

COMMUNITY INTERACTION AS AN INTEGRAL PART OF THE HIGHWAY DECISION-MAKING PROCESS

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Community interaction includes all the activities by which the team of highway professionals and the members of the community learn from each other and includes all the different ways in which they work together, negotiate, and generally search for agreement on a course of action. Thirty-four techniques are identified for highway agencies to interact with the various individuals, groups, and institutions that make up the community. Objectives aimed at establishing the responsibility of the highway agency in the view of the general public include the following: establish and maintain agency and process legitimacy and maintain validity of earlier decisions. Objectives aimed at generating alternative courses of action that are responsive to the values of the particular time and place include forming concepts, finding facts, detecting and anticipating community problems, finding solutions, and exploring values. Objectives aimed at making the location team as effective as possible in carrying out its responsibilities include establishing credibility, communicating, forming consensus, and depolarizing. Management of community interaction consists of 6 steps by which the location team gets from general community interaction objectives to specific personnel assignments and work schedules: select community interaction objectives, assess needs, review community interaction resources, select community interaction techniques, coordinate with other technical team activities, and assign personnel and work schedules.

•A HIGHWAY location and design process consists of 5 basic kinds of activities: community interaction, impact prediction, generation of design options, evaluation, and location team management. This paper discusses community interaction and examines its role in the overall process. In fact, we concentrate primarily on a discussion of the objectives for community interaction and why the definition of objectives is important. Lesser reference is made to techniques, the actual tools for achieving community interaction objectives, and to community interaction management.

A wide variety of techniques is available to facilitate interaction between a highway agency and potentially impacted community groups. These includes small meetings, field work, use of public communications media, citizen advisory panels, field offices, demonstration projects, and public hearings. Several important questions arise. What is the role of community interaction in the overall location and design process, particularly with respect to incorporating community and environmental values into all aspects of the process? What specific interaction techniques should be used in a given context? When in the process should each interaction technique be employed? Answering such questions requires that the overall objective of the location and design process be clear, a range of specific well-defined objectives for community interaction activities be articulated for each project, and these objectives be effectively used in managing the location and design process.

EXPLANATION OF TERMS AND METHODOLOGY

Community Interaction

The construction—or, for that matter, the nonconstruction—of a highway in an urban area has a multitude of impacts reaching just about every facet of urban life. Consequently the term "community" is used as an inclusive concept, consisting of all individuals, groups, and institutions that will be impacted in one way or another, positively or negatively, by any one of the alternatives that may result from the highway planning process.

Community interaction constitutes all of the formal and informal, direct and indirect mutual intercourse between the highway agency and the community. Community interaction covers all those activities by which the technical team, i.e., the team of highway professionals, learns about the diverse groups that make up the community, their needs, wants, and perceptions. Community interaction also includes all the ways by which the community learns about the technical team, its responsibilities, the possible courses of action, and consequences of different courses of action. Finally, community interaction involves all the different ways in which the location team and community work together, negotiate, and generally search for agreement on a course of action. Community interaction, thus, denotes the entire interface between technical team and community.

Objective of the Highway Decision-Making Process

While most highway planning involves community interaction in some form and, therefore, is subject to our recommendations, the proposed approach to community interaction was developed as part of a particular strategy for highway decision-making (1, 2, 3). A restating of the central objective of the highway planning and design process is suggested as follows: The objective of the location team is to achieve substantial, effective agreement on a course of action that is feasible, equitable, and desirable.

Location Team—The location team is that organization of professionals (engineers, architects, planners, and community specialists) that has the task of doing studies of alternative highway locations and designs. This team may have as few as 2 or 3 professionals or as many as 100 and may be an element of a state highway department or other state or local agency, a metropolitan planning council, or a consulting firm hired by such agencies.

Course of Action—Although the major public program element of concern is a highway, highway plans must be coordinated with a variety of related public and private actions, including some or all of the following: relocation assistance plan, program for construction of replacement housing, air-rights construction, multiple uses of rights-of-way, joint development, model cities and other area-oriented community action programs, job training, wildlife refuge development and other conservation measures, and rehabilitation of historical sites. The potential development of a highway through an area is a stimulus to constructive public and private actions to enhance the area as a whole through coordination of the highway plan with other actions. The courses of action with which the location team will deal must involve many of these elements.

Feasible—The course of action must be feasible technically, economically, fiscally, and legally. This may, in some circumstances, require actions by the location team to stimulate changes in law or administrative interpretation to achieve the basic objective.

Equitable—The construction of a modern limited-access type of highway in an urban area is a major public intervention in the fabric of the city; some groups may be hurt by this intervention while other groups may gain. If particular groups receive undue tangible and intangible burdens, considerations of equity and fairness require that they be compensated more than adequately. For example, the traditional concept of compensating homeowners displaced by highway construction with "fair market value" is not equitable if equivalent replacement housing cannot be obtained on the open market at that price. Conditions such as limited housing supply in a price range or high interest rate or de facto segregation may require that to be equitable additional financial

compensation over and above fair market value, or even construction of replacement housing, be made. To achieve equity, the location team must identify, for the alternative courses of action being considered, any possible inequities by examining the incidence and distribution of impacts on particular community elements. This should guide the team in searching for design approaches (e. g., modifications to the basic design or inclusion of additional program elements in the course of action) that will redress any undue burdens on any groups.

Desirable—After the course of action has been developed and tailored to be feasible and equitable, the benefits should still be sufficiently great to justify the costs incurred, if the action is to be implemented.

Substantial Agreement—It will never be possible to get total agreement from all the interests affected. However, the location team should strive for this as an objective. The existence of any sizable group opposed to the course of action should be seen as an indication of a legitimate interest that has not been adequately addressed in developing the action. To the maximum extent possible, effort should be devoted to identifying and understanding this interest and developing a component, or modification, of the course of action that will be responsive to this interest.

Effective Agreement—Effective agreement requires that all the interest groups be involved in the process of reaching agreement. This means that these groups must be confident that their views, needs, and suggestions have been fully considered and taken into account; that the location team is credible, open, and professionally knowledgeable; that there are no surprises or hidden arrangements; and that the agreed-on course of action is indeed equitable and desirable from the points of view of the diverse elements of the community. This objective of the location and design process suggests that the role of the technical team is to clarify the issues of choice and to assist a community in determining what is best for itself. In addition to the relatively traditional role of developing alternatives and tracing out their impacts on various individuals and groups, the technical team has a second broader role that it should perform in the sociopolitical context, i. e., to take a positive role in stimulating clarification of goals and the reaching of agreement on a course of action.

Community and Environmental Values

The intercity links of the Interstate Highway System have probably been, in the public's eyes, about as unqualified a success as is possible; they have made an express vehicle out of the family car. Links falling within highly built-up areas of cities, however, have not enjoyed the same success. Increasing attention has been drawn to the disruption they cause to the physical and the much less understood nonphysical elements of the city. Controversies have developed with growing frequency; this entire phenomenon, labeled the "highway revolt," has at its roots at least two problems. First, the urban setting is entirely different from the rural setting, is more complex, and requires a range of design solutions that are responsive to the variety of complex and interrelated urban problems. Urban highways must be responsive to criteria that were either possible to ignore or less critical on intercity roadways. These criteria, for lack of specific definition, have been labeled community and environmental values. Second, time changes everything, including people's values and priorities. As a result, people's preferences for different alternatives vary over time. Highways, on the other hand, are rather lasting fixtures; the planning, designing, and implementing process requires anywhere from 5 to 25 years. Not only must the decision-making process accommodate community and environmental values, it must deal with these values as variables that change with both time and context.

This is hardly a revelation to most highway engineers or administrators. It is one thing, however, to realize the importance of community and environmental values and quite another to say how the highway decision-making rationale should be modified to better account for these values.

The engineer has challenged the social scientists and environmentalists to quantify the hitherto unquantified community and environmental values, and this challenge has not gone entirely unmet. There is, however, a serious question whether criteria that

are subject only to people's innermost feelings for "measurement" can, in any valid sense, be quantified. The slope of a particular piece of land can be measured by using the earth's horizon as a reference line, but where is the valid zero line when we want to measure aesthetic amenity? Are there any meaningful absolutes?

These are not entirely rhetorical questions; some valid references and some absolutes may well be discovered. Until that happens, however, what is the highway agency charged with the responsibility for developing specific highway links in urban areas supposed to do? Our objective is to respond to this question by providing the highway agency with improved methods even though these values thus far have defied operational definitions.

Techniques within reasonable reach of most any highway agency are utilized. Non-operational concepts such as beauty, quiet, scale, neighborliness, and sense of security do have meaning for the man on the street. The fact that every attempt at quantifying, for example, aesthetic amenity has failed does not mean that the concept has no meaning for the person who uses it in his language. We are recommending capitalizing on the principle that these ill-defined concepts have meaning for the general public, if not for the scientist.

Numerous channels are provided for bringing the public's values into the decision-making process in such a way that the resulting highway plans will be responsive to those values. Where this can be accomplished, the community will not need to resort to outright opposition to the highway plans. Where this cannot be accomplished, communities can be expected to continue opposing highways as the most effective strategy for protecting their ill-defined, but nevertheless real, values.

Methodology

The proposed approach to community interaction emanates from current research (4) and from studies to develop a strategy for the aggregation of different preference orderings (5). The investigation has drawn on insights gained from reviewing applicable principles of social welfare economics (6), game theory (7, 8), and planning theory (9, 10) and from analyzing 4 highway decision-making cases involving various degrees of controversy (9, 10). The 4 cases include the Century Freeway in Los Angeles, I-278 extension in New Jersey, the Brooklyn Linear City Project, and the inner belt in metropolitan Boston.

COMMUNITY INTERACTION OBJECTIVES

A wide variety of community interaction techniques are available; decisions must be made initially and throughout the process as to which techniques to use, when to use them, and how to apply them. Making these decisions is assisted by clearly defining the objectives of community interaction and by structuring a program of community interaction activities to achieve the defined objectives.

Once objectives of community interaction are identified for a particular location and design project, a program of activities made up of selected interaction techniques can be designed. The choice of which techniques to apply at a given time and at what scale of effort depends on the immediate needs and on the resources available, a continuous management task.

Eleven different needs that may be facilitated by interaction between the highway agency and the community can be discerned. Corresponding to these needs are 11 community interaction objectives falling into 3 broad categories: responsibility, responsiveness, and effectiveness (Fig. 1).

Category 1: Responsibility

A highway agency, like any public agency, must be responsible to the public, must be answerable to the public, and must account for its actions to the public. The "public" is the generalized concept of the "community" because the full range of actions or nonactions effected by an agency over a period of years affects nearly all individuals, groups, and institutions.

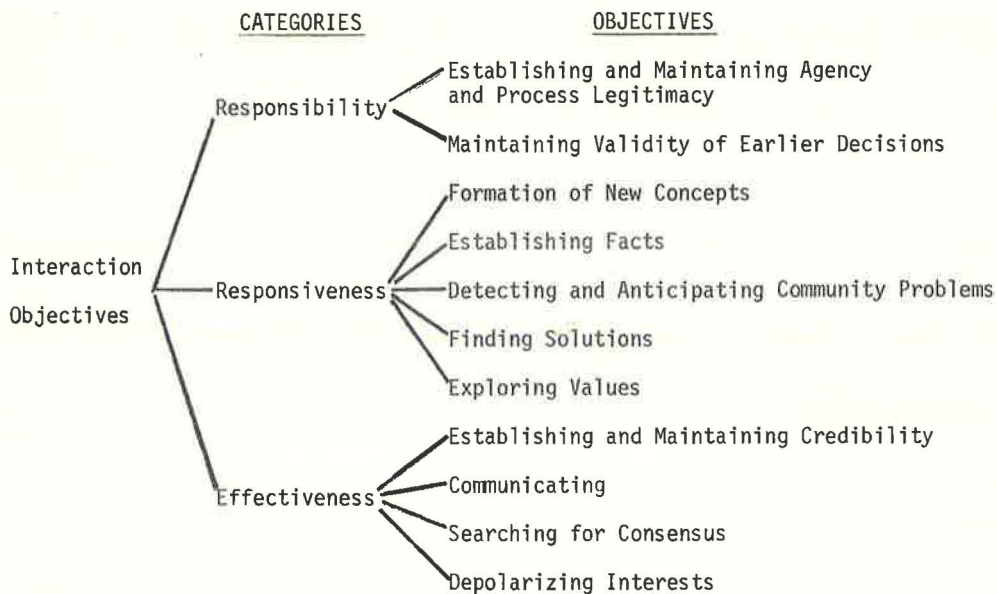


Figure 1. Categories of community interaction objectives.

It is essential that not only the highway engineer but also the lay citizen know and accept what the agency's responsibilities are. In the absence of this understanding, an agency cannot move effectively to meet the responsibilities in question. Even if the agency is administratively accountable to some power other than the community at large, what matters is the public's perception of how well the agency is pursuing the community's interest. This suggests that not only must a decision-making process be responsible to the public but also the process must be perceived by the public to be responsible.

General consensus on agency and process responsibility is extremely critical. The premise that a state highway agency is simply implementing the highways that the public, through its duly elected representatives, has decided to build has evaporated in the last few years. Increasingly, highway agencies are viewed by many segments of the public as being more responsive to the needs of a special interest group than to the needs of the broader public. Obviously this is tantamount to declaring the highway agency to be a special interest group and, thus, not responsible to the public as a whole.

This crisis of confidence seriously undermines an agency's ability to carry out its responsibilities. (This position is, of course, not unique to highway agencies; other public agencies have been experiencing this same crisis of confidence in urban renewal, power, and flood control projects. In fact, any agency that can be readily identified with the established way of doing things is often referred to as a member of the "Establishment." Although it need not be, this term has become derogatory.) Any public agency that is not perceived by the public as being responsible to the public is burdened with an almost insurmountable handicap. Regardless of the reasons for this loss of legitimacy, the highway agency has to address the reality of this loss if it is to become more effective in carrying out its charge.

Objective 1: Establishing and Maintaining Agency and Process Legitimacy—Agency and process legitimacy is this sought-after quality of being perceived by the community at large as meeting the intent and letter of the relevant statutory and administrative mandate and, importantly, as having the mandate itself being accepted as correct. Where loss of confidence is detected, establishing and maintaining legitimacy must be adopted as the primary objective for an agency. Legitimacy is not unlike an individual's reputation; it is a precious thing that is hard to earn but easy to lose. A 3-part strategy

of Spartan simplicity is suggested: (a) make the agency's responsibilities, authorities, programs, processes, operating procedures, and constraints known; (b) operate scrupulously within the intent and the letter of these; and (c) make this fact known.

The public is generally ignorant of the highway agency's responsibilities and authorities as well as of the location and design process being followed. This is the case not only for the man on the street but also for local officials, other public agencies, and members of the public press. A major reason for the loss of legitimacy of many agencies today is the generally prevailing ignorance of the agency's role; this ignorance sets the stage for rumors, misunderstandings, and misrepresentation, all of which are fertile ground for suspicion and mutual distrust. A task that an agency should never tire of is to put before the public, and to keep before the public, the agency's responsibilities, authorities, programs, processes, operating procedures, and constraints.

Objective 2: Maintain Validity of Earlier Decisions—Decisions such as transportation network design and timing, and the reasons for these decisions, have to be kept available to the public. Should conditions change sufficiently to warrant a reconsideration of some of these larger and earlier decisions, the agency should take the initiative to raise the issue rather than wait for the public to do it. The public, however, should have a realistic sense of both the feasibility and the consequences of changing these decisions. This "sense" has to be achieved through a frank sharing of the professionals' evolving view of earlier decisions. If the agency finds earlier decisions still valid, it must share its reasons rather than simply ask the public to accept the decision.

Category 2: Responsiveness

If "substantial, effective community agreement on a course of action which is feasible, equitable, and desirable" is to be achieved, each of the various participants must see something desirable in the contemplated course of action. That is, developed solutions should respond directly to the needs of the various individuals, groups, and institutions that are potentially impacted. While the first category of community interaction objectives dealt with the "crisis of confidence" in the agency and its processes, the objectives in this category address a perceived "crisis of solutions."

An increasing number of lay observers, as well as many highway professionals, perceive a rather unsatisfactory response to the problem of designing urban highways by the typical solutions to this problem. There are essentially two contributing factors to this poor response:

1. People do not share the same values and, therefore, do not perceive the same problems. More specifically, highway professionals and laymen far too often perceive different phenomena when they appear to be looking at the same thing.

2. Any massive construction project in the urban setting is bound to be very disruptive and the highway agency, as well as any other single institution, is ill-prepared to deal with the many problems that result from this disruption.

Five separate needs that will help to make a location team more responsive are identified. Each of these needs can be achieved in part, or in toto, by an appropriate mix of community interaction techniques.

Objective 1: Formation of New Concepts—Trying to solve the wrong problem will usually not lead to excellent or even adequate solutions. To some degree this is precisely what happens if strong preconceptions of highway effects are carried into a community that has not been studied. (Carrying the rationale that was used for aligning and designing suburban expressways into the core city is one example of this. Applying middle-class values in evaluating solutions in a not-so-middle-class community is another example, and it is something the typical, middle-class highway professional frequently does.) A conscious, overt effort has to be made to penetrate through any possibly existing preconceptions about the community in question. When this can be done, there is a reasonable chance to anticipate what impacts the highway really will have on the community and a fighting chance to do something about those impacts before they actually happen.

A number of techniques and professions, such as anthropology, can be employed to help a highway agency formulate concepts about a community that will assist the agency in responding to highway impact-related problems in that community.

Formulation of concepts is essentially inventing new, but useful, ways of seeing and defining a problem. For example, one agency considered providing relocation housing to displaced families by high-rise housing to be built in the air rights. The agency abandoned the idea when they learned that high-rise housing would be unsatisfactory for the displaced families. Though poor, they were now living in low density, one-floor and at most two-floor houses. Replacement housing had to incorporate the concepts of single-family homes and adequate open space to be acceptable to the relocatees.

Objective 2: Establishing Facts—Although concepts are formulated, facts are simply gathered. The important thing is to establish beforehand which facts are to be gathered and for what purposes, and to be aware of the possible dangers of fact-gathering. Facts and concepts are significantly different phenomena. A fact is 100 percent operational; it can be settled to everyone's satisfaction beyond dispute. A concept is essentially a "way of seeing things," a hypothesis that may be supported either by a line of reasoning or by facts but whose existence or validity cannot be proved once and for all.

Separating facts and concepts, however, may not be easy. The highway case studies that have been examined suggest that failure to distinguish between the 2 phenomena fuels the fires of controversy by creating misunderstandings and cynicism on the part of both the public and the highway agency. It must be carefully resolved which facts can settle which issues, and this must be done not only to the satisfaction of the highway professionals but also to the satisfaction of those laymen who have their own concepts of problems and possible solutions.

For example, when one agency wanted to determine the stability of a particular neighborhood, it determined that the necessary facts could be obtained through a survey of the area to determine the percentage of people who lived there 5 years or less. About 30 percent of the residents fit this category, and the agency concluded that the neighborhood was relatively unstable. A social scientist who was doing field work in the same neighborhood, however, felt that the concept of neighborhood stability as determined by a percentage of people who were transients was inadequate. From his more intimate, but completely nonquantitative, knowledge of the neighborhood, he was of the opinion that the concept of a very stable neighborhood was more characteristic of the area. He then secured and analyzed data on the entire distribution of length of residence. It turned out that there was a bimodal distribution with about 30 percent of the residents living there for 5 years and less and another 30 percent living there for 40 years and more.

The decision to be made in this case is the most relevant concept that can be supported by the available facts that constitute the bimodal distribution. When the possible difficulties of relocating people are considered, the 30 percent long-time residents are significant because they may prove to be very immobile; when predictions are made as to how the neighborhood may change in the years between route adoption and construction, the makeup of the 30 percent short-term residents would become very important.

Objective 3: Detecting and Anticipating Community Problems—Community interaction should bring all basic community problems to the highway planner's attention. Although such an effort does not necessarily imply that it is the planner's responsibility to solve these problems, the added knowledge will permit better decisions and, in some instances, will also permit solution of some of the community's problems. Highway professionals often tend to discount the way laymen perceive a problem and, conversely, laymen tend to discount the problem perceptions of the professionals. Neither the professionals nor the laymen have a monopoly on having lucid insights or occasionally wearing blinders.

Objective 4: Finding Solutions—The community not only holds a store of its own problems that it tends to burden the highway designer with, it also may hold the key to potential solutions to the highway and related impact problems. Although the highway engineer cannot rely on finding a solution via this method, he can ill afford not to put good ideas to use if they are available.

Obtaining community-suggested solutions, however, is easier said than done. Usually solutions proposed by laymen are not completely worked out, are put forward rather

late in the process and often in the midst of controversy, and are generally communicated in such a manner that they are rejected out of hand by the professionals. Some very good constructive ideas, as a result, manage to go unrecognized.

Although community interaction should not be the prime vehicle for producing alternative solutions, it can contribute to enlarging the set of alternatives by providing access to ideas about possible variations of proposed alternatives in order to meet particular problems. Needless to say, even a mere variant of a developed alternative may get a response from the public entirely different from the original alternative particularly if the change is in direct response to some community problem. Of equal importance, the process of developing and evaluating proposed solutions will assist a community in achieving an improved understanding of complex and interrelated community problems.

Objective 5: Exploring Values—Community values are, of course, really what a location team is after. As has been discussed, however, community values cannot now be dealt with in the same manner as items such as accessibility or costs. Communities do not spend their time articulating values, and, even if they did, past experience indicates that the articulated values may not represent actual values.

The difficulties of working with community values are recognized, but, even if articulated values cannot be relied on, there are ways to help a community determine its actual values in a very meaningful sense. For example, alternatives embodying quite different but reasonable values can be developed to help a community, as well as the location team, obtain an understanding of the implications of a range of values. The public should react to some of the various ramifications of different values before any of their value statements are taken too seriously.

Such value explorations actually can and should accomplish one more thing, an honesty check. If, for example, a community or an individual claims to place a very high value on impact A but chooses not to implement any of the available means of enhancing impact A, statements about concern over impact A should be taken with a grain of salt.

Category 3: Effectiveness

The 2 categories of objectives, responsibility and responsiveness, embody the strategy for building a constructive interface between the highway agency and the community. The third category of objectives enhances the likelihood of success in carrying out the agency's responsibilities and in responding to the community's values and can best be thought of as effectiveness objectives.

Objective 1: Establishing and Maintaining Credibility—Credibility is not to be confused with legitimacy. Legitimacy concerns the community's perception about how well the agency conforms to the statutory and administrative procedures, as well as the community's belief in these procedures. Credibility describes the community's perception of the reliability of the agency's word. Credibility, however, is like legitimacy in one respect; both are hard to maintain, very easy to lose, and extremely hard to earn back once lost.

It is to no one's advantage when communication between communities and the highway agency breaks down because these communities do not believe what the agency is saying. When the public is skeptical in accepting the highway agency's word, every communication from the highway agency, no matter how well intended, may be interpreted to have some malicious meaning.

If the agency's communication is to be effective, its word has to be credible. This is best achieved if an outright effort is made to establish and maintain the highway agency as the most reliable source of information relative to highway issues. The agency cannot be secretive; it must interact with the community in a manner that gets all relevant information to the potentially affected people, be that information favorable or unfavorable.

Objective 2: Communicating—The construction of a major urban highway may affect literally thousands of individuals, groups, and institutions. Most highway agencies are currently unprepared to carry on a communications effort of the necessary order of magnitude to achieve meaningful communication between these people and the agency.

Worse, at the very moment when communications become crucial, i. e., when a project becomes controversial, many agencies close up channels of communication as a matter of policy. After all, they say, the communication just contains opposition and abuse and is not constructive.

There is no reason to believe that controversy, opposition, and abuse will go away simply by opening up channels of communication, but establishing and maintaining communication are necessary first steps in resolving conflict; reliable information must be effectively communicated between the agency and the public. Even under very favorable circumstances, such as those that exist between 2 parties who have no controversy, good communication lacking distortion is difficult. Highways are currently a very controversial business requiring the communication of difficult and ill-understood concepts. It is imperative that all feasible channels of communication be used effectively.

Objective 3: Searching for Consensus—Developments during the past several years demonstrate that a proposed action requires rather broad public support if it is to be implementable. Although not every interest will support an alternative, there needs to be substantial effective agreement on the action's desirability.

Our objective is that none of the groups who could prevent implementation should be opposed to the contemplated course of action. This sounds like a tall order because it seems that today almost any group can stop a large public project. Still it is a statement of the obvious; if an alternative is to be implemented, all those who could potentially stop it have to be in favor of it.

It is important to recognize and remember that individuals base their actions not necessarily on what is but on what they perceive. Consequently, if the technical location team develops an alternative that it believes solves all of the problems, it is essential that the public perceive the same thing. It is useless for the professional to have designed a "good" alternative if the general public does not also agree that the alternative is a good one.

Objective 4: Depolarizing Interests—Many observers of, and participants in, the highway revolt have the impression that there are only 2 possible positions: for the highway or against it. What is good for one party is necessarily bad for another party, i. e., building an urban highway constitutes a zero-sum game between 2 interests. This perception of the problem leads automatically to a polarization of positions.

The for-or-against attitude is an unfortunate oversimplification; the urban highway problem does not need to be a tug of war between interests for the highway and interests against the highway. Schelling (7) and others show that true zero-sum game relationships are extremely hard to come by. Typically, not even war constitutes such a polarized relationship, and highway controversies can never qualify.

The effects of a polarized relationship are harmful to all parties involved because communication is cut off when the other party is vilified. [This is one of the characteristics of truly polarized relationships. Participants have absolutely nothing to gain from sending or receiving any communication to or from the other party, except for the express purpose of deceiving the other, and deception is only attempted if each one believes the other is less intelligent than himself, i. e., that he can fool the other (8).] The very thing that is needed most, a cooperative search for a mutually acceptable solution, is abandoned because each party feels the other party is not sincere and is trying to "put something over." In addition, the conflict syndrome results in a breakdown of the communications channels, distrust between highway agency and public, and real or imagined attempts at deception—all tending to drive the participants into polarized positions and the concomitant perception of a tug of war between for-and-against interests.

Polarization depends very much on misconceptions. We, therefore, have to look for, and make use of, those values and areas of concern where there is an overlap or sharing of interests. This means a close relation with the objective of using communication interaction as a means of searching for new solutions.

COMMUNITY INTERACTION TECHNIQUES

Nature and Role of Techniques

Each of the many different ways in which an agency can interact with individuals, groups, or institutions, i.e., with an element of the community, is a potential tool for achieving the determined objectives of community interaction. (Community interaction as defined is much broader and more inclusive than the concepts of community involvement or citizen participation. Community interaction includes all formal and informal, direct and indirect intercourse between the agency and the public.) Some 34 different techniques or ways of interacting with a community have been identified (Table 1). This is not intended to be an exhaustive list, and no agency needs to, nor would it want to, use nearly this many techniques on any given project. Rather, a package of techniques would be selected based on a review of objectives, the relative potential of each technique to achieve the objectives, and the available resources for carrying them out. Most likely, the particular package of techniques would be continually modified for the duration of a study, with some techniques being added and others deleted. Although some of the listed techniques are very simple and specific and, therefore, clearly techniques, others are much more general and might have been better labeled approaches.

Some of the listed techniques can be applied throughout the location and design process; others lend themselves best for one or more particular phases; and a third set includes techniques that are used primarily for special purposes.

Examples of Techniques

In the NCHRP study (4), each technique is discussed in terms of its key features, basic principles behind it, basic variations, an example application, advantages and disadvantages, possible highway applications, and annotated references.

Holding and Attending Meetings—Meetings include both small group sessions or working meetings and large formal meetings or public hearings. Working meetings

TABLE 1
COMMUNITY INTERACTION TECHNIQUES

Techniques Used During Some Phases of Process	Techniques Used Throughout Process	Techniques Used for Special Purposes
Using field work method	Establishing overall process agenda and operating within it	Carrying out demonstration project
Holding and attending meetings	Educating public about decision-making process	Conducting experiment
Operating field office	Monitoring communications	Initiating necessary legislation when constraints are too rigid
Mediating between different interests	media	Providing built-in communications-effectiveness test
Using advisory committees	Producing and releasing material for mass media	Employing community residents on project
Analyzing past and current plans made by or for particular community	Dealing with public in highway agency offices	Role-playing
Conducting background study	Listening for public's suggestions for alternative solutions	Using sensitivity training and laboratory method
Reviewing local election issues	Establishing and maintaining contact with all actors and issues	Looking for or becoming third party in negotiations between two interests
Collecting data	Monitoring new developments affecting one or more of relevant urban systems	Hiring an advocate for community
Mapping sociopolitical and environmental data	Monitoring actual impacts of recently built highways	Providing community with capability to deal with relevant nonhighway problems
Illustrating final form of alternative in laymen's terms	Encouraging internal communication in highway agency	Engaging in charette
Presenting public with range of alternatives	Hiring an ombudsman	

should be attended by lower echelon representatives of the various participating interests, including the highway agency, to minimize confrontations. These people normally do not have the power to make final decisions, are less likely to elicit demands and ultimatums, and therefore have a better chance of searching together for solutions meeting each other's needs. Participation in such working meetings should be limited to 12 or fewer members. The participants represent different interests and, therefore, cannot be expected to hold the same opinions. The agenda for the working meeting, however, should be such that all agree that the items to be discussed are the ones that need discussing; in other words, the agenda should not prejudice the discussion.

Formal meetings, such as public hearings, do not lend themselves to substantive discussion. Ideally, a public hearing should hold no surprises for anyone. No new information should be disclosed at such a meeting; rather an agenda of informally worked-out issues is presented formally. Formal meetings are the perfect setting for confrontations, the making of demands and ultimatums; they, therefore, should be used with caution. They can, however, serve to formally ratify agreements worked out informally in working meetings. As such, they provide a good check on the thoroughness of the informal working meetings and other modes of negotiation that preceded the formal meeting.

Providing a Built-In Communications-Effectiveness Test—Before a message is sent out by an agency, it is first tested on someone who is less equipped to understand it than the person or group of whom the message is ultimately intended. The less equipped person reads or listens to the message in the exact form it is planned to be sent out. He then is asked to explain its meaning. If he does not get the point of the message, the message is revised and retested until it makes the intended point. At the root of this technique lies the realization that it is very difficult to communicate. A story is told that Napoleon kept a not-too-swift noncom around on whom he tested, in the manner described, all communication he was about to send out to his generals.

Citizen Advisory Committees—A citizen advisory committee is established for the explicit purpose of articulating community needs that, it is implied, the duly elected and appointed officials might not be aware of. Community advisory committees have been used for some time in community and renewal planning. Some committees have an open membership, welcoming anyone willing to spend the time and effort of attending nighttime meetings; other committees consist of appointees of the mayor or city manager. Most make some effort to be (more) representative of those interests that are underrepresented by the duly elected and appointed officials. Citizen advisory committees, however, have been frequently abused because they have too often been established only to fulfill federal requirements of citizen participation rather than to really seek out the viewpoints of the unrepresented interests and to fully incorporate these viewpoints into the making of plans. Advisory committees have, at times, been used as a means of getting around community opinions rather than getting at opinions by a mayor who saw to it that only citizens were placed on the committee who agreed with his point of view or who could be told what to say. It is, therefore, not entirely without cause that to those interests that are most difficult to represent, such as the poor and ethnic minority groups, citizen advisory committees smack of co-option. Consequently, the concept of citizen advisory committees should be viewed as being sufficiently stigmatized to make it a liability rather than an asset if used as a community interaction technique. Unless an agency is aware of the drawbacks and can overcome each of them, it should not attempt to use citizen advisory committees. Even when the agency is satisfied that it can overcome the technique's drawbacks, it should not rely on citizen advisory committees as the only technique of community interaction.

Nontechniques

Just because more than 30 community interaction techniques can be identified, each one of them is not necessarily recommended for use by highway agencies. Some of these techniques, in fact, have severe drawbacks and it is suggested that they not be used at all or, if used, that special precautions be taken to prevent them from doing more harm than good. The dangers are emphasized by referring to these techniques

as nontechniques. Although this may be an overstatement, the dangers in misuse of these techniques are indeed great. The following techniques are currently placed in this category: attitude surveys, community advisory committees, formal public hearing (as a substitute for other community interaction), legal notices (in lieu of other notification), news releases (as a substitute for more direct communication with local governments, agencies, and other known interested parties), and hiring a community person (as a means of getting at local community values and as a substitute for other more active community interaction).

COMMUNITY INTERACTION MANAGEMENT

Management of community interaction activities is crucial if a program using several techniques is to be properly coordinated and fully effective. Individual techniques must be not only coordinated among themselves but also carefully interfaced with other ongoing technical team activities. Management is a continuing responsibility of the technical team but will vary considerably with such differences in context as the size of the technical team, the degree to which consultants are being used, the existence or absence of controversy, or the phase of the location-design process. The following 6 management operations can be identified:

1. Select and review objectives. The 11 general community interaction objectives are reviewed vis-à-vis the central objective of the location and design process (achieving substantial, effective public agreement on a course of action that is feasible, equitable, and desirable) and used as a basis for selecting a set of specific objectives, including the establishment of priorities. These objectives are then periodically reviewed and adjusted as necessary for the duration of the study.

2. Assess needs. For each of the selected objectives, an assessment is made of the difference between the current level and the aspired level of achievement. A specific need, or set of needs, for each community interaction objective can then be drawn up.

3. Review resources. Having established priorities among objectives and specific needs for each objective, the technical team examines the personnel and fiscal resources at its disposal or that might be put to its disposal. This is more than just determining the amount of manpower and funding that can be invested in community interaction; at least as important are the qualifications of the manpower. Community interaction is more than just another work task; opportunities are offered to agency staff for developing a deepened and unique understanding of the community and how members of the community perceive the highway impacts. Delegating this task to a consultant, or even a public relations office, largely deprives the technical team of this opportunity and its resulting benefits.

4. Select techniques. Considering the specific objectives, the needs and problems, and the available resources, the technical team decides what specific techniques to utilize. Obviously, the resource decisions cannot be made entirely independent of the choice of techniques. Once the technical team has tried to put together a coordinated package of individual techniques to be used in the immediate future, it may find it necessary to try to adjust its available resources.

5. Review and coordinate schedules of other technical team activities. Although community interaction has been the principal topic of this paper, interaction activities must be closely coordinated with the other technical team activities of design, impact analysis, evaluation, and overall process strategy. These other activities will, at times, provide time constraints and make substantive demands on community interaction. For example, location and design process strategy establishes an overall schedule for all technical team activities, and evaluation asks for inputs on the community's own preferences. By the same token, community interaction activities may provide time constraints and make substantial demands on other technical team activities. For example, needs assessment of community interaction may determine that a work schedule for the development of an alignment be speeded up or slowed down, or it may ask that additional courses of action of some particular nature be developed.

6. Making personnel assignments and setting work schedules. The final step in developing a community interaction program is an operational set of job assignments for specific individuals to be performed on a set schedule. Besides the more obvious consideration of the individual's capabilities for carrying out particular community interaction techniques, the technical team will want to consider, as was suggested earlier, how it can make the most of the potential broadening that the individuals involved in community interaction activities may experience.

These management operations are overly static in the sense that they describe the process of establishing an initial program of community interaction activities. In reality, community interaction is dynamic and the management process is continual. The program of activities, and resulting personnel assignments, are continually adjusted in response to changing objectives, the results of previous interaction, and the needs of other technical team activities.

CONCLUSIONS

Community interaction is 1 of 5 location team activities; the others are impact prediction, generation of alternative courses of actions, evaluation, and process strategy. A carefully designed and sensitively managed community interaction program is necessary to achieve the basic process objective of substantial, effective community agreement on a course of action that is feasible, equitable, and desirable.

It is not possible to get agreement on a complete, consistent, operational statement of community values from the diverse groups, individuals, and institutions that are potentially impacted by a highway. It is possible, though, to get agreement on a course of action, provided that the alternative courses of action that are generated reflect the values of the time and place.

A wide variety of community interaction techniques are potentially useful, and several separate techniques should normally be used. Decisions must be made to select techniques initially, to review, and to change a community interaction program in response to changing conditions. An effectively managed community interaction is one in which the overall objective of the location and design process always remain clear, community interaction objectives are clearly articulated, and the community interaction program of specific techniques is structured to achieve these objectives. Community interaction activities are complex and must be carefully managed. Activities should be periodically reviewed vis-à-vis the articulated interaction objectives.

Eleven general community interaction objectives have been identified and are aimed at establishing the fact that the highway agency and its decision processes are responsible to the public, at generating alternative courses of action that are responsive to the values of the particular time and place, and at increasing the effectiveness of the location team in carrying out its responsibilities. These community interaction concepts and ideas are presently being implemented and used on actual projects in California. In the process of making the proposed approach to community interaction operational, we also expect to modify and refine it.

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