

THE STATE

OF OUR

HIGHWAYS

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IN 1916 we had 3 million miles of roads and streets (*102 million people; 3.6 million motor vehicles*); in 1968 we had 3.7 million miles of roads and streets—*only 700,000 additional miles*.

In spite of the fact that most of the investment in highways since 1916 (when federal aid for highways was first authorized) has been not to new routes, but to improvements of an existing system, motor vehicles and highways are blamed by some for a large share of everything wrong in our contemporary society.

The new mileage added has been in response to a demand for mobility, which becomes greater every year. The majority of our people already live in urban areas, and this majority will increase to dimensions that will become truly awesome in later years—awesome in terms of moving people around to and from the places where they wish to go.

Some of those who propose mass transit as the easy and instant solution to the problems either don't know about or deliberately ignore the nature of the daily movements of our urban population. The great mass of urban area travel is entirely separate from the

home-to-job commuting pattern, which is the only part of travel mass transit planners are considering. As much as 95 percent of all travel in the largest cities is concerned with trips which are almost entirely dependent on the private automobile or taxi. They are of a type which neither rail nor bus transit can accommodate.

People Prefer Automobiles

Two opinion surveys were recently completed for the National Academy of Sciences by professional poll-taking contractors. The surveys together covered more than 5,000 households, and the great majority of respondents reported that they consider the automobile much closer to the "ideal mode of transportation" for all trips except business trips over 500 miles. Public transportation of all kinds—air, train, bus, rail transit, and taxi—was considered closer to the ideal mode by only 12 percent of those responding to the poll.

Yet, despite this overwhelming preference for the private car and the flexi-

bility it affords, there have been loud critics against highways and the internal combustion engine, particularly in the urban areas and particularly in relation to freeways. We have a whole new breed of amateur instant experts who would do away with highways altogether and force everyone to ride a subway or some kind of magic carpet that exists only in the minds of dreamers.

Are Highways Subsidized?

Highways are *not* subsidized. They are paid for by the people who use them and pay their various use taxes for the privilege, plus about a 25 percent average surcharge which is diverted to general government purposes. Highways are beneficial in their main purpose, to move people and goods; and the transportation they afford is a human and social value of a high order, serving to aid substantially in creating many of the other fine values which our society demands and enjoys.

The Joint-Development Concept

The Bureau of Public Roads, in cooperation with state highway departments, is encouraging what we call the joint development concept, under which highways serve a multi-purpose function. They can be used, for example, to provide the "package" development of desirable non-highway needs such as housing, business, parking, and recreational facilities above, below, or alongside the urban highway. An important social aspect is the opportunity which they frequently afford for replacement housing of better quality for those persons displaced by the highway project itself.

Joint development is the answer in many areas to social and economic problems, but we have found to our dismay that the foot-draggers in these projects are usually the other "jointees," rather than the highway people. So the highway official is often blamed for inaction on the part of others, which is largely responsible for the plight of displacees. In any case, the opportunities which highways afford to rebuild a city far exceed the damage and dislocation which they sometimes necessarily cause and which are more subject to publicity.

Literally hundreds of studies show the economic benefits that highways bring with them. One of the most striking and best documented is the case of Route 128, a circumferential highway around Boston. It was opened in 1951, and it is estimated that by 1959 over \$137 million had been invested in new plants employing some 27,500 workers along the route. Although some of this activity involved relocation, the net gain to the metropolitan area represented an estimated \$129 million and added 19,100 new employees to the area's payrolls. (This was an eight-year study and one of sufficient depth to demonstrate that highways do have tremendous economic effects.)

The Boston experience with Route 128 could be duplicated in nearly any large metropolitan area in the United States where freeways have been built.

Flight to the Suburbs

People move to the suburbs for the positive values they find there, rather than to escape the negatives of the inner city. The automobile did not cause the flight to the suburbs, but it did make it possible; and this is obviously what the people wanted.

Presently, 67 percent of all American families in metropolitan areas live in single family houses, a proportion that is rising. Present trends and the results of surveys suggest that the preference of families for their own private homes in a suburban-type setting is deeply rooted. The metropolitan form of urban development has also allowed industries and businesses a wider freedom of location choice. The expectation is that in the future the growth of jobs will occur mostly in the suburban areas, with little change or a moderate rate of increase in the central city.

It is largely for this reason that mass transit—either rail or rubber-tired,—cannot substitute for the private automobile. Transportation is an infinite number of personalized trips, some of which overlap each other, but most of which do not because of the many trips that begin and end at the doors of our homes. There will always be an irreducible minimum of passenger car traffic, made up of trips that cannot be accommodated by any other means of transportation. The moving sidewalk has some limited applications but by no means is an answer to our growing

need for mobility; it doesn't take most people where they want to go. It would be practical only if it led from everyone's front door to his office, factory, church, store, doctor, dentist, drive-in, bowling alley, and satisfied the need for a hundred other routine, everyday movements of people. This is not meant to deride any type of transportation, because surely we will need all we have and all we can dream up to accommodate the ever-increasing need and demand for mobility.

Air Pollution

Some would substitute, for present motor vehicles, a modern steam engine or a battery-powered motor in the name of solving the air pollution problem. Both have been tried and both failed historically to provide the service which the gasoline-powered engine provided; hence, they became outmoded. If there is a future for either, it is in the future, while the need for mobility is at hand here and now. Progress is being made through the use of control devices in pollution.

Restrict Driving?

Some would ban, restrict, or otherwise make it difficult and expensive to drive a private automobile in urban areas (through the use of tolls, among other things). The idea runs counter to one of the great pluses of our way of life—the ability to move about freely in living as well as making a living.

There is another point of importance in this connection. To raise sharply the price of commuting by car to the downtown area would have the probable effect of accelerating further the departure of industry from the central city to the suburbs.

Urban travel, in terms of vehicle miles, is now increasing at a rate equivalent to doubling about every twenty to twenty-five years. About half the yearly increase is accounted for simply by the increase in urban population. The other half comes from changing travel habits occasioned by the dispersal of homes and activities and by rising personal incomes.

Freeways Use Little Land

Do freeways "chew up" tremendous amounts of scarce urban land needed

for other purposes? The facts are that urban freeways presently planned will require less than 3 percent of the land in the cities. In Los Angeles (sometimes held up as a horrible example) the proposed 800 miles of freeways that will weave through the metropolitan area by 1980 will occupy only about 2 percent of the available land.

The charge has been made that half of the total area of Los Angeles is devoted to highways, streets, and parking—in other words, to the motor vehicle. This is true of the central business district of Los Angeles, although a large share of the parking represents land in a transitional stage while it is being changed by developers into new high-rise office buildings. But fifty years ago, in the horse and buggy era, 35 percent of the central business district was devoted to streets, alleys, and sidewalks. So the alleged voracious demands of the automobile have required an additional temporary and diminishing 15 percent, surely not a high price to pay for the speed, convenience, and flexibility of the private motor vehicle which makes all the rest of the 50 percent of occupied land as valuable as it is—and which value would not exist without the auto accessibility.

Highways—the Best Bargain

Another contention is that freeways are inordinately expensive. Expense is a relative term. Obviously, urban freeways cost more dollars per mile to build than most of the rural connecting routes. But measured in terms of service to vehicles—and thus to people—they are the best bargains available in highways. On the basis of vehicle miles of use or service, they are the cheapest of all. To illustrate, the actual cost per vehicle-mile of urban freeways on the Interstate System is 0.646 cents. The comparable cost for the lowest type of rural roads and streets is about 3.24 cents.

Another point that should be made is that freeways are by no means the private reservation of the passenger car, as some of the critics would have it. They also serve as main arteries for buses, providing safe, fast service en route, with local service at both trip ends. The place of bus transit in our total transportation system is of tremendous importance. Buses presently carry 70 percent of all transit passen-

gers in urban areas. Bus transit is and probably will continue to be the only form of mass transit in at least 95 percent of our urban areas of 50,000 population and in smaller communities; and bus transit provides the greatest flexibility at lowest cost for those without automobiles.

We are making a special and continuing effort to encourage the greater use of mass transit by bus through the provision of better routes, either on freeways or on regular city streets or a combination of both. This makes sense, obviously, since the purpose of these arteries is to move people and goods, rather than just vehicles. At the same time, it serves the other desirable purposes of enhancing traffic safety and reducing air pollution in the urban areas, as well as easing congestion. (The congestion problem stems largely from the fact that most urban streets were laid out either before the advent of the automobile or before there was any general awareness of its potential.)

There is a tremendous potential in the use of reserved lanes or reserved streets for buses, and the Bureau of Public Roads is allowing Federal-aid funds to be used for this purpose under certain conditions. Where bus service would not justify the exclusive use of special lanes during rush hours, buses could be given priority, with a limited but additional number of private cars also allowed. This is a new program—too new to have advanced very far—and there are at present no exclusive bus lanes in operation on freeways in the United States. But this will come, and, in the meantime, at least fourteen cities have established exclusive bus lanes in urban streets, with most encouraging results. The indications are that both buses and other vehicles can save 10 to 30 percent in travel time as a result.

Roads, Rails Not Interchangeable

In some very few cases, as in that of the Eisenhower Expressway in Chicago, rail and roads coexist and complement each other. On the other hand, in any case where there is sufficient patronage to warrant a rail transit line, there are also enough highway users to require freeways or other high-capacity highways. So the answer in such heavily-traveled corridors is to provide both rail and highway facilities, even though

the rail line may reduce the number of lanes required on the new highway.

Although a rail transit line runs down the center median of the Eisenhower Expressway, the great preponderance of potential customers rely on the freeway. Inbound person trips are split 42.5 percent by rail transit and 57.5 percent by freeway during the peak hours. Outbound peak hour trips do not differ greatly—46.8 percent by rail and 53.2 percent by freeway. On a 24-hour basis, however, 71.3 percent of the inbound trips are by the expressway and only 28.7 percent by rail; and outbound trips are almost identical—71.6 percent by freeway and 28.4 percent by rail.

Moreover, the freeway and the city streets also carry the freight traffic of the city for its essential services and cargo movements. They move the garbage and deliver the ice cream, move the firemen, police, doctors, school kids, fuel, groceries and do the dozens of other tasks which neither the adjacent rail tracks nor any other subway or metro rail line can perform.

A Look Ahead

It is unlikely that any form of mass transit—rail, bus, air, hydrofoil, or moving sidewalk—will eliminate the need for a continuing program of providing substantial additional highway facilities in urban areas and in stretching the capacity of those we have or are developing.

In 1985, instead of 200 million people, we will have about 265 million. Instead of 100 million motor vehicles, we will have something like 144 million. And instead of 960 billion motor vehicles miles of travel per year, we are expected to have 1.5 trillion.

Perhaps if we could find acceptable ways to keep people at home in substantial numbers, the remainder could be accommodated on the existing system after a fashion and make new facilities unnecessary. But how will we choose those to stay at home—and how will we enforce this choice in a free society such as ours? We can do only what we are doing now—responding to the general public demand to provide a good highway network available to all in the way that the people have spoken to their Congressional representatives—and by their use of the system.