

## *Session Four*

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# SCHEDULING LETTING DATES FOR SPECIFIC PROJECTS

JAMES O. GRANUM, Presiding

## **Coordinating the Highway Construction Schedule With All Agencies Concerned**

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Rural highways were of primary importance in the first half of the 20th Century. Most highway projects were in relatively open and undeveloped areas involving only occasional conflicts with other agencies or interests. Only infrequently did instances arise that required coordination with outside groups.

Another characteristic of this period was that most highway improvements were on existing locations and consisted chiefly of widening, resurfacing, and straightening. Complete relocations were few and far between; the controlled-access highway was still a relatively new idea.

At the beginning of the 1950's, the principal change in the over-all highway program nationally was that attention began to shift from the country to the city. Also, with the passage of the 1956 Federal-Aid Highway Act the tempo of highway activity increased, with dramatic attention being given to construction on new locations and to controlled-access highways.

With these changes, most highway agencies found themselves confronted with tremendous problems of coordination. Conflicts with cities, with public utilities, and with home owners brought new and complex problems for the highway departments to solve. In many instances highway agencies were not too accustomed to working with cities and the utility companies. Furthermore, they did not fully appreciate each other's problems and methods of operation. The lack of mutual understanding coupled with imperfect machinery for coordination brought delay and, at times, complete halt to highway construction schedules.

The purpose of this paper is to describe the nature of some of these problems of coordination, and to discuss some ideas for their solution. Setting up advance contract letting schedules without regard to the coordination that needs to be achieved with all agencies concerned is like calculating the path of a projectile to the moon without considering the effects of air friction and the varying effects of gravity. It simply will not work.

### COORDINATION WITH COUNTIES AND CITIES

Highway agencies have encountered considerable difficulty in the past decade in winning the support of counties and particularly local communities for expressway location, design, and construction. Here is where the old concept that a highway agency can complete its highway design before attempting coordination with other agencies must be completely abandoned. As a matter of fact, in the case of local communities, even the word

"coordination" is no longer appropriate. It is becoming clearer each day that community master plans and expressway plans are so interdependent that coordination in the form of only occasional contacts between the local city planners and the highway planners is inadequate to produce a master plan and a highway plan that are in harmony with each other. Instead of thinking in terms of "coordination," we should be thinking in terms of "integration."

This point may seem somewhat removed from the problem of formulating highway construction schedules. Yet is not this the root of many of our urban problems—construction schedules broken down through opposition from local officials and the community itself? This is no simple problem, and a great deal more know-how is needed before we have the tools we need to master fully this challenge. The point to be made, however, is that the local communities should be brought into construction scheduling and planning at earlier stages than they generally have in the past. It is in these early stages when neglect of the community or lack of full consideration for its legitimate concerns can plant the seeds for future problems that can tear any construction schedule to shreds.

The fact that practical difficulties of integrated planning in urban areas are numerous and complex should not divert us from recognizing that this integrated planning is the only fully satisfactory approach. Many highway departments and cities today are attacking the problem frontally and cooperatively by creating metropolitan area transportation committees in which all agencies concerned participate actively toward a common solution. Not only is the best over-all plan most likely to result, but the local support that comes from this approach creates a firm foundation for a dependable future construction schedule.

### COORDINATION WITH URBAN RENEWAL

Another area where integrated planning with city officials is imperative occurs when proposed highway improvements run through or near urban renewal projects. It is here where perhaps the greatest benefits of all can be achieved through joint effort, both in terms of benefits to the city as well as to our highway interests. Surely, the outstanding success that has thus far been achieved in a number of cities through joint planning of urban renewal and highways will cause many more projects of this type to be undertaken in the future.

An urban renewal project capitalizes on the potential value created by a new expressway in the areas abutting the expressway. Such areas are redeveloped into higher and more attractive uses which bring important benefits to the city in place of formerly substandard areas. A renewal project also usually provides for parking areas near the expressway ramps as well as major physical street adjustments to tie in with the expressway. The long term benefits of such actions are great, both to the city and to drivers. In addition to this, the expressway—a major gateway into the city—will pass through a modern attractive area instead of slums and deteriorating commercial and industrial districts which may have existed before renewal.

In addition to the general benefits mentioned above, cooperative efforts of this type generally bring savings in rights-of-way costs both to the highway department and the urban renewal agency through the elimination of "partial takes." Also, joint effort in relocation of families and in public relation activities greatly simplifies these responsibilities for the highway department.

To achieve such benefits early coordination between the urban renewal and highway agencies must be established. Coordination must be achieved in the development of physical plans, in scheduling and timing all phases of both projects, and in field operating problems such as right-of-way acquisition and certain interlocking construction work.

Although the complexities and problems of coordination between urban renewal and new highways are not simple, the rewards are such that they deserve all the effort required to solve them. The primary requirement is for coordinated planning as much as three to four years in advance of the construction date. None of the problems are insurmountable, but, as in any coordinated project of such magnitude, there are numerous

complications which must be anticipated and provided for if the over-all schedule is to move according to plan.

### COORDINATION WITH PUBLIC HEARINGS

The support of both the community and local officials that generally comes from integrated planning gives a highway agency a considerable advantage at public hearings. The Federal-Aid Highway Act specifies that a public hearing must be held and the economic effects of the proposal considered by the state highway department before any final decision as to the location is made and before any rights-of-way are acquired.

Many states differ as to the exact stage in the development of a project that a public hearing should be held. The time to hold the hearing is when the project is still flexible in order that adjustments can be made if information brought out at the hearing should justify.

The reaction to a project at the public hearing will generally affect the construction schedule in some way. Vigorous opposition may require the construction to be deferred. Conversely, enthusiastic support may permit early construction. It is helpful if a state can have some indication well in advance of the hearing concerning public reaction to a proposed project. With such advance information it is possible to meet legitimate criticisms before the hearing.

Close and continuous integrated planning with the community will go a long way in averting opposition. In addition, an alert public relations program from the earliest stages of the project can increase public support and hold misconceptions to a minimum. Particularly successful are meetings with small interested groups, such as chambers of commerce, civic clubs, and affected home owners, to explain the project in detail and provide a forum for amicable discussion. It is much easier to head off unfounded opposition before it becomes organized and committed rather than after it has gained momentum.

Another strong reason for early meetings with all interested groups prior to the public hearing is that the state itself may find it desirable to make adjustments which will result in greater benefit and service to the community without sacrifice to the highway project as such.

### COORDINATION WITH RIGHTS-OF-WAY

Once the public hearing has been held and the state has considered the information presented at the hearing, the final highway location can be established and detailed design started. As soon as design has progressed to a point where it is possible to fix the approximate rights-of-way limits, the machinery leading to the acquisition of rights-of-way can be put into motion. A close working relationship between the design division and the rights-of-way division is essential to produce the maximum lead time for property acquisition.

Where a tight construction schedule exists, it is desirable to begin certain rights-of-way activities in the early design stages. Title searching can begin and taking maps prepared. The acquisition of "total takes" generally can also be started. The acquisition of "partial takes," on the other hand, must usually await completion of design since even minor design adjustments may affect the extent of the taking as well as the extent of damages.

The keys to successful rights-of-way acquisition are a close working relationship between the rights-of-way and design divisions, and an adequate lead time for acquisition.

If the completion of design, including all requisite approvals, is not kept to a fixed pre-determined schedule, the rights-of-way division can find itself in a "squeeze-play." That is, when the design plans are not completed on schedule, the rights-of-way division becomes sandwiched between a late starting date and a fixed contract advertising date. Since resistance is usually strong to changing a publicized advertising date, the rights-of-way division all too frequently become involved in a desperate race to meet that date. This not only tends to upset its other work schedules, it also interferes with the orderly procedures that are requisite to efficient operations and good public relations. A home owner should be given the maximum time possible to relocate. An over-pressured ac-

quisition schedule causes inconvenience and hardship to property owners, and creates bad feeling between the public and the highway agency.

### COORDINATION WITH UTILITIES

Utility relocations represent another area which frequently disrupts construction schedules, particularly in recent years with the accelerated highway program and the increased work in built-up areas.

Inadequately coordinated utility relocations can easily delay an advertising schedule. They can also prevent the contractor from prosecuting his work with dispatch and add greatly to the cost of the project.

W. A. Bugge lists ("American Highways," July 1960) four important elements a utility must consider in setting up construction schedules: (a) Deployment of engineering manpower, (b) acquisition of right-of-way (utilities do not have the right of immediate possession), (c) need for special material which may require special ordering and (d) the problem of money. These elements must be recognized by a state highway department in coordinating construction schedules with a utility. Bugge then suggests that utilities could improve coordination with the state highway department by more thoroughly familiarizing themselves with legal requirements in each state and setting up a highway organization within their own administrative setup to work closely with the highway departments on highway development.

To date, many of the problems of coordinating utility relocations with highway construction have come from a lack of understanding of mutual problems by highway and utility agencies, and also from insufficient working liaison between the two.

In many states joint committees are being established comprised of representatives from the highway department, contractor associations, and the utilities. Such committees provide an excellent forum for the discussion of common problems and for the formulation of joint policies directed toward their solution.

There are a number of practices that have been found helpful in coordinating utility work and keeping the construction program on schedule. In some states the highway department in the early planning stages informs utility companies about the locations being considered and the tentative long-range schedule for the project. The utility company in turn apprises the highway agency of the effects of each of the alternate highway lines on its facilities or on its future plans for utility expansion.

In later stages, the highway agency sends the utility companies a map showing the approximate centerline and right-of-way limits as soon as a particular highway location becomes fixed. From this point onward a close liaison between the highway designers and utility engineers is established to permit consultation on mutual problems as the design progresses. During design consultation, arrangements can be made for the scheduling of utility relocation work to minimize interference with the highway work. In particular, arrangements should be made to complete all possible utility relocations in advance of the highway construction.

As soon as the contract is awarded, an on-site conference should be held with representatives from the contractor, the utility companies, and the highway agency to discuss scheduling of the utility work which must be done during the highway construction. At this time friendly liaison can be established between the field forces involved.

Another practice that has been found helpful is for both the highway agency and the utility companies to have a single individual in each agency to clear all highway-utility information and problems.

This will avoid the difficulty often encountered when engineers from either side must go from one office to another to find the right man to furnish them certain information or help with a problem. Many state highway departments have created the position of utilities engineer to serve this purpose. There are also many advantages in having a utilities engineer permanently assigned to each district. This is often the best way to create friendly working relationships with local utilities foremen that can aid appreciably in solving unanticipated problems.

These procedures will go a long way toward preventing many of the difficulties that have been encountered in coordinating utility and highway work. Vast strides are being

made in all the states in implementing utilities procedures. As a consequence, coordination of utility relocation with highway projects in the future should improve a great deal. This will mean not only better relations, but lower costs and less disruption of highway construction schedules.

### COORDINATION WITH CONTRACTORS

The early planning that must be done by highway agencies, local governments, rights-of-way personnel, and utility companies in preparing to meet a highway construction schedule has been discussed. Too often it is assumed that the contractor may be excepted from this concept, that his interest begins only as the date of advertising approaches. Actually this is not the case. Early project information as well as a particular seasonal pattern of advertising can be most helpful to a contractor with beneficial results to the highway department.

A one-year advance advertising schedule will permit the contractor to select for bidding those jobs he can do most efficiently. It will also allow him to compete for a series of jobs that will make possible the most advantageous scheduling of his men and equipment over an extended period of time. This will encourage lower bidding as well as more efficient operations in meeting the construction schedule.

To serve a contractor advantageously, an advance advertising schedule must be dependable. If a contractor cannot rely on the sequence of advertising as shown on the advance schedule, he may be then forced to compete for remote jobs to insure keeping his forces employed. He will refrain from early and extensive searches for materials and supplies, and will be discouraged from advance equipment planning.

In addition to an advance one-year schedule, many contractors prefer that advertising be spread out over the entire year with peaks in the fall and early spring. When project advertising is spread out to some extent throughout the year a contractor is in a better position to give each job more careful analysis before preparing the bid. This might not be possible if a large number of projects had to be bid on at once. On the other hand, advertising peaks in the fall and early spring insure that in states with limited construction seasons the early part of the construction season will not be wasted. In the snow-belt, advertising should be minimized during the winter months when a blanket of snow can prevent a proper field inspection of the job.

An advertising schedule that gives consideration to contractors' problems will put contractors in the most favorable position to meet the construction schedule with the lowest cost to the public.

It has not been possible to include other agencies with whom coordination should also be achieved. These might include Federal agencies such as the Bureau of Public Roads and the Corps of Engineers, as well as other state agencies such as flood commissions, park commissions, and state development commissions. The primary focus here has been on outlining some of the chief problem areas that now exist.

In conclusion, regardless of the agency with which coordination must be achieved, the best solution is early planning. This means appraising the problems of the future and taking steps beforehand toward their solution. This can be achieved through better understanding of mutual problems by all agencies, and through the establishment of working relationships that lead to their solution.

### *Discussion*

Houston. —Swanson has mentioned briefly coordination of highway problems with rights-of-way and the utilities. I think it is pertinent to "scheduling letting dates" because you have to consider all facets that feed into it.

In my spare time I have been National Chairman of the American Right-of-Way Association, which was originated by Frank Balfour 26 years ago in California.

We are interested in right-of-way matters, whether they are the concern of the highway department, utilities, (regulated or unregulated), pipeline companies, railroads, flood control projects, or water companies—both public and private: in other words,

right-of-way affairs in the whole gamut of public, quasi-public, and private organizations.

The Association is a non-political and educational organization. We are striving to do a good job in connection with the highway program, particularly the 1956 Federal-aid Highway Act.

Relocation of all kinds of utilities for highway work involved only one percent—a very small item—of the construction budget of the utilities prior to the 1956 Act. There are over 3.2 million miles of utility networks on, under and over the surface of the United States. The Interstate System alone, 41,000 miles, superimposed on that utility network, creates a potential conflict everywhere. I have found a lot of discussion that does not provide for good public relations between highways and utilities. I think, as Swanson pointed out, that there is a lot of misunderstanding, which we are seeking to eliminate.

In the fourth annual seminar of the American Right-of-Way Association, held in San Francisco, I moderated a panel entitled "The Advantages of Advance Planning, Cooperation, and Coordination Between Highways, Utilities, and Other Affected Agencies." On that panel were George Williams, Deputy Chief Engineer of the Bureau of Public Roads; A. E. Johnson, Executive Secretary of AASHO; Richard Taylor, Director of Right-of-Way and Real Estate for the Detroit Edison Company; Fred Crane, Superintendent of Right-of-Way for the Sinclair Pipeline Company; and a small independent telephone company man, Allen Stacy, with the Sunland-Tujunga Telephone Company in California.

The conclusion was that there was a definite need for coordination between highways and the utilities. For years everybody had been talking about it, but no one actually was doing anything on a concerted basis. We presented that situation to the 44th annual meeting of AASHO before the Legal Affairs and Right-of-way Committee, pleading, as a result of the resolution of the American Right-of-Way Association, that this was a desirable procedure, and that we would work with any like-minded organization to attempt to get the utilities and the highways together on this problem of coordination of planning.

Highway-related construction budgets for the utilities have increased. Lang told you yesterday that in three states and the District of Columbia the Chesapeake and Potomac Telephone Co. alone sets aside approximately \$5 million annually. We do not know exactly how it is going to be spent, but it is the only way we could protect ourselves and try to keep in good faith with the highway departments when it was necessary to move our utilities.

I do not think that this is quite fair, because actually we do not have enough lead time to do the engineering or to get the material.

The particular subject in the past which has led to most misunderstanding was the justice or injustice of reimbursement. Now, we pitched that right out the window. I am no attorney, but I do not believe litigation makes you any friends at all.

All the American Right-of-Way Association is saying is: Let's let reimbursement stand aside, and let's discuss with you, if you will, through your organizations, advance planning, cooperation, and coordination. In our 33 chapters, covering all but four states in the United States, we have 300 men that have been appointed for the single purpose of liaison.

AASHO, in its December meeting, appointed DeWitt Greer with ten colleagues to formulate, encourage, and stimulate similar arrangements in the various highway departments of the United States. Greer sent a letter out on February 5, 1960.

On the utility side, we have a large problem. There are 50 of you people in the State organizations, plus one in the District of Columbia.

There are 30,000 utilities that we are trying to help in this program. Our means of communication with them has to be arranged through the national utility bodies, the American Gas Association, the American Petroleum Institute, the American Water Works Association, Edison Electrical Institute, The United States Independent Telephone Association.

There are 4,600 independent telephone companies in this United States. And there is the AT & T. We have contacted all of those organizations on this program, and they are helping us through their committees by having their associates in the States coordinate with us.

The machinery is set up. The American Right-of-Way Association does not ask any-

one to belong to it. All it asks for is workers who may join with our local chapter committees simply to coordinate with the State.

For example, in Maryland John Funk, Director of Highways, called a meeting of all the utilities. We brought the city engineers, the county engineers, and the utility engineers into that meeting. Now all 80 of them have written to Funk and have indicated to him what kind of advance procedures should be set up to coordinate problems with the State.

Funk is now analyzing those suggestions and they are going to set up procedures in Maryland to give at least six months' lead time—something we have not had in the past in Maryland. That is a good beginning. California has had liaison for years.

I am pressing this matter because it is going to help in your public relations, and in connection with your public hearings, because the utilities are serving the public.

We would appreciate it if you would remember that there is an agency, the American Right-of-Way Association, in your State that is ready to help, and the utility people are ready and willing to cooperate.

I am not saying everything is going to work smoothly, but we are learning.

Aitken.—I received a letter from the telephone company recently, asking me to give them more advice and more time lead on some of our major projects. Well, in the best of regulated families, you tell people to do things, but they do not do them. So I am taking Houston's suggestion. I think I am going to pin one man with the job of keeping in touch with the telephone company, because we have projects here where the company gets hit with a construction bill of half a million dollars or more. Moreover, they have the same problem that we do in terms of scheduling, in that they must maintain their telephone traffic, and we must maintain highway traffic.

Granum.—In two days, we are attempting to explore many problems concerning the formulation of construction programs, and certainly coordination of all agencies is an important problem. Threading through all of these discussions is the need for lead time—advance time.

Swanson emphasized, for example, that the contractors, as well as others, would like to have at least a one-year advance advertising schedule. I think the theme of his paper is teamwork, both inside the highway departments (State, county, and city) and with others that are concerned.

I think Swanson's paper emphasized the coordination necessary—once a decision had been made to proceed with something. In the early part of his paper, there is a fairly strong implication of the need for coordinated teamwork in reaching those decisions, too.

My question is: What do you see as necessary, among both public and private agencies, in order to arrive at the decision to proceed with a specific project? How far ahead do you think such a decision should be reached in order to allow lead time for carrying out all the coordinated activities essential to getting the project under way?

Swanson.—More specifically, I was thinking of the need for the State getting in at the early stages in cooperative planning and thinking with city and metropolitan area officials; because from the time a project is first conceived until it is finished can take many, many years. I think if we get in and work the way we should and cooperate and coordinate our work, we can cut that time down considerably.

In the New York Times yesterday there was an editorial referring to the Manhattan Island expressway. It was first approved by the city planning commission, as far as the major arterial plan was concerned, in 1941, and it was just last week that the board of estimate gave approval to that route.

Twenty years is a long time. I do not know if it could be cut down in New York City, particularly, but certainly in many urban areas, with good regional and city planning work between the cities and the State highway departments, we could cut down our planning schedules, and I am firmly convinced that a great deal needs to be done in that field.

Granum.—Would you say that there should be more initiation on the part of local agencies of government? In other words, should a city or a county precede the State and initiate some of these studies? I think this has been done generally in the New York City area.

Swanson.—We all subscribe to the principles set forth in the Sagamore Conference. It outlined six or seven things for the States to do, and four or five for the cities. If we accomplish those, I think that is the way it should be done.

Granum.—Hall, where do you think this initiative should arise basically?

Hall.—We are always biased by our own experiences. In San Diego, the city took the initiative to form a technical coordinating committee composed of the planners and engineers of all the cities in the metropolitan area, the county, the State Division of Highways, the San Diego transit private enterprise, urban renewal officials and traffic police, keeping in mind that after we get through building the facilities, somebody has to operate them, and it might be nice to have the police know the concepts of planning that went into the systems, both freeway and major street. We had legal personnel there, too, to keep us out of trouble and advise about problems such as Houston has discussed. This committee was organized in 1955 and met monthly until recently, and then it shifted to a bi-monthly schedule.

In connection with the California SCR 26 and SCR 62 studies, both of which John Legarra described, identical maps were submitted by each of the independent cities and counties to the local district office of the State Division of Highways. The Division accepted these as the area-wide plan.

In other words, we were all together. And it had been done by working together over a period of years.

In Phoenix, about four years ago, there was organized a Phoenix-Maricopa County Traffic Coordinating Committee, including the Bureau of Public Roads, Arizona Highway Department, County of Maricopa, and City of Phoenix. The initial purpose of that committee was to develop a general transportation plan. A private consulting firm was hired and on March 10, 1960, presented such a plan.

Last week, resolutions were drafted which, if adopted by the State Highway Commission, the County of Maricopa, and the City of Phoenix, will adopt legally the identical maps of a master highway plan for the area.

They have not yet, for some reason, invited in the other 13 cities in the metropolitan area. We are taking immediate action to extend that invitation to all of the cities to become a partner in this effort, because the system of highways and streets surely affects all cities.

I think these are two illustrations where the central city of an area has taken the initiative and the lead, in both cases with strong county and State support.

Granum.—Do the master plans, either in San Diego or in Phoenix, carry through to the development of a tentative construction schedule?

Hall.—In San Diego, the coordinating committee was a technical advisory group, non-policy making, because you cannot make decisions in committees of 20 or 30 people. But because the people were brought together, we had informal offshoots, where the State or the county or the city or little groups would get together and talk about these things; and then, of course, in the final decision-making, it gets down to the specific jurisdictions involved.

I think the coordinating committee idea provides a common meeting ground. In the San Diego operation, and I am sure it will be the same in Phoenix, you do not make detail programs. However, this leads to announcement of such things as joint city-county-State programs, such as were just written up in the California Highway Magazine, on the joint city-county-State projects on US 80, the Mission Valley Road, which is a rather tremendous coordinated effort. But the meeting ground is established, and people talk to each other. I think this is the clue. Communications are established.

Granum.—I have the impression that in North Carolina a different approach is being developed, through the Highway Department in terms of the State initiating planning and helping the cities.

Babcock.—Yes, the State Highway Department has quite a bit of responsibility in the cities. On the North Carolina State highway system we have the bulk of the major thoroughfares—roughly 25 percent of all the city streets.



The State enacted legislation in 1959 that says the basis for any highway improvement within an incorporated municipality shall be a mutually adopted thoroughfare plan, accepted both by the city and the State Highway Commission. This thoroughfare plan must be based upon a 20-year potential land development plan for the area. Once mutually adopted, the city and the State will jointly determine, on the basis of that thoroughfare plan, which streets are the State's responsibilities within the concept of the law, and which are the city's responsibilities. When we go from that, we have also adopted priorities in general, though this is not a commitment of the Commission.

Kimley has 55 such thoroughfare plans under way. In two years we have had about 20 adopted. They vary from cities of 5,000 to cities of 250,000.

The State has its own planning staff. In the smaller towns we do the work in cooperation with them. For larger towns, we will share 50-50 in land development plans, with the Federal Government paying part of this out of HPS funds, which is a help. Sometimes we use consultants. We use the land development plan as the strict basis for any urban highway improvement, which must be part of a well thought out master thoroughfare plan which, in turn, is part of an over-all master plan for a city.

We will not accept a schematic plan for highways which attempts to dictate what the over-all development of the cities shall be. It has to be within the framework of what we call an over-all master plan.

W. Johnson.—With respect to urban redevelopment plans, in three rather large urban areas in Kansas there are coordinating committees similar to those described by Hall.

Through the City of Topeka, the Interstate route is going through an urban redevelopment area. The county, contemplating the construction of a new court house, decided to locate that court house near the fairly new city auditorium and city building in developing a civic center. The county and city proposed to use some right-of-way the State had intended to use for the Interstate System.

Now it is working out, through cooperation between the city, county, State and the Bureau of Public Roads, that the city and county are going to acquire a portion of this right-of-way for the construction of a parking garage, and build a retaining wall adjacent to the Interstate construction; of course, no access to the Interstate System.

This is an example of cooperation that can be developed if everyone is interested.

Babcock.—Swanson, what is your experience as to the detail in public hearings that gives the best possible result? This is a very difficult question for all of us.

For example, you go to public hearings with an actual 200-ft scale topographic map, in which the details of all the interchanges are shown. Would that be conducive to good results in congested areas in the northeast?

Swanson.—We have had better luck when interchanges are shown just as circles on the map, rather than getting down to specifics. If you show details, immediately you are accused of having a preconceived idea of what you want to do, and are not subject to change. But if you go in with the kind of route location reports a consulting engineer generally provides for preliminary study, then you certainly are not guilty of that charge. Generally, we have gone into public hearings with route locations, rather than very detailed studies.

Referring to improving understanding between the Bureau of Public Roads and the State highway departments, I think Connecticut has done a very fine thing. They have a weekly staff meeting which the BPR division engineer has been invited to attend. They discuss, for example: Why is BPR holding up this or that? The BPR division engineer may say: "Well, such-and-such a person in your department is not giving me the information I need." Such meetings expedite the whole planning operation, eliminate misunderstandings and make the program move.

Aitken.—If any of you want to follow a project through a difficult course in terms of broad and more specific planning, and finally see it carried through to construction, come around. I will show you a maze that will shock you.

The District of Columbia is fortunate in that some years ago the Congress established the National Capital Planning Commission. Anything we do in Washington must be done correctly, because it is the nation's capital, and I think it cannot be done too well.

We have had some differences because of the old business of, "Where does planning end, and where does design begin?", but we have maintained contact, despite difficulties.

We are also fortunate that during the last four or five years a study has been under way and was completed last year for a proposed metropolitan area transportation system here in Washington. The study includes a combination of freeways, normal streets, and some subways. During the past session of Congress, legislation was enacted to create a transportation agency, which is supposed to develop a total transport program.

Now, again, it is a play on words as to what is meant between planning and programming. And perhaps there may be a question as to what this agency is to do in its final terms.

Then, after all the planning agencies and the District highway department agree on something that can be done, we go to the Fine Arts Commission. Although the general transportation plan that came out last year was adopted by everyone, because all the agencies had participants, the Fine Arts Commission has never adopted the plan, because they are against the idea of freeways in Washington. Therefore, when we take our plans to the Fine Arts Commission for comment and advice, we get advice on esthetics and then condemnation because we even think about freeways in Washington.

So it is a lot of fun. But once in a while we get a project advertised.