

I. Highway

by Francis C. Turner,
Federal Highway Administrator

The federal-aid highway program was inaugurated in 1916 with very modest financing and relatively simple aims in those days when the linen duster and goggles were still in use, if not in high fashion. It was essentially a rural program and the problems were rural—getting the farmer out of the mud, getting the mail through and bringing to the country population some of the advantages of city living.

But the growth in population, the rise in the number and use of motor vehicles, the continuing gravitation of the rural populace to the cities have brought about dramatic changes in the federal-aid program. Prior to 1944 only a token amount of federal or state funds went for highway projects within urban areas of 5,000 or more population. From 1944, when federal funds were first legislatively earmarked for use inside urban areas, until 1956, less than a third of the available federal aid went for highway projects within urban areas.

The metropolitan complexes thus accumulated a backlog of needed highway improvements while their populations increased at a fantastic rate. As a result the transportation needs of urban areas have received increasingly greater federal and state attention in the past decade and undoubtedly will need more in the future.

During the 1960's federal law and policy have been strengthened to promote greater harmony between the highway and its surroundings, notably in the Federal-aid Highway Act of 1962. This required that urban highway plans in cities of 50,000 population be developed as part of a cooperative, comprehensive and continuing urban transportation process, including coordination with plans for other modes of transportation and for land development, and greater participation in planning by local government.

SOME MEASURE of the significance of the comprehensive planning process is indicated by the fact that the federal-aid highway program is the largest program of federal aid for capital improvements in urban areas and often constitutes the most crucial factor in urban development.

One of the enlarged dimensions of

the highway program brought about by its increased urbanization and humanization is in the growth of the joint development concept. Cities have many problems but, as you well know, among the most troublesome are those resulting from shortages of both money and space in urban areas. The Federal Highway Administration, in recognition of this twin problem, has been vigorously encouraging joint development or multiple use projects in which double or triple use may be made of the Federal-aid highway rights-of-way.

The nature of these projects covers a wide range. Projects that are being built, designed, investigated or permitted include a U.S. sub-post office, a fire station, public parks, recreation developments and various industrial developments.

Because of the economies inherent in the simultaneous and integrated development of both highway and non-highway types of public works, needed non-highway facilities frequently can be provided at a much earlier date than would otherwise be possible. Also one of the most im-

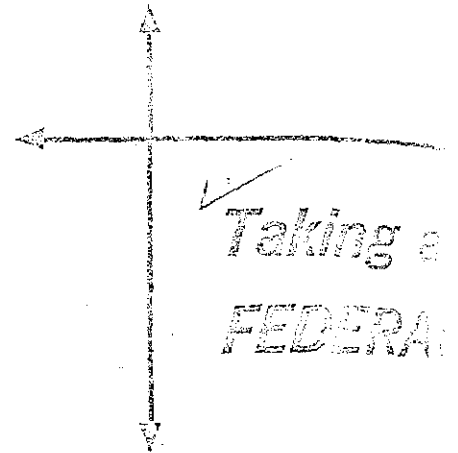
The three papers that begin on these pages were presented at the APWA general session on federal-aid programs, Sept. 15 in Cleveland. They have been condensed for publication.

portant social aspects of joint development is the opportunity which it often affords for replacement housing of better quality than that vacated by persons displaced by highway construction.

REPLACEMENT HOUSING in urban areas is one of the most sensitive problems in the routing of freeways and other arterial routes through urban areas. Congress took special recognition of this problem in the Federal-aid Highway Act of 1968 which provided for greatly increased financial assistance and counsel for those forced to move.

The act authorizes the secretary of transportation to establish standards for decent, safe, sanitary and comparable housing for those displaced. It also requires that no federal-aid projects be approved unless enough such housing is available within a reasonable time and within their financial means. The states are required to provide relocation housing advisory assistance programs to help

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II. Water Pollution

by David D. Dominick,
Commissioner, Federal
Water Pollution Control
Administration

Intolerable pressures generated by expanding population and technology are despoiling the natural environment of man.

Today, as we pursue the conquest of nature certain questions intrude. Become more nagging, more insistent.

Will the process of environmental decay become finally, irreversible? Will man become the victim of his own technological virtuosity and his habits and his carelessness? Not a major river basin in the United States is unpolluted. And now even the ocean waters and their treasure of food are under serious threat.

But I am not here today to preach gloom and doom. In fact, my relatively short experience as commissioner of the Federal Water Pollution Control Administration has left me optimistic about the future and convinced me that local, state, and federal clean water programs, with industry's cooperation, can and will do the job.

Propellants of a successful clean water program must include the skills and efforts of cross-section America—physical and biological scientists, engineers, systems analysts, economists, government leaders, industrial chiefs, and just plain people who engender public opinion.

PUBLIC OPINION, of course, is the primary ingredient of an effective water pollution control program. It is the leavening force.

And fortunately, today, the majority of the American people are concerned about the quality of their

APWA Reporter, November 1969

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co-ordination and harmonization of transport legislations, highway codes, road signs and signals as well as the registration of vehicles and driving licenses have been subjects of decision of the highest political body of the OAU. The importance which the OAU attaches to the improvement and rapid development of Highway in Africa arises from the duties assigned to it by the Charter of the Organization and decisions taken at the highest levels. In carrying out these duties we are constantly reminded of the need to have an efficient network of highways in Africa. In fact we are very aware of the fact that transport is one of the means to enhance economic development and strengthen solidarity which are the basis for African unity. Moreover, the need to achieve the economic integration of Africa has been a matter of prime importance in our activities and we believe that one of the essential conditions is to establish the infrastructure particularly in transport and telecommunications.

In the field of transport, the outmoded colonial system which has still left its mark on Africa has resulted in the development of Africa as an outward looking continent. This quite apart from being an intolerable situation for the African states, entails numerous disadvantages in many respects. This is so because, conceived and organized to serve the purely colonial interests of the former masters of Africa, this system not only effectively isolates the African states from one another but also contributes to the relative backwardness of the continent.

It is a known fact that today all African countries are concerned about extending the present trend of industrial development which is now centred in the isolated urban areas. The establishment of new industrial centres is up against serious problems when it comes to the means of fair distribution of products. Moreover, there are lots of undeveloped resources both in agriculture and industry because of the poor network of internal and regional communications. Still further, the lack of proper land transport has been detrimental to the effective utilization of the natural tourist attractions African countries could have offered the world to enable these countries acquire their share of the world tourist industry.

The OAU considers it of vital necessity for the harmonious development of Africa that you find solutions to the problems which you will discuss at this conference. We earnestly invite you to think over these problems very carefully so that you can find solution which will be in the interest of Africa. We are aware of the complexities of the problem but we fervently hope that the advanced countries whose economics owe so much to Africa, and all those who are sincerely anxious to co-operate with Africa in helping to lay the foundations for the rational development of its economy, will find in this respect an ideal opportunity to make a practical contribution in a field which we regard as of supreme importance to our future.

Finally, I wish to take this opportunity to express my heartfelt gratitude to the Imperial Highway Authority of Ethiopia and the International Road Federation for taking this initiative to organize this conference. At the same time I wish to convey to them that their initiative was recognized by the per-



"IT IS A GREAT PERSONAL HONOR," said US Federal Highway Administrator Francis C. Turner, center, after receiving the IRF Man-of-the-year scroll from His Imperial Majesty Haile Selassie I, "to have been chosen." At left is Count Ferdinand Arco, Director General of the International Road Federation, Geneva. Right is President Robert O. Swain of the International Road Federation, Washington.

continent political organs of the OAU who prepared a resolution on this matter which was adopted by the Conference of the Heads of State and Government of the OAU in Addis Ababa only last month. The OAU Secretariat has the pleasure to have participated as member of the Organizing Committee of the Conference.

I can give you the firm assurance that this is the spirit in which the General Secretariat of the OAU, in response to the kind invitation of the sponsors, is happy to participate in your deliberations and is prepared throughout the meeting to co-operate fully so that this important conference will be a great success for Africa.

Once again I should like to express the most ardent hope that your deliberations, which the whole of Africa will be following with great interest, will be crowned with complete success.

Turner Applauds

IRF Achievements

Following is the response of the Hon. Francis C. Turner at presentation ceremony of IRF Man-of-the-year award for 1969, African Highway Conference Inaugural Session

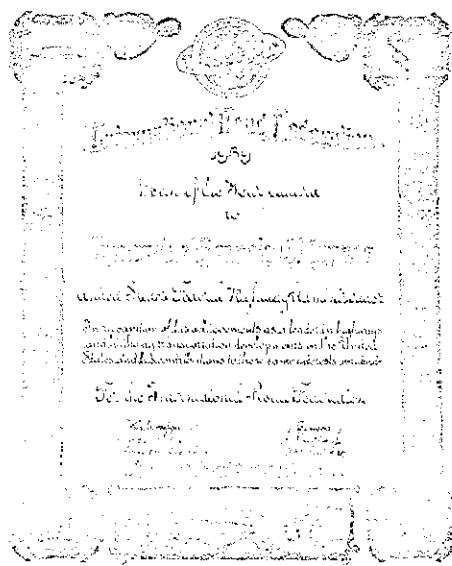
It is a great personal honor to have been chosen by the International Road Federation to receive its 1969 Man of the Year Award, and it is made even more meaningful to have that award presented by Your Imperial Majesty.

There is a personal satisfaction in this special occasion because I was directly involved at the Washington headquarters of the U. S. Bureau of Public Roads with the first beginnings of the Imperial Highway Authority in 1950.

This organization was created through the foresight and leadership of Your Imperial Majesty under the terms of a loan made by the World Bank in that year for the purpose of restoring the highway system of Ethiopia. That system had been necessarily neglected for a period of several years because of the misfortunes of the war years. But recognizing that an improved highway network was essential to the well-being and further economic growth of Ethiopia, Your Imperial Majesty sought and obtained approval in 1950 of a \$5 million World Bank loan with which to purchase needed equipment, supplies, and services to begin the restorative work.

Our representative here in Ethiopia at that time was the late John L. Humbard. Some of the special studies were also made during these early years by the late Thomas H. Mumford, Commissioner of the Bureau of Public Roads, who then held the position which I am honored to hold today. It was your own personal leadership, Your Imperial Majesty, in working with these representatives from the United States which laid the foundation for the later advances

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IRF DIPLOMA PRESENTED to Mr. Turner by His Imperial Majesty is pictured above. The IRF Man-of-the-Year award also includes a silver tray.

TURNER...

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which your country has been making in highway transportation during the past two decades. You can rightly be proud of the position your country now occupies, and I extend congratulations and commendation to all who have had a part in this splendid effort.

For it is abundantly clear that good transportation is absolutely essential to the development of a stable economy, and to the creation and maintenance of a high social order within any of the nations of the world. Highways and the vehicles which operate over them to move people and goods and services, are certainly the dominant element of that needed transport capability, as is being demonstrated here in the Ethiopia of today.

And so, there is indeed real truth in the words which IRF carries on the emblem and badge that "Better Roads Mean Better Living." Those words are more than just a slogan—they are an axiom in any plan to build a better world.

That is why this First African Highway Conference being held here in Ethiopia this week under the co-sponsorship of the Imperial Highway Authority and the International Road Federation with cooperation of the Economic Commission for Africa and the Organization of African Unity is of major significance and far-reaching importance.

For it is more than just a convention to which various people are attracted for the exchange of friendly greetings in an atmosphere of pleasant surroundings. Yes, it is that too—and that is important in itself—but there is more also in that it provides a workshop and a forum through which good ideas can be exchanged and the experiences and knowledge from several countries can be exchanged for the benefit of all. It is especially fitting that this Conference be held here in Ethiopia so that the leadership being evidenced here might be demonstrated at first hand. I am confident that out of the Conference there will emerge the framework of a plan to create a continuing African highway organization to cover the whole of the vast African continent.

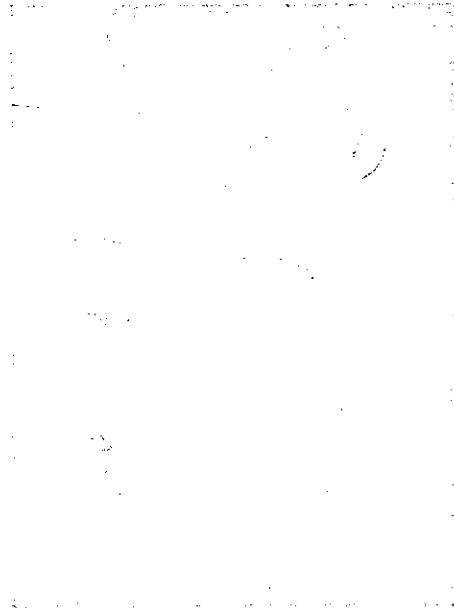
Experience elsewhere has taught us that as we improve the highway systems of our respective countries, we simultaneously improve the economic and social lot of our peoples. And so I pay high tribute to the International Road Federation and its leadership position in the promotion of better roads throughout the world. Under the able direction of its President, Robert O. Swain, it is contributing to a better world order in a quiet but most effective manner. For this excellent program therefore, I salute you, Bob Swain, and your Board of Directors and affiliate organizations.

I am both pleased and honored to accept this award from your organization, but no person can win such a recognition by his own efforts alone. It represents the achievement of a collective lot of many people and I am honored to make the acceptance in their behalf.

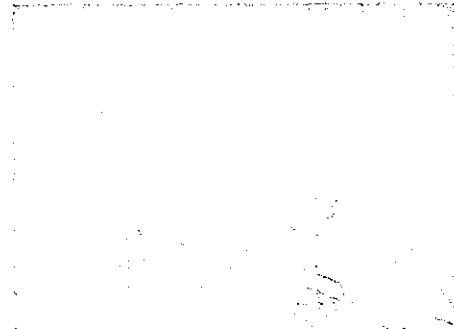
To you, Your Imperial Majesty, I say a special thanks for making the presentation. Your participation has added much to its meaning for me.

Thank you, and

Thank you, International Road Federation.



HONORED IN SPAIN—US Federal Highway Administrator Francis C. Turner visited Spain recently and was feted at a dinner in his honor in Madrid, attended among others by Pedro Arellano, Director General of Highways for Spain. Mr. Turner is shown here with President Juan de Araspachanga of the Spanish Road Association.



CONGRATULATIONS are offered to U.S. Federal Highway Administrator by a group of Ethiopians after he received the 1969 IRF Man-of-the-Year award.

International Highway Financing

By Gerald T. McCarthy, Member, IRF Washington Board of Directors, U.S.A.

The Importance of Transportation

Throughout history transport facilities have fashioned growth and development. Most of the world's largest urban areas have developed at the confluence of or along transportation routes. One of the most highly advanced early civilizations in the Middle East were located along caravan routes. Ports along coastlines developed early as centers for the interchanges of goods between land and water transportation.

The rapid economic growth of the United States during the 19th century followed rather than featured the out-reach, first of canals and subsequently of railroads, into previously underdeveloped areas. Conversely, the case that the less developed regions of the United States—Appalachia, for example—have not progressed as rapidly as other parts of the country today can be largely attributed to the relative lack of good transportation facilities.

The question of priorities in developing nations today is often difficult to resolve, but history shows that a nation that builds its transport facilities develops, while a nation that neglects transportation does not develop. Transportation is a key to national development, because it can widen domestic markets, stimulate industrial activity, and encourage national unity.

The importance of transportation to the social and economic growth of developing nations is widely recognized today by developing and developed nations alike. Through many programs and institutions the material resources and experience of a ready developed countries are being joined with those of the developing nations to meet the overwhelming need for better transportation and the other things that can bring a better life to the world's population.

Sharing of resources between developed and developing nations is facilitated today through the workings of the various international banks and governmental lending agencies. Most of these institutions were formed just after World War II. Their principal concern today is the long-range social and economic progress of the developing nations of Latin America, Africa and Asia. While these lending institutions are aware that the stability and progress for which developing nations are struggling can only be achieved through internal effort, they do recognize that external help can be an effective supplement.

This paper deals with the financing of highways, but it is important to note at the outset the importance of defining transport investment needs and capital improvement programs in consideration of all possible modes. Highways are not always the answer to a transport need.

A broad scale study leading to the formulation of a general program for transport development, comprising water and air as well as land transport modes, is a recommended early step in the process of building a framework for a national transport system. The United Nations Development Programme, the World Bank and others have recognized the need for such an approach and have sponsored comprehensive transport studies in several nations.

Determination of Priorities

In underdeveloped areas with substantial resources that depend to a large extent on transportation for their development, the transportation needs are usually far greater than the funds that might possibly be made available. Provided that there is stability and continuity of economic development, the most deserving of these projects will be built within a period of several years during the normal development of the country. Building in the exact order of priority is less important than getting on with the job. In other words, the need to make detailed feasibility studies of all deserving projects throughout a country to provide an exact order of priority should not be an excuse for delaying construction of an obviously feasible project.

To expedite progress and make the most of limited funds, preliminary priority ratings among competing types of projects in developing countries are often determined to advantage by the

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Nine prevalent myths about

BY FRANCIS C. TURNER
Administrator
Federal Highway
Administration



A lot of current day mythology has arisen regarding the nation's highway program . . . myths that have no relationship to reality. Nevertheless, they are being talked about and written about and they have attracted the attention of some of the people who would rather believe in fancy than facts. Adapted from Mr. Turner's remarks at the 55th annual meeting of AASHC.

• **Myth No. 1: Highway officials, susceptible to blandishments of some unseen and selfish "lobby," are striving to pave over the whole country, just to permit the "lobby" to sell materials, or equipment or provide itself with perpetuity.**

First, let me acknowledge that there indeed is a "highway lobby," in this country. It consists of the men who own our 105 million motor vehicles. This "lobby" includes not only the owners of our 105 million motor vehicles but also the rest of our 200 plus million people who may not own a car but are basically dependent on the car for virtually every aspect of their lives.

Second, the "paving over" allegation is unfounded. In 1916, when the federal-state partnership for improving the nation's roads came into existence, there were only 3 million mi. of roads and streets. In that year, we had only 102 million people and 3.6 million motor vehicles. Today, 53 years later the mileage of roads and streets has increased by less than 1/4 to a total of 3.7 million mi. The population has doubled but vehicles have increased tenfold.

The truth is that most of the investment in roads during the last half-century or so has been made not so much for new routes but for improving the existing system. The joint federal-state effort has been directed largely toward improving — in terms of capacity and safety — the basic network we have had since the and-buggy days. The improvements which have been made have been in response to the swelling number of vehicles and the increase in their individual demands for better accommodations. This is the true "highway program" and I personally believe it is a true and excellent example of how a democracy such as ours was intended by our founding forefathers to work.

Myth No. 2: Because of congestion, modern urban freeways are moving traffic slower today than during pre-freeway days.

Prior to the construction of freeways in Los Angeles it took 30 min. to cover 10 mi. on conventional streets. After freeways were built, in the same length of time it has become possible to cover 25 mi. on the Harbor Freeway, 20 mi. on the San Bernadino Freeway, 15 mi. on the Hollywood and Ventura Freeway, and 10 mi. on the Harbor Freeway, an increase in travel speed of 10 to 15 times the possible pre-freeway speed. So far from being the largest parking lots in the world and being a rather cruise humor, and far from the truth, the Los Angeles Freeway system, I would estimate, has an average speed for this long a distance of 100 to 120 miles per hour.

The truth is that urban freeways move traffic at much higher speeds than city streets. At a speed of 35-40 mi. an hour, the freeway carries 10 to 15 times as much traffic as a city street.

nation's highway program

the number of vehicles per lane as does the average street. It would require 20 new lanes of surface street to carry as much traffic as an 8-lane freeway. But the 20 lanes would have neither the speed nor the safety of the freeway.

Benefits of the freeway are many, but probably the most important is its safety superiority over conventional city streets. Head-on collisions, opposite direction side-swipe, vehicle-pedestrian accidents, and traffic turbulence at intersections and driveways have been eliminated. Freeways are twice as safe as other city streets in terms of fatalities, and about four times safer as far as personal injuries are concerned.

Myth No. 3: Travel today in urban areas is slower than in the horse-and-buggy days.

It is always good for a chuckle or a "horse laugh" when someone says we are without factual substance. Admittedly, traffic in the highly publicized downtown areas during peak hours moves frustratingly slow, but believe me, it moves faster as a general rule than in the pre-motor vehicle era. If we were still trying to use the horse and wagon, we would have much worse congestion than we have today and also some other problems more difficult and unmanageable than our present ones.

Myth No. 4: Highway program takes valuable agricultural land for right-of-way and we are about to produce a famine for the nation.

Actually, by replacing the horse and mule, motor vehicles have made more land available on which to grow food for humans. In 1910, 90 million acres were required to feed for horses and mules. This is twice the area of all the right-of-way on all of the entire public street system of our nation today. And the pavement itself is only a minor fraction of this amount. Interestingly, we also are taking more agricultural land out of crop production as a part of our soil bank program each year than we take out for new highways — because of overproduction of agricultural products.

Myth No. 5: Urban highway construction and improvement take land from the ratable rolls, reduce tax revenues, and thus compel the remaining taxpayers to pay for the loss by having to shoulder an added tax burden.

There are hundreds of studies which show that there may be a brief loss in ratables in some instances, but in the overwhelming majority of cases, the highway program brings with them substantial economic benefits. I will give a few examples.

The best documented cases is Route 128, a circled highway around Boston. It was opened in 1957. It is estimated that by 1959, over \$137 million was invested in new plants along the route employing 45,000 workers. Although some of this activity was migration from other parts of the community, it added to the whole metropolitan area represented an additional \$129 million, and added 19,000 new employees to the area's payrolls.

The second illustration involves a smaller town — Yankton, S.D., a city of 9000 population where 3.1 mi. of U.S. 81, running through the heart of the city, were widened and upgraded in design at a cost of \$852,488. An in-depth study made by the Federal Highway Administration of the impact of the improvement disclosed that it saved time and money for the citizenry, reduced accidents, spurred business, boosted employment, hiked land values, and improved the tax base.

The study further revealed that accidents dropped from 71 in 1956 to 34 in 1965, even though travel doubled from 1½ to 3 million vehicle mi. The overall cost to the user, which in addition to accidents includes travel time and vehicle operating costs, totaled 15.8 cents per vehicle mi. before and 13.1 cents after the highway was rebuilt, a decrease of more than 15%. The number of businesses showed a net increase of almost 100% — from 60 to 119.

Land values showed a sharp increase as assessed valuations for property tax purposes climbed from \$1.2 million to \$2.79 million, an increase of 133%. It is estimated that the improvements themselves increased assessed values by more than 100%.

The number of persons employed by business firms along U.S. 81 jumped from 402 in 1956 to 952 in 1965, an increase of 137%. By comparing this with the increase in a "control group," it was concluded that at least 1/3 of the increase was due solely to the widening and upgrading of U.S. 81.

Myth No. 6: Freeways use up tremendous amounts of scarce urban land needed for other purposes.

The fact is that urban freeways presently planned will require less than 3% of the land in the cities and if we didn't build the freeway types of highway, several times as much land area would be required for moving the same traffic volume by conventional street systems. In Los Angeles — sometimes held up as a horrible example — the proposed 800 mi. of freeways (only a fraction Interstate system incidentally) that will run through the metropolitan area by 1980 will occupy only about 2% of the available land.

It has been frequently charged 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 at this present time only about the central business district. But a large share of the parking usage represents land that is in a transitional stage from old, uneconomic buildings to new high density buildings use which will then permit parking as an incidental to some other usage of the same plot of ground. And this other type of land usage could not occur if the street and vehicle did not provide the access thereto. About 50 years ago in the horse and buggy and trolley era, 50% of the central business district was devoted to streets, alleys and sidewalks. We do not have a record of the amount of area that was devoted to the stables and wagon yards to park the horse and buggy transportation of that era, but it must have also been a sizeable amount. Surely some small additional

percentage is not too high a price to pay for the speed, convenience and flexibility of the private motor vehicle, and accessibility which it brings that makes all the rest of the occupied land as valuable as it is.

It is interesting to note that when Pierre L'Enfant laid out the city of Washington, D.C. in 1790, a full century before the days of the automobile, he proposed that 59% of the total area be used for roads and streets. This is even more than the area now devoted to highway transportation and parking.

Myth No. 7: We have reached the stage of a national coast-to-coast and bumper-to-bumper traffic jam, with the whole country stragling in traffic congestion.

This is really an interesting one because last year Americans drove a whopping one trillion 16 billion vehicle mi. If, as some critics claim, motor vehicles have become immobilized on our highways, how did the driving public rack up this fantastic mileage? There just had to be more than a few gaps in the mythical coast-to-coast traffic jam.

Myth No. 8: Highway people want to prevent any other mode of transportation from being made available because they are so selfishly jealous of the automobile that they don't want any competition.

The real truth is that no group is more aware of the limitations in highway transportation than are the highway people themselves and no group is more willing than the hard-pressed highway administration to share with others some of the heavy burden of transportation in this country.

We in the Federal Highway Administration welcome with open arms the contribution which any mode of transportation can make toward moving people and goods efficiently. That is why we support enactment of the pending Public Transportation Assistance Bill of 1969 which would provide \$10 billion over the next 12 years to cities for additional mass transit facilities. Please note that this bill would permit both or either rail and bus types of mass public transit.

There is no disputing that in some areas of high population density, rail mass transit can do a fine job, and we enthusiastically support its construction in such cases. But we also recognize a truism of transportation life — that in many areas rail transit is impractical and uneconomical and will never be built. Those areas then must rely on bus mass transit, which today is already carrying 70% of all transit passengers in our urban areas, and the bus will probably continue to be the only form of mass transit in at least 95% of our urban areas of 50,000 or more population, and in every one of our smaller communities.

We must not lose sight of the fact that about 70% of today's population lives in urban areas, and by 1985 this figure will jump to almost 80%. As this growing urbanization continues, more and more people will have to depend on bus public transit.

Myth No. 9: Rail mass transit can substitute effectively for highway transportation in an either/or, or local choice basis.

In some larger cities, it can surely augment highway transportation of people but what about the movement of goods none of which can be moved by a rail line? To talk about rail transit as the single, simple panacea for all the nation's transportation problems in every urban area simply does not jibe with reality.

The clothes we wear, the food we eat, the newspapers we read, the mail we receive, are all dependent on highway transportation and even more so within the urban areas than the inter-city links. As a matter of fact, it is difficult to imagine any major facet of American life that is not closely linked to rubber-tired transportation.

In the 233 urban areas of more than 50,000 population in our nation today, 99% of all person-trips and 98% of all person-miles of travel are by highway vehicle. Of 213.6 billion person-trips annually, 205.4 billion are by automobile, 6 billion by bus, and 2.2 billion by rail. Of 653.3

billion person-miles annually, 616.2 billion are by automobile, 23.9 billion by bus, and 13.2 billion by rail. In smaller urban areas, the proportion of highway travel is even higher.

In intercity travel, it is estimated that 931 billion person-miles, 931 billion are by automobile, 23.9 billion by bus, for a total of 956 billion or 88% by highway. Air travel was second with 67 billion person-miles or less than 9% of the total. Thus highway mode is more than 10 times as big as all other modes together.

Mass public transit, whether by bus or rail, must play an increasing role in urban transportation. There is nothing in the foreseeable future that will substitute or greatly reduce the need for some mass transit and other traffic arteries in our growing cities. These must be provided, with much greater emphasis placed in increased use of buses moving on the transit system to accommodate the increasing number of people traveling into and out of the downtown business areas in rush hours — or alternatively we must revise our present concepts of the working hour to spread peak demand over considerable periods of time — both day and night and perhaps on weekends as well.

The limited experience we have had with pilot bus and exclusive bus lanes on freeways indicates that buses can play a major role in the movement of people in urban areas. Buses traveling on freeways between the city and the suburbs could afford a substitute for many of the private cars now contributing to street congestion. A switch of 50 persons from their own cars to buses could bring a reduction of 30 cars on city streets.

We are closely observing an experiment recently completed on Interstate 95 in northern Virginia where lanes have been reserved for exclusive bus traffic from Washington, D.C. in the morning rush hours. It is already that travel time is reduced by restricting the use of the lanes to buses, and we are hopeful that many more people will leave their cars at home and use bus mass transit.

Yes, there are many myths and much misinformation being spread about the highway program. We must, however, act in a responsible way that separates myth from hard facts. In dealing with the real world of transportation, we must base our actions on sound basic information, constantly apply the trained professional expertise and experience which we have learned. We cannot be swayed by simple hunches and emotions. We must evaluate the whole of our country's transportation needs in relation of those needs to the overall needs of the nation.

The right answer may frequently involve a mixture of more than one form of transportation. In every case, the selection of the individual mode or the amounts of different modes to produce a proper mix must be based on factual information of what combination will produce the most overall efficient service to meet the needs of the particular situation. These decisions cannot be achieved by a popular referendum based on public group action or hunches. Each element of the system selected must complement the others to produce the most effective transportation system. As engineers and planners, we are trained to make these decisions in this way. The cooperative, continuing comprehensive transportation planning process in which we engage in every urban area of more than 50,000 population not only forms the solid base on which to develop a sound highway program for these areas, but at the same time it creates the data base on which the most appropriate mode of mass transit is selected. Please note that I called these transportation planning processes — and that I did not limit them to a single highway mode. This is significant because it is accurately descriptive of the procedure which we use in the highway program to insure that we do make transportation decisions on the basis of a full consideration of the whole of the transportation needs and possibilities of the community — in every one, not just some — of our present urban areas of more than 50,000 population.