

The federal-aid highway program

FRANCIS C. TURNER, F. ASCE
Administrator
Federal Highway Administration
Washington, D. C.

Widely reported criticism of the federal-aid highway program gives a seriously imbalanced picture. Construction of relatively little Interstate mileage (105) has been delayed by citizen objections.

The completed Interstate system will save an estimated 8,000 lives and 500,000 injuries a year. Community benefits include higher land values, increased job opportunity, easier access to recreation and culture, and increased effectiveness of schools and hospitals. In 1968, Interstate highway travel led to savings of \$5.5 billion in lower vehicle-operating costs, fewer accidents and reduced travel time. Also, Interstate construction is undertaken pay-as-you-build.

Highway program leadership in urban transportation planning has spurred comprehensive metropolitan planning. The federal modal agencies are cooperating closely. To get full citizen input, two hearings are being held before a freeway is located and built. The federal highway program is leading to an upgrading of the cities' housing stock.

The post-1972 federal-aid highway program will be determined soon by Congress. Citizens are encouraged to present their views to their legislators.

Transportation is so much a part of U.S. life that it accounts for one out of every five dollars of gross national product (GNP).

By far the largest portion of the nation's transportation services is provided by highways. People in urban areas are almost totally dependent on highway transportation for personal travel. In intercity travel about 88 percent of all such travel is by autos or

buses. In the movement of goods, virtually all movement within urban areas is by truck. Trucks account for about 23 percent of the ton-miles of intercity goods movement and about 73 percent of the total freight transportation bill.

Highway transportation at a 1968 level of \$142 billion accounted for 83 percent of all U.S. transportation costs and 16 percent of the GNP.

These are the dimensions of highway transportation which must be considered in forming transportation policy and in shaping programs for the improvement of the publicly-owned highway facilities.

The objectives of the highway program, of course, are influenced by and responsive to the needs of the times. In the early days of the federal-aid highway program, the main thrust was to get the farmer out of the mud, to speed the movement of his produce to market, and to improve rural life.

These objectives have been met. Today, highway improvements serve other purposes and meet other needs, and in so doing they yield benefits to the nation that are so far-reaching they are difficult to comprehend.

Highway improvements save lives and prevent injuries and property damage. They provide dollars and cents benefits in the form of more economical transportation. They are vital to national defense. They enable us to achieve a whole range of social goals. And they enhance the material quality of life for America.

Benefits of Interstate System

When the entire Interstate System is open, travel on it will be so much safer that annually at least 8,000 fatalities will be avoided, and a half billion injuries will be prevented.

As to economic benefits, estimates for the year 1968 show that savings in operating costs on the Interstate System compared to the older roads were in the range of \$3.5 billion. Add to that a saving of over \$500 million in the cost of accidents avoided by virtue of the safer design, plus a saving of more than \$1.5 billion in the value of travel-time saved, and the total 1968 savings exceeded \$5.5 billion.

By the time the Interstate System is completed about 5 years from now the saving in operating costs alone will have amounted to at least \$90 billion, enough to pay the entire capital cost and have a substantial amount left over, while the savings will continue to mount, year after year.

The savings in cost to the users, who are paying the entire cost of the system through user taxes, more than

offset the expenditures for these roads. The motor vehicle operator, one of the few taxpayers who gets a specific return for his tax dollar, is probably the only one who literally gets all of his dollar payments back, with interest.

Benefits to nonusers

The impact of highway improvements, however, goes well beyond the highway user to include enormous benefits to the social and economic structure of the nation. Many of these, such as increases in land values because of better accessibility, can be measured. In addition, there are other immeasurable but very real benefits, such as increased job opportunities, dispersion of industrial and commercial activity, wider choice of residence, easier and quicker access to parks and recreational and cultural centers, and the increased effectiveness of such facilities and services as schools, hospitals, and churches.

What this means is a better life for all.

What needs to be more fully appreciated is that the improvement in living and in widened freedom of choice in daily activities, such as described above, results from a highway system fully paid for by the users at the time the facility is opened to travel. The many benefits that stem from the presence of the system, beyond the benefits to the users themselves, are in effect a pure bonus.

Highway users pay for the entire federal share of highway improvements through the Highway Trust Fund, which was established by Congress in 1956 to finance the accelerated construction of the Interstate System and the improvement of other federal-aid systems.

Financing post-1972 highway construction

Under present legislation, Highway Trust Fund revenues will accrue only through September 30, 1972. To complete the Interstate System, now about 70 percent open to traffic, and to continue other programs as presently projected, additional revenues will be needed, revenues which could be generated either by extension of the Trust

During Francis C. Turner's 41-year career with the federal-aid highway program he has seen service as advisor to the War Department and to the Foreign Service. In 1967 President Johnson named him the first Director of Public Roads in the new Department of Transportation. In 1969 President Nixon elevated him to Federal Highway Administrator.

Fund, by additional tax levies, or by a combination of these alternatives, as might be determined by the Congress.

As these important decisions for the future of the highway program are pending, there are some who loudly counsel that the program be severely curtailed. They deplore the dependence on the automobile and truck and urge that highway user tax resources be diverted to other programs.

They level their fire on what they consider to be the sins of highway officials or the negative aspects of the highway program. Indeed there are some negative values as you would expect in any program, but we in the highway business know even better than our critics where and what they are, but most importantly, we are using this special knowledge to find practical ways to make desired corrections and improvements in management of the program, instead of merely decrying the entire program and wringing our hands and crying in anguish.

Following is a review of a few of their charges.

Is highway planning inadequate?

One line of complaint has it that highway officials are guilty of bad planning, or no planning at all; that we are possessed of a mindless impulse to lay down pavement, in a straight line if possible, with no heed for community needs. Along with this it is alleged that we have a myopic obsession with highways, with no consideration for alternative means of transportation.

Now, the facts are that in this country, at least, highway officials practically invented planning. They have pioneered in long-range national transportation planning, in relating transportation planning to land use planning, and in urban intermodal transportation and community development planning.

The 1956 Interstate highway legislation was the culmination of nearly 20 years of such planning activity. We are now engaged in a number of unprecedented nationwide surveys and analyses, including classification of all roads and streets in accordance with the traffic service and land access functions which they perform. This is necessary for the preparation of new program recommendations anticipating the substantial completion of the Interstate System by 1975 and the future needs which must be met if our nation is to survive and grow.

In 1962 Congress enacted the requirement that federal-aid highway projects in cities of 50,000 or more population be developed as part of a

cooperative, comprehensive and continuing urban transportation planning process, including full coordination with plans for other modes of transportation and for local land development, and with greater participation by local government.

This planning process is now operative in all 233 urban areas of 50,000 or more population and there could be 43 additional areas when the 1970 Census is completed.

This urban transportation planning process under the highway program is currently not only the most extensive, comprehensive, and effective national urban planning program, but it is actually the only such planning process in existence on any such scale. Where then would planning be except for the highway program? It directly relates the planning of arcawide systems of all and I emphasize—all—modes of transportation to the planning for growth and development of urban lands.

It has provided for the first time in all metropolitan areas for the participation and cooperation of representatives of all political jurisdictions, civic groups, and business organizations, in the guidance and direction of a major public investment program, in cooperation with public officials.

It has helped, at all levels of government, in insuring coordination of plans for highways and transit, as well as other public works, and in achieving desirable urban growth patterns reflecting the aspirations of the local communities.

Basic to the joint land use and transportation planning effort is the establishment of goals and objectives of the metropolitan areas. Thus, for the first time cities have had to consider their future land use in terms of its requirements for transportation and whether it would lead to the desired social, environmental, and economic fabric of the community. It has been highway program initiative, skills and funds which have made this joint planning possible—something that no other program has done—surely a much needed and desirable achievement that the critics say should be done. We agree with them and are doing something positive about it and more than just talking.

Multi-modal planning

Further, our interest in finding acceptable alternatives to automotive transportation modes goes beyond mere intermodal planning considerations.

At the national level we are working very closely with the Urban Mass Transportation Administration, which

has the primary interest in solving public transportation problems. Steps are being taken to provide for special treatment of bus transit (which already accounts for about three-quarters of public transportation) by using highway funds.

Our objective is to promote the most efficient use of the public investment in the urban highway system for moving people, even including those who do not personally own or use automobiles.

Federal-aid highway funds currently are participating in a number of mass transit improvement projects, ranging from exclusive bus lanes (see article next month, Ed.) and extra median width for rapid transit facilities, to a series of special feasibility studies and an urban corridor demonstration program (January 1970 issue, page 54) conducted jointly with UMTA.

Thus, throughout the broad range of transportation planning and development the highway program is making a positive contribution to the nation and its communities.

Heedless about human impact?

Another line of attack against the highway program says we are not considerate of people, that we needlessly run bulldozers through neighborhoods and throw people out of their homes and businesses.

I have already referred to the steps taken through the planning process to minimize neighborhood disruption and to identify ways in which highway improvements can be used to help achieve the community's social objectives.

To this should be added the public hearings requirements under which highway departments solicit the views of all interested citizens on proposed projects. Through the hearings a forum is provided whereby consideration is given to the economic, social and environmental effects of highway location, including both the direct and indirect benefits or losses to the community as well as to highway users.

Two such hearings now are required—one to consider the corridor or general location of the highway, and the other its more detailed design—and more are sometimes arranged as needed in order to inform the public and provide a mechanism for citizen participation in the location and design processes.

1968 Highway Act is pioneering housing legislation

While great care is taken in highway location to avoid displacement of

families, farms and businesses, some displacement necessarily must take place. Recognizing the burden this places on those individuals who are displaced, the highway program has pioneered in establishing a relocation assistance program that is a model for a government-wide program now being considered by Congress.

The Federal-aid highway program is the first national public works program in history to provide the means by which displaced are guaranteed adequate replacement housing. The relocation assistance program enacted in the 1968 Federal-Aid Highway Act provides that in addition to normal moving costs, displaced may receive up to \$5,000 above fair market value for homeowners and up to \$1,500 rental payments for tenants.

The Act also requires that no federal-aid project can be approved unless sufficient decent, safe, and sanitary housing is actually available for relocatees. Secretary Volpe recently extended this provision to all of the other programs of the DOT.

The benefits of the highway program relocation scheme to individuals include the substantial additive payments to enable a home owner or tenant to re-acquire comparable quarters and actually in many cases to substantially upgrade his quality of living. The additive payment is intended to insure that the payment made for the property of a displaced person will insure his being able to re-establish himself in at least comparable housing.

The community itself benefits in many instances by replacement of substandard housing units with other housing that is decent, safe and sanitary and better fit for human habitation. The economic well being of the whole community is thereby strengthened. So here again the highway program is making a positive contribution to social progress. Displacement by the highway program is actually a housing improvement contribution as a bonus feature apart from the highways themselves.

Impact on the environment

Still another line of attack blames highway improvements for damaging the natural environment, for paving over the country, and for increasing air pollution.

First, emphatically the country is not being paved over. At the present rate the country would not be paved over before about the year 10,000 at the earliest—somewhat into the future. Total highway mileage has increased from nearly 3 million miles when the Federal-aid program began in 1916 to around 3.7 million miles

today, and is increasing very slowly. In the older cities the amount of acreage devoted to highways has changed little since horse and buggy days. Most of the new mileage is built to serve developing suburban areas and most of the investment in highways during the last half-century has been made to improve an already existing system.

Further, a sizable set of tools has been developed over the years to enable the highway program to contribute to the enhancement of social and environmental value goals.

The impact of highways on people and the environment is a factor which is considered in every stage of a project, from planning through construction and maintenance.

In fact, the highway official attaches as much importance to noise, pollution, compatibility of land uses, amenities, ecological factors and many other environmental considerations as he does to drainage, topography, cuts and fills, traffic accommodation, and the other engineering elements of location and design.

About 15 percent of all Federal-aid highway program costs at the present time are directly associated with these social and environmental factors, and that at least as much again is indirectly concerned with the environment.

Summary

The critics who would like to see these highway funds used for other purposes have another complaint—that too much is being spent on highways.

I have tried to point out that highway dollars are buying more than transportation, although as a transportation investment alone the highway expenditures are a bargain. The highway community has recognized its social and environmental responsibilities, not only with words but with money. A significant portion of total expenditures are made directly or indirectly to achieve non-transportation benefits.

As to actual construction costs, while general prices were increasing at an annual rate of 4 to 6 percent over the past decade, highway prices increased at an average annual rate of only 3 percent, and the price of material inputs increased at a rate of less than 1 percent annually over this period.

Competitive bidding on Federal-aid highway construction has provided industry with the incentive to improve equipment methods and overall productivity, thereby keeping prices at a reasonable level.

The combined effect of all these various and continued critical attacks on the highway program has produced an element of opposition to it. A good deal of publicity has been given this opposition, particularly as it concerns controversies over a few sections of urban Interstate freeways.

At the present time progress on some 105 miles of Interstate routes, located in 11 cities, has been halted because of some controversial aspect of the proposed route. It should be emphasized that the total mileage in controversy represents less than 1½ percent of all urban Interstate mileage and that only 4 percent of the urban mileage (274 miles) has not as yet passed the route location approval stage. Ninety-six percent has already been accepted and is in place or at some stage of construction.

Taking all these facts into consideration, then, the shrillness of the anti-highway voices and the amount of attention given them in the news and editorial commentaries needs to be measured against the constructive, positive accomplishments of the highway program and its overwhelmingly beneficial results for the nation.

The need for clear thinking as to the future of the program is especially important at this time, since legislation is required this year regarding the extension of the Trust Fund. It also would be desirable to begin now on the task of legislatively charting the future highway program.

Every American has a stake in the policy decisions that will be made. Those who are concerned about the quality of transportation in the United States and the resulting benefits to economic and social progress have a duty to weigh the facts and let their views be known to their elected representative as the policy issues are being decided in the Congress.

My own view is well known. I believe firmly that the Trust Fund should be continued, because it has been demonstrated to be the best instrument for seeing the present vitally needed highway program to its present stage of completion, and for assuring a smooth transition into essential follow-on programs, utilizing proven management tools and sound business financing methods.

We are now engaged in the serious business of building our America for ourselves, our children and grandchildren to enjoy and utilize. Good transportation—most of it by highway mode—is an essential and indispensable building block in the process. Support is welcomed now in the effort to continue to provide and improve the product. □