

THE MUNICIPALITY'S PROBLEMS IN THE DESIGN AND CONSTRUCTION OF URBAN HIGHWAYS

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•TRADITIONAL classifications of the county as rural and the city as urban are no longer accurate. For example, nearly two-thirds of our Model Cities area is included in the unincorporated area of Dade County and one-third in the city of Miami. The line marking the city limit does not mark any physical differences or change in population density.

Some of the problems related to highway design and construction as they are seen by the public administrator are described in this paper. To establish the range of these problems, let us assume that the decision to build a road has already been made. There are certain questions, difficulties, and problems that occur, and these fall into several well-defined categories: relocation of displaced persons; expressway design for adequate access and local traffic circulation; citizen involvement in decision-making on relocation, access to neighborhoods, and impact of new highways on the community; scheduling of construction and coordination of related projects; and public information and handling complaints. The following sections define the procedures associated with these categories.

RELOCATION

Urban highways can be classified as expressways or arterial streets. If we classify problems as "people problems" and "thing problems," then expressways seem to create more of the former and arterial streets more of the latter.

The greatest problem caused by expressways is the relocation of people displaced by the expressway construction. This relocation is really only an inconvenience if the person displaced can obtain suitable housing with the money provided him. Our laws require the condemning authority to pay fair market value to the owner of property needed for highways, and this ordinarily provides sufficient funds for that person to buy similar property elsewhere. However, if the expressway goes through an area where buildings are old and unsound or where real estate values are otherwise depressed, then the fair market values of these properties are small and insufficient for the owners to buy any other dwellings. In rental properties, which predominate in the deteriorating central urban areas, tenants are forced to look for other housing in an already crowded and now diminished area. The Federal Highway Relocation Assistance Act provides a solution to this problem where federal-aid roads are involved. For state and locally funded road projects it may be appropriate for us to review our statutes on eminent domain for any revision needed to provide similar relief.

However, in my opinion, a problem for the municipal official greater than that of obtaining relocation funds is coping with increased social dependency, crime, disease, fire hazard, and decline in property values caused by forcing people deeper into the slums when proper relocation cannot be made.

EXPRESSWAY DESIGN

From the viewpoint of the local government administrator, one of the design problems is the difficulty of providing adequate access to the expressway while maintaining safety. For optimum service to the traffic-generating sections within an urban com-

munity, there is a demand for access ramps at intervals along the expressway closer than can be allowed for the weaving and speed changing involved in using ramps. Expressway traffic speeds require access points to be spaced as much as 1 mile apart for safety in making maneuvers, and this interval is much greater in the vicinity where 2 expressways interchange. This interval is also greater than the distance between arterial streets in many cases, and it means that some arterials cannot be connected directly to the expressway. Thus, the urban expressway is limited in its capacity to serve the travel needs of the community in which it is located. Many citizens who could receive benefits of saved time and cost of travel between home and work except for this limitation must continue to use the slower and still-crowded arterial streets.

Traffic engineers frequently would like to have arterials be one-way to facilitate entrance to and exit from expressway ramps and to use a split-diamond interchange to fit a parallel pair of one-way streets. Merchants claim that a change in the existing traffic pattern will ruin their businesses. The inevitable compromises afford ample opportunity, if diligently pursued, to annoy just about everybody.

Urban expressways tend to become nearly complete barriers that separate portions of a city. The grid pattern of our planned expressway system, part of which has been built and the remainder is in preliminary planning or design stages, could result in what appears to be a deliberate attempt to physically define and contain ghetto areas. At-grade construction and solid fill create Chinese-wall situations. In our extremely flat terrain, grade separations between expressways and arterial streets require costly solutions.

Many of our local community leaders have suggested that all expressways in urban areas be entirely elevated. This, of course, is extremely expensive because elevated construction costs approximately 6 to 10 times more than at-grade construction. However, even if 20 percent of these expressways have to be elevated anyway for grade separations at major arterial streets and if present urban area right-of-way costs generally equal construction costs, the most likely effect of elevating the entire expressway would be to approximately double the present cost.

This cost increase could be offset by the benefits of multiple use of rights-of-way, such as for parking lots (revenue producing) and for miniparks and schools (nonrevenue producing), under the elevated expressways. In addition, with appropriate amendments of present laws, air rights could be sold for private development above the expressways. If expressways in urban areas were entirely elevated, no existing surface streets would have dead ends, and this would be another benefit to local traffic circulation.

Economics seems to indicate that the Chinese-wall effect cannot be entirely avoided in urban expressway construction; yet, imaginative design can greatly reduce this undesirable feature. It may be a valid conclusion that the social ills created by the Chinese wall are more costly ultimately than the money saved on construction.

CITIZEN INVOLVEMENT

Citizen involvement may lead to the question, Where can an expressway be located if, indeed, it should be built at all? Although I have assumed that the expressway corridor already had been agreed on, it should be pointed out that the real question for a municipal official is, Where should an expressway be built? If there is no place where it can be built without producing more problems than it solves, then the question arises, Should the expressway be built?

Our state highway officials have been rudely rebuffed at recent public hearings held in our area to receive the community's response to expressway corridor location proposals. These adverse public reactions would indicate either that some proposed expressways should not be built at all or that a more effective public information program is needed to enable citizens to recognize the need for such highways within the community. Unless they fully understand their transportation needs and the alternatives available to satisfy those needs, citizens cannot constructively participate in the decision-making process intended by federal regulations prescribing public hearings during the planning phases of federal-aid road projects.

A centerline location of the proposed expressway does not answer a citizen's question as to whether his house will be condemned. He needs to know where the right-of-way lines will be; he also needs to know the time schedule. He does not want to live a few years in limbo while the government searches for money or debates on right-of-way lines.

SCHEDULING AND COORDINATION OF ROAD IMPROVEMENT

There are more than 730,000 motor vehicles registered in Dade County. When roads are built, improved, or just maintained, it makes sense to try not to inconvenience these drivers more than reasonable practice requires. However, to make approximately 20,000 per day out-of-state tourist drivers uncomfortable enough not to come back is suicide for us. Thus, we try to schedule work to occur during the off-peak tourist season. This is most difficult for 2 reasons. First, most arterial road improvement projects in urban areas require about a year of construction time, thus overlapping the season no matter when they are scheduled. Second, for the past 10 to 15 years more tourists have arrived in the summer than in the winter, and indeed we now have almost a year-round season. The months of April, May, October, and November are what is left of the slack periods. However, excellent promotion of the convention business does not allow a comfortable decrease in traffic; thus, scheduling alone does not help very much except on a small project.

Another approach that we frequently must use is to require that the road-building contractor maintain 2-way traffic on the road he is rebuilding throughout the construction period and that, where expressways cross existing arterials, the arterials be kept in operation except for certain short periods. In especially critical situations, we even require the contractor to do certain kinds of work between midnight and dawn to avoid intolerable traffic congestion. The result is, of course, that the contractor is hampered in his operation, and construction done in this manner costs more and takes more time.

For some time the design of improvements to a series of our main east-west arterials in the populous southwest section of our county has been complete; and, although these improvements are badly needed, we are scheduling only one project at a time because simultaneous construction would leave commuter traffic without any alternate routes.

Coordinating the various efforts related to urban highway construction is a difficult job. Few government projects are so embarrassingly obvious as the newly completed pavement that is torn up to lay utility lines. In Dade County we have attempted to overcome this planning deficiency by creating a construction coordinating council to keep all agencies involved in public works construction informed of current work programs and future planning. The monthly meetings of the council are attended by representatives of county and municipal public works organizations, the local utility companies, the Florida Department of Transportation, and other state and federal agencies when their projects are concerned. Good coordination is thus effected, but, of course, the situation in a large urban area is much too complicated to gain perfect coordination; however, the procedure we have adopted has eliminated many problems of the past.

PUBLIC INFORMATION

Another problem the local government administrator is concerned with is providing prompt and effective response to citizen inquiries and complaints about projects affecting them. Too often we hear the complaint that a citizen's efforts to get the information he wants are fruitless because he does not know whom to call and his call is repeatedly referred to a succession of agencies until the right one is finally reached. Sometimes the citizen gives up before he reaches the agency that is responsible for the matter concerning him, and he is left frustrated and disillusioned about government efficiency.

This problem is, of course, magnified in a large urban area because of the multiplicity of governmental jurisdictions in such areas. In Dade County we have not only the county government engaged in public facility construction and maintenance but also

the Florida Department of Transportation, the Central and Southern Florida Flood Control District, several federal agencies, and more than 24 municipalities—not to mention the many utility companies who also construct and maintain public service facilities.

To help reduce this problem in our community, the staff of the county manager's office handles citizen inquiries, transmits them to the proper county department or other agency, and follows up to see that they are given adequate answers. Although we do not claim to have eliminated the difficulties citizens encounter in seeking information, we believe we have reduced them substantially not only by organizing to handle inquiries and complaints but also by establishing good liaison with the other agencies active in our jurisdiction. Through exchange of information about projects under way or planned we try to keep ourselves well enough informed so that we can answer many inquiries without having to refer the citizen to the responsible agency for the answer. This not only saves time for the citizen and helps reduce the burden of public inquiries on the other agency but also improves our own image in the eyes of the people we serve.

CONCLUSIONS

Some of the municipality's problems in the design and construction of urban highways can be mitigated to a large degree if effective and continual communication is established between citizens and government agencies. This is important not only prior to construction but also, and especially, during construction of projects.

This would require the contractors, subcontractors, utility companies, and other persons involved in construction, as well as the transportation industry as major road users, to become partners with the government unit responsible for road construction and maintenance to form a public relations team. We feel sure that many complaints of property owners, residents, and road users could be eliminated if courtesy, concern, and helpfulness became an integral part of our daily construction practice.

INFORMAL DISCUSSION

Robert G. Bartlett

We have been criticized for the highway that pierces into an urban area, cuts across the fabric, and causes barriers. We are now trying to rectify the wrongs of the past, if they were that, and develop a highway that is compatible with the social fabric of the community, that flows with the existing street lines, that enhances the residential or the parkland areas, and that receives support of the people. The growing problem of the lack of credibility of the citizens in their governmental agencies is not limited to highways; it is another aspect of the political circumstance in which we live. We must, as highway engineers and planners, encourage programs that inform the public well before the public hearings occur so that the formal public hearing is the last step in a series of events in which the public has participated in the decision-making process.

William Gelbach

In reference to a previous statement, I feel that the public agency should participate in the problem of the high cost of construction. Many people would agree but would ask what the public can do. I think that the only way that we can ever solve the problem of the high cost of construction is to have some sort of wage and price control. I have read in a reliable source that construction workers are making \$1,000 per week. Of course, we can say that, if the job is worth \$1 million, it will cost \$2 million, and the contractor is going to build it. If we are only putting in place 1 mile of highway instead of 2, 3, 4, or 5 miles of highway, taxpayers' money is being wasted. We must stop this inflation. We all talk about it, but we do very little about it. Anything that can be done to stop it will allow us to do a better job and to build better highways.

Ecology is something we need to concern ourselves with, and we should be able to spend the money for it. However, if we are going to spend more money to do the very

simple things, from where will the money come to deal with the problems of ecology and noise abatement?

Robert G. Bartlett

These are very valid concerns. Can the public agency or should the federal government take the leadership of controlling construction inflation, or is there a need for federal legislation or wage and price controls?

Question From Audience

With the cost of construction becoming more and more expensive, is there an advantage to the state to improve the capability of the state highway department so that its own forces do the construction?

Douglas B. Fugate

I do not believe that this is the answer. The contractor is a specialist. He can construct highways better than can the highway organization that uses state labor. The state's role is maintenance and not construction. I do think, however, that the state highway commissions can help to control the problem that has been raised. More and more, we tend to cancel highway projects that exceed our engineer's estimate by a percentage that we feel is unrealistic. We use the money elsewhere and, fortunately, we are able to do that because we are still primarily a rural state, although we do have high-density urban areas. Sooner or later, people in the urban areas are going to find out that highway construction in their areas cannot be afforded, and they are going to become aroused. This is at least one way of dealing with this problem. I agree that wage and price control is the only absolute way to control the high cost of construction and whether we are ready to go to that is, of course, a question of national significance.

Robert G. Bartlett

Having been in the Pennsylvania state government, I am not convinced that government operations are the most efficient way of getting things done, from a cost-performance standpoint. We have looked at such things as the contracting out of certain maintenance services, such as snow removal, ice control, and other operational activities. In comparing costs, we find that the ingenuity of the American competitive enterprise system is still the most effective cost-performance way of getting things done. I am not convinced that taking over the construction activities would be wise.

Marshall Suloway

The system of free enterprise has reflected only a minor escalation in the cost of construction in the past years. This is because the contractors, in the competitive spirit of free enterprise, have been forced to cut down their costs because of the new technology, new equipment, and new methods of construction. However, with recent increases of labor costs, contractors can no longer make profits as they have in the past 15 or 20 years when new equipment and modern methods of building projects were common.

Robert G. Bartlett

The tailing off of productivity increases is well known. During the decades of the 1940's and the 1950's with the advent of the big earth-moving equipment, contractors were able to absorb the increasing cost because the productivity measures were increasing. I think one of the other things we must have is more openness. We must have the environmental hearings and the double public hearing. We must think in terms of time from project conception to project implementation and in terms of cost. A project could previously be completed in 5 years, but it now takes 8 years. The cost of these 3 years is denial of benefits. We must somehow use all of the measures needed to evaluate a project and make certain that a project is sound and in the best interest of the people.