Ky. La. Minn. Miss. Mont. Nev N. H. N Y	Ohio Okla. S. C Tenn. Wash. W Va Wyo.
7	10	7	4	1		23	
13.5%	*19 2%*	*13.5%*	*7 7%*	*1.9%*		*44 2%*	

[1] Utilities not authorized to proceed prior to authorization of highway project.
[2] Continuous liaison
[3] Utility is furnished information as to priority.
[4] Contact with Liaison Engineer.
[5] Personal contact.
[6] Reimbursable relocations.
[7] Continuous liaison on freeway projects, exchange of engineering information on non-freeway projects.

TABLE 9.1.—Are Conferences Held by Representatives of State Highway Department and Utilities When Relocations Are Necessary?

(State Highway Departments)

Yes								Sometimes
Ala.	Fla.	Kans	Minn.	N. H.	Ohio	S. Dak.	Wash.	Colo.[1]
Alaska	Ga	Ky.	Miss.	N J	Okla.	Tenn	W. Va.	
Ariz.	Hawaii	La.	Mo.	N. Mex.	Ore.	Tex.	Wis.	
Ark	Idaho	Me.	Mont.	N Y.	Pa	Utah	Wyo.	
Calif.	Ill.	Md.	Nebr.	N. C.	R. I.	Vt.	D. C.	
Conn.	Ind	Mass	Nev.	N. Dak.	S. C.	Va.	P Rico	
Del.	Iowa	Mich.						
			51					1
			98 1%					*1 9%*

[1] If problem indicates a need.

TABLE 9.2.—Are Conferences Held by Representatives of State Highway Department and Utilities When Relocations Are Necessary?

(Utilities)

State	Always	Generally	Seldom	Never	No Answer	Total
Ala.	9	13	6	—	—	28
Alaska	—	3	—	—	—	3
Ariz.	3	4	4	1	—	12
Ark.	4	10	5	2	—	21
Calif.	54	25	—	1	—	80
Colo	11	15	8	2	—	36
Conn.	8	18	4	—	—	30
Del.	3	3	—	—	—	6
Fla	9	23	8	2	1	43
Ga	17	20	4	—	—	41
Hawaii	4	5	1	1	—	11
Idaho	6	7	2	1	—	16
Ill.	26	46	17	9	1	99
Ind.	7	33	9	8	—	57
Iowa	11	27	15	5	—	58
Kans	12	22	13	2	—	49
Ky.	29	32	6	2	—	69
La	10	22	6	1	—	39
Me.	14	36	9	6	—	65
Md	3	13	3	—	—	19
Mass	8	47	5	3	1	64
Mich	15	32	1	2	—	50
Minn.	19	54	14	9	—	96
Miss.	8	14	3	2	—	27
Mo	28	22	17	6	1	74
Mont	21	17	1	1	1	41
Nebr	10	14	11	3	—	38
Nev	3	2	1	1	—	7
N. H.	7	6	8	1	—	22
N. J	8	14	3	—	—	25
N. Mex	3	10	6	3	—	22
N Y.	14	17	3	2	—	36
N C	14	20	3	1	—	38
N Dak.	6	19	7	6	—	38
Ohio	20	38	3	—	—	61
Okla.	17	30	13	1	—	61
Ore	8	6	3	—	—	17
Pa.	17	36	3	1	—	57
R I	2	4	3	1	—	10
S. C	8	16	3	2	—	29
S. Dak.	7	24	8	4	—	43
Tenn.	7	14	7	—	—	28
Tex	37	69	21	14	2	143
Utah	3	4	3	2	2	14
Vt.	5	4	3	3	—	15
Va	14	8	—	—	—	22
Wash.	11	9	6	2	—	28
W Va.	2	11	1	—	1	15
Wis	20	29	4	2	—	55
Wyo.	8	12	4	1	—	25
D. C	2	1	—	—	—	3
P. Rico	—	1	—	—	—	1
Total	592	981	288	116	10	1987
	29.7%	*49 4%*	*14.5%*	*5.9%*	*0.5%*	*100.0%*

TABLE 9.3.—Are Conferences Held with Affected Utilities or Other Affected Agencies?

(County Highway Departments)

State	Yes	Sometimes	Never	No Answer	Total
Ala	8	—	3	—	11
Ariz.	2	—	—	—	2
Ark	2	—	2	—	4
Calif.	25	—	5	—	30
Colo	6	—	1	—	7
Fla.	5	—	3	—	8
Ga.	12	—	3	—	15
Idaho	1	—	2	—	3
Ill.	17	—	7	—	24
Ind.	10	—	2	—	12
Iowa	23[1]	2	16	1	42
Kans.	20	—	14	—	34
Ky.	3	2	1	—	6
La.	2	—	2	—	4
Me.	1	—	—	—	1
Md	6	—	2	—	8
Mich.	15	2	4	—	21
Minn	27	—	11	—	38
Miss.	1	—	—	—	1
Mo	6[2]	—	4	—	10
Mont.	3	—	1	—	4
Nebr	5	1	—	—	6
N. J.	7	—	1	—	8
N. Mex.	—	—	1	—	1
N Y	12	—	2	—	14
N C.	3	—	—	—	3
N. Dak.	7	—	3	—	10
Ohio	10	—	5	—	15
Okla.	2	—	2	—	4
Ore.	7	—	4	—	11
Pa.	3	—	—	—	3
S C.	1	—	—	—	1
S Dak.	10	—	4	—	14
Tenn	5	—	1	—	6
Tex	18	1	3	—	22
Utah	2	—	—	1	3
Va.	5	—	—	—	5
Wash	10	1	9	—	20
W. Va.	1	—	—	—	1
Wis	12	—	1	—	13
Wyo	3	—	—	—	3
Total	318	9	119	2	448
	71 0%	*2.0%*	*26.6%*	*0 4%*	*100.0%*

[1] Conferences always held in one county when utility is required to move from publicly-owned right-of-way at its own expense, sometimes held when utility is required to move from such right-of-way partially or wholly at expense of local government.

[2] In one county, applies only when property rights are being taken for which utility must be paid compensation.

TABLE 9.4.—Are Conferences Held with Affected Utilities or Other Affected Agencies? (Municipal Highway Departments)

State	Yes	Sometimes	No	Total
Ala	1			1
Alaska			1	1
Calif.	18	2		20
Colo	2	1	1	4
Conn			1	1
Fla.	5			5
Ga	4			4
Hawaii	1			1
Idaho	1			1
Ill.	3			3
Iowa	2			2
Kans.	1			1
Ky.	1			1
La	1			1
Me.	1			1
Md.	1	1		2
Mich	2			2
Minn.	3			3
Miss	1			1
Mo	3			3
Nev.	2			2
N J	1			1
N Mex	1			1
N Y.	2		1	3
N. C.	4		1	5
Ore.	1			1
Pa	2			2
S C.			1	1
S Dak	1			1
Tenn.	2			2
Tex	1			1
Va	3			3
Wash.	1			1
W. Va	1			1
Wis	3			3
Wyo	1			1
Total	77	4	6	87
	88.5%	*4 6%*	*6.9%*	*100.0%*

TABLE 10.1.—At What Stages Are Conferences Held with Affected Agencies? (State Highway Departments)

Route Location	Preliminary Engineering, Design, Etc.	Final Plans	Award of Contract	Preliminary Engineering (or Design) and Final Plans	All Stages	When Necessary
Ariz.	Del. Okla. Iowa Pa. Md. S C. Mass. Wyo Nev Hawaii N. H. P. Rico Ohio	Idaho Mich Kans. Mont Ky N Dak. Me. S Dak.	N Mex	Fla. Miss. Ga. N J Ill. N Y. Ind. N. C Minn. Utah [1]	Ark Calif Conn. Tex.	Ala. Nebr. Va Alaska Ore. Wash. Colo. R. I W. Va. La. Tenn Wis. Mo. Vt. D. C.
1	13	8	1	10	4	15
1.9%	*25 0%*	*15.4%*	*1 9%*	*19.2%*	*7.7%*	*28.9%*

[1] At various stages.

TABLE 10.3.—At What Stages Are Conferences Held with Affected Utilities or Other Affected Agencies? (County Highway Departments)

State	Location	Preliminary Plans	Final Plans	Award of Contract	Final Plans, Award of Contract	Preliminary Plans, Final Plans	Location, Preliminary Plans, Final Plans	Preliminary Plans, Final Plans, Award of Contract	Location, Preliminary Plans, Final Plans, Award of Contract	Location, Preliminary Plans	Location, Final Plans	Preliminary Plans, Award of Contract	Not Applicable[1]	No Answer	Total
Ala		4	3			1							3		11
Ariz.										2					2
Ark			1										2	1	4
Calif	3[2]	7	2		1	3[3]	3	1	3				5	2	30
Colo	1	4											1	1	7
Fla.		1	2		1			1					3		8
Ga	4[4]	1	4	2			1						3		15
Idaho						1							2		3
Ill.		1	9		2			2	1			1	7	1	24
Ind.	2	5	2					1					2		12
Iowa	1	5	15	1	1							1	16	2	42
Kans	3	6[5]	4		2	2						1	14	2	34
Ky.	1	1	3										1		6
La.			2				1						2		4
Me.								1							1
Md	3	1	1										2		8
Mich	2	6	4		1	2		1		1			4		21
Minn.	2	5	9	7	2					1		1	11		38
Miss.					1										1
Mo	2	2[5]	1								1		4		10
Mont		2				1							1		4
Nebr		1	1			1			1	1	1				6
N. J	1	2	1			1	1	1					1		8
N. Mex.													1		1
N. Y.	2	4	3				1		1		1		2		14
N. C.		1	2												3
N Dak.	1	2	3						1				3		10
Ohio	1	5	2		1					1			5		15
Okla		1											2	1	4
Ore.		3	2					1		1			4		11
Pa		2							1						3
S C.											1				1
S Dak	1	3	3	2						1			4		14
Tenn.		1	4										1		6
Tex.		7	3	1		4				1	1	1	3	1	22
Utah	1		1											1	3
Va.		2				1		1						1	5
Wash.		4	5			1					1		9		20
W Va.	1														1
Wis	1	7	1			1				1		1	1		13
Wyo.	2		1												3
Total	35	96	94	13	12	19	7	10	8	10	6	6	119	13	448
	7 8%	*21 5%*	*21.0%*	*2.9%*	*2.7%*	*4.2%*	*1 6%*	*2.2%*	*1.8%*	*2.2%*	*1.3%*	*1.3%*	*26.6%*	*2.9%*	*100 0%*

[1] No conferences are held.
[2] In one county, conferences also are held at preliminary plans and award of contract stages.
[3] In one county, conferences are held at preliminary plans and final stages when utility is required to move from publicly-owned right-of-way at its own expense; when required to move from such right-of-way partially or wholly at expense of local government, conferences are held at preliminary plans, final plans, and award of contract stages.
[4] Conferences are held, in addition to location stage, in one county when contract is awarded, and in one county at final plans and award of contract stages.
[5] In one county, applies only when property rights are being taken for which utility must be paid compensation

TABLE 102.—At What Stages Are Conferences Between State Highway Department and Utilities Held?
(Utilities)

State	Route Location	Preliminary Plans	Final Plans	Award of Contract	Final Plans, Award of Contract	Preliminary Plans, Final Plans	Location, Preliminary Plans, Final Plan	Preliminary Plans, Final Plans, Award of Contract	Location, Preliminary Plans, Award of Contract	All Four	Route Location, Preliminary Plans	Route Location, Final Plans	Preliminary Plans, Award of Contract	Route Location, Award of Contract	Not Applicable [1]	No Answer	Total
Ala.	1	9	12	—	1	2	—	—	—	2	—	—	—	—	—	1	28
Alaska	—	1	2	—	—	—	—	—	—	—	—	—	—	—	—	—	3
Ariz	—	8	3	—	—	—	—	—	—	—	—	—	—	—	1	—	12
Ark.	—	5	10	1	—	1	—	1	—	—	1	—	—	—	2	—	21
Calif	10	38	8	1	—	3	7	2	—	5	2	—	2	—	1	1	80
Colo.	4	12	13	—	1	2	—	—	—	—	2	—	—	—	2	—	36
Conn.	1	16	3	1	1	1	1	1	—	—	—	—	3	1	—	1	30
Del.	—	2	1	—	1	—	—	1	—	—	—	—	—	1	—	—	6
Fla.	—	16	12	7	1	1	—	—	—	—	2	—	—	—	2	2	43
Ga.	2	16	14	4	1	1	—	—	—	1	—	—	1	—	—	1	41
Hawaii	—	2	3	—	—	—	3	1	—	—	—	—	—	—	1	1	11
Idaho	1	7	6	—	—	—	—	—	—	—	—	—	—	—	1	1	16
Ill.	5	40	19	9	—	6	2	1	1	1	2	—	1	—	9	3	99
Ind	2	15	13	6	1	3	1	2	—	1	—	—	1	—	8	4	57
Iowa	3	17	13	8	1	3	2	—	—	—	2	—	—	—	5	4	58
Kans.	3	12	21	4	—	2	2	—	—	—	2	—	—	—	2	1	49
Ky.	2	19	27	10	3	4	1	—	—	—	1	—	—	—	2	—	69
La.	—	15	18	2	—	3	—	—	—	—	—	—	—	—	1	—	39
Me.	5	28	8	6	1	4	3	2	—	1	—	—	—	—	6	1	65
Md.	—	8	5	2	1	2	—	1	—	—	—	—	—	—	—	—	19
Mass.	5	31	6	5	—	10	—	1	—	—	1	—	—	—	3	2	64
Mich.	2	18	7	2	—	6	5	3	—	2	2	—	—	1	2	—	50
Minn.	5	30	35	6	—	3	3	—	—	—	3	1	—	—	9	1	96
Miss.	—	12	10	—	—	2	—	—	—	1	—	—	—	—	2	—	27
Mo.	1	27	27	2	—	3	2	—	—	—	1	1	1	1	6	2	74
Mont.	2	12	14	2	—	3	3	1	—	—	1	1	—	—	1	1	41
Nebr.	1	12	16	1	2	—	—	—	—	—	2	—	—	—	3	1	38
Nev.	1	2	2	—	—	—	1	—	—	—	—	—	—	—	1	—	7
N. H.	1	9	7	1	—	—	—	—	—	1	—	1	—	—	1	1	22
N. J.	1	14	3	—	1	2	—	—	—	—	3	—	1	—	—	—	25
N. Mex.	—	7	8	1	—	1	—	—	—	—	—	—	1	—	3	1	22
N. Y.	—	16	1	4	2	3	3	1	—	1	—	1	1	—	2	1	36
N. C.	4	13	12	3	2	2	—	1	—	—	—	—	—	—	1	—	38
N Dak.	1	10	15	2	—	2	—	—	—	—	2	—	—	—	6	—	38
Ohio	3	20	12	16	3	2	—	1	—	2	1	—	1	—	—	—	61
Okla.	2	14	30	4	—	2	2	—	—	1	3	1	—	—	1	1	61
Ore	—	7	5	1	—	1	2	—	—	—	—	—	—	—	—	1	17
Pa	2	14	9	16	1	3	1	1	—	—	2	—	4	1	1	2	57
R I.	—	5	3	—	—	—	—	—	—	—	1	—	—	—	1	—	10
S C.	—	7	9	11	—	—	—	—	—	—	—	—	—	—	2	—	29
S. Dak.	1	15	17	4	—	1	—	—	—	—	—	1	—	—	4	—	43
Tenn.	1	8	11	6	—	—	2	—	—	—	—	—	—	—	—	—	28
Tex.	19	35	53	5	—	9	1	1	—	3	1	—	1	—	14	1	143
Utah	—	2	6	1	—	—	—	—	—	—	—	—	—	—	2	3	14
Vt.	—	7	3	—	—	2	—	—	—	—	—	—	—	—	3	—	15
Va.	1	12	2	—	—	3	1	—	—	2	—	—	—	—	—	1	22
Wash	1	9	5	1	—	2	—	—	—	—	3	—	1	—	2	4	28
W. Va.	—	5	4	2	—	3	—	—	—	—	—	—	—	—	—	1	15
Wis.	6	30	7	1	—	3	3	—	—	1	1	—	1	—	2	—	55
Wyo	3	6	9	1	1	1	—	1	—	—	1	—	—	—	1	1	25
D C	1	1	—	—	—	—	—	—	—	1	—	—	—	—	—	—	3
P Rico	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1
Total	103	697	559	159	25	107	51	23	1	26	42	7	20	5	116	46	1987
	5.2%	*35.1%*	*28.1%*	*8.0%*	*1.3%*	*5.4%*	*2.6%*	*1.1%*	—	*1.3%*	*2.1%*	*0.4%*	*1.0%*	*0.2%*	*5.9%*	*2.3%*	*100.0%*

[1] No conferences are held.

TABLE 10.4.—At What Stages Are Conferences with Affected Utilities or Other Agencies Held?

(Municipal Highway Departments)

State	Location	Preliminary Plans	Final Plans	Award of Contract	Location, Preliminary Plans, Final Plans, Award of Contract	Location, Preliminary Plans	Location, Final Plans	Location, Preliminary Plans, Final Plans	Location, Preliminary Plans, Award of Contract	Location, Final Plans, Award of Contract	Preliminary Plans, Final Plans	Preliminary Plans, Final Plans, Award of Contract	Final Plans, Award of Contract	Preliminary Plans, Award of Contract	Other	No Answer	No Conference
Ala.			1														
Alaska																	1
Calif.		7		1	1	2			1		3		1		4[1]		
Colo.		3													1[2]		
Conn																	1
Fla.		1		1							1		1		1[2]		
Ga	2		1	1													
Hawaii		1[3]															
Idaho										1							
Ill.	1											1	1				
Iowa								2									
Kans.											1						
Ky.																1	
La.															1[2]		
Me			1														
Md.			1	1													
Mich.		2															
Minn.		1										1		1			
Miss.					1												
Mo.		1	2														
Nev.							1	1									
N J.							1										
N. Mex.							1[4]										
N. Y											1		1				1
N C		2	1												1[5]		1
Ore.											1						
Pa.		1			1												
S. C																	1
S Dak.			1														
Tenn		2															
Tex.			1														
Va.		1		1[6]			1										
Wash		1															
W. Va.	1																
Wis.		1	1					1									
Wyo.			1														
Total	4	24	11	5	3	2	4	4	1	1	7	2	4	1	8	1	5
	4.6%	*27.6%*	*12.7%*	*5 8%*	*3.5%*	*2.3%*	*4.6%*	*4 6%*	*1.1%*	*1.1%*	*8.0%*	*2.3%*	*4.6%*	*1 1%*	*9.2%*	*1.1%*	*5.8%*

[1] Berkeley, periodically; Oakland, monthly, Long Beach and San Francisco, as needed.
[2] When necessary.
[3] In preliminary stage only, if required
[4] In Albuquerque, when utility is required to move at its own expense, conference is held at location stage; when required to move wholly or partially at expense of local government, conferences are held at location and final plans stages
[5] In Fayetteville, city engineer holds weekly conference with utility representatives to discuss conflicts and progress.
[6] Norfolk also has conference during construction

TABLE 11.1.—Are Representatives of Municipalities Affected Included in Conferences Between Utilities and State Highway Department?
(State Highway Departments)

Yes			Sometimes	No	Not Applicable	No Answer
Alaska	Md.	N. Dak.	Calif [1]	La	D C [2]	Ala.
Ariz.	Mass.	Ohio	Idaho [3]	Nebr.		Colo.
Ark	Mich.	Pa.	Ill. [1]			
Conn.	Minn.	R I.	Me [3]			
Del.	Miss.	S. Dak.	N. H. [3]			
Fla.	Mo.	Tenn	Okla. [1]			
Ga.	Mont.	Utah	Ore. [1]			
Hawaii	Nev	Vt.	S. C [1]			
Ind.	N. J	W Va.	Tex [1]			
Iowa	N. Mex.	Wis	Va [4]			
Kans	N Y	Wyo.	Wash. [3]			
Ky.	N. C.	P. Rico				
	36		11	2	1	2
	69.2%		*21.1%*	*3 9%*	*1 9%*	*3 9%*

[1] Under certain circumstances.
[2] District of Columbia is a municipality.
[3] Only if municipality is owner of utility affected
[4] When municipality's facilities are affected or when municipality is bearing part of cost.

TABLE 11.2.—Are Representatives of Municipalities Affected Included in Conferences Between Utilities and State Highway Department?
(Utilities)

State	Yes	Generally	Seldom	Never	Not Applicable[1]	No Answer	Total
Ala.	8	—	—	19	—	1	28
Alaska	2	—	—	1	—	—	3
Ariz.	5	—	—	5	1	1	12
Ark	7	—	—	12	2	—	21
Calif.	58	—	1	16	1	4	80
Colo.	10	—	—	23	2	1	36
Conn.	23	—	—	6	—	1	30
Del	5	—	—	1	—	—	6
Fla	23	—	1	12	2	5	43
Ga.	19	1	—	15	—	6	41
Hawaii	3	—	—	7	1	—	11
Idaho	5	—	—	10	1	—	16
Ill	33	—	1	50	9	6	99
Ind.	19	—	1	22	8	7	57
Iowa	23	1	1	23	5	5	58
Kans.	11	—	1	33	2	2	49
Ky.	41	1	1	21	2	3	69
La.	14	—	—	22	1	2	39
Me.	19	—	1	36	6	3	65
Md	11	—	—	7	—	1	19
Mass.	26	—	—	33	3	2	64
Mich.	30	—	1	14	2	3	50
Minn.	33	—	—	42	9	12	96
Miss.	9	—	—	15	2	1	27
Mo	18	—	—	44	6	6	74
Mont.	11	—	1	18	1	10	41
Nebr.	8	—	—	24	3	3	38
Nev	2	—	—	4	1	—	7
N H.	7	1	—	11	1	2	22
N. J	11	—	—	13	—	1	25
N Mex.	10	—	—	9	3	—	22
N. Y.	16	—	—	15	2	3	36
N. C	16	—	—	18	1	3	38
N. Dak.	8	—	—	23	6	1	38
Ohio	47	—	—	9	—	5	61
Okla	12	—	3	41	1	4	61
Ore.	6	—	—	7	—	4	17
Pa	39	—	—	16	1	1	57
R. I	3	—	—	6	1	—	10
S C.	6	1	1	17	2	2	29
S Dak.	7	—	—	30	4	2	43
Tenn.	7	—	—	20	—	1	28
Tex.	47	1	2	69	14	10	143
Utah	3	—	—	7	2	2	14
Vt.	6	—	—	4	3	2	15
Va.	14	—	1	5	—	2	22
Wash.	8	—	—	15	2	3	28
W. Va.	10	—	—	3	—	2	15
Wis.	33	—	2	17	2	1	55
Wyo.	8	—	—	14	1	2	25
D. C	3	—	—	—	—	—	3
P. Rico	—	—	—	1	—	—	1
Total	803	6	19	905	116	138	1987
	40.4%	*0.3%*	*1 0%*	*45 6%*	*5 8%*	*6.9%*	*100 0%*

[1] No conferences are held.

TABLE 11.3.—Is Your Street or Highway Department Invited to Participate in Conferences Between State or County or Municipal Highway Department and Utilities Concerning Projects in Your Area?

(County Highway Departments)

State	Yes	Sometimes	Never	No Answer	Total
Ala.	2		5	4	11
Ariz.	2				2
Ark.	1		2	1	4
Calif.	14	4	8	4	30
Colo.	5		1	1	7
Fla.	4		2	2	8
Ga	10	1	4		15
Idaho	3				3
Ill.	11	1	9	3	24
Ind.	9		2	1	12
Iowa	10	1[1]	18	13	42
Kans.	10[2]	3	14	7	34
Ky	4	1		1	6
La.	2		1	1	4
Me.	1				1
Md.	6		2		8
Mich.	15	1	3	2	21
Minn	13		17	8	38
Miss.	1				1
Mo.	6		1	3	10
Mont.	3		1		4
Nebr.	3	1	2		6
N. J.	6		2		8
N. Mex	1				1
N. Y.	5		8	1	14
N. C.	2			1	3
N. Dak.	1		8	1	10
Ohio	10	1	4		15
Okla.	2		1	1	4
Ore.	6		3	2	11
Pa.	2			1	3
S. C.			1		1
S Dak.	10[3]		2	2	14
Tenn	4		1	1	6
Tex.	16	1	1	4	22
Utah	2		1		3
Va.	4			1	5
Wash.	4	1	11	4	20
W. Va.	1				1
Wis.	12			1	13
Wyo.	2		1		3
Total	225	16	136	71	448
	50 2%	*3.6%*	*30.4%*	*15.8%*	*100.0%*

[1] Only when utility is required to move from publicly-owned right-of-way at its own expense.
[2] In one county, applies only when property rights are being taken for which utility must be paid compensation
[3] In one county, only when utility is required to move from publicly-owned right-of-way partially or wholly at expense of local government.

TABLE 11.4.—Is City Street or Highway Department Invited to Participate in Conferences Between State or County Highway Departments and Utilities Concerning Projects in Your Area?

(Municipal Highway Departments)

State	Yes	Occasionally	No	No Answer	Total
Ala			1		1
Alaska			1		1
Calif	11	2[1]	7		20
Colo.	3			1	4
Conn.				1	1
Fla.	4		1		5
Ga	3		1		4
Hawaii		1			1
Idaho	1				1
Ill	3				3
Iowa	2				2
Kans.		1			1
Ky	1				1
La.	1				1
Me.	1				1
Md			1	1	2
Mich	1		1		2
Minn.	3				3
Miss.	1				1
Mo.	2	1			3
Nev.			2		2
N J	1				1
N. Mex.	1[2]				1
N Y.			1	2	3
N. C.	3		1	1	5
Ore.			1		1
Pa	2				2
S. C.				1	1
S. Dak.			1		1
Tenn.	2				2
Tex.	1				1
Va	2		1		3
Wash.			1		1
W. Va.			1		1
Wis.	2			1	3
Wyo.			1		1
Total	51	5	23	8	87
	58 6%	*5.7%*	*26.5%*	*9.2%*	*100 0%*

[1] San Francisco street or highway department participates in conferences only if municipally-owned facilities are involved
[2] Albuquerque street or highway department participates only when utility is required to move at its own expense, in other cases, city engineer's office participates.

TABLE 12.1.—Are Joint Conferences Held When More Than One Utility Is Involved?

(State Highway Departments)

Yes		Under Particular Circumstances	When Necessary	Seldom	Never
Alaska	Mont.	Colo [1]	Ga.	Idaho	Ala
Ark.	N Y.	Ill.	Mo.	Nebr	Ariz.
Calif	Okla.	Iowa	N. J.	N. H.	Kans
Conn.	Pa	La	R I.	S. Dak.	Miss.
Del.	Tenn.	Me	S. C.		N. Dak
Fla.	Utah	Nev.			
Hawaii	Vt.	N. Mex			
Ind.	Va.	N. C.			
Ky.	Wis.	Ohio			
Md.	Wyo	Ore			
Mass	D C	Tex			
Mich.	P. Rico	Wash.			
Minn.		W. Va.			
25		13	5	4	5
43.1%		*25.0%*	*9 6%*	*7.7%*	*9.6%*

[1] When railroad is involved.

TABLE 12.2—Are Joint Conferences Held When More Than One Utility Company or Other Affected Agency Is Involved? (Utilities)

State	Yes	No	Generally	Seldom	Depends on Circumstances	No Answer	Total
Ala	8	17	—	1	—	2	28
Alaska	2	—	—	1	—	—	3
Ariz	6	6	—	—	—	—	12
Ark	9	12	—	—	—	—	21
Calif.	52	19	—	1	—	8	80
Colo.	10	24	—	—	—	2	36
Conn.	25	4	—	—	—	1	30
Del.	5	—	—	—	—	1	6
Fla.	20	18	—	1	—	4	43
Ga	24	12	—	1	—	4	41
Hawaii	7	2	—	—	—	2	11
Idaho	4	11	—	—	—	1	16
Ill	45	44	—	2	—	8	109
Ind.	27	25	—	—	—	5	57
Iowa	21	28	1	4	—	4	58
Kans.	18	29	—	—	1	1	49
Ky.	56	13	—	—	—	—	69
La	16	19	—	2	—	2	39
Me.	41	21	—	—	—	3	65
Md	15	4	—	—	—	—	19
Mass.	35	19	6	2	—	2	64
Mich	40	7	—	—	—	3	50
Minn	28	57	—	1	—	10	96
Miss.	10	12	—	1	—	4	27
Mo	21	46	—	1	2	4	74
Mont.	13	24	—	1	—	3	41
Nebr	13	23	—	—	—	2	38
Nev	4	2	—	—	—	1	7
N H	15	7	—	—	—	—	22
N J	13	8	1	—	—	3	25
N Mex.	8	13	—	—	—	1	22
N Y	22	13	—	1	—	—	36
N. C	18	19	—	—	—	1	38
N Dak	7	30	—	—	—	1	38
Ohio	57	4	—	—	—	—	61
Okla	19	35	—	2	—	5	61
Ore.	7	9	—	—	—	1	17
Pa.	51	3	—	1	—	2	57
R. I	4	6	—	—	—	—	10
S C.	14	14	—	—	1	—	29
S. Dak.	9	31	—	—	—	3	43
Tenn.	12	15	—	1	—	—	28
Tex.	42	89	—	3	—	9	143
Utah	2	9	—	—	—	3	14
Vt.	9	5	—	—	—	1	15
Va	16	3	—	1	—	2	22
Wash.	4	23	—	—	—	1	28
W Va.	12	1	—	—	—	2	15
Wis	34	19	—	—	—	2	55
Wyo	9	14	—	—	—	2	25
D. C.	3	—	—	—	—	—	3
P Rico	1	—	—	—	—	—	1
Total	963	868	8	28	4	116	1987
	48 5%	*43 7%*	*0.4%*	*1 4%*	*0.2%*	*5 8%*	*100.0%*

TABLE 12.3.—Are Joint Conferences Held When More Than One Utility Company or Other Affected Agency Is Involved? (Publicly-Owned Utilities, by Type)

Type	Yes	No	Generally	Seldom	Depends on Circumstances	No Answer	Total
Power transmission	20	24	—	—	—	5	49
Telephone	29	43	—	—	—	7	79
Water	72	42	1	2	—	3	120
Gas	15	15	—	—	—	1	31
Oil	—	1	—	—	—	1	2
Petroleum products	4	—	—	—	—	—	4
Sewer	7	3	—	—	—	1	11
Drainage	1	2	—	—	—	1	4
Power transmission and water	7	5	—	—	1	—	13
Power transmission, water, gas	2	2	—	—	—	—	4
Power transmission, water, sewer (drainage, irrigation)	10	12	—	—	—	3	25
Power transmission and gas	1	—	—	—	—	—	1
Power, water and steam	1	—	—	—	—	—	1
Water, sewer (drainage)	75	37	—	1	—	15	128
Water and gas	2	1	—	—	—	—	3
Water, gas, sewer (drainage)	3	—	—	2	—	—	5
Sewer and drainage	37	10	—	—	—	12	59
Railroads	—	—	—	1	—	—	1
Gas and oil	1	—	—	—	—	2	3
Water, gas and oil	—	1	—	—	—	—	1
Electric cooperatives	167	300	—	3	2	40	512
Other combinations	4	1	—	1	—	1	7
Power, water, gas, and other combinations	1	3	—	—	—	—	4
Power and other combinations	—	3	—	—	—	—	3
Total	459	505	1	10	3	92	1070
	42 9%	*47.2%*	*0.1%*	*0 9%*	*0 3%*	*8 6%*	*100.0%*

TABLE 12.4.—Are Joint Conferences Held When More Than One Utility Company or Other Affected Agency Is Involved? (Privately-Owned Utilities, by Type)

Type	Yes	No	Generally	Seldom	No Answer	Total
Power transmission	72	43	—	3	3	121
Telephone	99	82	—	1	4	186
Telegraph	34	6	—	—	—	40
Water	47	19	6	—	—	72
Gas	70	55	—	1	7	133
Oil	77	77	—	4	5	163
Petroleum products	27	23	—	1	—	51
Sewer	—	1	—	—	1	2
Irrigation	—	—	—	—	1	1
Power transmission and steam	1	—	—	—	—	1
Power transmission and water	—	4	—	—	—	4
Power transmission, water, gas	5	3	—	—	—	8
Power transmission, water, sewer (drainage, irrigation)	—	1	—	—	—	1
Power transmission and gas	22	9	—	3	—	34
Power transmission, gas and steam	8	2	—	—	—	10
Power, water and steam	6	2	—	1	—	9
Water, sewer (drainage)	—	—	—	—	1	1
Water and gas	—	2	—	—	—	2
Sewer and drainage	1	2	—	—	—	3
Telephone and telegraph	14	13	—	3	2	32
Railroads	11	16	1	—	—	28
Gas and oil	9	3	—	—	—	12
Transportation	1	—	—	—	—	1
Water, gas and oil	—	—	—	1	—	1
Power, telephone, and other combinations	1	—	—	—	—	1
Total	505	363	7	18	24	917
	55 1%	*39 6%*	*0.8%*	*1 9%*	*2 6%*	*100 0%*

TABLE 12.5.—Are Joint Conferences Held When More Than One Utility or Other Affected Agency Is Involved? (County Highway Departments)

State	Yes	Sometimes	Never	No Answer	Total
Ala.	3	—	7	1	11
Ariz.	2	—	—	—	2
Ark.	1	—	2	1	4
Calif	22	1	5	2	30
Colo.	4	—	3	—	7
Fla.	2	—	6	—	8
Ga	8	—	5	2	15
Idaho	2	—	1	—	3
Ill.	8	—	15	1	24
Ind.	5	1	6	—	12
Iowa	6	1	31	4	42
Kans.	9[1]	—	24	1	34
Ky.	5	—	—	1	6
La.	2	—	—	2	4
Me.	1	—	—	—	1
Md.	5	—	3	—	8
Mich	16	—	5	—	21
Minn	14	2	22	—	38
Miss.	—	—	1	—	1
Mo.	4[1]	—	5	1	10
Mont	2	—	2	—	4
Nebr	4	—	2	—	6
N J	7	—	1	—	8
N Mex.	—	—	1	—	1
N. Y.	8	—	6	—	14
N. C.	3	—	—	—	3
N. Dak	1	—	8	1	10
Ohio	9	1	5	—	15
Okla.	2	—	2	—	4
Ore	4	—	5	2	11
Pa	2	—	1	—	3
S. C	—	—	1	—	1
S. Dak	5	—	8	1	14
Tenn	3	—	2	1	6
Tex.	12	—	9	1	22
Utah	2	—	1	—	3
Va.	5	—	—	—	5
Wash	3	1	15	1	20
W. Va.	—	—	1	—	1
Wis	10	1	2	—	13
Wyo.	1	—	2	—	3
Total	202	8	215	23	448
	45 1%	*1.8%*	*48 0%*	*5.1%*	*100 0%*

[1] In one county, only when property rights are being taken for which utility must be compensated.

TABLE 12.6.—Are Joint Conferences Held When More Than One Utility or Other Affected Agency Is Involved? (Municipal Highway Departments)

State	Yes	Sometimes	No	No Answer	Total
Ala.			1		1
Alaska	1				1
Calif.	19[1]		1		20
Colo.	2		2		4
Conn			1		1
Fla.	5				5
Ga	3		1		4
Hawaii	1				1
Idaho	1				1
Ill.	3				3
Iowa	2				2
Kans.			1		1
Ky.	1				1
La.	1				1
Me.	1				1
Md	1		1		2
Mich.	1		1		2
Minn	3				3
Miss.	1				1
Mo.	2		1		3
Nev.	2				2
N J.				1	1
N. Mex	1				1
N. Y		2	1		3
N. C.	3		2		5
Ore.			1		1
Pa.	2				2
S C			1		1
S. Dak.			1		1
Tenn.	1		1		2
Tex.	1				1
Va.	3				3
Wash.				1	1
W. Va.	1				1
Wis.	2		1		3
Wyo.			1		1
Total	64	2	19	2	87
	73 6%	*2.3%*	*21.8%*	*2.3%*	*100.0%*

[1] In Berkeley, joint conferences are held only when utility is required to move from publicly-owned right-of-way partially or wholly at expense of local government.

TABLE 13.1.—Do Smaller Utilities Pool Interests and Employ Representatives on a Cooperative Basis?
(State Highway Departments)

Yes	Sometimes	No					
Alaska	Tenn.	Ala	Ga	Me	Nev	Okla.	Vt
Mich.[1]	Wis [2]	Ariz.	Idaho	Md	N H.	Ore.	Va
		Ark	Ill	Mass	N J	Pa	Wash.
		Calif	Ind	Minn.	N Mex	R I.	W. Va
		Colo	Iowa	Miss	N Y.	S C.	Wyo.
		Conn.	Kans.	Mo.	N C.	S. Dak.	Hawaii
		Del	Ky.	Mont	N Dak	Tex	D C.
		Fla	La	Nebr.	Ohio	Utah	P. Rico
2	2			48			
4 3%	*4 3%*			*92.4%*			

[1] REA uses one consulting engineer as a rule
[2] Small REA's generally contract with one large REA to prepare plans, etc

TABLE 13.2.—Do Affected Utilities Ever Pool Interests and Employ Representatives on a Cooperative Basis?
(Utilities)

State	Regularly	Frequently	Occasionally	Never	No Answer	Total
Ala.	1	—	4	23	—	28
Alaska	—	—	1	2	—	3
Ariz.	1	—	1	10	—	12
Ark.	—	—	1	20	—	21
Calif.	—	3	6	67	4	80
Colo	—	1	2	31	2	36
Conn.	—	2	5	23	—	30
Del.	—	—	—	5	1	6
Fla.	—	1	4	5	5	43
Ga.	—	1	5	35	—	41
Hawaii	2	—	1	7	1	11
Idaho	1	—	2	13	—	16
Ill.	—	2	14	79	4	99
Ind.	—	4	10	41	2	57
Iowa	2	—	10	44	2	58
Kans.	1	—	9	39	—	49
Ky.	—	4	4	60	1	69
La.	—	—	3	36	—	39
Me	1	—	7	56	1	65
Md	—	—	1	17	1	19
Mass.	13	6	6	38	1	64
Mich.	—	2	8	37	3	50
Minn.	1	4	11	78	2	96
Miss	—	—	—	27	—	27
Mo.	1	1	5	62	5	74
Mont.	—	—	1	37	3	41
Nebr.	1	—	3	33	1	38
Nev.	1	1	1	4	—	7
N. H.	2	2	3	14	1	22
N. J.	—	—	7	17	1	25
N. Mex.	—	1	2	19	—	22
N Y	—	—	2	29	5	36
N C.	—	1	8	28	1	38
N. Dak.	—	1	3	34	—	38
Ohio	1	1	11	48	—	61
Okla	1	1	5	53	1	61
Ore.	—	1	2	13	1	17
Pa.	—	—	4	50	3	57
R. I.	—	2	1	7	—	10
S. C	—	—	6	23	—	29
S. Dak	—	1	3	38	1	43
Tenn	—	—	1	27	—	28
Tex.	3	2	14	122	2	143
Utah	—	—	3	9	2	14
Vt.	2	1	2	10	—	15
Va.	—	1	2	19	—	22
Wash.	—	—	2	24	2	28
W. Va	—	—	2	12	1	15
Wis	—	—	7	46	2	55
Wyo.	1	—	2	22	—	25
D C	—	—	—	3	—	3
P Rico	—	—	—	1	—	1
Total	36	47	217	1627	60	1987
	1.8%	*2 4%*	*10 9%*	*81.9%*	*3.0%*	*100 0%*

TABLE 13.3.—Do Smaller Utilities Pool Interests and Employ Representatives on a Cooperative Basis?
(County Highway Departments)

State	Regularly	Frequently	Occasionally	Never	No Answer	Total
Ala.	—	—	1	7	3	11
Ariz.	—	—	—	2	—	2
Ark.	—	—	—	4	—	4
Calif.	1	2	6	19	2	30
Colo.	—	—	3	3	1	7
Fla.	—	—	—	8	—	8
Ga.	—	2	1	12	—	15
Idaho	—	—	1	1	1	3
Ill	—	2	7[1]	13	2	24
Ind	—	2	2	6	2	12
Iowa	—	2	13	20	7	42
Kans.	2	2[1]	5	18	7	34
Ky.	—	—	2	3	1	6
La.	—	1	—	2	1	4
Me.	—	—	—	1	—	1
Md.	—	—	2	5	1	8
Mich	—	1	5	13	2	21
Minn	1	1	8	25	3	38
Miss.	—	—	—	1	—	1
Mo	3	—	2	2	3	10
Mont	—	1	—	3	—	4
Nebr	1	1	2	1	1	6
N J.	—	—	4	4	—	8
N Mex.	—	—	—	—	1	1
N. Y.	1	—	4	6	3	14
N. C.	—	—	1	2	—	3
N. Dak	—	1	—	8	1	10
Ohio	1	1	1	10	2	15
Okla	—	2	1	1	—	4
Ore.	—	—	4	7	—	11
Pa.	—	—	1	—	2	3
S. C.	—	—	—	1	—	1
S Dak.	1	1	3	7	2	14
Tenn.	1	—	—	3	2	6
Tex	—	1	5	14	2	22
Utah	1	—	2	—	—	3
Va.	—	—	—	3	2	5
Wash	—	3	4	10	3	20
W Va	—	—	—	1	—	1
Wis.	2	—	1	5	5	13
Wyo.	—	—	—	3	—	3
Total	15	26	91	254	62	448
	3 3%	*5 8%*	*20 4%*	*56.7%*	*13.8%*	*100 0%*

[1] In one county, applies only when property rights are being taken for which utility must be paid compensation.

TABLE 13.4.—Do Smaller Utilities Pool Interests and Employ Representatives on a Cooperative Basis?
(Municipal Highway Departments)

State	Regularly	Frequently	Occasionally	Never	No Answer	Total
Ala.				1		1
Alaska					1	1
Calif.		1	1	17	1	20
Colo.				4		4
Conn.				1		1
Fla				5		5
Ga			1	2	1	4
Hawaii				1		1
Idaho				1		1
Ill		1	1	1		3
Iowa				2		2
Kans.				1		1
Ky.				1		1
La				1		1
Me					1	1
Md.				2		2
Mich				2		2
Minn				3		3
Miss.	1					1
Mo				2	1	3
Nev.				2		2
N. J.					1	1
N Mex				1		1
N. Y.				3		3
N. C				5		5
Ore					1	1
Pa	1			1		2
S C				1		1
S Dak.				1		1
Tenn.		1			1	2
Tex					1	1
Va.				2	1	3
Wash.					1	1
W. Va.				1		1
Wis.		1		1	1	3
Wyo					1	1
Total	2	4	3	65	13	87
	2 3%	*4.6%*	*3 5%*	*74 7%*	*14.9%*	*100.0%*

TABLE 14.1.—Are Utilities Specially Advised of Public Hearings on Projects Which May Affect Their Facilities?
(State Highway Departments)

Yes				No				No Answer
Do Utilities Attend Hearings?				Do Utilities Attend Hearings?				
Yes	Sometimes		No / No Answer	Yes	No	Sometimes	No Answer	
Calif. Md. Mass. Utah D C. P. Rico	Del. Ga [1] Idaho Me Nev.	N. H N Dak. S. Dak. Vt Va.		Conn. N. Y. Wash.[3]	Fla. Nebr R I.[3] Wis.[2]	Alaska Ariz [2] Ark.[3] Ill.[3] Ind.[3] Iowa La.[3] Mich.[3] Mo.	Mont. N. J [3] N C. Ohio S. C. Tenn [3] Tex. W. Va.[3] Wyo.	Hawaii Kans. Ky. Minn. Miss. N. Mex Okla. Ore. Pa	Ala. Colo.
6	10		0 / 0	3	4	18		9	2
11 5%	*19 2%*			*5.8%*	*7.7%*	*34.6%*		*17.3%*	
30.7%				*65.4%*					*3 9%*

[1] Utilities are sometimes advised.
[2] Large utilities have representatives at all public hearings.
[3] Utilities are aware of hearings through public notice.

TABLE 14.2.—Are Utilities Specially Advised of Public Hearings on Highway Projects Which May Affect Their Facilities?
(Utilities)

State	Utilities Advised of Hearings					Utility Representatives Attend Hearings			
	Yes	No	Varies	No Answer	Total	Yes	No	Yes, If Aware of Hearings	No Answer
Ala.	7	21	—	—	28	9	16	—	3
Alaska	1	2	—	—	3	2	1	—	—
Ariz.	4	8	—	—	12	4	5	—	3
Ark.	6	13	1	1	21	8	8	—	5
Calif.	70	8	2	—	80	67	12	—	1
Colo.	5	28	—	3	36	6	28	—	1
Conn.	11	17	2	—	30	15	12	2	7
Del.	4	2	—	—	6	5	1	—	—
Fla.	12	30	—	1	43	13	27	1	2
Ga.	10	29	—	2	41	13	20	1	7
Hawaii	5	5	—	1	11	4	6	—	1
Idaho	10	6	—	—	16	6	8	—	2
Ill.	31	65	2	1	99	33	46	3	17
Ind.	26	30	1	—	57	30	20	—	7
Iowa	19	37	2	—	58	20	27	2	9
Kans.	14	32	1	2	49	16	26	1	6
Ky.	36	31	—	2	69	42	21	—	6
La.	11	26	1	1	39	13	17	1	8
Me.	50	15	—	—	65	45	16	—	4
Md.	13	6	—	—	19	12	5	—	2
Mass.	37	27	—	—	64	44	17	—	3
Mich.	26	22	1	1	50	29	16	—	5
Minn.	36	58	1	1	96	31	47	1	17
Miss.	8	18	1	—	27	10	14	1	2
Mo.	19	52	—	3	74	17	38	2	17
Mont.	12	27	1	1	41	10	18	3	10
Nebr.	8	28	—	2	38	8	18	—	12
Nev.	4	3	—	—	7	2	5	—	—
N. H.	11	9	1	1	22	13	6	1	2
N. J.	14	11	—	—	25	13	11	—	1
N. Mex.	4	17	—	1	22	3	12	1	6
N. Y.	19	16	—	1	36	20	13	—	3
N. C.	12	25	—	1	38	13	19	—	6
N. Dak.	10	28	—	—	38	13	21	2	2
Ohio	30	29	2	—	61	36	22	1	2
Okla.	16	44	—	1	61	15	35	1	10
Ore.	6	10	—	1	17	6	7	—	4
Pa.	34	23	—	—	57	35	19	—	3
R. I.	5	4	1	—	10	6	1	1	2
S. C.	5	24	—	—	29	5	21	—	3
S. Dak.	8	34	1	—	43	8	24	1	10
Tenn.	6	22	—	—	28	6	19	1	2
Tex.	44	97	2	—	143	47	73	3	20
Utah	2	10	—	2	14	1	8	—	5
Vt.	13	2	—	—	15	7	7	—	1
Va.	15	7	—	—	22	12	6	1	3
Wash.	11	17	—	—	28	8	15	1	4
W. Va.	11	4	—	—	15	11	4	—	—
Wis.	35	19	—	1	55	36	12	—	7
Wyo.	5	19	—	1	25	4	16	1	4
D. C.	3	—	—	—	3	3	—	—	—
P. Rico	1	—	—	—	1	1	—	—	—
Total	815	1117	23	32	1987	836	861	33	257
	41.0%	*56.2%*	*1.2%*	*1.6%*	*100.0%*	*42.1%*	*43.3%*	*1.7%*	*12.9%*

TABLE 14.3.—Are Utilities Specially Advised of Public Hearings or Final Review by Governing Bodies on Projects Which May Affect Their Facilities?

(County Highway Departments)

State	Utilities Advised of Meetings			Utility Representatives Attend Meetings						Total
	Yes	No	No Answer	Always	Generally	Sometimes	Never	Not Applicable	No Answer	
Ala.	3	7	1	—	—	1	1	7	2	11
Ariz.	2	—	—	1	1	—	—	—	—	2
Ark.	3	—	1	—	3	—	—	—	1	4
Calif	21	8	1	8	13	—	—	8	1	30
Colo.	6	1	—	1	3	1	1	1	—	7
Fla.	3	5	—	1	1	1	—	5	—	8
Ga.	11	4	—	3	5	3	—	4	—	15
Idaho	2	1	—	—	2	—	—	1	—	3
Ill.	8[1]	14	2	3	3[2]	2	—	14	2	24
Ind.	8	2	2	2	5	1	—	2	2	12
Iowa	13	24	5	—	8	4	—	24	6	42
Kans.	12[1]	17	5	2	8[2]	1	—	17	6	34
Ky.	5	1	—	3	2	—	—	1	—	6
La.	2	2	—	2	—	—	—	2	—	4
Me.	1	—	—	—	1	—	—	—	—	1
Md.	3	4	1	2	1	—	—	4	1	8
Mich.	12	7	2	3	9	—	—	7	2	21
Minn.	19	16	3	2[3]	12	5	—	16	3	38
Miss.	1	—	—	—	—	—	—	—	—	1
Mo.	3	6	1	—	2	—	1	6	1	10
Mont.	4	—	—	1	2	1	—	—	—	4
Nebr.	4	2	—	2	1	1	—	2	—	6
N. J.	5	2	1	—	5	—	—	2	1	8
N. Mex.	1	—	—	—	1	—	—	—	—	1
N. Y.	6	7	1	3	3	—	—	7	1	14
N. C.	2	1	—	—	1	1	—	1	—	3
N. Dak.	4	5	1	—	3	1	—	5	1	10
Ohio	9	6	—	3	6	—	—	6	—	15
Okla	3	1	—	1	1	1	—	1	—	4
Ore.	3	6	2	2	—	—	—	6	3	11
Pa.	2	1	—	1	—	1	—	1	—	3
S. C.	1	—	—	—	1	—	—	—	—	1
S. Dak.	6	7	1	1	2	3	—	7	1	14
Tenn.	3	—	3	1	2	—	—	—	3	6
Tex.	14	8	—	3	7	4	—	8	—	22
Utah	3	—	—	1	2	—	—	—	—	3
Va.	4	1	—	—	3	1	—	1	—	5
Wash.	10	8	2	8	—	2	—	8	2	20
W. Va.	1	—	—	—	1	—	—	—	—	1
Wis	10	3	—	2	5	1	—	3	2	13
Wyo	1	1	1	—	1	—	—	1	1	3
Total	284	178	36	62	127	36	3	178	42	448
	52.2%	*39.7%*	*8.1%*	*13.8%*	*28.3%*	*8.1%*	*0.7%*	*39.7%*	*9.4%*	*100.0%*

[1] In one county, utilities are advised of such hearings only when property rights are being taken for which utility must be paid compensation.

[2] In one county, applies only when property rights are being taken for which utility must be paid compensation.

[3] In one county, utility representatives always attend hearings when property rights are being taken for which utility must be paid compensation and generally do when utility is required to move from publicly-owned right-of-way at its own expense

TABLE 14.4.—Are Utilities Specially Advised of Public Hearings or Final Review by Governing Bodies on Projects Which May Affect Their Facilities?
(Municipal Highway Departments)

State	Utilities Advised of Meetings			Utility Representatives Attend Meetings					Total
	Yes	No	Not Answered	Always	Generally	Seldom	Never	Not Answered	
Ala.		1				1			1
Alaska		1						1	1
Calif.	14[1]	6		5	7[1]	6[2]		2	20
Colo	2	2			2			2	4
Conn.		1						1	1
Fla.	4	1		1	3	1			5
Ga.	4			1	3				4
Hawaii		1				1			1
Idaho		1				1			1
Ill.	1	2			1	2			3
Iowa	1	1			1			1	2
Kans.		1						1	1
Ky.		1						1	1
La.	1			1					1
Me.	1					1			1
Md.	2				1	1			2
Mich.	1	1			1		1		2
Minn.	1	2			2		1		3
Miss.	1					1			1
Mo.	1[3]	2				2	1		3
Nev.		2				2			2
N. J.	1				1				1
N. Mex	1[4]				1[4]				1
N. Y.		3				2		1	3
N. C.	1	4		1	1	1	1	1	5
Ore.		1				1			1
Pa.	1	1		1				1	2
S. C.	1			1					1
S. Dak.	1							1	1
Tenn.	1		1		1			1	2
Tex.			1					1	1
Va.	2[3]	1			2	1			3
Wash.			1					1	1
W. Va.	1						1		1
Wis.	2	1		1	1			1	3
Wyo.	1			1					1
Total	47	37	3	13	28	24	5	17	87
	54 0%	*42.6%*	*3.4%*	*15.0%*	*32.2%*	*27.6%*	*5.7%*	*19.5%*	*100 0%*

[1] In Berkeley, applicable only when utility is required to move from publicly-owned right-of-way partially or wholly at expense of local government.
[2] Only when necessary do representatives of Long Beach attend public hearings or similar meetings.
[3] In St. Joseph, Mo , and Newport News, Va , advised of public hearings through legal notices published in newspapers
[4] In Albuquerque, applies only when utility is required to move from publicly-owned right-of-way at its own expense.

TABLE 15.1.—Is Map Indicating Proposed Location of Highway Improvement Furnished Utility by State Highway Department?
(State Highway Departments)

State	Shown on Map or Plans											
	General Area	Route	Specific Location	Design and/or Construction data	Preliminary Plans	Final Plans	Cross-Sections	Profile	Old and/or New Right-of-Way	Access Control	Existing Utility Location	Suggested Utility Location
Ala.			x									
Alaska	x	x	x					x	x		x	
Ariz.	x	x										
Ark.	x	x	x			x						
Calif.	x	x	x		x	x						
Colo.[1]												
Conn		x		x		x						
Del.	x	x	x	x								
Fla.	x		x						x		x	
Ga.	x	x	x		x							
Hawaii	x	x	x					x				
Idaho	x	x	x								x	
Ill	x	x	x	x								
Ind.			x	x								
Iowa		x		x			x		x			
Kans.	x	x	x									
Ky.	x	x	x									
La.			x									
Me.	x	x	x		x							
Md.	x	x	x						x			
Mass.	x	x	x									
Mich.	x	x				x			x			
Minn.				x					x			
Miss.			x									
Mo.	x	x	x									x
Local	x	x	x								x	x
Mont.		x	x								x	x
Nebr.			x									
Nev.				x					x	x		x
N. H.	x		x		x		x	x				
N. J.	x	x	x									x
Non-freeway	x	x	x		x							
N. Mex.			x	x			x	x				
N. Y.	x	x	x		x							
N. C.			x									
N. Dak.	x	x	x					x	x			
Ohio	x	x	x						x			
Okla.	x	x	x[2]									
Ore.	x	x	x		x		x	x				
Pa.	x	x										
R. I.		x	x	x					x			
S. C.									x			
S. Dak.	x	x	x				x					
Tenn.[3]												
Tex.	x	x	x									
Utah			x	x							x	
Vt.	x	x	x			x						
Va.	x	x										
Wash.			x						x	x		
W. Va	x	x	x									
Wis.	x		x	x								
Wyo.	x	x	x									
D. C.		x	x		x	x					x	x
P. Rico			x									

[1] Maps or plans furnished if situation indicates need for clarification.
[2] Approximate location.
[3] Map or plan indicating proposed improvement submitted, additional information submitted on request.

TABLE 15.2.—Is Map Indicating Proposed Location of Highway Improvement Furnished Utility by State Highway Department?
(Utilities)

State	Yes	No	Varies	No Answer	Total
Ala.	26	2	—	—	28
Alaska	3	—	—	—	3
Ariz	10	2	—	—	12
Ark.	20	1	—	—	21
Calif	80	—	—	—	80
Colo.	36	—	—	—	36
Conn.	27	1	2	—	30
Del.	6	—	—	—	6
Fla.	35	4	2	2	43
Ga.	40	1	—	—	41
Hawaii	10	1	—	—	11
Idaho	15	—	1	—	16
Ill.	89	7	1	2	99
Ind.	49	7	—	1	57
Iowa	48	9	—	1	58
Kans.	46	3	—	—	49
Ky	62	5	1	1	69
La	36	2	1	—	39
Me.	50	15	—	—	65
Md.	18	1	—	—	19
Mass.	50	11	2	1	64
Mich.	45	5	—	—	50
Minn.	93	2	1	—	96
Miss.	24	2	—	1	27
Mo.	69	3	1	1	74
Mont.	41	—	—	—	41
Nebr.	36	1	—	1	38
Nev.	7	—	—	—	7
N. H.	20	1	1	—	22
N. J.	24	1	—	—	25
N. Mex	19	3	—	—	22
N. Y.	35	1	—	—	36
N. C	37	—	1	—	38
N. Dak.	37	1	—	—	38
Ohio	59	2	—	—	61
Okla	59	1	—	1	61
Ore.	17	—	—	—	17
Pa.	54	2	—	1	57
R. I.	7	2	1	—	10
S. C	14	14	1	—	29
S. Dak.	39	1	1	2	43
Tenn.	21	6	1	—	28
Tex.	128	15	—	—	143
Utah	14	—	—	—	14
Vt.	13	2	—	—	15
Va.	22	—	—	—	22
Wash	23	5	—	—	28
W. Va	13	2	—	—	15
Wis.	49	6	—	—	55
Wyo	23	2	—	—	25
D. C.	3	—	—	—	3
P. Rico	1	—	—	—	1
Total	1802	152	18	15	1987
	90.7%	*7.6%*	*0.9%*	*0.8%*	*100.0%*

TABLE 15.3.—Are Maps or Plans Indicating Proposed Improvement Furnished Utility or Other Affected Agency? (County Highway Departments)

State	Maps Furnished			Data Shown on Map												Total
	Yes	No	No Answer	General Area	Route	Specific Location	General and/or Proposed Plans	General Area, Route, Specific Location	General Area, Route, Specific Location, General and/or Proposed Plans	General Area, Route	Route, Specific Location	General Area, Specific Location	Other	Not Applicable	No Answer	
Ala.	11					9	1		1							11
Ariz.	2					1					1[1]					2
Ark.	3	1			1	1					1			1		4
Calif.	30			1	1	16[2]	1	4	3	1	2		1			30
Colo.	6	1		2	1	1				1		1		1		7
Fla.	7	1		1	2	1					2		1	1		8
Ga.	11	3	1	1	1	7					1	1		3	1	15
Idaho	3				1	2										3
Ill.	24				1	16[3]	2	1	1	1	1	1				24
Ind.	8	4		2	1	3	1						1	4		12
Iowa	40	2			17	17	1				3		2	2		42
Kans.	29[4]	4	1	2	3[4]	15[5]	1	1			4		2	4	2	34
Ky	6				1	4							1			6
La.	2	2			1						1			2		4
Me.	1					1										1
Md.	8			1	2	4						1				8
Mich.	19	2		1	2	8	1	1			4		2	2		21
Minn	32	6		3	7	14	2	1		2	1	1	1	6		38
Miss.	1					1										1
Mo.	9	1			3[6]	4					1			1	1	10
Mont.	4				1		1	1		1						4
Nebr.	5	1				2		1	1	1				1		6
N. J.	8					2	1	2			2				1	8
N. Mex.	1				1											1
N. Y.	13	1		1		8		2			2			1		14
N. C.	3					3										3
N. Dak.	8	2		1		6					1			2		10
Ohio	11	4		1	1	6		1		2				4		15
Okla.	3	1			1	1					1			1		4
Ore.	9	2				7		1						2	1	11
Pa.	3					2	1									3
S. C.	1					1										1
S. Dak.	11[7]	3		1	1[7]	7					1		1	3		14
Tenn	4	1	1			4								1	1	6
Tex.	21	1		2[8]	3	9	2	3			2			1		22
Utah	3					3										3
Va.	5					4	1									5
Wash.	20				1	16		2			1					20
W. Va.	1										1					1
Wis.	12	1		1	1	9					1			1		13
Wyo.	1	1	1			1								1	1	3
Total	399	45	4	20	55	216	16	21	6	9	34	5	12	45	8	448
	89.1%	*10.0%*	*0.9%*	*4.5%*	*12.3%*	*48.2%*	*3.7%*	*4.7%*	*1.3%*	*2.0%*	*7.6%*	*1.2%*	*2.7%*	*10.0%*	*1.8%*	*100.0%*

[1] In addition, one county shows anticipated or proposed schedules when utility is required to move from publicly-owned right-of-way at its own expense.
[2] In one county, when utility is required to move from publicly-owned right-of-way at its own expense, route is shown in addition to specific location.
[3] In one county, when utility is required to move from publicly-owned right-of-way partially or wholly at expense of local government, maps also show general area and route.
[4] In one county, applicable only when property rights are being taken for which utility must be compensated.
[5] In one county, when property rights are being taken for which utility must be compensated, maps also show general area and route.
[6] In one county, specific location also is shown when property rights are being taken for which utility must be paid compensation.
[7] In one county, applies only when utility is required to move from publicly-owned right-of-way partially or wholly at expense of local government.

TABLE 15.4.—Are Maps or Plans Indicating Proposed Improvement Furnished Utility or Other Affected Agency?
(Municipal Highway Departments)

State	Yes									No	Total
	What Is Shown on Map										
	General Area	Route	Specific Location	Route and Specific Location	General Area and Specific Location	General Area and Route	General Area, Route, Specific Location	Other	No Answer		
Ala.			1								1
Alaska								1[1]			1
Calif			9[2]	2	2		2[3]	4[4]		1[5]	20
Colo		1	1			1	1				4
Conn.			1								1
Fla.			2				2	1[6]			5
Ga.		1	2				1				4
Hawaii					1						1
Idaho			1								1
Ill.			2			1					3
Iowa			2								2
Kans.			1								1
Ky.										1	1
La			1								1
Me		1									1
Md.			2								2
Mich.			1	1							2
Minn.		1		1			1				3
Miss			1								1
Mo.			2					1[7]			3
Nev.			1						1		2
N. J.			1								1
N Mex							1[8]				1
N. Y.			3[9]								3
N. C			5								5
Ore.					1						1
Pa.			1				1[10]				2
S. C			1								1
S Dak.		1									1
Tenn.	1[11]		1								2
Tex.									1		1
Va.	1		2								3
Wash			1								1
W. Va.			1								1
Wis			2				1				3
Wyo.			1								1
Total	2	5	49	4	4	2	10	7	2	2	87
	2.3%	*5.8%*	*56.3%*	*4.6%*	*4.6%*	*2.3%*	*11.5%*	*8.0%*	*2.3%*	*2.3%*	*100.0%*

[1] Anchorage requires plan and profile drawings.
[2] Alhambra map also shows all improvements contemplated, San Francisco requires that nature of improvement be shown
[3] San Leando furnishes both preliminary and final construction plans
[4] Anaheim, standard improvement plans showing plan and profile, Long Beach, preliminary construction plans and details together with facilities of record for all utility and pipeline owners, Los Angeles and Oakland, complete construction plans
[5] Los Angeles, plans must be purchased
[6] Miami Beach, map shows detailed plans
[7] University City, maps show construction data and scaled location of known utilities.
[8] In Albuquerque, when utility is required to move from publicly-owned right-of-way wholly or partially at expense of local government, map also shows elevation and topographical details, when utility is required to move at its own expense, utility receives final construction drawings when job goes to bid
[9] Troy map also requires curb, pavement, and water line details, Fayetteville maps also show storm sewer, curb, and gutter grades.
[10] Maps for Philadelphia also show detailed plans.
[11] Kingsport maps also show location of road, drainage, sidewalks, and water lines.

TABLE 16.1.—Is Utility Requested to Return Map or Plans Indicating Location of Facilities and Proposed Relocation Plans? If So, at What Stage?
(State Highway Departments)

Yes							
Preliminary Stage	Design Stage	Final Plan Stage	Before or at Time Agreement Signed	Cost Estimating Stage	Prior to Solicitation of Bid	Other	No
Del.[1] Fla.[2] Idaho Me.[6] Md. Mass. Mich N. J.[9] Okla. Tex. W Va. Wyo.	Ariz. Conn Ga. Hawaii La Mo Nebr. Nev. N H. N. C. Ohio Pa D. C P. Rico	Miss. N Dak.	Alaska Ind. Iowa R. I. S. C. S Dak. Tenn Utah	Kans Mont.	Ill N. Mex. Wash	Calif[2] Colo[4] Ky[5] Ore.[7] Wis.[8]	Ala. Ark. Minn N. Y Vt. Va
12	14	2	8	2	3	5	6
23.1%	*27.0%*	*3 8%*	*15 4%*	*3.8%*	*5.8%*	*9.6%*	*11.5%*

[1] Existing location; proposed location at semi-final plan stage.
[2] As soon as possible after surveys are completed.
[3] Also at final plan stage.
[4] Some maps or plans may provide place for approval to be returned.
[5] After joint inspection.
[6] Preliminary construction plans, sometimes
[7] Prior to start of utility relocation.
[8] As soon as available.
[9] Freeway projects only.

TABLE 16.2.—Is Utility Requested to Return Maps or Plans to State Highway Department Indicating Location of Facilities and Proposed Relocation Plans?
(Utilities)

State	Yes	No	Sometimes	Not Applicable	No Answer	Total
Ala.	9	17	—	2	—	28
Alaska	2	1	—	—	—	3
Ariz.	6	4	—	2	—	12
Ark.	4	15	—	1	1	21
Calif.	62	16	—	—	2	80
Colo.	22	14	—	—	—	36
Conn.	13	15	1	1	—	30
Del.	5	1	—	—	—	6
Fla.	13	25	1	4	—	43
Ga.	28	11	—	1	1	41
Hawaii	9	1	—	1	—	11
Idaho	12	4	—	—	—	16
Ill.	40	51	1	7	—	99
Ind.	18	31	1	7	—	57
Iowa	15	31	2	9	1	58
Kans.	11	35	—	3	—	49
Ky.	35	29	—	5	—	69
La.	17	19	1	2	—	39
Me.	7	43	—	15	—	65
Md.	3	15	—	1	—	19
Mass.	10	42	1	11	—	64
Mich.	23	20	—	5	2	50
Minn.	26	66	2	2	—	96
Miss.	8	17	—	2	—	27
Mo.	31	36	3	3	1	74
Mont.	19	20	—	—	2	41
Nebr.	15	22	—	1	—	38
Nev.	5	2	—	—	—	7
N. H.	10	10	1	1	—	22
N. J.	12	11	1	1	—	25
N. Mex.	16	3	—	3	—	22
N. Y.	22	13	—	1	—	36
N. C.	5	31	—	—	2	38
N. Dak.	20	16	1	1	—	38
Ohio	32	23	2	2	2	61
Okla.	14	46	—	1	—	61
Ore.	8	9	—	—	—	17
Pa	33	20	1	2	1	57
R. I.	6	2	—	2	—	10
S. C.	9	6	—	14	—	29
S Dak.	11	29	1	1	1	43
Tenn.	8	14	6	—	—	28
Tex.	66	61	1	15	—	143
Utah	7	7	—	—	—	14
Vt.	3	10	—	2	—	15
Va.	10	12	—	—	—	22
Wash.	15	8	—	5	—	28
W. Va.	6	7	—	2	—	15
Wis.	20	26	3	6	—	55
Wyo	12	11	—	2	—	25
D. C.	2	1	—	—	—	3
P. Rico	1	—	—	—	—	1
Total	816	979	30	146	16	1987
	41.1%	*49.3%*	*1.5%*	*7.3%*	*0.8%*	*100.0%*

TABLE 16.3.—Is Utility Requested to Return Maps or Plans Indicating Location of Facilities and Proposed Relocation Plans?
(County Highway Departments)

State	Utility Requested to Return Maps or Plans					Cooperation Satisfactory			
	Yes	Sometimes	No	Not Applicable	No Answer	Yes	Never	Not Applicable[1]	No Answer
Ala.	3		8			3		8	
Ariz.	1		1			1		1	
Ark.	1		2	1		1		3	
Calif.	14	1	15			15		15	
Colo.	1		5	1		1		6	
Fla.	1		6	1		1		7	
Ga.	5		6	3	1	5		9	1
Idaho			3					3	
Ill.	6[2]		18			6[2]		18	
Ind.	2	1	5	4		3		9	
Iowa	11		29	2		11		31	
Kans.	8[3]		22	4		6[3]		26	2
Ky.	1	1	3		1	1		3	2
La.			2	2				4	
Me.			1					1	
Md.	2		6			2		6	
Mich.	6	1	12	2		7		14	
Minn.	5		27	6		5		33	
Miss.			1					1	
Mo.	3		6	1		3		7	
Mont.	2		2			2		2	
Nebr.	1		4	1		1		5	
N. J.	4		4			4		4	
N. Mex.			1					1	
N. Y.	5		8	1		5		9	
N. C.	1		2			1		2	
N. Dak.	1		7	2		1		9	
Ohio	2		9	4		2		13	
Okla	2		1	1		2		2	
Ore.	2		7	2		2		9	
Pa.		1	2			1		2	
S. C.	1					1			
S. Dak.	1		10	3			1	13	
Tenn.	2		1	1	2	2		2	2
Tex.	3		17	1	1	3		18	1
Utah	1		2			1		2	
Va.	2		3			2		3	
Wash.	1		19			1		19	
W. Va.			1					1	
Wis.	1		11	1		1		12	
Wyo.	1		1	1		1		2	
Total	103	5	290	45	5	104	1	335	8
	23.0%	*1.1%*	*64.8%*	*10.0%*	*1.1%*	*23.2%*	*0.2%*	*74.8%*	*1.8%*

[1] Utility not requested to return plans
[2] In Johnson County, applies only when utility is required to move from publicly-owned right-of-way at its own expense.
[3] In Rush and Seward Counties, applies only when property rights are being taken for which utility must be compensated.

TABLE 16.4.—Is Utility Requested to Return Map or Plans Indicating Location of Facilities and Proposed Relocation Plans?
(Municipal Highway Departments)

State	Cooperation Satisfactory			No	No Answer	Total
	Yes	Generally or Fair	No			
Ala.				1		1
Alaska	1					1
Calif.	11[1]			9[2]		20
Colo.	2			2		4
Conn.				1		1
Fla.	4			1		5
Ga.	2			2		4
Hawaii	1					1
Idaho				1		1
Ill.	1			2		3
Iowa	2					2
Kans.	1					1
Ky.					1[3]	1
La.	1					1
Me.	1					1
Md.	1	1				2
Mich.				2		2
Minn.		1		2		3
Miss				1		1
Mo.				3		3
Nev.				2		2
N. J.	1					1
N. Mex.	1					1
N Y.	1			2		3
N. C.	2			3		5
Ore.				1		1
Pa	1	1				2
S. C.				1		1
S Dak				1		1
Tenn.	1[4]			1		2
Tex				1		1
Va.	1	1		1		3
Wash				1		1
W Va.				1		1
Wisc.				3		3
Wyo.				1		1
Total	36	4	—	46	1	87
	41.4%	*4.6%*		*52.9%*	*1.1%*	*100.0%*

[1] Long Beach when necessary furnishes two sets of plans and requests that facilities be reviewed for accuracy, marked on the plans, and one set returned, however, no indication was made as to whether cooperation in this matter was satisfactory or unsatisfactory, San Leandro qualifies the "yes," as the utility does not guarantee information supplied by it.
[2] Los Angeles requires utility to purchase plans, thus return is not expected
[3] Ashland does not furnish utility with map or plans.
[4] Except for underground lines, Kingsport does not require utility to return map or plans

TABLE 17.1.—Is Cooperation Satisfactory in Matter of Returning Plans Indicating Location of Facilities?
(State Highway Departments)

Yes				No	Generally		Not Applicable	No Answer
Alaska	Ind.	Miss.	S. Dak.	Okla	Del.	N. J.	Ala.	Colo.
Ariz.	Iowa	Mont.	Tenn	Pa [1]	Idaho	N C.[2]	Ark	Ohio
Calif.	Kans.	Nebr [3]	Tex		Me.	Ore.	Minn.	
Conn.[3]	Ky.[3]	Nev.[3]	Wash.		Mo.[2]	Utah	N Y.	
Fla.	La.	N Mex	W Va.		N. H.[4]	Wis	Vt.	
Ga.	Md	N Dak.	Wyo				Va.	
Hawaii	Mass	R. I.	D C.					
Ill.	Mich.[3]	S. C.	P. Rico					
32				2	10		6	2
61 5%				*3.9%*	*19 2%*		*11.5%*	*3.9%*

[1] Procedure is new, evaluation not yet possible.
[2] Very poor with small utilities.
[3] Cooperation very satisfactory
[4] Improving

TABLE 18.1.—Is Field Check Made to Determine Errors, Omissions, or Necessary Changes to Utility Facilities, Installations Not Known to Exist, Etc.?
(State Highway Departments)

State	Field Check Made			Utility Representatives Accompany Highway Representatives		
	Yes	No	Sometimes	Yes	No	Sometimes
Ala.	x			x		
Alaska	x			x[1]		
Ariz.	x					x[2]
Ark.	x			x[3]		
Calif.	x					x[4]
Colo.			x[5]			x
Conn.	x					x
Del.	x				x	
Fla.	x					x[6]
Ga.	x			x		
Hawaii	x					x
Idaho	x			x		
Ill.	x					x[2]
Ind.	x					x[2]
Iowa			x[7]			x[6]
Kans.	x			x		
Ky.	x			x		
La.	x			x		
Me.	x					x
Md.	x			x		
Mass.	x			x		
Mich.	x					x
Minn.	x			x		
Miss.	x			x		
Mo.			x[2]			x
Mont.	x			x		
Nebr.			x			x
Nev.	x			x		
N. H						
N. J.	x[8]					
N. Mex.	x					
N Y.	x					
N C.	x					
N. Dak	x					
Ohio	x					
Okla.	x					
Ore.	x					
Pa.	x					
R. I.	x[9]					
S. C.						
S. Dak.	x					
Tenn.	x					
Tex.	x					
Utah						
Vt.	x					
Va.	x					
Wash.	x					
W. Va	x					
Wis.	x					
Wyo.	x					
D. C	x					
P. Rico	x					
Total	45	0	7	19	3	30
	86 5%	*0.0%*	*13.5%*	*36.5%*	*5.8%*	*57.7%*

State	Field Check Made			Utility Representatives Accompany Highway Representatives		
	Yes	No	Sometimes	Yes	No	Sometimes
N. H			x[5]			x[5]
N. J.	x[8]					x[2]
N. Mex.	x					x[6]
N Y.	x					x[4]
N C.	x					x[5]
N. Dak	x				x	
Ohio	x					x[5]
Okla.	x			x[3]		
Ore.	x					x[5]
Pa.	x				x	
R. I.	x[9]					x[5]
S. C.			x			x[5]
S. Dak.	x			x[10]		
Tenn.	x					x[6]
Tex.	x					x[5]
Utah			x			x
Vt.	x					x
Va.	x			x		
Wash.	x					x[1]
W. Va	x			x		
Wis.	x					x[4]
Wyo.	x			x		
D. C	x					x[6]
P. Rico	x					x[2]
Total	45	0	7	19	3	30
	86 5%	*0.0%*	*13.5%*	*36.5%*	*5.8%*	*57.7%*

[1] Utility agents, not alignment or plan-in-hand inspection
[2] On large or complex projects.
[3] Also BPR representative.
[4] Frequently
[5] When necessary or desirable.
[6] When requested.
[7] On Interstate.
[8] On freeway projects; otherwise only where facilities might affect road structurally.
[9] Superficial check
[10] Whenever possible.

TABLE 18.2.—Is Field Check Made to Determine Any Errors, Omissions, or Necessary Changes to Utility Facilities, Installations Not Known to Exist, Etc.?
(County Highway Departments)

State	Yes	Never	No Answer	Total
Ala.	11	—	—	11
Ariz.	1	—	1	2
Ark	4	—	—	4
Calif.	29	1	—	30
Colo.	4	2	1	7
Fla.	6	2	—	8
Ga.	13	2	—	15
Idaho	3	—	—	3
Ill.	20	4	—	24
Ind.	6	4	2	12
Iowa	23	18	1	42
Kans	22	7	5	34
Ky.	4	1	1	6
La.	2	1	1	4
Me	1	—	—	1
Md	8	—	—	8
Mich.	15	6	—	21
Minn.	30[1]	8	—	38
Miss	1	—	—	1
Mo.	8	2	—	10
Mont	4	—	—	4
Nebr	5	—	1	6
N. J	7	1	—	8
N. Mex	1	—	—	1
N. Y	11	2	1	14
N. C.	3	—	—	3
N Dak.	9	1	—	10
Ohio	11	3	1	15
Okla	3	1	—	4
Ore	9	1	1	11
Pa.	3	—	—	3
S. C.	1	—	—	1
S. Dak.	11[2]	3	—	14
Tenn	3	1	2	6
Tex.	20	2	—	22
Utah	3	—	—	3
Va.	5	—	—	5
Wash	18	2	—	20
W. Va.	1	—	—	1
Wis.	8	4	1	13
Wyo.	3	—	—	3
Total	350	79	19	448
	78 2%	*17.6%*	*4.2%*	*100 0%*

[1] In one county, only when property rights are being taken for which utility must be compensated.
[2] In one county, only when utility is required to move from publicly-owned right-of-way partially or wholly at expense of local government.

TABLE 18.3.—Is Field Check Made to Determine Any Errors, Omissions, or Necessary Changes to Utility Facilities, Installations Not Known to Exist, Etc.?
(Municipal Highway Departments)

State	Yes	Occasionally	No	Not Answered	Total
Ala	1				1
Alaska	1				1
Calif	18[1]	1	1		20
Colo.	3		1		4
Conn.	1				1
Fla	4		1		5
Ga	4				4
Hawaii			1		1
Idaho	1				1
Ill.	1		2		3
Iowa	2				2
Kans	1				1
Ky	1				1
La.	1				1
Me	1				1
Md	2				2
Mich.	1		1		2
Minn	3				3
Miss	1				1
Mo.	2		1		3
Nev			2		2
N. J	1				1
N. Mex.	1[2]				1
N. Y	3				3
N C	5				5
Ore	1				1
Pa	1			1	2
S C.	1				1
S Dak.				1	1
Tenn	2				2
Tex.	1				1
Va.	1		2		3
Wash	1				1
W Va	1				1
Wis.	2		1		3
Wyo.	1				1
Total	71	1	13	2	87
	81 6%	*1.1%*	*15 0%*	*2.3%*	*100.0%*

[1] In Berkeley, only when utility is required to move from publicly-owned right-of-way at its own expense
[2] In Albuquerque, always when utility is required to move from publicly-owned right-of-way partially or wholly at expense of local government, occasionally when utility is required to move at its own expense

TABLE 19.1.—Do Utility Representatives Accompany State Highway Department Representatives When Field Check Is Made to Determine Errors, Omissions, or Necessary Changes to Utility Facilities, Installations Not Known to Exist, Etc.?
(State Highway Departments)

Yes			No	Sometimes			
Ala.	Ky	Mont.	Del.	Ariz [1]	Iowa[2]	N. Y [3]	Tex [4]
Alaska[5]	La.	Nev.	N. Dak.	Calif [3]	Me.	N C.[4]	Utah
Ark.	Md.	Okla.	Pa.	Colo.	Mich.	Ohio[6]	Vt.
Ga.	Mass.	Va.		Conn.	Mo	Okla [4]	Wash
Idaho	Minn.	W. Va		Fla.[2]	Nebr	R. I.[4]	Wis.[1]
Kans.	Miss.	Wyo.		Hawaii	N H [4]	S. C.[4]	D C [2]
				Ill.[1]	N. J [1]	S Dak.[6]	P. Rico[1]
				Ind [1]	N. Mex	Tenn.[2]	
18			3	31			
34.6%			*5.8%*	*59.6%*			

[1] On large or complex projects.
[2] When requested.
[3] Frequently.
[4] When necessary or desirable.
[5] Utility agents; not alignment or plan-in-hand inspection.
[6] Whenever possible.

TABLE 19.2.—If Field Trip Is Made by Representatives of State Highway Department to Check Location of Affected Facilities, Are Representatives of Utilities Given Opportunity to Accompany Them?

(Utilities)

State	Yes	No	Some-times	No Field Trips	No Answer	Total	State	Yes	No	Some-times	No Field Trips	No Answer	Total
Ala	19	8	1	—	—	28	N. H.	11	10	1	—	—	22
Alaska	2	1	—	—	—	3	N. J.	19	6	—	—	—	25
Ariz	9	3	—	—	—	12	N. Mex	10	12	—	—	—	22
Ark	18	3	—	—	—	21	N Y	24	11	—	—	1	36
Calif.	57	17	1	—	5	80	N. C.	32	5	1	—	—	38
Colo	26	9	1	—	—	36	N. Dak	21	15	2	—	—	38
Conn.	22	6	2	—	—	30	Ohio	34	25	1	—	1	61
Del	6	—	—	—	—	6	Okla.	39	19	1	—	2	61
Fla	22	19	1	—	1	43	Ore	14	3	—	—	—	17
Ga.	35	4	2	—	—	41	Pa	36	20	1	—	—	57
Hawaii	8	3	—	—	—	11	R I.	4	5	1	—	—	10
Idaho	14	2	—	—	—	16	S C	25	3	1	—	—	29
Ill.	63	31	2	—	3	99	S. Dak	28	14	1	—	—	43
Ind.	31	22	2	—	2	57	Tenn.	19	6	2	—	1	28
Iowa	34	21	3	—	—	58	Tex	85	52	2	1	3	143
Kans.	32	15	1	—	1	49	Utah	5	7	—	—	2	14
Ky.	61	7	1	—	—	69	Vt.	11	3	—	—	1	15
La	28	10	1	—	—	39	Va	18	4	—	—	—	22
Me	51	13	—	—	1	65	Wash.	18	8	2	—	—	28
Md	16	3	—	-	—	19	W. Va	11	4	—	—	—	15
Mass.	40	22	—	—	2	64	Wis	42	12	—	—	1	55
Mich	37	12	1	—	—	50	Wyo.	18	6	1	—	—	25
Minn.	67	25	1	—	3	96	D. C.	2	1	—	—	—	3
Miss	16	10	1	—	—	27	P. Rico	—	1	—	—	—	1
Mo.	44	28	—	—	2	74							
Mont	38	2	—	—	1	41	Total	1345	568	38	1	35	1987
Nebr.	17	20	—	—	1	38		*67.7%*	*28.6%*	*1.9%*	—	*1.8%*	*100.0%*
Nev.	6	—	—	—	1	7							

TABLE 19.3.—If Field Trip Is Made by Representatives of State Highway Department to Check Location of Affected Facilities, Are Representatives of Utilities Given Opportunity to Accompany Them?

(Utilities)

Type	Yes	No	Some-times	No Field Trips	No Answer	Total
Power transmission	119	49	—	—	2	170
Telephone	165	92	2	—	6	265
Telegraph	21	19	—	—	—	40
Water	133	48	2	—	4	187
Gas	119	44	5	—	—	158
Oil	88	70	1	—	1	160
Petroleum products	25	22	6	1	—	54
Sewer	11	2	7	—	—	20
Drainage	2	1	—	—	1	4
Irrigation	—	—	—	—	1	1
Power transmission and steam	—	1	—	—	—	1
Power transmission and water	9	8	—	—	—	17
Power transmission, water, gas	10	2	—	—	—	12
Power transmission, water, sewer (drainage, irrigation)	18	8	—	—	—	26
Power transmission and gas	20	12	3	—	—	35
Power transmission, gas and steam	8	2	—	—	—	10
Power, water and steam	7	3	—	—	—	10
Water, sewer (drainage)	97	26	—	—	6	129
Water and gas	4	1	—	—	—	5
Water, gas, sewer (drainage)	3	2	—	—	—	5
Sewer and drainage	45	9	4	4	—	62
Telephone and telegraph	16	11	1	—	4	32
Railroads	26	3	—	—	—	29
Gas and oil	13	2	—	—	—	15
Transportation	1	—	—	—	—	1
Water, gas and oil	1	1	—	—	—	2
Electric cooperatives	373	126	7	—	6	512
Other combinations	5	2	—	—	—	7
Power, telephone and other combinations	1	—	—	—	—	1
Power, water, gas and other combinations	3	1	—	—	—	4
Power and other combinations	2	1	—	—	—	3
Total	1345	568	38	5	31	1987
	67.7%	*28.6%*	*1.9%*	*0.3%*	*1.5%*	*100.0%*

TABLE 19.4.—Does Utility Send Representatives on Field Trips Made by State Highway Department to Check Location of Facilities?

(Utilities)

State	Yes	No	Sometimes	Not Applicable[1]	No Answer	Total
Ala.	20	—	—	8	—	28
Alaska	2	—	—	1	—	3
Ariz.	9	—	—	3	—	12
Ark.	17	—	—	3	1	21
Calif.	56	1	1	17	5	80
Colo.	25	—	—	9	2	36
Conn.	24	—	—	6	—	30
Del	5	—	—	—	1	6
Fla.	23	—	—	19	1	43
Ga.	33	2	1	4	1	41
Hawaii	8	—	—	3	—	11
Idaho	14	—	—	2	—	16
Ill.	62	1	2	31	3	99
Ind.	31	1	1	22	2	57
Iowa	36	1	—	21	—	58
Kans	32	—	1	15	1	49
Ky.	61	1	—	7	—	69
La	27	1	1	10	—	39
Me.	50	1	—	13	1	65
Md.	16	—	—	3	—	19
Mass.	40	—	—	22	2	64
Mich.	37	1	—	12	—	50
Minn.	65	1	2	25	3	96
Miss.	16	—	1	10	—	27
Mo.	42	—	—	29	3	74
Mont.	37	—	1	2	1	41
Nebr.	16	1	—	20	1	38
Nev.	6	—	—	—	1	7
N H.	10	—	—	10	2	22
N. J.	18	1	—	6	—	25
N. Mex.	10	—	—	12	—	22
N. Y.	23	2	—	11	—	36
N. C.	31	1	—	5	1	38
N. Dak.	23	—	—	15	—	38
Ohio	34	1	—	25	1	61
Okla.	40	—	—	19	2	61
Ore	15	—	—	2	—	17
Pa	34	—	1	20	2	57
R. I.	5	—	—	5	—	10
S. C.	26	—	—	3	—	29
S. Dak.	29	—	—	14	—	43
Tenn.	20	—	—	6	2	28
Tex.	84	2	1	52	4	143
Utah	5	—	—	7	2	14
Vt.	11	—	—	3	1	15
Va.	18	—	—	4	—	22
Wash.	19	—	—	8	1	28
W. Va.	11	—	—	4	—	15
Wis.	42	—	—	12	1	55
Wyo	18	—	—	6	1	25
D. C.	2	—	—	1	—	3
P Rico	—	—	—	1	—	1
Total	1338	19	13	568	49	1987
	67.3%	*0.9%*	*0 7%*	*28.6%*	*2.5%*	*100.0%*

[1] Utilities not given opportunity to accompany highway department on field trips

TABLE 19.5.—Do Utility Representatives Accompany Street or Highway Department Representatives on the Different Field Trips Required?

(County Highway Departments)

State	Yes	Sometimes	Never	No Answer	Total
Ala	11	—	—	—	11
Ariz	2	—	—	—	2
Ark	3	—	1	—	4
Calif	21	3	6	—	30
Colo	6	—	1	—	7
Fla.	5	1	1	1	8
Ga	11	—	4	—	15
Idaho	3	—	—	—	3
Ill.	14	2	7	1	24
Ind	9	—	3	—	12
Iowa	16	6	18	2	42
Kans.	15[1]	1	14	4	34
Ky	4	1	—	1	6
La	2	—	1	1	4
Me.	1	—	—	—	1
Md	5	—	3	—	8
Mich.	20	—	1	—	21
Minn	25[2]	3	10	—	38
Miss.	1	—	—	—	1
Mo	6	—	4	—	10
Mont.	4	—	—	—	4
Nebr.	3	2	1	—	6
N J	8	—	—	—	8
N. Mex.	1	—	—	—	1
N. Y	11	—	2	1	14
N C.	3	—	—	—	3
N Dak.	6	2	2	—	10
Ohio	11	—	3	1	15
Okla.	2	1	1	—	4
Ore.	10	—	1	—	11
Pa	2	—	—	1	3
S C	1	—	—	—	1
S. Dak	8	—	4	2	14
Tenn	6	—	—	—	6
Tex.	13	1	7	1	22
Utah	2	1	—	—	3
Va.	4	1	—	—	5
Wash.	16	2	2	—	20
W. Va.	1	—	—	—	1
Wis	8	—	5	—	13
Wyo.	3	—	—	—	3
Total	303	27	102	16	448
	67.6%	*6.0%*	*22.8%*	*3.6%*	*100.0%*

[1] In one county applies only when property rights are being taken for which utility must be compensated

[2] In one county, utility representatives not required to accompany street and highway department officials on field trips except when property rights are being taken for which utility must be compensated.

TABLE 19.6.—Do Utility Representatives Accompany Street or Highway Department Representatives on the Different Field Trips Required?

(Municipal Highway Departments)

State	Yes	Occasionally or When Necessary	On Request	No	Not Answered	Total
Ala.	1					1
Alaska	1					1
Calif.	8[1]	3		9		20
Colo.	4					4
Conn.	1					1
Fla.	4			1		5
Ga.	4					4
Hawaii				1		1
Idaho	1					1
Ill.	1			2		3
Iowa	2					2
Kans.	1					1
Ky	1					1
La.	1					1
Me.				1		1
Md.	1			1		2
Mich.	2					2
Minn.	3					3
Miss	1					1
Mo.	3					3
Nev.	1	1				2
N. J.	1					1
N. Mex.	1[2]					1
N. Y			1	1	1	3
N. C.	4			1		5
Ore.		1				1
Pa.	1	1				2
S. C.				1		1
S. Dak.				1		1
Tenn	1	1				2
Tex.	1					1
Va.	1			2		3
Wash.	1					1
W. Va.	1					1
Wis.	3					3
Wyo.	1					1
Total	57	7	1	21	1	87
	65.6%	*8.0%*	*1.1%*	*24.2%*	*1.1%*	*100.0%*

[1] In Berkeley, utility representatives accompany city representatives only when utility is required to move from publicly-owned right-of-way at its own expense.
[2] In Albuquerque, utility representatives accompany city representatives only when utility is required to move from publicly-owned right-of-way partially or wholly at expense of local government.

TABLE 20.2.—Is Utility Notified by State Highway Department of Subsequent Change of Plans for Highway Improvement Contemplated?

(Utilities)

State	Yes	Generally	Sometimes	No	No Answer	Total
Ala.	19	—	1	8	—	28
Alaska	3	—	—	—	—	3
Ariz.	8	—	—	4	—	12
Ark.	16	—	—	4	1	21
Calif.	79	—	1	—	—	80
Colo	28	—	1	7	—	36
Conn.	23	—	3	3	1	30
Del.	5	—	—	1	—	6
Fla.	23	—	1	15	4	43
Ga	36	—	1	3	1	41
Hawaii	9	—	—	2	—	11
Idaho	14	1	—	1	—	16
Ill	74	—	—	23	2	99
Ind	38	—	1	17	1	57
Iowa	33	1	—	22	2	58
Kans	37	—	1	10	1	49
Ky	47	1	—	21	—	69
La.	28	1	2	7	1	39
Me.	40	1	1	22	1	65
Md.	14	—	1	3	1	19
Mass.	50	—	—	13	1	64
Mich.	43	—	—	6	1	50
Minn.	82	—	—	14	—	96
Miss.	18	—	1	7	1	27
Mo.	60	—	—	10	4	74
Mont	34	—	1	3	3	41
Nebr.	25	—	1	10	2	38
Nev.	6	—	—	1	—	7
N. H.	15	—	1	6	—	22
N. J.	24	—	—	—	1	25
N. Mex	17	—	—	5	—	22
N. Y.	31	1	1	3	—	36
N C.	33	—	—	5	—	38
N. Dak.	28	—	—	9	1	38
Ohio	44	2	1	12	2	61
Okla.	48	—	—	12	1	61
Ore	14	—	—	2	1	17
Pa.	42	—	4	11	—	57
R. I.	7	—	—	2	1	10
S. C.	21	—	—	7	1	29
S. Dak.	26	—	—	15	3	43
Tenn.	17	—	—	11	—	28
Tex.	106	1	5	26	5	143
Utah	10	1	—	—	3	14
Vt.	13	—	—	2	—	15
Va	21	—	—	1	—	22
Wash	20	1	—	6	1	28
W. Va.	11	—	1	2	1	15
Wis.	43	—	1	11	—	55
Wyo.	23	—	—	2	—	25
D. C.	3	—	—	—	—	3
P. Rico	1	—	—	—	—	1
Total	1510	11	31	387	48	1987
	76.1%	*0.6%*	*1.6%*	*19.5%*	*2.2%*	*100.0%*

TABLE 20.1.—What Are Arrangements for Notifying Utility of Change in Plans?

(State Highway Departments)

Letter	Telephone, Letter, and Personal Contact	Personal Contact	Plans Furnished Utility				Responsibility of Division Office, Utility Engineer, Etc	Other
Ala. Ariz. Ga. Ill. Minn. Mo Nev. R. I [6] Wis.	Conn. Hawaii Mass	Mich N. Y.	Alaska[1] Ark.[2] Del.[5] Fla Ind Iowa[2] Kans Ky.	La [2] Me. Md. Miss.[2] Mont.[2] Nebr. N. H.[2] N J [1]	N C. N. Dak. Ohio[2] Okla. Ore. S Dak. Tex.[4]	Utah Vt Va W. Va. Wyo. D. C. P. Rico	Colo. Idaho N Mex S C. Tenn	Calif [3] Pa [4] Wash [6]
9	3	2			30		5	3
17 3%	*5.8%*	*3 8%*			*57 7%*		*9 6%*	*5.8%*

[1] By personal contact.
[2] By letter.
[3] Constant liaison.
[4] No firm policy.
[5] Often by personal contact.
[6] Important changes only.

TABLE 20.3.—Is Utility Notified of Change in Plans?

(County Highway Departments)

State	Yes	Sometimes	No	No Answer	Total
Ala.	11	—	—	—	11
Ariz.	2	—	—	—	2
Ark.	4	—	—	—	4
Calif	30	—	—	—	30
Colo.	7	—	—	—	7
Fla	7	—	—	1	8
Ga	15	—	—	—	15
Idaho	3	—	—	—	3
Ill.	20	—	3	1	24
Ind.	12	—	—	—	12
Iowa	36	1	4	1	42
Kans	30[1]	—	2	2	34
Ky.	5	—	—	1	6
La.	2	—	—	2	4
Me.	1	—	—	—	1
Md.	8	—	—	—	8
Mich	19	1	—	1	21
Minn.	35	—	2	1	38
Miss.	1	—	—	—	1
Mo.	10	—	—	—	10
Mont.	3	—	—	1	4
Nebr.	6	—	—	—	6
N J.	8	—	—	—	8
N. Mex.	1	—	—	—	1
N. Y	14	—	—	—	14
N. C.	3	—	—	—	3
N. Dak.	10	—	—	—	10
Ohio	14	—	—	1	15
Okla.	3	—	1	—	4
Ore	11	—	—	—	11
Pa.	3	—	—	—	3
S C.	1	—	—	—	1
S Dak	13	—	1	—	14
Tenn.	5	—	—	1	6
Tex.	19	—	—	3	22
Utah	3	—	—	—	3
Va.	5	—	—	—	5
Wash.	20	—	—	—	20
W. Va	1	—	—	—	1
Wis.	13	—	—	—	13
Wyo.	2	—	—	1	3
Total	416	2	13	17	448
	92.8%	*0.4%*	*2.9%*	*3.9%*	*100.0%*

[1] In one county, only when property rights are being taken for which utility must be compensated.

TABLE 20.4.—Is Utility Notified of Change in Plans?

(Municipal Highway Departments)

State	Yes	If Change Affects Utility	No	Not Answered	Total
Ala.	1				1
Alaska			1		1
Calif.	17	2		1	20
Colo.	4				4
Conn	1				1
Fla	5				5
Ga	4				4
Hawaii	1				1
Idaho	1				1
Ill	3				3
Iowa	2				2
Kans.	1				1
Ky.	1				1
La.	1				1
Me.	1				1
Md.	2				2
Mich	2				2
Minn	3				3
Miss	1				1
Mo.	2[1]			1	3
Nev.	2				2
N. J.	1				1
N Mex.	1				1
N. Y.	3				3
N. C	4	1			5
Ore.	1				1
Pa.	1		1		2
S C.	1				1
S Dak.	1				1
Tenn.	1	1			2
Tex	1				1
Va.	2			1	3
Wash	1				1
W. Va.	1				1
Wis.	3				3
Wyo.	1				1
Total	78	4	2	3	87
	89.6%	*4.6%*	*2.3%*	*3 5%*	*100.0%*

[1] St. Joseph is not allowed to change plans after ordinance is passed.

TABLE 21.1.—Is Utility Kept Informed as to Status of Highway Project?
(State Highway Departments)

Yes				No
Form of Advice Not Specified	By Telephone, Letter, or Personal Contact	Responsibility of Utility, District, Resident, or Project Engineer	Utilities Advised at Joint Meetings	
Colo Tenn.	Alaska Ariz.[3] Calif Del[6] Fla Ga. Hawaii Ill. Ind. Iowa[1] Kans. Ky. Mass. Mich Minn Miss Mo Mont. Nebr[2] Nev[3] N H[1] N J N Mex. N Y N C[7] N Dak. Ohio[8] Okla. Ore R I. Tex Utah[1] Vt W Va Wyo. P Rico	Ark Conn. Idaho La. Me. Va Wash.	Md. Pa Wis.[4] D C.[3]	Ala S C S Dak[5]
2	36	7	4	3
3.8%	*69.2%*	*13.5%*	*7.7%*	*5.8%*

[1] Letter advising of proposed letting date, etc
[2] Generally.
[3] Project status reports issued.
[4] Annual meeting, after which utilities make own arrangements to keep informed.
[5] Advised when move is desired.
[6] Also at regular monthly meetings
[7] Not before design stage.
[8] Series of form letters

TABLE 21.2.—Is Utility Kept Informed as to Status of Highway Project by State Highway Department?
(Utilities by State)

State	Yes	No	Varies	No Answer	Total
Ala	12	16	—	—	28
Alaska	1	2	—	—	3
Ariz.	9	3	—	—	12
Ark.	11	8	1	1	21
Calif	68	9	1	2	80
Colo.	17	18	—	1	36
Conn	17	11	2	—	30
Del.	5	1	—	—	6
Fla	17	25	—	1	43
Ga	21	20	—	—	41
Hawaii	7	4	—	—	11
Idaho	8	7	—	1	16
Ill.	49	47	1	2	99
Ind	26	28	1	2	57
Iowa	21	34	2	1	58
Kans.	20	29	—	—	49
Ky.	30	37	1	1	69
La.	21	16	2	—	39
Me.	42	22	—	1	65
Md.	12	6	—	1	19
Mass.	33	30	—	1	64
Mich	33	17	—	—	50
Minn.	52	42	—	2	96
Miss	8	17	1	1	27
Mo.	36	34	2	2	74
Mont.	17	22	1	1	41
Nebr.	15	22	—	1	38
Nev.	5	2	—	—	7
N. H	11	9	1	1	22
N. J.	12	13	—	—	25
N. Mex	8	13	1	—	22
N. Y.	21	13	2	—	36
N. C	18	20	—	—	38
N. Dak.	16	22	—	—	38
Ohio	35	22	3	1	61
Okla.	27	32	1	1	61
Ore.	6	10	—	1	17
Pa.	26	28	2	1	57
R. I.	4	5	1	—	10
S. C	12	16	—	1	29
S. Dak	20	22	1	—	43
Tenn	8	20	—	—	28
Tex	66	69	7	1	143
Utah	4	9	—	1	14
Vt.	11	3	1	—	15
Va	15	7	—	—	22
Wash.	14	13	1	—	28
W Va.	8	5	1	1	15
Wis	34	19	1	1	55
Wyo.	11	14	—	—	25
D C	2	1	—	—	3
P. Rico	1	—	—	—	1
Total	1003	914	38	32	1987
	50.5%	*46 0%*	*1 9%*	*1.6%*	*100 0%*

TABLE 21.3.—Is Utility Kept Informed as to Status of Highway Project by State Highway Department?
(Utilities, by Type)

Type	Yes	No	Varies	No Answer	Total
Power transmission	92	75	—	3	170
Telephone	111	148	5	1	265
Telegraph	23	17	—	—	40
Water	105	74	9	4	192
Gas	89	73	2	—	164
Oil	76	76	11	2	165
Petroleum products	38	16	1	—	55
Sewer	10	3	—	—	13
Drainage	3	1	—	—	4
Irrigation	1	—	—	—	1
Power and steam	1	—	—	—	1
Power and water	10	5	1	1	17
Power, water and gas	7	5	—	—	12
Power, water, sewer (drainage, irrigation)	15	9	2	—	26
Power and gas	19	15	1	—	35
Power, gas and steam	6	4	—	—	10
Power, water and steam	5	5	—	—	10
Water, sewer (drainage)	85	40	—	4	129
Water and gas	1	4	—	—	5
Water, gas, sewer (drainage)	4	1	—	—	5
Sewer and drainage	39	20	1	2	62
Telephone and telegraph	14	18	—	—	32
Railroads	27	2	—	—	29
Gas and oil	2	13	—	—	15
Transportation	1	—	—	—	1
Water, gas and oil	—	2	—	—	2
Electric cooperatives	211	281	5	15	512
Other combinations	4	3	—	—	7
Power, telephone, and other combinations	1	—	—	—	1
Power, water, gas, and other combinations	2	2	—	—	4
Power and other combinations	1	2	—	—	3
Total	1003	914	38	32	1987
	50.5%	*46 0%*	*1.9%*	*1 6%*	*100.0%*

TABLE 21.4.—Is Utility Kept Informed as to Status of Street or Road Project?
(County Highway Departments)

State	Yes	Sometimes	Never	No Answer	Total
Ala.	8	—	3	—	11
Ariz.	2	—	—	—	2
Ark.	3	—	1	—	4
Calif.	26	—	4	—	30
Colo.	6	—	1	—	7
Fla	6	—	2	—	8
Ga.	11	—	4	—	15
Idaho	2	—	1	—	3
Ill.	18	1	5	—	24
Ind	10	—	2	—	12
Iowa	31	1	10	—	42
Kans.	18	—	14	2	34
Ky.	4	—	—	2	6
La.	2	—	2	—	4
Me.	1	—	—	—	1
Md.	6	—	2	—	8
Mich	13	—	8	—	21
Minn.	25	1	12	—	38
Miss	1	—	—	—	1
Mo	4	—	6	—	10
Mont	2	—	2	—	4
Nebr.	5	—	1	—	6
N J	6	—	2	—	8
N. Mex	1	—	—	—	1
N. Y.	7	—	6	1	14
N. C	3	—	—	—	3
N. Dak.	8	—	2	—	10
Ohio	13	—	2	—	15
Okla.	2	—	2	—	4
Ore.	7	—	4	—	11
Pa	2	—	1	—	3
S C.	1	—	—	—	1
S Dak.	10	—	4	—	14
Tenn.	2	—	2	2	6
Tex.	16	—	5	1	22
Utah	2	—	1	—	3
Va.	5	—	—	—	5
Wash	18	—	2	—	20
W. Va.	1	—	—	—	1
Wis	9	—	2	2	13
Wyo	2	—	1	—	3
Total	319	3	116	10	448
	71 2%	*0 7%*	*25 9%*	*2 2%*	*100.0%*

TABLE 21.5.—Is Utility Kept Informed as to Status of Street or Road Project?
(Municipal Highway Departments)

State	Yes									No	No Answer	Total
	Letter	Telephone	Letter and Telephone	Letter or Telephone	Personal Contact	Personal Contact or Letter	Personal Contact or Telephone	Utility Meeting or Conference	Other			
Ala.										1		1
Alaska										1		1
Calif.	10[1]	1	1	1	2		1	3[2]			1	20
Colo.		1[3]								2	1	4
Conn.								1				1
Fla.		2[3]				1			2[4]			5
Ga.			2	1		1						4
Hawaii										1		1
Idaho					1							1
Ill.		1[5]			1					1		3
Iowa			1				1					2
Kans										1		1
Ky											1	1
La.	1											1
Me.	1[6]											1
Md.		2[7]										2
Mich.				1				1[8]				2
Minn.		1							1[9]		1	3
Miss.	1											1
Mo.										2	1	3
Nev					1					1		2
N. J	1											1
N. Mex.		1[10]										1
N. Y.		2									1	3
N C.		2			1			1[11]			1	5
Ore.									1[12]	1		1
Pa										1		2
S. C.		1										1
S. Dak.					1							1
Tenn			1		1[13]							2
Tex.			1									1
Va.	1							1	1[14]			3
Wash.							1					1
W Va							1					1
Wis							2[15]				1	3
Wyo											1	1
Total	15	14	6	3	8	2	6	7	5	12	9	87
					85.1%					*13.8%*	*1.1%*	*100.0%*

[1] In Berkeley, when the utility is required to move from publicly-owned right-of-way at its own expense, also by mail or through quarterly meetings of street utility users; when required to move partially or wholly at expense of local government, information upon request of utility is by telephone and/or letter. Long Beach uses a series of form letters, (1) when engineer is authorized to prepare plans, (2) when project has been adopted, and (3) when contract is awarded. San Francisco also informs utility through program and officially published notices

[2] San Jose holds monthly utility meeting and, if necessary, also informs by mail; Oakland gives status information at monthly meeting of Public Works Coordinating Committee.

[3] Aurora, Colo., and St. Petersburg, Fla., may also inform utility of status by letter and personal contact.

[4] Construction inspectors keep utility informed in Miami, in Fort Lauderdale the utility maintains contact with city's engineering department.

[5] Kingsport keeps utility informed by changes in plans.

[6] Bangor also issues copy of revised plans.

[7] Baltimore also holds conferences

[8] Pontiac holds bi-weekly meetings.

[9] Duluth informs utility through liaison.

[10] In Albuquerque, when utility is required to move from publicly-owned right-of-way at its own expense, status information is given by telephone; when moving is wholly or partially at expense of local government, utility is kept informed, only upon request, by telephone and/or letter.

[11] Fayetteville holds weekly meetings.

[12] Philadelphia keeps utility informed, but does not identify method used.

[13] Kingsport keeps utility informed by changes in plans.

[14] Utilities in Norfolk are kept informed by their own representatives.

[15] Eau Claire also by written report

TABLE 22.1.—Are Utilities Consulted Before Final Highway Plans Completed to Avoid Excessive Relocation Costs, Etc.?

(State Highway Departments)

Yes			No	Usually		If Necessary	Occasionally
Ariz.	Mass.	N. C.	Alaska	Colo [1]	Okla [2]	Ala.	Iowa
Calif	Mich.	Ohio	Ark.	Fla.[3]	Ore [3]	N. Mex.	Me
Conn.	Minn.	Pa	Kans.	Ind [3]	R I [4]		S. C
Del	Miss	Tex.	N. Dak.	La [3]	Tenn.[3]		S Dak [3]
Ga	Mo.	Va	Vt [5]	Nebr	Wyo		Wis [3]
Idaho	Mont.	Wash		N. H.	D C.		Utah[3]
Ill	Nev	W. Va					
Ky.	N. J.	Hawaii					
Md.	N Y.	P. Rico					
	27		5	12		2	6
	51.9%		*9 6%*	*23 1%*		*3 8%*	*11.6%*

[1] Yes, if there can be a choice or alternate
[2] When possible.
[3] Where relocations are extensive, complex, and/or unusually expensive.
[4] If economical.
[5] Generally not.

TABLE 22.2.—Is Utility Consulted Before Final Plans Are Completed to Avoid Excessive Relocation or Adjustment Costs Whenever Possible Without Adversely Affecting the Highway?

(Utilities, by State)

State	Always		Generally		Seldom		Never		No Answer		Total
	Privately Owned	Publicly Owned	Privately Owned	Publicly Owned	Privately Owned	Publicly Owned	Privately Owned	Publicly Owned	Privately Owned	Publicly Owned	
Ala.	1	2	4	2	8	4	2	5	—	—	28
Alaska	—	—	—	3	—	—	—	—	—	—	3
Ariz.	—	2	4	1	2	1	1	1	—	—	12
Ark.	—	1	4	3	3	1	4	4	—	1	21
Calif.	6	29	16	20	—	6	1	2	—	—	80
Colo.	1	—	2	9	10	4	2	7	—	1	36
Conn.	2	4	12	3	5	1	1	2	—	—	30
Del.	—	2	1	—	2	—	—	1	—	—	6
Fla.	1	—	6	6	2	12	3	12	—	1	43
Ga.	2	3	7	12	4	4	1	8	—	—	41
Hawaii	3	1	1	5	—	—	—	1	—	—	11
Idaho	1	2	4	2	3	1	2	1	—	—	16
Ill	5	5	25	17	16	11	10	9	1	—	99
Ind.	—	3	7	13	12	3	7	12	—	—	57
Iowa	—	4	5	12	9	7	8	12	—	1	58
Kans.	—	1	7	10	10	6	4	10	1	—	49
Ky.	2	3	11	8	5	13	13	13	1	—	69
La.	1	2	10	2	10	3	7	4	—	—	39
Me.	2	2	24	10	5	5	10	6	—	1	65
Md.	1	—	4	1	7	3	2	1	—	—	19
Mass.	2	4	23	9	9	3	9	5	—	—	64
Mich.	2	7	9	19	6	2	2	3	—	—	50
Minn.	1	7	14	25	6	12	12	19	—	—	96
Miss.	1	6	3	4	4	1	—	8	—	—	27
Mo.	5	5	10	15	12	7	8	9	1	2	74
Mont.	5	2	5	7	3	8	2	6	1	2	41
Nebr.	—	2	2	8	7	6	1	9	—	3	38
Nev.	—	—	4	1	—	—	1	1	—	—	7
N. H	—	2	5	—	6	2	6	1	—	—	22
N. J.	3	2	6	6	4	1	2	1	—	—	25
N. Mex.	—	1	5	3	6	2	2	2	1	—	22
N. Y.	1	9	6	7	6	1	5	1	—	—	36
N C.	—	5	6	13	4	6	—	4	—	—	38
N. Dak	1	1	5	9	3	8	4	7	—	—	38
Ohio	4	5	10	10	15	1	7	8	—	1	61
Okla.	—	6	5	9	16	8	4	10	1	2	61
Ore.	—	3	3	4	2	1	1	2	—	1	17
Pa.	3	2	8	13	11	3	11	5	1	—	57
R I	—	1	5	—	1	1	2	—	—	—	10
S. C.	1	1	2	5	4	6	1	9	—	—	29
S Dak.	—	1	4	10	7	8	2	10	—	1	43
Tenn	1	2	—	3	3	6	2	11	—	—	28
Tex.	4	19	20	21	18	7	16	36	2	—	143
Utah	—	—	2	3	6	2	—	—	1	—	14
Vt.	1	—	4	2	2	—	6	—	—	—	15
Va.	3	5	6	2	2	2	—	2	—	—	22
Wash.	—	2	4	7	2	4	3	6	—	—	28
W. Va	—	—	5	3	4	1	1	—	—	1	15
Wis.	—	8	6	17	9	8	2	5	—	—	55
Wyo.	—	3	4	3	8	2	4	1	—	—	25
D. C.	—	1	1	—	—	—	1	—	—	—	3
P. Rico	—	—	—	1	—	—	—	—	—	—	1
Total	66	178	346	378	299	204	195	292	11	18	1987
	12.3%		*36.4%*		*25 3%*		*24.5%*		*1.5%*		*100.0%*

TABLE 22.3.—Are You Consulted Before Final Highway Plans Are Completed to Avoid Excessive Relocation or Adjustment Costs Whenever Possible Without Adversely Affecting the Highway?
(Utilities, by Type)

Type	Always	Generally	Seldom	Never	No Answer	Total
Power transmission	10	58	48	50	4	170
Telephone	13	68	83	95	6	265
Telegraph	—	13	27	—	—	40
Water	40	92	30	29	1	192
Gas	25	79	34	26	—	164
Oil	10	54	70	29	2	165
Petroleum products	4	26	20	5	—	55
Sewer	5	5	—	3	—	13
Drainage	1	2	—	1	—	4
Irrigation	1	—	—	—	—	1
Power and steam	—	1	—	—	—	1
Power and water	1	3	4	6	3	17
Power, water and gas	2	6	2	2	—	12
Power, water, sewer (drainage, irrigation)	6	14	2	4	—	26
Power and gas	1	9	15	10	—	35
Power, gas and steam	2	6	1	1	—	10
Power, water and steam	—	3	7	—	—	10
Water, sewer (drainage)	45	56	18	8	2	129
Water and gas	—	2	2	1	—	5
Water, gas, sewer (drainage)	—	4	1	—	—	5
Sewer and drainage	29	24	5	3	1	62
Telephone and telegraph	—	10	14	7	1	32
Railroads	2	27	—	—	—	29
Gas and oil	—	2	10	3	—	15
Transportation	—	1	—	—	—	1
Water, gas and oil	—	1	1	—	—	2
Electric cooperatives	45	150	106	202	9	512
Other combinations	2	4	—	1	—	7
Power, telephone and other combinations	—	—	—	1	—	1
Power, water, gas and other combinations	—	2	2	—	—	4
Power and other combinations	—	2	1	—	—	3
Total	244	724	503	487	29	1987
	12.3%	*36.4%*	*25.3%*	*24.5%*	*1.5%*	*100.0%*

TABLE 22.4.—Are Utilities Consulted Before Final Plans Are Completed to Avoid Excessive Relocation Costs of Utilities, Whenever Possible, Without Impairing the Utility of the Road?

(County Highway Departments)

State	Yes	Sometimes	Never	No Answer	Total
Ala.	3	1	7	—	11
Ariz	2	—	—	—	2
Ark.	2	—	1	1	4
Calif	23	1	6	—	30
Colo.	5	—	1	1	7
Fla.	6	—	2	—	8
Ga	11	—	4	—	15
Idaho	3	—	—	—	3
Ill	10[1]	0	14	—	24
Ind.	10	—	1	1	12
Iowa	15[2]	1	24	2	42
Kans.	20	—	13	1	34
Ky.	6	—	—	—	6
La.	2	—	1	1	4
Me	1	—	—	—	1
Md.	6	—	2	—	8
Mich	11	—	10	—	21
Minn	14	—	24	—	38
Miss	—	—	1	—	1
Mo.	8	—	2	—	10
Mont.	4	—	—	—	4
Nebr	4	—	2	—	6
N J.	7	—	1	—	8
N. Mex	1	—	—	—	1
N. Y.	8	—	6	—	14
N. C	1	—	2	—	3
N. Dak.	7	—	3	—	10
Ohio	12	1	2	—	15
Okla	2	1	1	—	4
Ore	10	—	1	—	11
Pa	3	—	—	—	3
S. C.	1	—	—	—	1
S Dak	8	—	6	—	14
Tenn	5	—	—	1	6
Tex.	16	—	5	1	22
Utah	3	—	—	—	3
Va.	4	1	—	—	5
Wash.	15	—	5	—	20
W. Va.	1	—	—	—	1
Wis.	6	—	7	—	13
Wyo.	2	—	—	1	3
Total	278	6	154	10	448
	62.1%	*1.3%*	*34.4%*	*2.2%*	*100.0%*

[1] In one county, applies only when property rights are being taken for which utility must be compensated

[2] In one county, applies only when utility is required to move from publicly-owned right-of-way at its own expense.

TABLE 22.5.—Are Utilities Consulted Before Final Plans Are Completed to Avoid Excessive Relocation Costs to Utilities, Whenever Possible, Without Impairing the Utility of the Road?

(Municipal Highway Departments)

State	Yes	Occasionally or Generally	No	Total
Ala.			1	1
Alaska			1	1
Calif.	15	3[1]	2[2]	20
Colo	3		1	4
Conn.			1	1
Fla.	5			5
Ga.	4			4
Hawaii	1			1
Idaho	1			1
Ill.	2		1	3
Iowa	2			2
Kans.	1			1
Ky.			1	1
La.	1			1
Me.	1			1
Md.	2			2
Mich.	2			2
Minn.	3			3
Miss	1			1
Mo.	1		2	3
Nev.	2			2
N. J.	1			1
N. Mex.	1			1
N. Y.	3			3
N. C.	4		1	5
Ore.	1			1
Pa	1		1	2
S. C.			1	1
S Dak.	1			1
Tenn.	2			2
Tex.	1			1
Va	2		1	3
Wash.	1			1
W. Va.	1			1
Wis.	3			3
Wyo.	1			1
Total	70	3	14	87
	80.5%	*3.4%*	*16.1%*	*100.0%*

[1] San Leandro, when utility can show severe hardship, considers revision of final plans.

[2] In Berkeley, utilities not consulted before final plans are completed when utility is required to move from publicly-owned right-of-way at its own expense; when required to move partially or wholly at expense of local government, utility is consulted.

TABLE 23.1.—Average Length of Time Allowed Utility to Relocate Prior to Award of Contract (State Highway Departments)

Average Time	State	Period Sufficient for Completion of Work				
		Always	Generally	Seldom	Never	No Answer
Less than one month	N. Mex.			X		
	N. C			X		
	Ore				X	
5 States	S. C.			X		
9.6%	Wyo.		X			
1 to 3 months	Ala.		X			
	Alaska	X				
	Ariz.		X			
	Ark.			X		
	Idaho		X			
	Ky.		X			
15 States	Mo.		X			
28.8%	Nebr		X			
	N. J [1]			X		
	N. Dak.		X			
	Ohio		X			
	Tenn			X		
	Vt			X		
	W. Va.			X		
	Wis.		X			
3 to 6 months	Miss.		X			
	Nev.	X				
4 States	Pa.		X			
7.7%	Va. [2]					
6 months to 1 year	Mich. [2]	X				
1 State *1.9%*						
1 to 2 years	Calif.		X			
2 States *3.8%*	Tex		X			
Varies, depending on amount of work involved, load time, etc	Colo.		X			
	Conn.	X				
	Del		X			
	Ill.			X		
	Ind.	X				
	La. [3]		X			
	Md.			X		
12 States	Mass.	X				
23.2%	Mont.		X			
	N. Y.			X		
	Okla.			X		
	Utah [2]			X		
Relocation during construction	Fla.		X			
	Ga			X		
	Iowa		X			
	Kans.				X	
	Me.			X		
	Minn.			X		
	N. H.			X		
13 States	R. I.				X	
25.0%	S. Dak.			X		
	Wash.		X			
	Hawaii					X
	D. C.	X				
	P. Rico					X
	52	7	22	18	3	2
	100.0%	*13.5%*	*42.3%*	*34.6%*	*5.8%*	*3.8%*

[1] Generally satisfactory for freeway construction.
[2] Often after contract is let.
[3] Progress of utility adjustment considered before advertising

TABLE 23.2.—What Is Average Length of Time Utility Is Given to Adjust Facilities? (Utilities)

State	Less Than 1 Month	1 to 3 Months	3 to 6 Months	6 Months to 1 Year	1 to 2 Years	Varies	No Answer	Total
Ala.	9	13	2	—	—	3	1	28
Alaska	1	2	—	—	—	—	—	3
Ariz	3	8	1	—	—	—	—	12
Ark.	3	10	6	—	—	1	1	21
Calif	6	32	14	6	1	9	12	80
Colo	4	24	2	2	—	3	1	36
Conn.	2	13	2	1	—	11	1	30
Dela.	2	2	—	—	—	2	—	6
Fla.	8	19	2	3	—	9	2	43
Ga.	11	14	1	—	—	14	1	41
Hawaii	—	2	2	1	—	2	4	11
Idaho	3	8	2	—	—	3	—	16
Ill	21	53	7	5	2	7	4	99
Ind.	7	31	6	4	—	7	2	57
Iowa	12	27	7	2	1	8	1	58
Kans	9	31	4	—	1	2	2	49
Ky.	12	36	6	2	—	10	3	69
La.	8	18	3	2	—	5	3	39
Me	21	20	1	1	—	20	2	65
Md	2	9	2	—	—	5	1	19
Mass	20	23	3	5	—	9	4	64
Mich	3	21	10	3	1	6	6	50
Minn	11	58	12	3	1	7	4	96
Miss	9	14	2	—	—	1	1	27
Mo.	12	39	6	3	1	7	6	74
Mont.	5	23	4	2	—	5	2	41
Nebr	6	25	3	—	—	2	2	38
Nev	1	5	—	—	—	1	—	7
N H.	3	13	—	1	—	3	2	22
N. J	2	6	3	3	—	6	5	25
N Mex.	9	10	1	—	—	1	1	22
N Y	8	9	5	1	—	7	6	36
N C.	10	19	2	—	—	5	2	38
N. Dak	4	21	6	2	1	4	—	38
Ohio	9	32	7	2	—	9	2	61
Okla.	10	41	6	1	—	—	3	61
Ore	3	7	3	1	—	3	—	17
Pa	9	26	6	—	—	10	6	57
R. I	1	4	1	—	—	4	—	10
S. C	17	7	1	—	—	1	3	29
S. Dak.	9	20	4	1	—	7	2	43
Tenn.	8	18	—	1	—	5	1	28
Tex.	27	74	23	4	—	10	5	143
Utah	—	8	2	—	—	1	3	14
Vt.	5	6	—	1	—	2	1	15
Va.	2	14	2	—	—	4	—	22
Wash.	7	8	3	4	—	3	3	28
W. Va	3	6	2	—	—	3	1	15
Wis	6	33	7	3	1	5	—	55
Wyo.	4	16	4	—	—	1	—	25
D C	—	2	—	—	—	1	—	3
P. Rico	—	—	1	—	—	—	—	1
Total	367	975	199	70	10	254	112	1987
	18 47%	*49.06%*	*10.0%*	*3 5%*	*0.5%*	*12 8%*	*5.8%*	*100.0%*

TABLE 23.3.—Is Time Allowed Utilities Sufficient to Allow Completion of Relocation?
(Utilities)

State	Always	Generally	Seldom	Never	No Answer	Total
Ala.	2	23	2	—	1	28
Alaska	1	1	1	—	—	3
Ariz.	1	8	3	—	—	12
Ark.	2	15	3	1	—	21
Calif.	18	45	5	—	12	80
Colo.	5	28	2	—	1	36
Conn.	5	23	1	—	1	30
Del	—	4	2	—	—	6
Fla	7	26	8	—	2	43
Ga.	6	28	3	1	3	41
Hawaii	3	4	—	—	4	11
Idaho	1	12	2	—	1	16
Ill.	10	73	11	—	5	99
Ind.	8	43	4	—	2	57
Iowa	6	41	7	2	2	58
Kans.	5	37	5	—	2	49
Ky	13	44	8	—	4	69
La.	5	25	5	—	4	39
Me.	6	43	7	5	4	65
Md.	—	16	2	—	1	19
Mass.	3	42	14	2	3	64
Mich	8	35	1	—	6	50
Minn.	13	74	3	—	6	96
Miss.	7	19	—	—	1	27
Mo.	8	54	4	—	8	74
Mont.	12	22	2	1	4	41
Nebr.	4	31	1	—	2	38
Nev	1	4	2	—	—	7
N. H.	2	17	1	—	2	22
N. J.	7	12	2	—	4	25
N. Mex	—	17	2	1	2	22
N. Y.	3	23	5	—	5	36
N C	7	25	4	—	2	38
N Dak.	7	27	2	1	1	38
Ohio	5	52	3	—	1	61
Okla	10	41	6	1	3	61
Ore	4	12	1	—	—	17
Pa	7	36	5	3	6	57
R I.	—	8	—	1	1	10
S C.	3	22	3	—	1	29
S Dak.	2	31	5	2	3	43
Tenn	2	20	4	—	2	28
Tex.	27	96	11	4	5	143
Utah	1	9	1	—	3	14
Vt	1	11	—	2	1	15
Va	2	20	—	—	—	22
Wash.	5	18	1	—	4	28
W. Va	—	12	2	—	1	15
Wis.	3	48	4	—	—	55
Wyo.	5	15	3	1	1	25
D. C.	—	3	—	—	—	3
P Rico	—	1	—	—	—	1
Total	263	1396	173	28	127	1987
	13.2%	*70.3%*	*8.7%*	*1.4%*	*6.4%*	*100.0%*

TABLE 23.4.—What Is Average Length of Time Allowed Utility to Relocate Before Commencement of Construction?
(County Highway Departments)

State	Less Than 1 Month	1-3 Months	3-6 Months	6 Months-1 Year	1-2 Years	Varies	No Answer	Total
Ala.	—	9	1	1	—	—	—	11
Ariz.	—	2	—	—	—	—	—	2
Ark.	—	4	—	—	—	—	—	4
Calif.	3	12	6	4	1	3	1	30
Colo	1	6	—	—	—	—	—	7
Fla.	2	5	—	1	—	—	—	8
Ga.	6	6	1	1	—	1	—	15
Idaho	—	2	1	—	—	—	—	3
Ill.	5	9[1]	5	—	—	3	2	24
Ind.	1	5	2	—	—	2	2	12
Iowa	11[2]	27	1	1	—	1	1	42
Kans.	7	22[3]	2	2	—	1	—	34
Ky.	—	3	—	—	—	2	1	6
La.	2	1	—	—	—	1	—	4
Me.	—	—	—	—	—	—	1	1
Md	1	5	2	—	—	—	—	8
Mich.	4	11	6	—	—	—	—	21
Minn.	11	24	2	—	—	1	—	38
Miss	—	1	—	—	—	—	—	1
Mo.	1	8	—	—	—	—	1	10
Mont.	—	1	—	1	—	1	1	4
Nebr.	1	3	1	—	—	1	—	6
N. J.	1	5	—	—	—	1	1	8
N. Mex.	—	1	—	—	—	—	—	1
N. Y.	1	9	2	1	—	1	—	14
N. C.	1	2	—	—	—	1	—	3
N. Dak.	—	8	2	—	—	—	—	10
Ohio	6	6	1	1	—	1	—	15
Okla.	1	2	—	—	—	1	—	4
Ore	3	3	2	1	—	1	1	11
Pa.	—	1	—	—	—	1	1	3
S. C	—	—	—	—	—	1	—	1
S. Dak.	7	7	—	—	—	—	—	14
Tenn.	1	2	—	—	—	1	2	6
Tex	—	13	4	—	—	3	2	22
Utah	—	2	1	—	—	—	—	3
Va.	—	1	2	—	—	2	—	5
Wash.	3	16	—	—	—	—	1	20
W. Va.	—	1	—	—	—	—	—	1
Wis.	1	7	2	3	—	—	—	13
Wyo.	—	2	—	—	—	—	1	3
Total	81	254	46	17	1	30	19	448
	18.1%	*56.7%*	*10.3%*	*3.8%*	*0.2%*	*6.7%*	*4.2%*	*100.0%*

[1] In one county, when utility is required to move from publicly-owned right-of-way partially or wholly at expense of local government, time allowed is 1-3 months; when property rights are being taken for which utility must be compensated, the time is 3-6 months

[2] In one county, when utility is required to move from publicly-owned right-of-way at its own expense, time is less than 1 month; when required to move partially or wholly at expense of local government, time is 1-3 months.

[3] In one county, when utility is required to move from publicly-owned right-of-way at its own expense, time allowed is 1-3 months; when property rights are being taken for which utility must be compensated, time is 3-6 months.

TABLE 23.5.—What Is Average Length of Time Allowed Utility to Relocate Before Commencement of Construction?

(Municipal Highway Departments)

State	Less Than 1 Month	1-3 Months	3-6 Months	6 Months-1 Year	Varies	Other	Not Answered	Total
Ala.	1							1
Alaska		1						1
Calif.	1	14[1]	2	1	1[2]	1[3]		20
Colo	1[4]	2	1					4
Conn.			1					1
Fla.	1	2			2			5
Ga.	1	3						4
Hawaii						1[5]		1
Idaho		1						1
Ill.		1	2					3
Iowa		1		1				2
Kans.		1						1
Ky		1						1
La.					1			1
Me.			1					1
Md		2						2
Mich		1	1					2
Minn		2			1			3
Miss			1					1
Mo.	1	2						3
Nev		1	1					2
N. J.				1				1
N Mex.			1					1
N. Y.		2				1[6]		3
N. C.	1	2	1		1[7]			5
Ore		1						1
Pa	1	1						2
S. C.	1							1
S. Dak.		1						1
Tenn.	1	1						2
Tex.	1							1
Va.	2	1						3
Wash							1	1
W Va		1						1
Wis		1	1				1	3
Wyo.		1						1
Total	13	47	13	3	6	3	2	87
	14.9%	*54.0%*	*14.9%*	*3.5%*	*6.9%*	*3.5%*	*2.3%*	*100.0%*

[1] In Berkeley, applies only when utility is required to move from publicly-owned right-of-way at its own expense; when required to move partially or wholly at expense of local government, time allowed varies with circumstances
[2] In Oakland, varies from weeks to years
[3] In San Francisco, a minimum of 10 days from date of notification of award of contract to begin adjustment of facilities, followed by cooperation with contractor's construction schedule, or negotiation with contractor regarding delay in start of adjustment and coordination of work.
[4] Aurora allows less than one month to three months.
[5] In Honolulu, the time usually coincides with work.
[6] Relocation usually coordinated with contract in Schenectady
[7] High Point allows as long as necessary

TABLE 24.1.—Is Utility Sent Copy of Notice to Bidders?

(State Highway Departments)

Always	Major Utilities	Sometimes	Never			Utility Otherwise Informed
Ariz	Colo.	Ky.	Ala	Mich.	Okla	Calif. [1]
Conn.	Ga.	Mass [2]	Alaska	Minn	Pa.	N. Y [3]
Del	Ore	N. C. [4]	Ark	Miss.	S. C.	Tex. [5]
Ind.	Vt.	Tenn	Fla.	Mo	S. Dak.	Utah
Me		P. Rico	Idaho	Mont.	Wash.	Va [6]
Md			Ill.	Nebr.	W. Va.	
Nev			Iowa	N. Mex.	Wis.	
N. H.			Kans.	N. Dak.	Wyo.	
N. J.			La	Ohio	Hawaii	
R. I.						
D. C.						
11	4	5		27		5
21.2%	*7.7%*	*9.6%*		*51.9%*		*9.6%*

[1] Notified of bid opening date.
[2] Railroads.
[3] Utility knows State's schedule.
[4] On request.
[5] Through public advertisement
[6] Utility kept informed.

TABLE 24.2.—Does Utility Receive Copy of Notice to Bidders? (Utilities)

State	Yes	No	No Answer	Total
Ala.	2	25	1	28
Alaska	—	3	—	3
Ariz	1	11	—	12
Ark.	4	16	1	21
Calif.	23	56	1	80
Colo.	2	34	—	36
Conn	4	24	2	30
Del.	2	4	—	6
Fla	3	37	3	43
Ga.	4	36	1	41
Hawaii	—	11	—	11
Idaho	1	14	1	16
Ill.	11	83	5	99
Ind	17	40	—	57
Iowa	6	51	1	58
Kans	1	48	—	49
Ky.	32	37	—	69
La	3	35	1	39
Me.	20	42	3	65
Md.	5	14	—	19
Mass	19	44	1	64
Mich.	10	39	1	50
Minn.	3	92	1	96
Miss	3	22	2	27
Mo.	6	67	1	74
Mont.	2	39	—	41
Nebr.	1	36	1	38
Nev	1	6	—	7
N. H.	3	18	1	22
N J	6	18	1	25
N. Mex.	1	21	—	22
N. Y.	11	24	1	36
N. C.	3	34	1	38
N. Dak	4	33	1	38
Ohio	15	46	—	61
Okla	2	59	—	61
Ore	3	14	—	17
Pa.	8	47	2	57
R I	2	8	—	10
S. C	4	23	2	29
S. Dak	1	42	—	43
Tenn.	4	22	2	28
Tex	2	138	3	143
Utah	—	12	2	14
Vt	5	10	—	15
Va	5	17	—	22
Wash.	2	26	—	28
W Va.	1	12	2	15
Wis	5	49	1	55
Wyo	—	25	—	25
D C	1	2	—	3
P Rico	—	1	—	1
Total	274	1667	46	1987
	13.8%	*83 9%*	*2.3%*	*100.0%*

TABLE 24.3.—Is Utility Sent Copy of Notice to Bidders? (County Highway Departments)

State	Yes	Sometimes	Never	No Answer	Total
Ala.	2		9		11
Ariz			2		2
Ark.			4		4
Calif	1		29		30
Colo.	1		4	2	7
Fla			8		8
Ga.	3		11	1	15
Idaho			2	1	3
Ill.	2		21	1	24
Ind.	2		8	2	12
Iowa			42		42
Kans.	3		29	2	34
Ky.	3		2	1	6
La.			3	1	4
Me.				1	1
Md	1		7		8
Mich.			21		21
Minn			38		38
Miss.			1		1
Mo	1		8	1	10
Mont	1		2	1	4
Nebr	1		4	1	6
N. J.	1		7		8
N. Mex.			1		1
N. Y.	1		8	5	14
N. C.			3		3
N. Dak.			10		10
Ohio	4		10	1	15
Okla.			4		4
Ore		1	9	1	11
Pa	1		2		3
S C				1	1
S. Dak	1		13		14
Tenn.			4	2	6
Tex	2		17	3	22
Utah			3		3
Va.			5		5
Wash.	1		19		20
W. Va.				1	1
Wis	2		10	1	13
Wyo			2	1	3
Total	34	1	382	31	448
	7 6%	*0 2%*	*85.3%*	*6 9%*	*100 0%*

TABLE 24.4.—Is Utility Sent Copy of Notice to Bidders? (Municipal Highway Departments)

State	Yes	No	No Answer	Total
Ala.	—	1	—	1
Alaska	—	1	—	1
Calif.	1	19	—	20
Colo	1	3	—	4
Conn.	—	1	—	1
Fla.	—	5	—	5
Ga.	—	4	—	4
Hawaii	—	1	—	1
Idaho	—	1	—	1
Ill.	—	3	—	3
Iowa	1	1	—	2
Kans.	—	1	—	1
Ky.	—	1	—	1
La	—	1	—	1
Me	—	1	—	1
Md.	1	1	—	2
Mich.	—	2	—	2
Minn	—	3	—	3
Miss.	1	—	—	1
Mo.	—	3[1]	—	3
Nev.	1	1	—	2
N. J.	—	1	—	1
N. Mex	1[2]	—	—	1
N Y	—	3	—	3
N C	—	5	—	5
Ore.	—	1	—	1
Pa.	1	1	—	2
S C.	—	1	—	1
S Dak.	—	1	—	1
Tenn.	—	2	—	2
Tex.	—	—	1	1
Va	—	3	—	3
Wash	—	1	—	1
W. Va.	—	1	—	1
Wis.	2	1	—	3
Wyo	—	1	—	1
Total	10	76	1	87
	11.5%	*87 4%*	*1.1%*	*100.0%*

[1] St. Joseph is required by law to give 15-day notice of work before construction starts

[2] In Albuquerque, notice is given only when utility is required to move from publicly-owned right-of-way partially or wholly at expense of local government

TABLE 25.1.—Is Utility Advised as to Name and Address of Highway Contractor; of Highway Department Field Engineer in Charge?

(State Highway Departments)

Name and Address of Contractor					Name and Address of Highway Department Field Engineer in Charge				
Yes				No	Yes				No
Alaska[1]	Ill	Nebr.	R I	Ala.	Ala.	Ind.	Nebr	S C.	Hawaii
Ariz.	Ind.	Nev.	Tenn.[2]	Iowa	Alaska[1]	Iowa	Nev.	S Dak.	La
Ark.	Ky.	N. J	Tex	Kans	Ariz	Kans.	N J	Tenn[2]	N H.
Calif	Me.	N. Mex[2]	Utah	La[3]	Ark	Ky	N. Mex[2]	Tex.	Utah[4]
Colo	Md	N. Y.[5]	Vt	Miss	Calif	Me.	N. Y.[5]	Vt	Wis.
Conn	Mass.	N. Dak.[4]	Wash	N. H	Colo.	Md	N C.	Va	
Del.	Mich.	Ohio[6]	W Va	N C	Conn	Mass	N Dak[2]	Wash.	
Fla	Minn[2]	Okla	Wis.	S C.	Del	Mich	Ohio[6]	W. Va.	
Ga.	Mo[7]	Ore	D C.	S Dak.	Fla.	Minn.	Okla.	Wyo.	
Hawaii	Mont.	Pa.	P. Rico	Va.	Ga.	Miss	Ore.	D C.	
Idaho				Wyo.	Idaho	Mo[7]	Pa	P Rico	
					Ill.	Mont.	R I.		
		41		11			47		5
		78.8%		*21.2%*			*90.4%*		*9.6%*

[1] Will be when utility engineer is appointed
[2] When requested.
[3] Contractor notifies utility, district utility engineer provides liaison.
[4] Not routine procedure.
[5] Utility attends preconstruction conference.
[6] If relocation not completed prior to construction.
[7] When necessary.

TABLE 25.2.—Is Utility Notified of Name and Address of Highway Construction Contractor?

(Utilities, by State)

State	Yes	No	Varies	No Answer	Total
Ala.	4	23	—	1	28
Alaska	1	2	—	—	3
Ariz	4	8	—	—	12
Ark	10	10	—	1	21
Calif.	69	11	—	—	80
Colo	7	27	1	1	36
Conn	20	7	—	3	30
Del.	5	1	—	—	6
Fla	15	25	—	3	43
Ga.	21	18	—	2	41
Hawaii	5	5	—	1	11
Idaho	4	10	—	2	16
Ill	35	60	2	2	99
Ind	20	34	3	—	57
Iowa	13	43	—	2	58
Kans	5	43	1	—	49
Ky.	17	50	1	1	69
La	8	30	—	1	39
Me.	34	29	—	2	65
Md	11	8	—	—	19
Mass.	19	43	1	1	64
Mich	20	29	—	1	50
Minn	28	66	—	2	96
Miss.	3	23	—	1	27
Mo	19	54	1	—	74
Mont.	7	34	—	—	41
Nebr.	17	21	—	—	38
Nev	5	2	—	—	7
N H	6	16	—	—	22
N J	11	13	1	—	25
N. Mex	5	17	—	—	22
N Y	19	15	1	1	36
N C	7	30	—	1	38
N Dak	6	32	—	—	38
Ohio	49	10	2	—	61
Okla	9	52	—	—	61
Ore.	6	11	—	—	17
Pa.	39	17	—	1	57
R I	3	7	—	—	10
S. C	6	22	—	1	29
S. Dak.	10	33	—	—	43
Tenn	6	20	—	2	28
Tex.	26	113	2	2	143
Utah	4	8	—	2	14
Vt	5	10	—	—	15
Va	10	12	—	—	22
Wash.	9	18	—	1	28
W Va	2	11	—	2	15
Wis.	19	35	—	1	55
Wyo.	3	22	—	—	25
D C	1	2	—	—	3
P Rico	1	—	—	—	1
Total	688	1242	16	41	1987
	34.6%	*62.5%*	*0 8%*	*2 1%*	*100 0%*

TABLE 25.3.—Is Utility Advised as to Name and Address of Contractor and of Street or Highway Department Field Engineer in Charge of Project?
(County Highway Departments)

State	Advised of Contractor				Advised of Field Engineer				Total
	Yes	Sometimes	Never	No Answer	Yes	Sometimes	Never	No Answer	
Ala.	5	—	6	—	9	—	2	—	11
Ariz.	2	—	—	—	—	—	—	—	2
Ark.	2	—	2	—	1	—	2	1	4
Calif.	15	—	15	—	16	—	14	—	30
Colo.	4	—	2	1	3	—	1	3	7
Fla.	—	—	8	—	7	—	1	—	8
Ga.	4	—	10	1	8	—	6	1	15
Idaho	—	—	2	1	1	—	2	—	3
Ill.	8	1	14	1	12[1]	—	10	2	24
Ind.	6	—	4	2	7	—	3	2	12
Iowa	29	1	12	—	27	—	14	1	42
Kans.	13	—	19	2	19[2]	1	9	5	34
Ky.	4	—	1	1	4	—	1	1	6
La.	2	—	2	—	2	—	2	—	4
Me.	—	—	—	1	—	—	—	1	1
Md.	2	—	4	2	2	—	4	2	8
Mich	14	—	7	—	16	—	3	2	21
Minn.	26	—	12	—	25	—	10	3	38
Miss.	1	—	—	—	1	—	—	—	1
Mo.	5	—	3	2	4	—	2	4	10
Mont	1	—	2	1	3	—	—	1	4
Nebr.	5	—	1	—	5	—	1	—	6
N J.	6	—	2	—	6	—	2	—	8
N Mex.	1	—	—	—	1	—	—	—	1
N. Y.	5	—	3	6	8	—	3	3	14
N. C.	1	—	2	—	2	—	1	—	3
N. Dak.	5	—	5	—	3	—	6	1	10
Ohio	13	—	1	1	11	—	3	1	15
Okla.	3	—	1	—	4	—	—	—	4
Ore	4	—	6	1	6	—	3	2	11
Pa.	2	—	1	—	—	1	2	—	3
S. C.	1	—	—	—	—	—	1	—	1
S. Dak.	8	—	5	1	7[2]	—	5	2	14
Tenn	5	—	—	1	2	—	—	4	6
Tex.	11	2	7	2	14	—	2	6	22
Utah	1	—	2	—	2	—	1	—	3
Va.	3	—	2	—	3	—	1	1	5
Wash.	12	—	8	—	15	—	4	1	20
W. Va.	1	—	—	—	1	—	—	—	1
Wis.	4	—	9	—	7	—	3	3	13
Wyo.	1	—	1	1	3	—	—	—	3
Total	235	4	181	28	269	2	124	53	448
	52.5%	*0.9%*	*40.4%*	*6.2%*	*60.1%*	*0.4%*	*27.7%*	*11.8%*	*100.0%*

[1] In one county, utility is advised name of field engineer only when utility is required to move from publicly-owned right-of-way partially or wholly at expense of local government.
[2] In one county, applies only when utility is required to move from publicly-owned right-of-way at its own expense.

TABLE 25.4.—Is Utility Advised as to Name and Address of Contractor, Street or Highway Department Field Engineer in Charge of Project?
(Municipal Highway Departments)

State	Utility Advised of						Total
	Contractor			Field Engineer			
	Yes	No	No Answer	Yes	No	No Answer	
Ala.	—	1	—	1	—	—	1
Alaska	1	—	—	—	—	1	1
Calif.	10[1]	9	1	11[1]	7	2	20
Colo.	1	3	—	3	1	—	4
Conn.	1	—	—	1	—	—	1
Fla.	3	2	—	4	1	—	5
Ga.	3	1	—	4	—	—	4
Hawaii	—	1	—	—	1	—	1
Idaho	1	—	—	—	1	—	1
Ill.	2	1	—	2	1	—	3
Iowa	1	1	—	1	1	—	2
Kans.	—	1	—	1	—	—	1
Ky.	1	—	—	1	—	—	1
La.	1	—	—	1	—	—	1
Me.	1	—	—	1	—	—	1
Md.	2[2]	—	—	1	1	—	2
Mich.	1	1	—	1	1	—	2
Minn.	3	—	—	2	1	—	3
Miss.	1	—	—	1	—	—	1
Mo.	—	3	—	1	2	—	3
Nev.	1	1	—	1	1	—	2
N. J.	1	—	—	1	—	—	1
N. Mex.	1	—	—	1	—	—	1
N. Y.	2	1	—	2	1	—	3
N. C.	3	2	—	3	2	—	5
Ore.	—	1	—	1	—	—	1
Pa	1	1	—	1	1	—	2
S. C	—	1	—	—	1	—	1
S. Dak.	1	—	—	1	—	—	1
Tenn.	1	1	—	1	1	—	2
Tex.	—	—	1	—	—	1	1
Va.	1	2	—	2	1	—	3
Wash.	1	—	—	1	—	—	1
W. Va.	1	—	—	—	—	1	1
Wis	2	1	—	2	1	—	3
Wyo.	—	1	—	1	—	—	1
Total	49	36	2	55	27	5	87
	56.3%	*41.4%*	*2.3%*	*63.2%*	*31.0%*	*5.8%*	*100.0%*

[1] In Berkeley, information given only when utility is required to move from publicly-own right-of-way partially or wholly at expense of local government, in Los Angeles, utility companies and contractors contact Utility Coordination Section on all problems, in Anaheim, only on request.
[2] In Rockville, only on request.

TABLE 26.1.—Who Notifies Contractor of Proposed Utility Plans for Relocation? (State Highway Departments)

State					Utility	Highway Department and Utility	Not Notified	No Answer
Ariz.[1]	Ill [1]	Miss	Okla.	Vt.[2]		N J	Alaska	Ala.
Ark.	Ind	Mo.[2]	Ore.	Va.		N. Y.	Mich [3]	
Calif.[2]	Iowa	Mont.[1]	Pa.[1]	Wash.			Minn [4]	
Colo	Kans.	Nev [2]	R. I.[2]	W Va.			Nebr.	
Conn.[1]	Ky.	N. H.[2]	S. C.	Wis.				
Del.[2]	La	N Mex.[2]	S. Dak.	Wyo.				
Fla.	Me.[3]	N. C.	Tenn.	Hawaii				
Ga.[2]	Md	N. Dak.	Tex.	D C.[2]				
Idaho [2]	Mass.	Ohio [1]	Utah	P. Rico				
		45			0	2	4	1
		86.6%			*0 0%*	*3.8%*	*7.7%*	*1.9%*

[1] At preconstruction conference
[2] Indicated on plans.
[3] Almost all relocation done prior to highway construction.
[4] May be inspected at utility unit headquarters

TABLE 26.2.—Who Notifies Highway Contractor of Proposed Plan of Relocation? (Utilities)

State	Highway Department	Utility	Highway Department and Utility	No Answer	Total
Ala.	23	2	2	1	28
Alaska	2	1	—	—	3
Ariz.	11	—	—	1	12
Ark.	20	1	—	—	21
Calif.	70	3	3	4	80
Colo.	30	—	2	4	36
Conn.	22	4	1	3	30
Del.	3	3	—	—	6
Fla.	25	12	2	4	43
Ga.	35	4	2	—	41
Hawaii	9	—	1	1	11
Idaho	15	—	—	1	16
Ill.	76	13	—	10	99
Ind.	46	6	1	4	57
Iowa	40	9	—	9	58
Kans.	46	—	—	3	49
Ky.	50	12	2	5	69
La.	33	2	2	2	39
Me.	45	12	1	7	65
Md.	14	2	2	1	19
Mass.	37	21	1	5	64
Mich.	42	4	1	3	50
Minn.	83	6	—	7	96
Miss.	24	2	1	—	27
Mo.	56	6	—	12	74
Mont.	32	4	—	5	41
Nebr.	32	2	—	4	38
Nev.	7	—	—	—	7
N. H.	15	5	—	2	22
N. J.	19	5	—	1	25
N. Mex.	19	—	—	3	22
N. Y.	26	7	—	3	36
N. C.	30	3	1	4	38
N. Dak.	32	2	1	3	38
Ohio	48	7	3	3	61
Okla.	54	4	—	3	61
Ore.	13	3	—	1	17
Pa.	38	15	1	3	57
R. I	7	3	—	—	10
S. C.	27	1	1	—	29
S. Dak.	35	4	1	3	43
Tenn.	20	4	1	3	28
Tex.	125	5	2	11	143
Utah	10	1	—	3	14
Vt.	11	2	—	2	15
Va.	17	2	2	1	22
Wash.	23	1	—	4	28
W. Va.	12	1	—	2	15
Wis.	40	10	1	4	55
Wyo.	22	1	—	2	25
D. C.	2	—	1	—	3
P. Rico	1	—	—	—	1
Total	1574	217	39	157	1987
	79.2%	*10.9%*	*2.0%*	*7.9%*	*100.0%*

TABLE 26.3.—Who Notifies Contractor of Proposed Utility Plans for Relocation? (County Highway Departments)

State	Street or Highway Department	Utility	Varies	No Answer	Total
Ala.	8	—	—	3	11
Ariz.	2	—	—	—	2
Ark.	3	1	—	—	4
Calif.	22	7	1	—	30
Colo	6	—	—	1	7
Fla	5	—	1	2	8
Ga	11	—	2	2	15
Idaho	2	1	—	—	3
Ill.	14	5	2	3	24
Ind.	4	3	1	4	12
Iowa	31[1]	7	3	1	42
Kans.	25[2]	4[3]	—	5	34
Ky	3	1	1	1	6
La	1	1	—	2	4
Me.	—	—	—	1	1
Md	3	1	2	2	8
Mich	16	4	1	—	21
Minn.	28[4]	8	2	—	38
Miss	1	—	—	—	1
Mo	8	—	—	2	10
Mont.	3	—	—	1	4
Nebr.	5	1	—	—	6
N. J.	6	1	—	1	8
N. Mex	1	—	—	—	1
N. Y.	6	1	1	6	14
N C.	2	1	—	—	3
N. Dak	9	1	—	—	10
Ohio	9	2	1	3	15
Okla	2	1	—	1	4
Ore.	4	4	—	3	11
Pa	1	1	1	—	3
S C.	1	—	—	—	1
S Dak	11	—	1	2	14
Tenn.	5	1	—	—	6
Tex	12	2	1	7	22
Utah	1	2	—	—	3
Va	5	—	—	—	5
Wash.	11	6	3	—	20
W. Va	1	—	—	—	1
Wis	6	4	—	3	13
Wyo	1	1	—	1	3
Total	295	72	24	57	448
	65.8%	*16.1%*	*5.4%*	*12.7%*	*100.0%*

[1] In Benton County, when utility is required to move from publicly-owned right-of-way at its own expense, utility notifies contractor of proposed relocation, when property rights are being taken for which utility must be compensated, street or highway department notifies contractor

[2] Applies in Clay County only when property rights are being taken for which utility must be compensated.

[3] In Seward County, applies when property rights are being taken for which utility must be compensated; street or highway department notifies contractor when utility is required to move from publicly-owned right-of-way at its own expense.

[4] In Mower County, same as in footnote 1.

TABLE 26.4.—Who Notifies Contractor of Proposed Utility Plans for Relocation? (Municipal Highway Departments)

State	Street or Highway, Public Works, or Engineering Department	Utility	Either	Other	Not Answered	Total
Ala.	1	—	—	—	—	1
Alaska	—	—	—	—	1	1
Calif.	9[1]	6	3[2]	2[3]	—	20
Colo.	4	—	—	—	—	4
Conn.	1	—	—	—	—	1
Fla.	3	1	1	—	—	5
Ga.	3	1	—	—	—	4
Hawaii	—	1	—	—	—	1
Idaho	1	—	—	—	—	1
Ill.	3	—	—	—	—	3
Iowa	1	1	—	—	—	2
Kans.	1	—	—	—	—	1
Ky.	1	—	—	—	—	1
La.	—	1	—	—	—	1
Me.	—	1	—	—	—	1
Md	2	—	—	—	—	2
Mich.	—	1	1	—	—	2
Minn.	1	2	—	—	—	3
Miss.	1	—	—	—	—	1
Mo.	2	1	—	—	—	3
Nev	2	—	—	—	—	2
N J.	1	—	—	—	—	1
N. Mex.	1	—	—	—	—	1
N. Y.	1	2	—	—	—	3
N. C.	4	1	—	—	—	5
Ore.	—	—	—	1[4]	—	1
Pa.	1	1	—	—	—	2
S. C.	—	—	—	—	1	1
S. Dak.	1	—	—	—	—	1
Tenn.	2	—	—	—	—	2
Tex.	1	—	—	—	—	1
Va.	2	1	—	—	—	3
Wash.	1	—	—	—	—	1
W. Va	1	—	—	—	—	1
Wis.	2	1	—	—	—	3
Wyo.	1	—	—	—	—	1
Total	55	22	5	3	2	87
	63.2%	*25.3%*	*5.7%*	*3.5%*	*2.3%*	*100.0%*

[1] In Berkeley, street and highway department notifies contractor when utility is required to move from publicly-owned right-of-way partially or wholly at expense of local government; when required to move at its own expense, plans are usually completed before contractor enters the picture.

[2] In Anaheim, notification depends on who initiates the contract requiring the relocation.

[3] In Long Beach, information normally indicated on construction drawings and in specifications when work is to be done during roadway construction; in Los Angeles, notification is made through Utility Coordinating Section.

[4] In Medford, information generally shown on plans.

TABLE 27.1.—Approximately What Percentage of Utility Relocation Work Is Completed Prior to Beginning of Highway Construction?

(State Highway Departments)

0 to 10 Percent	10 to 25 Percent	25 to 50 Percent	50 to 75 Percent	Over 75 Percent	Varies	No Answer
Del. Ga. Hawaii Iowa Me. Mass. Minn N. H. N Mex N. Y. Ore S. C S. Dak. Vt P Rico	Ark Colo. Idaho Ill La. Md. Mo. Nebr. N. J. R. I. Va. W. Va.	Fla. Ky. Mont. N. C. N. Dak. Ohio Okla. Pa. Utah	Calif. Kans. Tex. Wis. Wyo. D. C.[1]	Alaska Ariz. Mich. Miss Nev.	Conn.[1] Ind.[2] Tenn [3] Wash.[4]	Ala.
15	12	9	6	5	4	1
28 9%	*23.1%*	*17.3%*	*11.5%*	*9 6%*	*7.7%*	*1.9%*

[1] Relocations usually done just prior to or coincidentally with construction
[2] Not determinable.
[3] Low percentage.
[4] 50% urban, none in rural.

TABLE 27.2.—Approximately What Percentage of Utility Relocation Work Is Completed Prior to Beginning of Highway Construction?

(Utilities)

State	Percentage Completed Prior to Construction							Total
	0–10	10–25	25–50	50–75	Over 75	No Set Policy	No Answer	
Ala.	11	4	2	5	5	—	1	28
Alaska	—	—	2	—	1	—	—	3
Ariz.	2	3	1	2	3	—	1	12
Ark.	4	3	3	4	7	—	—	21
Calif.	9	4	10	13	31	1	12	80
Colo	9	6	5	7	7	2	—	36
Conn	15	5	2	1	2	1	4	30
Del.	2	2	1	1	—	—	—	6
Fla	22	4	4	5	5	—	3	43
Ga.	23	4	4	2	5	1	2	41
Hawaii	5	1	—	—	1	—	4	11
Idaho	5	2	3	2	2	—	2	16
Ill.	11	13	12	23	30	2	8	99
Ind.	19	6	7	6	16	—	3	57
Iowa	16	9	8	10	11	2	2	58
Kans.	10	4	6	13	14	1	1	49
Ky.	25	9	6	11	11	2	5	69
La	10	1	3	6	15	2	2	39
Me.	31	9	7	3	6	1	8	65
Md.	10	2	3	—	4	—	—	19
Mass.	42	4	3	3	8	1	3	64
Mich	10	6	4	10	16	1	3	50
Minn.	18	18	23	16	14	—	7	96
Miss	5	3	3	7	6	—	3	27
Mo.	15	6	14	12	19	2	6	74
Mont	10	5	4	7	10	1	4	41
Nebr	10	7	6	7	7	—	1	38
Nev	—	—	3	—	4	—	—	7
N. H	8	3	2	3	1	—	5	22
N. J.	7	4	3	—	6	1	4	25
N Mex	7	1	3	2	7	—	2	22
N. Y.	17	1	1	2	8	2	5	36
N. C.	16	3	6	5	6	1	1	38
N Dak.	4	5	8	6	12	1	2	38
Ohio	8	10	10	4	28	—	1	61
Okla	13	2	6	10	30	—	—	61
Ore.	7	3	1	3	2	1	—	17
Pa	19	6	9	8	10	2	3	57
R. I	7	—	—	—	2	—	1	10
S C	15	6	3	1	3	—	1	29
S Dak.	16	10	4	4	6	2	1	43
Tenn	12	3	2	3	5	1	2	28
Tex.	16	5	14	26	73	4	5	143
Utah	3	1	4	2	2	—	2	14
Vt.	6	6	1	1	—	—	1	15
Va.	7	1	3	5	6	—	—	22
Wash.	6	4	2	5	7	—	4	28
W. Va.	3	4	1	2	2	—	3	15
Wis.	6	8	7	9	22	1	2	55
Wyo	4	5	2	3	9	2	—	25
D. C	—	—	—	1	2	—	—	3
P. Rico.	—	—	1	—	—	—	—	1
Total	556	231	242	281	509	38	130	1987
	28.0%	*11 6%*	*12.2%*	*14 1%*	*25.6%*	*2 0%*	*6.5%*	*100.0%*

TABLE 27.3.—Approximately What Percentage of Utility Relocation Work Is Completed Prior to Beginning of Highway Construction?
(County Highway Departments)

State	Percentage Completed Prior to Construction							Total
	0–10	10–25	25–50	50–75	Over 75	Varies	No Answer	
Ala.	8	—	1	1	1	—	—	11
Ariz	—	—	1	—	—	—	1	2
Ark	2	—	1	—	1	—	—	4
Calif	3	1	5	6	12	2	1	30
Colo	1	1	1	1	2	—	1	7
Fla.	1	—	4	—	3	—	—	8
Ga	5	1	1	1	6	—	1	15
Idaho	—	1	1	1	—	—	—	3
Ill.	3	2	5	5	7	—	2	24
Ind	3	—	2	2	3	—	2	12
Iowa	8	7	4	11	11	—	1	42
Kans.	5	4	3[1]	3	17	2	—	34
Ky.	2	—	—	1	2	1	—	6
La	1	—	—	—	2	—	1	4
Me	—	—	—	—	—	—	1	1
Md.	3	1	2	2	—	—	—	8
Mich.	1	3	7	3	6	1	—	21
Minn	15	6	6	4	6	1	—	38
Miss	—	—	—	—	1	—	—	1
Mo	—	1	3	1	4	—	1	10
Mont	—	—	1	1	1	—	1	4
Nebr	2	—	2	1	1	—	—	6
N. J.	2	—	2	1	1	—	2	8
N Mex.	—	—	—	—	1	—	—	1
N. Y.	6	2	2	2	2	—	—	14
N. C.	1	—	1	—	1	—	—	3
N. Dak.	3	2	2	—	3	—	—	10
Ohio	1	4	3	1	6	—	—	15
Okla.	—	—	—	1	3	—	—	4
Ore.	3	1	2	2	2	—	1	11
Pa	1	—	—	—	1	1	—	3
S C	—	—	1	—	—	—	—	1
S. Dak.	5	2	2	1	2	1	1	14
Tenn.	1	—	—	1	2	—	2	6
Tex	2	1	—	6	13	—	—	22
Utah	—	—	1	1	1	—	—	3
Va.	1	2	—	2	—	—	—	5
Wash.	—	3	5	8	2	2	—	20
W. Va	—	—	1	—	—	—	—	1
Wis	3	4	1	3	2	—	—	13
Wyo.	1	—	1	—	—	—	1	3
Total	93	49	74	73	128	11	20	448
	20 7%	*10.9%*	*16.5%*	*16 3%*	*28.6%*	*2.5%*	*4.5%*	*100.0%*

[1] In one county, 0–10 when property rights are being taken for which utility must be compensated, 25–50 when utility is required to move from publicly-owned right-of-way at its own expense.

TABLE 27.4.—Approximately What Percentage of Utility Relocation Work Is Completed Prior to Beginning of Highway Construction? (Municipal Highway Departments)

State	Percentage Completed Prior to Construction							Total
	0-10	10-25	25-50	50-75	Over 75	Varies	No Answer	
Ala.	1							1
Alaska			1					1
Calif.	4	2	4	4[1]	5	1		20
Colo.		1	1		2			4
Conn.		1						1
Fla.	1	1		1	1		1	5
Ga.			1	1	2			4
Hawaii	1							1
Idaho				1				1
Ill.		1	1		1			3
Iowa					1		1	2
Kans.	1							1
Ky.			1					1
La.						1		1
Me.		1						1
Md.					2			2
Mich.				2				2
Minn.	2	1						3
Miss					1			1
Mo.	2				1			3
Nev.	1	1						2
N. J.				1				1
N. Mex.					1			1
N. Y.	1				1	1		3
N. C.	1		1	1	2			5
Ore.			1					1
Pa.	1				1			2
S. C.	1							1
S. Dak.	1							1
Tenn.				2				2
Tex.					1			1
Va.	1		1		1			3
Wash.							1	1
W. Va.					1			1
Wis.				2			1	3
Wyo.					1			1
Total	19	9	12	15	25	3	4	87
	21.9%	*10.3%*	*13.8%*	*17.2%*	*28.8%*	*3.4%*	*4.6%*	*100.0%*

[1] In Berkeley, 50-75 when utility is required to move from publicly-owned right-of-way partially or wholly at expense of local government; over 75 when required to move at its own expense

TABLE 28.1.—Is It Possible for Utility to Perform Any of Relocation Work Prior to Letting of Highway Construction Contract? (State Highway Departments)

Generally	If Right-of-Way Acquired or Available		When Agreement, Plans, Estimates, Etc., Approved		If Possible or Necessary		No
Ala. Ariz Miss. Nev. N C.	Ark [1] Idaho Ill. Kans Ky [4] Me.[2] Md. Mich.	Mo.[1] Mont. N. Y. Okla.[1] Ore. R. I.[1] Va [1] Wis.	Alaska Ind [3] Nebr. N. Dak. Pa. S. C. Tenn.	Vt. Wash.[2] W. Va Wyo D. C.[8] Utah	Calif Colo [4] Conn. Del. Fla. Iowa La.[2]	Minn.[2] N. H [2] N. J.[6] N. Mex. Ohio S. Dak. Tex.[2]	Ga. Mass.[5] Hawaii P. Rico
5	16		13		14		4
9 6%	*30.8%*		*25.0%*		*26.9%*		*7.7%*

[1] If utility agreement approved.
[2] If not necessary to defer until certain work done by contractor.
[3] Special authorization when major relocations involved.
[4] Increasing annually.
[5] Too many variables, decisions, materials, changes, etc.
[6] Freeway projects, 10-25 percent for non-freeway.
[7] Or at discretion of district engineer.
[8] Private only.

TABLE 28.2.—Is It Possible for Utility to Perform Any of Relocation Work Prior to Letting of Highway Construction Contract?

(Utilities)

State	Always	Generally	Seldom	Never	No Answer	Total
Ala.	1	12	12	3	—	28
Alaska	—	3	—	—	—	3
Ariz.	—	11	1	—	—	12
Ark.	2	14	2	3	—	21
Calif	12	49	11	—	8	80
Colo.	3	23	6	2	2	36
Conn.	—	12	14	2	2	30
Del	1	4	—	1	—	6
Fla	4	17	15	5	2	43
Ga	2	10	14	14	1	41
Hawaii	—	2	3	3	3	11
Idaho	—	11	3	1	1	16
Ill.	11	52	23	6	7	99
Ind.	7	29	11	8	2	57
Iowa	4	32	13	5	4	58
Kans	4	28	10	6	1	49
Ky	5	33	20	10	1	69
La	2	21	10	6	—	39
Me	4	22	30	4	5	65
Md.	2	5	9	3	—	19
Mass.	—	25	27	7	5	64
Mich.	2	31	12	1	4	50
Minn.	4	51	27	10	4	96
Miss.	1	14	7	3	2	27
Mo	4	44	11	10	5	74
Mont	3	24	5	7	2	41
Nebr	1	18	10	7	2	38
Nev.	—	7	—	—	—	7
N. H.	—	12	8	—	2	22
N. J.	1	13	6	1	4	25
N. Mex	3	11	5	1	2	22
N Y	4	10	15	4	3	36
N. C	2	17	10	8	1	38
N. Dak	3	22	6	4	3	38
Ohio	7	41	12	1	—	61
Okla	7	34	6	11	3	61
Ore.	1	8	4	4	—	17
Pa	5	30	17	2	3	57
R I	—	5	3	2	—	10
S C	2	9	9	9	—	29
S Dak.	1	21	11	9	1	43
Tenn.	4	10	10	4	—	28
Tex.	23	89	15	9	7	143
Utah	2	11	—	—	1	14
Vt.	—	6	8	1	—	15
Va.	1	10	6	5	—	22
Wash.	1	19	5	1	2	28
W. Va.	1	7	5	1	1	15
Wis	4	35	12	3	1	55
Wyo.	5	12	3	5	—	25
D. C	1	2	—	—	—	3
P Rico	—	1	—	—	—	1
Total	157	1039	482	212	97	1987
	7 9%	*52 3%*	*24.2%*	*10.7%*	*4.9%*	*100.0%*

TABLE 28.3.—When Is Utility Notified to Proceed with Physical Adjustment of Facilities?

(Utilities)

State	Before Advertisement of Highway Improvement	After Advertisement	Before Letting of Contract	After Letting	Varies	No Answer	Total
Ala.	8	6	1	9	1	3	28
Alaska	2	1	—	—	—	—	3
Ariz.	9	1	—	2	—	—	12
Ark.	8	6	2	4	—	1	21
Calif.	53	6	1	12	—	8	80
Colo.	9	14	4	7	—	2	36
Conn.	6	3	4	15	—	2	30
Del	2	—	—	4	—	—	6
Fla.	9	11	4	16	—	3	43
Ga.	5	12	—	19	2	3	41
Hawaii	—	3	—	4	—	4	11
Idaho	6	5	—	5	—	—	16
Ill	29	19	8	31	2	10	99
Ind.	18	7	4	23	1	4	57
Iowa	16	10	6	21	—	5	58
Kans.	15	11	8	13	—	2	49
Ky.	18	14	9	21	1	6	69
La.	12	9	3	8	4	2	39
Me	17	13	2	29	1	3	65
Md.	2	6	1	7	1	2	19
Mass.	10	16	8	26	—	4	64
Mich	28	4	4	7	1	6	50
Minn.	35	18	14	25	1	3	96
Miss.	9	7	1	7	2	1	27
Mo	20	13	10	21	2	8	74
Mont	16	7	4	10	1	3	41
Nebr	8	5	4	19	—	2	38
Nev.	6	—	—	1	—	—	7
N. H.	6	2	1	8	1	4	22
N. J	10	3	2	6	1	3	25
N. Mex	8	6	2	4	1	1	22
N Y.	8	6	3	15	2	2	36
N. C.	5	5	4	23	—	1	38
N Dak	18	8	5	6	—	1	38
Ohio	25	9	7	17	3	—	61
Okla.	20	14	7	14	—	6	61
Ore.	4	4	2	4	2	1	17
Pa.	16	13	7	15	1	5	57
R. I.	—	1	4	4	1	—	10
S. C	3	6	—	18	1	1	29
S. Dak	8	13	4	16	—	2	43
Tenn	7	7	1	11	—	2	28
Tex.	68	30	18	19	3	5	143
Utah	5	5	—	2	—	2	14
Vt.	5	4	—	5	1	—	15
Va	9	3	3	5	—	2	22
Wash.	12	5	3	6	—	2	28
W. Va.	5	3	3	3	—	1	15
Wis	27	11	5	11	—	1	55
Wyo.	8	6	4	6	—	1	25
D C.	3	—	—	—	—	—	3
P. Rico	—	—	—	1	—	—	1
Total	656	391	187	585	38	130	1987
	33.0%	*19.7%*	*9 4%*	*29 4%*	*2.0%*	*6.5%*	*100.0%*

TABLE 29.1.—Is Highway Department Called on to Assist Utility in Making Plans for Relocation?[1] (State Highway Departments)

Yes													
By Small Utilities or Those Not Staffed to Handle	Is This Cause for Delay			For Interpretation of Highway Plans, Suggested Route, Etc.	Is This Cause for Delay			Occasionally for Other Reasons	Is This Cause for Delay			No
	Yes	No	Sometimes		Yes	No	Sometimes		Yes	No	Sometimes	
Ariz.			X	Calif.		X		Ala.		X		Alaska
Ark.		X		Nebr.		X		Colo.			X	Conn.
Ga.	X			N. H.		X		Del.	X			Fla.
Idaho		X		Hawaii			X	Kans.				Ind.
Ill.		X		Mich.				Md.				Mass.
Iowa		X		D. C.		X		N. J.			X	Miss.
Ky.		X						Ore.		X		Mont.
La.		X						R. I		X		Ohio
Me.		X						S. Dak.		X		S. C.
Minn.		X						Tenn.		X		W. Va.
Mo.	X							Utah			X	P. Rico
Nev.		X						Vt.		X		
N. Mex.			X					Wyo.		X		
N. C.	X											
N. Dak		X										
Okla.		X										
Pa		X										
Tex.	X											
Va.		X										
Wash.		X										
Wis.		X										
21				6				13				11
41.2%				*11.8%*				*25.5%*				*21.5%*

[1] No answer from New York.

TABLE 29.2.—Is State Highway Department Ever Called on to Assist You in Making Plans for Relocation? (Utilities)

State	Yes—Is This Cause for Delay				No	No Answer	Total
	Yes	No	No Answer	Total			
Ala.	1	11	—	12	15	1	28
Alaska	1	—	1	2	1	—	3
Ariz.	—	5	—	5	6	1	12
Ark.	3	9	—	12	8	1	21
Calif	8	34	5	47	31	2	80
Colo	1	18	—	19	17	—	36
Conn.	—	9	1	10	18	2	30
Del	2	3	—	5	1	—	6
Fla.	4	17	1	22	18	3	43
Ga.	4	18	—	22	18	1	41
Hawaii	—	7	—	7	3	1	11
Idaho	2	4	—	6	9	1	16
Ill.	14	34	1	49	43	7	99
Ind.	7	24	—	31	24	2	57
Iowa	4	19	4	27	26	5	58
Kans	2	24	2	28	21	—	49
Ky.	10	13	1	24	44	1	69
La.	2	12	—	14	25	—	39
Me.	1	25	—	26	37	2	65
Md.	4	6	—	10	9	—	19
Mass.	3	27	2	32	28	4	64
Mich.	2	22	3	27	21	2	50
Minn.	1	36	5	42	51	3	96
Miss	4	12	—	16	11	—	27
Mo	4	25	2	31	39	4	74
Mont.	3	13	2	18	21	2	41
Nebr.	—	22	—	22	16	—	38
Nev.	2	3	—	5	1	1	7
N. H.	4	7	1	12	9	1	22
N. J.	2	10	1	13	11	1	25
N. Mex.	1	11	—	12	9	1	22
N. Y.	2	7	1	10	24	2	36
N. C.	2	15	1	18	19	1	38
N Dak.	3	13	1	17	21	—	38
Ohio	6	24	—	30	31	—	61
Okla	5	24	2	31	29	1	61
Ore.	2	6	—	8	8	1	17
Pa.	7	16	—	23	32	2	57
R. I.	—	3	—	3	6	1	10
S. C.	2	10	—	12	15	2	29
S. Dak.	—	13	1	14	26	3	43
Tenn.	3	10	—	13	15	—	28
Tex.	9	53	2	64	76	3	143
Utah	1	5	—	6	8	—	14
Vt.	—	6	—	6	9	—	15
Va.	2	10	—	12	9	1	22
Wash	1	9	—	10	17	1	28
W Va.	2	2	—	4	9	2	15
Wis.	3	25	—	28	26	1	55
Wyo.	1	9	1	11	14	—	25
D. C.	2	1	—	3	—	—	3
P. Rico	—	—	—	—	1	—	1
Total	149	741	41	931	986	70	1987
		46.9%			*49.6%*	*3.5%*	*100.0%*

TABLE 29.3.—Is Street or Highway Department Called on to Assist Utility in Making Plans for Relocation?

(County Highway Departments)

State	Highway Department Called on to Assist Utility with Plans				Is This Cause for Delay					Total
	Always	Sometimes	Never	No Answer	Always	Sometimes	Never	Not Applicable	No Answer	
Ala.	3	—	8	—	—	1	2	8	—	11
Ariz.	1	—	1	—	—	1	—	1	—	2
Ark.	—	—	3	1	—	—	—	4	—	4
Calif.	14	1	14	1	1	2	12	15	—	30
Colo.	2	—	4	1	—	1	1	5	—	7
Fla.	2	—	6	—	1	—	1	6	—	8
Ga.	12	—	3	—	2	2	8	3	—	15
Idaho	1	—	2	—	—	—	1	2	—	3
Ill.	6[1]	1	16	1	—	—	7	17	—	24
Ind.	5	—	5	2	—	—	5	7	—	12
Iowa	10	1	27	4	—	1	10	31	—	42
Kans	12[1]	—	21	1	—	—	12	22	—	34
Ky.	3	—	3	—	—	—	2	3	1	6
La.	1	—	3	—	—	—	1	3	—	4
Me.	—	—	—	1	—	—	—	1	—	1
Md.	3	—	5	—	—	—	2	5	1	8
Mich.	9	2	10	—	4	1	5	10	1	21
Minn.	9	1	27	1	—	—	10	28	—	38
Miss.	1	—	—	—	—	—	1	—	—	1
Mo.	5	—	3	2	—	—	3	5	2	10
Mont.	1	—	2	1	—	—	1	3	—	4
Nebr.	4	—	2	—	3	—	1	2	—	6
N. J.	1	—	6	1	—	—	1	7	—	8
N. Mex.	1	—	—	—	—	—	1	—	—	1
N. Y.	9	—	4	1	—	—	9	5	—	14
N. C	2	—	1	—	—	1	1	1	—	3
N. Dak.	4	—	5	1	—	—	4	6	—	10
Ohio	6	—	7	2	—	1	5	9	—	15
Okla.	—	—	4	—	—	—	—	4	—	4
Ore.	5	—	4	2	1	—	4	6	—	11
Pa.	1	—	1	1	—	—	1	2	—	3
S. C.	—	—	1	—	—	—	—	1	—	1
S. Dak.	2	—	10	2	—	—	2	12	—	14
Tenn.	3	—	—	3	—	—	3	3	—	6
Tex.	9	1	10	2	—	—	9	12	1	22
Utah	2	—	1	—	—	—	2	1	—	3
Va.	2	—	3	—	1	—	1	3	—	5
Wash.	5	1	12	2	—	—	6	14	—	20
W. Va.	1	—	—	—	—	—	1	—	—	1
Wis.	4	—	9	—	—	—	4	9	—	13
Wyo.	1	—	—	2	—	—	—	2	1	3
Total	162	8	243	85	13	11	139	278	7	448
	36.2%	*1.8%*	*54.2%*	*7.8%*	*2.9%*	*2.6%*	*31.0%*	*62.0%*	*1.5%*	*100.0%*

[1] In one county, applies only when property rights are being taken for which utility must be compensated.

TABLE 29.4.—Is Street or Highway Department Called on to Assist Utility in Making Plans for Relocation?
(Municipal Highway Departments)

State	Street or Highway Department Assists Utility with Plans				Is This Cause for Delay				Total
	Yes	Sometimes	No	No Answer	Yes	Sometimes	No	Not Applicable	
Ala	—	—	1	—	—	—	—	1	1
Alaska	—	—	1	—	—	—	—	1	1
Calif.	4	5	11	—	—	2	7	11	20
Colo.	1	1	2	—	—	1	1	2	4
Conn.	1	—	—	—	1	—	—	—	1
Fla	3	—	2	—	—	—	3	2	5
Ga.	1	—	3	—	—	—	1	3	4
Hawaii	—	1	—	—	1	—	—	—	1
Idaho	1	—	—	—	—	—	1	—	1
Ill.	—	2	1	—	—	—	2	1	3
Iowa	—	1	1	—	1	—	—	1	2
Kans	—	—	1	—	—	—	—	1	1
Ky.	—	—	1	—	—	—	—	1	1
La	—	1	—	—	—	—	1	—	1
Me.	—	1	—	—	—	—	1	—	1
Md.	—	—	2	—	—	—	—	2	2
Mich	1	—	1	—	—	—	1	1	2
Minn.	1	—	2	—	—	—	1	2	3
Miss.	1	—	—	—	—	—	1	—	1
Mo	—	—	3	—	—	—	—	3	3
Nev.	—	—	1	1	—	—	—	2	2
N J	—	—	1	—	—	—	—	1	1
N. Mex	—	1[1]	—	—	—	1	—	—	1
N. Y	—	—	3	—	—	—	—	3	3
N. C.	3	1	1	—	1	—	3	1	5
Ore.	—	—	1	—	—	—	—	1	1
Pa.	1	—	1	—	—	—	1	1	2
S C	—	1	—	—	1	—	—	—	1
S. Dak.	—	—	1	—	—	—	—	1	1
Tenn.	—	—	2	—	—	—	—	2	2
Tex.	—	—	1	—	—	—	—	1	1
Va.	—	—	3	—	—	—	—	3	3
Wash.	—	—	1	—	—	—	—	1	1
W. Va	—	1	—	—	—	—	1	—	1
Wis	1	1	—	1	—	—	2	1	3
Wyo.	1	—	—	—	—	—	1	—	1
Total	20	17	48	2	5	4	28	50	87
	23 0%	*19.5%*	*55.2%*	*2.3%*	*5.7%*	*4.6%*	*32.2%*	*57.5%*	*100.0%*

[1] In Albuquerque, only when utility is required to move from publicly-owned right-of-way at its own expense

TABLE 31.1.—Are Delays Encountered Due to Slowness of Utility in Completing Plans?
(State Highway Departments)

Yes	Frequently	Occasionally	Seldom	No
Alaska	Ark.[1]	Calif	Ala.	Conn.
Del	Idaho	Colo.	Ariz.[3]	Ill
Ga.[1]	Ky.	Iowa	Fla.	
Hawaii	Me	Kans.	Ind.	
Mo.[4]	N. Mex.	La.	Md.	
Okla.	Tenn	Mass	Mich.	
Pa.	Wash	Minn.		
S C.		Nev.[2]		
S. Dak.		N. H.	Miss.	
Utah		N. J[2]	Mont	
Vt.		N. Y.[4]	Nebr.	
Va.		N. C.[4]	N. Dak	
W. Va.		Ohio	R. I[2]	
Wis.[5]		Ore.	D C.	
Wyo.		Tex.		
P. Rico				
16	7	15	12	2
30 8%	*13.5%*	*28.8%*	*23 1%*	*3.8%*

[1] Mostly due to lack of lead time.
[2] Difficulty is usually with railroads
[3] Only one utility is slow.
[4] Smaller utilities are slow.
[5] Particularly with large utility.

TABLE 31.2.—Are Delays Encountered Due to Slowness of Utility in Completing Plans? (County Highway Departments)

State	Yes	Sometimes	Never	No Answer	Total
Ala.	6	1	4	—	11
Ariz	1	—	—	1	2
Ark.	1	1	1	1	4
Calif.	9	—	18	3	30
Colo.	2	—	5	—	7
Fla.	4	1	3	—	8
Ga.	8	2	5	—	15
Idaho	1	—	2	—	3
Ill.	10	2	10	2	24
Ind.	3	—	7	2	12
Iowa	6	3	29	4	42
Kans.	14[1]	4	12	4	34
Ky.	1	—	3	2	6
La.	1	—	2	1	4
Me	—	—	—	1	1
Md.	5	—	3	—	8
Mich.	10	1	8	2	21
Minn	7	2	27	2	38
Miss	1	—	—	—	1
Mo.	—	1	7	2	10
Mont.	—	1	1	2	4
Nebr.	1	2	3	—	6
N. J.	3	—	4	1	8
N. Mex.	—	—	1	—	1
N. Y.	7	—	7	—	14
N. C.	2	—	1	—	3
N. Dak.	3	1	5	1	10
Ohio	2	1	10	2	15
Okla	—	—	4	—	4
Ore.	3	—	7	1	11
Pa.	2	—	—	1	3
S. C.	—	1	—	—	1
S. Dak.	2	—	10	2	14
Tenn.	1	—	3	2	6
Tex	2	6	14	—	22
Utah	1	—	2	—	3
Va.	1	2	2	—	5
Wash.	7	4	9	—	20
W. Va.	—	—	1	—	1
Wis.	4	—	8	1	13
Wyo.	—	—	1	2	3
Total	131	36	239	42	448
	29.3%	*8.0%*	*53.3%*	*9.4%*	*100.0%*

[1] In one county, applies only when utility is required to move from publicly-owned right-of-way at its own expense.

TABLE 31.3.—Are Delays Encountered Due to Slowness of Utility in Completing Plans? (Municipal Highway Departments)

State	Yes	Sometimes	No	No Answer	Total
Ala.			1		1
Alaska			1		1
Calif.	7	5	7	1	20
Colo.	2	1	1		4
Conn.	1				1
Fla.	1		4		5
Ga.	1	1	2		4
Hawaii	1				1
Idaho	1				1
Ill		1	2		3
Iowa		1	1		2
Kans.	1				1
Ky.			1		1
La.			1		1
Me.	1				1
Md.	1	1			2
Mich.			2		2
Minn	2		1		3
Miss			1		1
Mo.	2		1		3
Nev.	2				2
N. J.			1		1
N. Mex.		1[1]			1
N. Y.		1	2		3
N C	1	1	3		5
Ore.		1			1
Pa.	1		1		2
S. C.	1				1
S. Dak.	1				1
Tenn.			2		2
Tex.			1		1
Va.	1		2		3
Wash.		1			1
W. Va				1	1
Wis.			2	1	3
Wyo.			1		1
Total	28	15	41	3	87
	32.2%	*17.2%*	*47.2%*	*3.4%*	*100.0%*

[1] In Albuquerque, only when utility is required to move from publicly-owned right-of-way at its own expense.

TABLE 32.1.—Are Delays Encountered Because Utility Defers Starting Pending Clearance of Right-of-Way by Highway Department or Contractor? (State Highway Departments)

Delays Encountered				Utility at Fault				
Yes	Sometimes	Never	No Answer	Yes	Sometimes	Never	Not Applicable	No Answer
Ariz. Ark. Del Ill. La. Me. Minn. Mo. Mont N. H. N J. N Mex. N. Y. Ohio R. I. S C Tex Utah Vt. Wis	Colo. Conn. Hawaii Idaho Kans Md. Mass. Nev. N. Dak. Okla. Ore Pa. S. Dak. Va.	Alaska[1] Calif. Fla. Ga. Ind. Iowa Ky. Mich. Miss Nebr. N. C Tenn. Wash. W. Va. Wyo. D C. P. Rico	Ala.	Del Ill.[2] Me.	Ark. Colo. Kans. La.[4] Md. Mass. Minn[5] Mo.[4] Mont. Nev. N. J. N. Y. Ohio[5] Okla Ore. Pa. R I.[6] S. C. S. Dak[6] Tex.[5] Vt. Va. Wis.[6]	Ariz.[2] Conn. Hawaii[2] Idaho[2] N. H.[2] N. Mex.[2] N. Dak. Utah[2]	Alaska Calif. Fla. Ga. Ind Iowa Ky. Mich. Miss. Nebr N. C. Tenn. Wash. W. Va. Wyo D. C. P Rico	Ala.
20	14	17	1	3	23	8	17	1
38 5%	*26 9%*	*32 7%*	*1.9%*	*5.8%*	*44 2%*	*15.4%*	*32.7%*	*1.9%*

[1] Utility does own clearing.
[2] Utility cannot relocate until clearing done.
[3] Plans and estimates assume utility work can be done without prior work by State or contractor.
[4] Minor companies sometimes depend on highway contractor to do work.
[5] Utilities may be delayed if forced to maintain service to buildings remaining in area
[6] Due to lack of sufficient personnel, funds, etc.

TABLE 32.2.—Are Delays Encountered by Street or Highway Department, or Contractor, Because Utility Defers Starting Relocation Pending Clearance (Grubbing, Drainage, Etc.) of Right-of-Way?

(County Highway Departments)

State	Delays Encountered				Utility at Fault					Total
	Yes	Sometimes	Never	No Answer	Yes	Sometimes	Never	Not Applicable	No Answer	
Ala.	7	—	4	—	—	—	5	4	2	11
Ariz.	1	—	1	—	—	—	1	1	—	2
Ark	—	—	4	—	—	—	—	4	—	4
Calif.	11	4	11	4	3	6	2	11	8	30
Colo.	1	—	3	3	1	—	—	3	3	7
Fla.	4	1	2	1	—	1	3	2	2	8
Ga.	10	1	4	—	2	3	3	4	3	15
Idaho	1	—	2	—	—	1	—	2	—	3
Ill.	12	4	7	1	5	4	5	7	3	24
Ind.	2	1	7	2	1	2	—	7	2	12
Iowa	25	4	10	3	6	5	17	10	4	42
Kans	16[1]	1	14	3	5	3[1]	4	14	8	34
Ky.	—	—	4	2	—	—	—	4	2	6
La.	1	—	3	—	—	—	—	3	1	4
Me.	—	—	—	1	—	—	—	—	1	1
Md.	6	—	1	1	—	1	4	1	2	8
Mich.	13	2	4	2	3	3	6	4	5	21
Minn.	24	—	13	1	6	3	11	13	5	38
Miss	—	—	1	—	—	—	—	1	—	1
Mo.	3[2]	—	3	4	—	1[2]	2	3	4	10
Mont.	1	—	2	1	—	—	1	2	1	4
Nebr.	2	3	1	—	—	2	2	1	1	6
N. J.	4	—	4	—	2	1	—	4	1	8
N. Mex	—	—	1	—	—	—	—	1	—	1
N. Y.	4	—	9	1	1	—	2	9	2	14
N. C	3	—	—	—	—	—	2	—	1	3
N. Dak.	2	—	7	1	—	1	1	7	1	10
Ohio	4	—	9	2	—	1	3	9	2	15
Okla	1	—	3	—	—	—	—	3	1	4
Ore	3	—	7	1	—	—	3	7	1	11
Pa.	1	—	1	1	—	—	—	1	2	3
S. C.	—	1	—	—	—	—	—	—	1	1
S. Dak.	1	—	9	4	—	1	—	9	4	14
Tenn.	1	—	3	2	—	1	—	3	2	6
Tex.	4	2	15	1	1	4	1	15	1	22
Utah	—	—	3	—	—	—	—	3	—	3
Va.	5	—	—	—	—	4	1	—	—	5
Wash.	5	2	13	—	3	—	3	13	1	20
W. Va.	—	—	1	—	—	—	—	1	—	1
Wis.	5	3	3	2	3	1	—	3	6	13
Wyo	1	—	—	2	—	—	1	—	2	3
Total	184	29	189	46	42	49	83	189	85	448
	41.1%	*6.5%*	*42.2%*	*10.2%*	*9.4%*	*10.9%*	*18.5%*	*42.2%*	*19.0%*	*100.0%*

[1] In one county, applies only when property rights are being taken for which utility must be compensated.
[2] In one county, applies only when utility is required to move from one place to another within publicly-owned right-of-way at its own expense.

TABLE 32.3.—Are Delays Encountered by Street or Highway Department, or Contractor, Because Utility Defers Starting Pending Clearance of Right-of-Way

(Municipal Highway Departments)

State	Delays Encountered				Utility at Fault		
	Yes	Sometimes	No	Not Answered	Yes	No	Not Answered
Ala			1				1
Alaska			1			1	
Calif	9[1]	2	6	3	7[2]	7	6
Colo.	1		2	1	1	1	2
Conn	1						1
Fla			5			2	3
Ga.		3	1		1	1	2
Hawaii	1				1		
Idaho			1			1	
Ill		1	2			3	
Iowa			1	1		1	1
Kans	1						1
Ky.			1			1	
La.			1			1	
Me			1				1
Md	1		1			2	
Mich.	1		1		1		1
Minn.	1		2		1	1	1
Miss			1			1	
Mo			2	1	1		2
Nev			2		1		1
N J.				1			1
N Mex.			1				1
N Y			3			2	1
N. C.	1	1	3		1[3]	2	2
Ore		1					1
Pa.	1		1			1	1
S C	1				1		
S. Dak	1				1		
Tenn.			1	1			2
Tex	1					1	
Va.	1		2		1	1	1
Wash				1			1
W. Va.			1		1		
Wis.	1		1	1		2	1
Wyo				1			1
Total	23	8	45	11	19	32	36
	26.5%	*9.2%*	*51.7%*	*12.6%*	*21.8%*	*36.8%*	*41.4%*

[1] San Francisco allows a minimum of 10 days from date of notification of award of contract to begin adjustment of facilities, followed by cooperation with contractor's construction schedule, or negotiation with contractor regarding delay in start of adjustment and coordination of work.
[2] In Sacramento, sometimes
[3] In Winston-Salem, sometimes.

TABLE 33.1.—What Is Approximate Period Required to Obtain Approval of Utility Plans by State Highway Department?

(State Highway Departments)

1 - 2 Weeks		2 - 4 Weeks		4 - 6 Weeks	6 Weeks - 2 Months	Varies
Alaska	Ore	Ala.	Nebr.	Ill.	Idaho	Ark.[1]
Ariz.	R. I	Calif.	N. J.	Iowa	Okla.	Colo.
Del	S C	Conn	N. C.	Nev.		Ga.
Fla.	S Dak.	Kans	Pa.	N. Mex		Ind.[2]
Hawaii	Utah	La	Tenn.	Ohio		Ky.[3]
Md.	Wyo.	Me.	Tex.	Vt.		Mass
N. Dak.	D. C	Mich	Wash	Va.		N. H.[4]
		Minn.	W. Va.			N Y.[5]
		Miss	Wis.			
		Mo	P. Rico			
		Mont				
14		21		7	2	8
26.9%		*40 4%*		*13.5%*	*3!8%*	*15 4%*

[1] 2 - 10 weeks
[2] 15 - 60 days
[3] 10 - 90 days.
[4] 1 week to 2 months
[5] From 2 days upward

TABLE 33.2.—Approximately How Long Does It Take to Obtain Approval of Utility Relocation Plans by State Highway Departments?

(Utilities)

State	1-2 Weeks	2-4 Weeks	4-6 Weeks	6 Weeks-2 Months	Over 2 Months	No Approval Obtained	Done on Field Check	Varies	Reasonable Period	Other	Total
Ala.	1	12	7	2	3	—	—	—	—	3	28
Alaska	—	1	1	—	1	—	—	—	—	—	3
Ariz	2	3	2	1	—	1	—	2	—	1	12
Ark	3	3	4	5	2	—	—	2	—	2	21
Calif	10	29	13	5	—	—	—	6	—	17	80
Colo	6	16	7	2	2	—	—	—	—	3	36
Conn.	2	7	6	2	5	—	—	1	—	7	30
Del	—	2	—	—	—	—	—	1	1	2	6
Fla.	4	12	9	4	5	1	—	1	—	7	43
Ga.	4	20	7	4	2	—	—	2	—	2	41
Hawaii	—	4	1	1	—	—	—	2	—	3	11
Idaho	—	5	4	3	1	—	—	—	—	3	16
Ill.	14	28	26	5	7	—	—	5	—	14	99
Ind.	4	12	13	6	10	—	—	2	—	10	57
Iowa	7	10	13	3	2	2	—	4	—	17	58
Kans.	10	13	9	7	4	—	—	3	—	3	49
Ky.	8	20	13	4	12	—	—	5	—	7	69
La	6	9	8	5	5	1	—	2	—	3	39
Me.	15	21	1	—	—	—	2	1	—	25	65
Md	4	5	4	1	1	1	—	2	—	1	19
Mass.	2	15	7	21	4	—	1	1	—	13	64
Mich.	6	19	8	—	7	—	—	3	—	7	50
Minn.	11	38	17	7	6	—	—	2	—	15	96
Miss	5	9	7	2	1	—	—	—	—	3	27
Mo.	11	23	14	6	5	—	—	4	—	11	74
Mont.	11	17	7	1	2	—	1	—	—	2	41
Nebr	8	14	5	2	2	1	—	2	—	4	38
Nev.	1	2	2	—	1	—	—	—	—	1	7
N. H	5	7	2	2	—	1	—	—	—	5	22
N J	1	6	3	3	2	—	—	3	—	7	25
N Mex.	2	4	5	1	4	—	—	4	—	2	22
N. Y.	3	9	6	3	3	—	—	7	—	5	36
N. C	10	18	3	2	—	1	—	—	—	4	38
N. Dak	7	18	6	3	2	—	—	—	—	2	38
Ohio	7	29	11	5	5	—	—	1	—	3	61
Okla	3	19	7	9	19	1	—	3	—	—	61
Ore	4	8	2	1	—	—	—	—	—	2	17
Pa.	4	15	12	5	3	—	—	7	—	11	57
R. I.	—	3	3	1	1	—	—	—	—	2	10
S. C.	8	14	4	1	—	—	—	1	—	1	29
S. Dak.	11	14	8	2	3	—	—	1	—	4	43
Tenn	1	6	3	3	7	—	—	1	—	7	28
Tex.	14	26	25	24	26	3	—	7	—	18	143
Utah	—	5	2	2	—	—	—	1	—	4	14
Vt	3	4	2	1	—	1	1	1	—	2	15
Va.	2	9	6	3	—	—	—	1	—	1	22
Wash.	1	8	7	4	3	—	—	1	—	4	28
W. Va.	1	7	2	—	2	—	—	1	—	2	15
Wis	5	19	12	5	6	—	—	—	—	8	55
Wyo.	1	13	4	3	3	—	—	1	—	—	25
D. C.	—	2	—	—	—	—	—	1	—	—	3
P. Rico	—	—	1	—	—	—	—	—	—	—	1
Total	248	632	351	182	179	14	5	95	1	280	1987
	12.5%	*32.0%*	*17.7%*	*9.1%*	*9.0%*	*0 7%*	*0.2%*	*4.8%*	—	*14 0%*	*100.0%*

TABLE 33.3.—What Is the Approximate Period Required to Obtain Approval of Utility Plans by Street or Highway Department?

(County Highway Departments)

State	1-2 Weeks	2-4 Weeks	4-6 Weeks	6 Weeks - 2 Months	Over 2 Months	No Approval Obtained	Varies	No Answer	Total
Ala	3	4	1	—	2	—	—	1	11
Ariz.	2	—	—	—	—	—	—	—	2
Ark.	2	—	—	—	—	—	—	2	4
Calif	14	4	2	1	2	2	—	5	30
Colo.	2	3	—	—	1	—	—	1	7
Fla.	3	2	1	—	—	1	—	1	8
Ga.	6	5	2	1	—	—	—	1	15
Idaho	2	—	—	1	—	—	—	—	3
Ill	8	6	1	1	—	2	—	6	24
Ind	5	3	—	1	—	—	—	3	12
Iowa	11[1]	10	1	1	—	3	—	16	42
Kans	9[2]	8[3]	3	2	—	1	—	11	34
Ky	1	—	—	—	1	—	1	3	6
La	1	1	—	—	—	—	—	2	4
Me.	—	—	—	—	—	—	—	1	1
Md.	4	2	—	—	—	—	—	2	8
Mich.	11	5	—	2	—	1	—	2	21
Minn.	13	5	1	1	—	7	—	11	38
Miss.	1	—	—	—	—	—	—	—	1
Mo.	3[1]	2	1	—	—	—	—	4	10
Mont.	1	1	—	—	—	—	—	2	4
Nebr.	2	3	—	—	—	1	—	—	6
N. J	3	1	1	—	—	1	—	2	8
N Mex.	1	—	—	—	—	—	—	—	1
N. Y	7	3	1	—	—	1	—	2	14
N C	—	2	—	—	—	—	—	1	3
N Dak	4	1	—	1	—	1	—	3	10
Ohio	8	2	1	—	—	—	—	4	15
Okla.	1	1	—	—	—	—	—	2	4
Ore.	7	1	—	—	—	1	—	2	11
Pa.	1	—	1	—	—	—	—	1	3
S. C	1	—	—	—	—	—	—	—	1
S. Dak.	4	3	2	1	—	—	—	4	14
Tenn.	1	1	1	—	—	—	—	3	6
Tex.	4	6	4	2	1	—	1	4	22
Utah	1	1	—	—	—	—	1[5]	—	3
Va	2	2	1	—	—	—	—	—	5
Wash.	8	3	—	—	3	—	—	6	20
W. Va	—	—	—	—	—	—	1	—	1
Wis.	2	4	—	—	1	1	—	5	13
Wyo.	2	1	—	—	—	—	—	—	3
Totals	161	96	25	15	11	23	4	113	448
	35.9%	*21.4%*	*5.6%*	*3.3%*	*2.6%*	*5.1%*	*0.9%*	*25.2%*	*100.0%*

[1] In one county, when property rights are being taken for which utility must be compensated; 2-4 weeks when utility is required to move from publicly-owned right-of-way at its own expense

[2] In one county, when utility is required to move from publicly-owned right-of-way at its own expense, 2-4 weeks when property rights are being taken for which utility must be compensated.

[3] In one county, only when utility is required to move from publicly-owned right-of-way partially or wholly at expense of local government

[4] In one county, only when utility is required to move from one place to another within publicly-owned right-of-way at its own expense

[5] In one county, usually set by court decision

TABLE 33.4.—What Is the Approximate Period Required to Obtain Approval of Utility Plans by Street or Highway Department?

(Municipal Highway Departments)

State	1-2 Weeks	2-4 Weeks	4-6 Weeks	6 Weeks-2 Months	Over 2 Months	Other	Not Answered	Total
Ala.				1				1
Alaska					1			1
Calif.	12[1]	4				2[2]	2	20
Colo.	2	2						4
Conn.							1	1
Fla.	2	1	1			1[3]		5
Ga.	2			1			1	4
Hawaii		1						1
Idaho	1							1
Ill		3						3
Iowa	2							2
Kans.		1						1
Ky		1						1
La.	1							1
Me.		1						1
Md.	2							2
Mich.	2							2
Minn.	3							3
Miss.	1							1
Mo.	1						2	3
Nev.	2							2
N. J.	1							1
N. Mex	1[4]							1
N. Y.	3							3
N. C	4	1						5
Ore.	1							1
Pa.	2							2
S. C.	1							1
S. Dak			1					1
Tenn.	1	1						2
Tex.	1							1
Va.	1		1				1	3
Wash.	1							1
W. Va.							1	1
Wis.	1		1				1	3
Wyo							1	1
Total	51	16	4	2	1	3	10	87
	58.6%	*18.4%*	*4.6%*	*2.3%*	*1.1%*	*3.5%*	*11.5%*	*100.0%*

[1] In Berkeley, when utility is required to move from publicly-owned right-of-way partially or wholly at expense of local government, over 2 months when utility is required to move at its own expense.

[2] In San Leandro, less than 1 week; in San Francisco, when interferences are previously resolved city approval is not required.

[3] In Miami Beach, depends on the magnitude of the job.

[4] In Albuquerque, when utility is required to move from publicly-owned right-of-way at its own expense, 4-6 weeks when utility is required to move partially or wholly at expense of local government (approval must be obtained from State).

TABLE 34.1.—Do Utilities Notify State Highway Department of Proposed New Installations Along Highways?

(State Highway Departments)

Yes			Permit Required When Locating Within Publicly-Owned Highway Right-of-Way				Sometimes	No
Ala.	La	N Dak	Ark.	Iowa[1]	Nev	Pa	Ariz [2]	Vt
Alaska	Me	Tenn	Colo	Kans	N H	R. I	Mont.	Va.
Calif	Mass	Tex	Conn	Ky	N J	S C	N. Mex [3]	
Ga.	Miss	W Va	Del.	Md.	N. Y	Utah	S. Dak.	
Hawaii	Nebr	Wis	Fla	Mich	Ohio	Wash		
Idaho	N. C	Wyo.	Ill	Minn	Okla.	D. C		
			Ind.	Mo.	Ore.	P Rico		
	18				28		4	2
	34.6%				*53.9%*		*7 7%*	*3 8%*

[1] Permit required to locate longitudinally.
[2] Advised by larger companies
[3] Encouraged to do so.

TABLE 34.2.—Do You Notify State Highway Department of Proposed Utility Installations Along Highways?

(Utilities)

State	Yes	No	Generally, Sometimes	No Answer	Total	State	Yes	No	Generally, Sometimes	No Answer	Total
Ala	21	6	—	1	28	Nev.	6	1	—	—	7
Alaska	3	—	—	—	3	N H.	20	1	—	1	22
Ariz	10	2	—	—	12	N. J.	21	2	1	1	25
Ark.	14	7	—	—	21	N Mex.	17	4	—	1	22
Calif	71	3	1	5	80	N Y.	31	3	—	2	36
Colo	29	7	—	—	36	N. C.	26	10	—	2	38
Conn	26	2	—	2	30	N. Dak.	23	14	—	1	38
Del.	6	—	—	—	6	Ohio	51	10	—	—	61
Fla.	37	2	—	4	43	Okla.	46	13	1	1	61
Ga	31	7	—	3	41	Ore	14	3	—	—	17
Hawaii	9	—	—	2	11	Pa.	46	7	—	4	57
Idaho	12	4	—	—	16	R I.	9	—	—	1	10
Ill.	81	14	—	4	99	S C.	19	9	—	1	29
Ind	48	7	—	2	57	S Dak.	24	17	—	2	43
Iowa	50	8	—	—	58	Tenn.	17	11	—	—	28
Kans.	34	13	—	2	49	Tex.	115	23	1	4	143
Ky	57	11	—	1	69	Utah	12	1	—	1	14
La.	32	7	—	—	39	Vt.	13	2	—	—	15
Me	42	22	—	1	65	Va	16	5	—	1	22
Md.	14	5	—	—	19	Wash	24	3	—	1	28
Mass	56	6	—	2	64	W Va	12	2	—	1	15
Mich	46	3	1	—	50	Wis	52	3	—	—	55
Minn.	83	9	—	4	96	Wyo.	20	5	—	—	25
Miss	25	2	—	—	27	D. C	3	—	—	—	3
Mo.	58	11	1	4	74	P. Rico	1	—	—	—	1
Mont.	25	15	—	1	41	Total	1585	333	6	63	1987
Nebr.	27	11	—	—	38		*79.8%*	*16.8%*	*0 3%*	*3.1%*	*100.0%*

TABLE 34.3.—Do Utilities Notify Street or Highway Department of Proposed New Installations Along Streets and Highways?

(County Highway Departments)

State	Yes	Generally	Sometimes	Never	No Answer	Total
Ala.	5	—	1	5	—	11
Ariz.	2	—	—	—	—	2
Ark.	3	—	—	1	—	4
Calif.	24	1	1	3	1	30
Colo.	5	—	—	2	—	7
Fla.	6	—	—	2	—	8
Ga.	11	—	—	4	—	15
Idaho	2	—	—	1	—	3
Ill	19	—	2	2	1	24
Ind.	10	—	—	1	1	12
Iowa	30	1	1	9	1	42
Kans.	12[1]	3	6	10	3	34
Ky.	3	—	—	—	3	6
La.	2	—	—	2	—	4
Me	—	—	—	—	1	1
Md	8	—	—	—	—	8
Mich.	20	—	—	1	—	21
Minn.	26	1	1	9	1	38
Miss	—	—	—	1	—	1
Mo	8	—	—	—	2	10
Mont.	2	—	—	1	1	4
Nebr	4	—	—	2	—	6
N J.	7	—	1	—	—	8
N. Mex.	1	—	—	—	—	1
N. Y.	13	—	—	—	1	14
N C.	3	—	—	—	—	3
N. Dak.	9	—	1	—	—	10
Ohio	11	—	—	4	—	15
Okla.	3	—	—	1	—	4
Ore	8	—	—	3	—	11
Pa	2	—	—	—	1	3
S C.	1	—	—	—	—	1
S Dak.	9	2	—	—	3	14
Tenn.	2	—	—	2	2	6
Tex.	13	1	1	4	3	22
Utah	1	—	—	2	—	3
Va.	5	—	—	—	—	5
Wash	14	—	2	4	—	20
W Va	1	—	—	—	—	1
Wis	11	—	—	2	—	13
Wyo.	3	—	—	—	—	3
Total	319	9	17	78	25	448
	71 2%	*2.0%*	*3 8%*	*17.4%*	*5.6%*	*100.0%*

[1] In one county, applies only when property rights are being taken for which utility must be compensated.

TABLE 34.4.—Do Utilities Notify Street or Highway Department of Proposed New Installations Along Streets and Highways?

(Municipal Highway Departments)

State	Yes	Sometimes	No	Total
Ala.	—	—	1	1
Alaska	1	—	—	1
Calif.	18[1]	1	1	20
Colo.	4	—	—	4
Conn.	1	—	—	1
Fla	5	—	—	5
Ga	4	—	—	4
Hawaii	1[2]	—	—	1
Idaho	1	—	—	1
Ill.	2	1	—	3
Iowa	2	—	—	2
Kans.	—	—	1	1
Ky.	—	—	1	1
La.	1	—	—	1
Me	1	—	—	1
Md.	2	—	—	2
Mich	2	—	—	2
Minn	2	—	1	3
Miss.	1	—	—	1
Mo.	2	—	1	3
Nev	2	—	—	2
N J	1	—	—	1
N. Mex.	1	—	—	1
N. Y.	3	—	—	3
N C	5	—	—	5
Ore.	1	—	—	1
Pa	2	—	—	2
S. C	1	—	—	1
S. Dak.	—	—	1	1
Tenn.	2	—	—	2
Tex.	1	—	—	1
Va.	3	—	—	3
Wash	1	—	—	1
W. Va.	1	—	—	1
Wis.	2	—	1	3
Wyo.	1	—	—	1
Total	77	2	8	87
	88.5%	*2 3%*	*9 2%*	*100.0%*

[1] In Long Beach and Norwalk, excavation or other permit required.
[2] In Honolulu, excavation or other permit required.

TABLE 35.1.—Do Utilities or Other Agencies Furnish Your Department Maps Showing Utility Facilities Within Your State?

(State Highway Departments)

Always	Notified of Changes or Additions		Upon Request	Notified of Changes or Additions		Sometimes	Notified of Changes or Additions		No	Notified of Changes or Additions	
	Yes	No		Yes	No		Yes	No		Yes	No
Ariz	X		Ala		X	Ark	X[1]		Alaska		X
Calif.	X		Colo		X[2]	Mont		X[3]	Del.		X
Conn	X		Hawaii		X[2]	N Mex		X[3]	Idaho		X
Fla	X		Iowa		X	N. C		—[4]	Ill		X
Ga	X[5]		Ky		X	Ohio		X[3]	Kans		X
Ind	X[5]		La		X	S. C		—[4]	N. Y		X
Me.	X[6]		Minn		X[3]	Utah		X[3]	Tex		X
Md	X		Nebr		X[3]	Va		X[3]	Wis		X
Mass		X[4]	N H		X				P Rico		X[2]
Mich		X[4]	N Dak		X						
Miss	X		Okla		X[3]						
Mo	X[5]		Pa.		X[2]						
Nev	X		R I.		X						
N. J		X[3]	Vt		X						
Ore		X[3]									
S Dak		X[7]									
Tenn.		X									
Wash		X									
W Va		X									
Wyo	X										
D C	X										
	21			14			8			9	
	40.4%			*26.9%*			*15.4%*			*17.3%*	

[1] Some of larger utilities keep State informed.
[2] Upon request.
[3] Sometimes, not necessarily, etc
[4] No answer.
[5] Usually.
[6] Major alterations
[7] Only when maps revised and reissued.

TABLE 35.2.—Does Utility Furnish State Highway Department Maps Showing Location of Utility Facilities?

(Utilities)

State	Yes	If Requested	No				No Answer	Total
			Would Utility Be Willing to Provide Such Map					
			Yes	No	No Answer	Total		
Ala.	12	—	14	1	—	15	1	28
Alaska	2	—	1	—	—	1	—	3
Ariz.	6	—	3	3	—	6	—	12
Ark	5	1	9	5	—	14	1	21
Calif.	29	3	23	8	1	32	16	80
Colo.	10	—	22	3	1	26	—	36
Conn	12	5	9	1	—	9	4	30
Del	4	1	1	—	—	1	—	6
Fla	18	—	17	2	2	21	4	43
Ga.	11	1	24	4	—	28	1	41
Hawaii	3	2	3	1	—	4	2	11
Idaho	10	1	4	1	—	5	—	16
Ill	34	1	49	5	2	56	8	99
Ind	24	1	28	1	—	29	3	57
Iowa	23	1	30	3	1	34	—	58
Kans	11	4	31	1	—	32	2	49
Ky.	43	1	18	5	1	24	1	69
La.	16	1	17	4	—	21	1	39
Me	10	11	39	3	—	43	1	65
Md.	7	1	7	4	—	11	—	19
Mass.	20	5	32	2	—	34	5	64
Mich	32	—	17	1	—	18	—	50
Minn.	31	2	55	3	—	58	5	96
Miss.	12	—	14	1	—	15	—	27
Mo.	21	2	40	6	—	46	5	74
Mont.	12	2	24	1	—	25	2	41
Nebr	14	1	21	1	—	22	1	38
Nev	3	—	2	2	—	4	—	7
N. H	5	—	10	3	2	15	2	22
N. J	10	2	8	—	—	8	5	25
N. Mex	5	1	13	2	—	15	1	22
N. Y	15	2	11	5	1	17	2	36
N. C.	14	—	22	2	—	24	—	38
N. Dak.	13	3	21	1	—	22	—	38
Ohio	25	2	30	2	—	32	2	61
Okla.	29	4	26	2	—	28	—	61
Ore	7	1	6	2	1	9	—	17
Pa	18	2	26	6	—	32	5	57
R I	4	1	4	—	—	4	1	10
S. C	8	—	17	2	2	21	—	29
S. Dak.	14	3	25	1	—	26	—	43
Tenn	11	2	15	—	—	15	—	28
Tex.	45	3	72	15	—	87	8	143
Utah	7	—	4	2	—	6	1	14
Vt.	5	—	8	1	—	9	1	15
Va.	12	—	5	4	—	9	1	22
Wash	12	1	9	4	—	13	2	28
W. Va.	5	—	8	1	—	9	1	15
Wis.	30	—	19	4	—	23	2	55
Wyo	10	—	11	3	1	15	—	25
D C.	3	—	—	—	—	—	—	3
P. Rico	1	—	—	—	—	—	—	1
Total	743	74	924	134	15	1073	97	1987
	37.4%	*3.7%*				*54.0%*	*4.9%*	*100.0%*

TABLE 35.3.—Do Utilities or Other Agencies Furnish Your Department Maps Showing Utility Facilities Within Your City?
(County Highway Departments)

State	Maps Furnished by Utilities					Utilities Notify of Changes				Total
	Yes	Sometimes	Never	On Request	No Answer	Yes	Sometimes	Never	No Answer	
Ala	1	—	9	—	1	2	—	9	—	11
Ariz.	1	—	—	—	1	1	—	—	1	2
Ark.	—	—	4	—	—	1	—	3	—	4
Calif.	9	1	13	6	1	14	3	11	2	30
Colo.	3	—	2	1	1	3	—	3	1	7
Fla.	3	—	5	—	—	3	1	4	—	8
Ga	5	—	7	1	2	7	1	6	1	15
Idaho	1	—	2	—	—	1	—	2	—	3
Ill.	10	—	9	3	2	11	1	10	2	24
Ind.	1	—	9	—	2	5	—	6	1	12
Iowa	19	2	14	2	5	21	3	12	6	42
Kans.	9[1]	1	20	1	3	9[1]	1	20	4	34
Ky	1	1	2	—	2	2	—	2	2	6
La.	2	—	2	—	—	2	—	2	—	4
Me	1	—	—	—	—	1	—	—	—	1
Md.	3	—	4	—	1	3	1	3	1	8
Mich.	14	1	4	1	1	18	1	1	1	21
Minn	18[2]	1	14	1	4	20	2	14	2	38
Miss.	—	—	1	—	—	—	—	1	—	1
Mo.	2	—	5	—	3	5	—	1	4	10
Mont	2	—	—	—	2	2	—	—	2	4
Nebr.	3	1	2	—	—	4	—	2	—	6
N. J.	1	4	3	—	—	4	3	1	—	8
N. Mex	1	—	—	—	—	1	—	—	—	1
N. Y.	7	—	5	—	2	8	—	4	2	14
N. C.	1	—	1	—	1	2	—	1	—	3
N. Dak.	3	—	4	—	3	3	—	4	3	10
Ohio	7	1	5	1	1	7	—	5	3	15
Okla	2	—	1	—	1	3	—	1	—	4
Ore.	3	—	4	2	2	7	—	4	—	11
Pa.	2	—	—	—	1	2	—	—	1	3
S. C.	—	—	—	1	—	—	—	—	1	1
S. Dak.	3	—	6	—	5	6	—	3	5	14
Tenn.	—	—	4	—	2	2	—	2	2	6
Tex.	7	—	6	4	5	10	2	5	5	22
Utah	—	—	3	—	—	1	—	2	—	3
Va.	1	—	2	2	—	3	—	1	1	5
Wash.	4	2	14	—	—	5	1	12	2	20
W. Va.	—	—	1	—	—	1	—	—	—	1
Wis	5	2	4	—	2	7	1	3	2	13
Wyo	3	—	—	—	—	3	—	—	—	3
Total	158	17	191	26	56	210	21	160	57	448
	35.3%	*3.8%*	*42.6%*	*5.8%*	*12.5%*	*46.9%*	*4.7%*	*35.7%*	*12.7%*	*100.0%*

[1] In Seward County, applies only when property rights are being taken for which utility must be compensated.
[2] In Mower County, applies only when utility is required to move from publicly-owned right-of-way at its own expense.

TABLE 35.4.—Do Utilities or Other Agencies Furnish Your Department Maps Showing Utility Facilities Within Your City?
(Municipal Highway Departments)

State	Maps Furnished by Utilities			Utilities Notify of Changes				Total
	Yes	No	No Answer	Yes	Sometimes	No	No Answer	
Ala.		1				1		1
Alaska	1			1				1
Calif	16[1]	4[2]		17[3]		2	1	20
Colo	3	1		3		1		4
Conn	1			1				1
Fla	5			5				5
Ga.	4			4				4
Hawaii		1				1		1
Idaho	1			1				1
Ill	3			3				3
Iowa	2			2				2
Kans		1				1		1
Ky			1				1	1
La	1			1				1
Me	1			1				1
Md	2			2				2
Mich	2[1]			2				2
Minn	2	1		2		1		3
Miss.	1			1				1
Mo	1	2		2		1		3
Nev	1	1		1		1		2
N. J.	1			1				1
N. Mex.		1[4]				1[4]		1
N Y.	3[1]			3[5]				3
N C	4	1		5				5
Ore	1			1				1
Pa	2			1	1			2
S. C.	1			1				1
S Dak		1				1		1
Tenn	1	1		1	1			2
Tex.	1						1	1
Va.	2	1		3				3
Wash	1			1				1
W. Va		1					1	1
Wis	3			2		1		3
Wyo.	1			1				1
Total	68	18	1	69	2	12	4	87
	78 2%	*20 7%*	*1 1%*	*79.3%*	*2 3%*	*13.8%*	*4.6%*	*100 0%*

[1] Maps furnished only upon request in Fresno, Calif , Pontiac, Mich , Schenectady, N Y
[2] Although utility does not furnish maps, all companies in Long Beach are required to maintain up-to-date maps on file, in San Francisco specific up-to-date information will be furnished by utility upon request
[3] Anaheim and San Francisco are notified of changes by application for necessary permit to do work, Anaheim also periodically receives up-to-date plans for utility installations
[4] In Albuquerque, when required to move from publicly-owned right-of-way at their own expense, utilities will give specific and up-to-date information upon request.
[5] Schenectady is notified of changes or additions to maps of underground facilities only.

TABLE 36.1.—Does Utility Submit Its Revisions in Maps Showing Location of Utility Facilities to State Highway Department?
(Utilities)

State	Yes	No	No Answer	Total
Ala.	14	11	3	28
Alaska	3	—	—	3
Ariz.	6	6	—	12
Ark	9	8	4	21
Calif.	38	16	26	80
Colo	19	13	4	36
Conn.	14	11	5	30
Del.	4	2	—	6
Fla.	22	11	10	43
Ga.	26	8	7	41
Hawaii	8	—	3	11
Idaho	10	5	1	16
Ill.	48	31	20	99
Ind.	41	11	5	57
Iowa	34	21	3	58
Kans.	26	18	5	49
Ky.	34	21	14	69
La.	21	11	7	39
Me	38	17	10	65
Md.	14	5	—	19
Mass.	46	10	8	64
Mich	39	10	1	50
Minn	60	20	16	96
Miss	16	6	5	27
Mo	38	24	12	74
Mont	26	9	6	41
Nebr	20	12	6	38
Nev.	4	3	—	7
N H.	12	4	6	22
N J.	13	6	6	25
N. Mex.	10	10	2	22
N Y.	18	11	7	36
N C.	25	9	4	38
N. Dak.	23	13	2	38
Ohio	40	15	6	61
Okla.	35	24	2	61
Ore	10	6	1	17
Pa.	23	20	14	57
R I.	6	3	1	10
S. C.	15	11	3	29
S Dak	24	14	5	43
Tenn	16	9	3	28
Tex	82	39	22	143
Utah	5	6	3	14
Vt.	11	2	2	15
Va.	13	5	4	22
Wash	14	11	3	28
W Va	7	5	3	15
Wis.	37	13	5	55
Wyo.	15	6	4	25
D. C	3	—	—	3
P. Rico	1	—	—	1
Total	1136	562	289	1987
	57.2%	*28.3%*	*14 5%*	*100 0%*

TABLE 36.2.—If Utility Does Not Now Submit Revisions in Maps Showing Location of Utility Facilities to State Highway Department, Would It Be Willing to Do So?
(Utilities)

State	Yes	No	Not Applicable	No Answer	Total
Ala.	10	2	14	2	28
Alaska	—	—	3	—	3
Ariz.	3	3	6	—	12
Ark.	6	2	9	4	21
Calif	13	6	38	23	80
Colo	13	2	19	2	36
Conn.	9	1	14	6	30
Del.	2	—	4	—	6
Fla.	11	2	22	8	43
Ga.	9	2	26	4	41
Hawaii	—	—	8	3	11
Idaho	4	1	10	1	16
Ill	31	4	48	16	99
Ind.	11	1	41	4	57
Iowa	18	3	34	3	58
Kans.	18	2	26	3	49
Ky.	24	2	34	9	69
La	11	2	21	13	39
Me	13	4	38	10	65
Md	1	4	14	—	19
Mass.	8	2	46	8	64
Mich.	8	3	39	—	50
Minn	27	1	60	8	96
Miss.	5	1	16	5	27
Mo.	16	8	38	12	74
Mont.	11	1	26	3	41
Nebr	11	2	20	5	38
Nev.	1	2	4	—	7
N. H	2	3	12	5	22
N. J	3	2	13	7	25
N. Mex	8	3	10	1	22
N Y	8	4	18	6	36
N. C	9	1	25	3	38
N. Dak	12	2	23	1	38
Ohio	10	5	40	6	61
Okla.	20	5	35	1	61
Ore.	3	2	10	2	17
Pa	18	5	23	11	57
R. I.	3	—	6	1	10
S. C.	10	2	15	2	29
S. Dak	16	1	24	2	43
Tenn	10	—	16	2	28
Tex	28	12	82	21	143
Utah	4	2	5	3	14
Vt.	2	1	11	1	15
Va	3	3	13	3	22
Wash.	7	4	14	3	28
W. Va.	4	2	7	2	15
Wis	9	6	37	3	55
Wyo.	5	1	15	4	25
D C.	—	—	3	—	3
P. Rico	—	—	1	—	1
Total	488	129	1136	234	1987
	24.6%	*6.5%*	*57.1%*	*11 8%*	*100.0%*

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