Remarks by Francis C. Turner, Director of Public Roads, Federal Highway Administration, U.S. Department of Transportation, prepared for delivery at the 1967 Convention of the Southeastern Association of State Highway Officials, at the Greenbrier Hotel, White Sulphur Springs, West Virginia, at 9:00a.m., November 20, 1967.

It is a pleasure, as always, to be with you of the Southeastern Association.

The Census Bureau in Washington has a "population clock" which ticks off a new American every 14 1/2 seconds. And at 11 o'clock this morning it will register 200 million of us.

This is roughly double the population of the United States in 1916, when the first Federal-aid Road Act was passed. The same period has seen the mass movement of the population to the cities, and by 1990 it is estimated that 220 million people will be living in urban areas -- or 20 million more than we have in the whole Nation this morning.

In thinking over what I might say to you today, my thoughts were dominated by these figures and trends. And despite the contrary views of some of our loudest critics, I think the Federal-State partnership and the program it operates have proved themselves to be quite flexible and adaptable to the needs of a growing and changing society over the past 50-plus years.

This flexibility has been particularly demonstrated in the evolution of our National System of Interstate and Defense Highways and I would like to depart from tradition today and explore this subject in some detail. I say "depart from tradition" because from my recollection over many years, the representative of the Bureau of Public Roads at these annual meetings customarily uses these occasions to give a lecture on what we should be doing.

But I think you may be tired of hearing lectures and sermons. Moreover, I'm quite sure that some of the historical background of the Interstate System would be of interest to those of you who are relatively new to the Federal-aid highway program. But most important of all, I think it is desirable to review for the general public and our critics from time to time the many years of thinking, studying and planning, the arguments and debates, the reports and drudgery that went into formulating the Interstate program as we have known it since 1956. Today we have an over-abundant supply of new found experts -- instant engineer-planner amateurs who know more than the professionals and have acquired this store of knowledge without training or experience. Before they hang up the expert's shingle, I suggest some search of history.

Despite all the publicity about it and the widespread public interest in this 41,000-mile network, it is not well understood. Myths and misconceptions have accompanied the program throughout its history, sometimes with damaging effect. I can recall back in 1959, for example, when we were having financing difficulties, an editorial in a respected publication which traced all of our

problems to the alleged fact that the Interstate program was "thrown together" and "imperfectly conceived." Nor was this a lone voice. It echoed a fairly widespread opinion, held even by some influential members of Congress and the learned public.

We weathered that storm but undoubtedly are heading into others. Right now the whole national policy of building freeways in urban areas is under scrutiny by many groups - all with nothing but criticism - but none with background, knowledge, nor training in this field which they have chosen to be critical of. Also, as you are well aware, a new estimate of cost of the Interstate System is due to be presented to Congress in January. So for all of these reasons, I want to take a little of your time for an exercise in history. For history is a profitable teacher, if we will be willing to listen and learn.

Although there had been a lot of talk about transcontinental highways as early as the twenties, the first direct step toward the establishment of an Interstate System was taken in 1938. In that year Congress asked the Bureau of Public Roads to study the feasibility of a toll-financed system of three east-west and three north-south cross-country superhighways. The study was undertaken with the aid of the State highway departments and was reported to Congress in 1939 in the publication, "Toll Roads and Free Roads."

The findings were negative as to the self-supporting possibilities of much of the proposed 13,000-mile toll road system. It did show the feasibility of some sections now built as toll roads. But the study went on to explore and document the need for a system of interregional freeways, with connections <u>through</u> as well as around cities. It proposed a network totaling 26,700 miles, with the Federal government contributing more than its traditional 50 percent share of the cost.

In 1941, President Franklin D. Roosevelt appointed a National Interregional Highway Committee to pursue this concept. Then in 1943, during World War II, Congress requested the Bureau of Public Roads to make a study of the need for a nationwide expressway system. This time the Bureau worked not only with the State highway departments but with the appropriate Committees of Congress to produce a single, landmark report called "Interregional Highways," which was presented to Congress and the Chief Executive in 1944. This is one of the most far-seeing highway documents ever produced and its contents are as accurate today as though prepared only this week.

The study gave detailed consideration to systems of varying lengths, and finally recommended, on the basis of the criteria applied, a network totaling 33,900 miles. The report also foresaw the need for an additional 5,000 miles of auxiliary urban routes, bringing the total proposed system to some 39,000 miles, of which about one-fifth would be in urban areas.

High standards of geometric design and full access control were recommended to assure safety, efficiency and the continued traffic capacity of the proposed expressways, as well as the protection of the enormous investments involved.

Acting on the basis of the 1939 and 1944 reports, Congress in the Federal-aid Highway Act of 1944 called for the designation of a National System of Interstate Highways, limited at that time to 40,000 miles and ..."so located as to connect by routes, as direct as practical, the principal metropolitan areas, cities, and industrial centers, to serve the national defense, and to connect at suitable border points with routes of continental importance...."

The system routes were to be selected by the States, with the approval of the Bureau of Public Roads, and were to be incorporated into the Federal-aid primary system if they were not already included. And so the long and tedious process of route selection began. By the end of 1944 the States had proposed 43,000 miles of main routes for inclusion in the System. Criteria for selection included service to cities and rural population, to manufacturing and agricultural production, to concentrations of motor vehicle ownership and traffic, and to national defense. Additional criteria in urban areas included consideration of need for through and circumferential routes and their relation to land use, urban planning and civil defense.

There followed much discussion among the Bureau, the States and the Department of Defense, and on August 2, 1947, the general routes for the System were officially announced. They totaled 37,700 miles, including 2,900 miles in urban areas. The remaining mileage within the 40,000-mile limitation was reserved for auxiliary urban routes.

Again in consultation with the States and the Department of Defense, the general locations of 2,300 miles of urban circumferential and distributing routes were designated on September 15, 1955.

Meanwhile, some short and scattered sections of the Interstate System were already beginning to take shape under the regular postwar highway program authorized by Congress. During the fiscal years 1946-53, no specific amounts were allocated to the Interstate but the States committed fairly substantial amounts of their ABC money to the System.

In 1952 a token $25 million was authorized for the Interstate System for each of the fiscal years 1954 and 1955, on the traditional 50-50 Federal-State cost sharing basis. In 1954, Congress authorized $175 million for the Interstate for each of the fiscal years 1956 and 1957, and raised the Federal share to 60 percent.

During this postwar period, in 1948 to be precise, Congress asked the Bureau of Public Roads to make another study -- to include the status of the Interstate System and the relationship of highways to the national defense. This study, reported in 1949 as "Highway Needs of the National Defense," pointed out the critical deficiencies of the Interstate routes and suggested that much of the System could be developed by reconstruction and widening of existing highways and by utilizing existing bridges. These expedients later proved to be impractical in the light of astronomically mounting traffic volumes.

In 1954 the late Francis V. du Pont, then Commissioner of Public Roads, took an active interest in the Interstate program and named an Informal Advisory Committee to work with him in studying the whole problem in depth. Alf Johnson was a member as then President of AASHO. The final recommendations of the Committee included these basic ones:

1. That the program should be undertaken and that the System should be so planned and financed that each State would finish its portion of the Interstate simultaneously.

2. That the Federal contribution to the program would have to be in the neighborhood of 90 percent if participation by all States was to be secured.

3. That the program should be carried on through the traditional Bureau-State highway department partnership.

4. That there should be no compromise in the principle of controlled access, nor in the highest possible design standards for the System.

In 1954 President Eisenhower called for a "grand plan" for highway development in a message to the Governors' Conference. He also appointed an Advisory Committee on a National Highway Program, headed by General Lucius D. Clay. Alf Johnson was a member of the Technical Staff of that Committee also. In the same year Congress asked the Bureau to make two more studies, which were reported in the spring of 1955. One, called "Needs of the Highway Systems, 1955-84," estimated the cost of the Interstate System at $23.2 billion, not including the 2,300 miles of auxiliary urban routes. (Later the cost of these was estimated at some $4 billion, for a total of about $27 billion for the System then contemplated.)

The other study, titled "Progress and Feasibility of Toll Roads and Their Relation to the Federal-aid Program," indicated that some 6,700 miles of Interstate routes could be successfully financed by tolls, but reiterated the principle established in the Federal-aid Road Act of 1916: that roads built with Federal-aid should be toll-free. It did, however, recommend inclusion in the Interstate System of toll roads which met Interstate System standards, if there were reasonably satisfactory non-toll bypass roads.

In February 1955 the Clay Committee submitted its report to the President, who sent it on to the Congress. It proposed a 10-year national highway program to be financed through a Federal Corporation which would issue long-term bonds to be repaid over a 32-year period from the then existing two-cent Federal motor fuel tax.

After considerable debate and maneuvering, the measure was defeated, largely because of the high interest costs on the bonds and the fact that, in effect, it removed fiscal control of the program from the hands of Congress.

The 1955 action was only a temporary setback, however. In the following year Congress passed what we refer to as the Federal-aid Highway Act of 1956. Much of the support for that Act came from AASHO with R. M. Whitton as President that year - he is with us today. Actually this is the name of Title I of twin Acts, Title I dealing with the legislative features and Title II covering the financing features and the establishment of the Highway Trust Fund.

The 1956 legislation declared it essential in the national interest to provide for the early completion of the Interstate System. In recognition of its importance to the national defense, its name was changed to the National System of Interstate and Defense Highways. Because Congress thought some additional and urban connections might be necessary, the authorized length was increased from 40,000 to 41,000 miles.

The Federal share of the cost was set generally at 90 percent with provision for raising this to as high as 95 percent in States having large areas of Federal public lands. The apportionments of Interstate funds were to be made, after the first three years of the program, on an entirely new basis of needs. This meant that any State's share of the annual Federal Interstate funds would be based on the ratio that prevailed between the cost of completing the System within its borders and the total cost of the System nationally. The Act required a series of periodic cost estimates as a kind of self-correcting device whereby any inaccuracies in one estimate resulting in inequities to a State could be compensated for in a later estimate.

The construction program was placed on a pay-as-you-build basis through an increase in the Federal motor fuel tax and the imposition of other new or increased highway user taxes such as those on new commercial vehicles, tires and recap rubber.

This is the basic legislation under which we are operating today although it has been amended a number of times in accordance with new estimates of the cost of the System, new concepts of the functions it should perform, and constant reappraisal of its long range adequacy in terms of efficiency, safety, esthetics and integration with other modes of transportation.

I should say parenthetically that the Interstate history I have reviewed and much more detail is contained in the monumental volume called "AASHO: The First Fifty Years, 1914-1964." This was put together principally by Alf Johnson, with the assistance of his staff and some help from the Bureau of Public Roads for the commemoration of AASHO's Golden Anniversary in 1964. Alf did a magnificent job on this book and I commend it to your attention. All registrants of State highway departments at the 1964 session in Atlanta received a copy.

Returning to the present and its problems, as you know, we are now operating on an Interstate estimate of $46.8 billion, including $42 billion Federal and $4.8 billion State funds. This is up from an original estimate of $27.6 billion made in 1955, and a more recent and realistic estimate of $41 billion made in 1958 and confirmed in 1961. Construction, right-of-way and engineering costs

have gone up considerably over the years but the principal reasons for the mounting estimate of cost lie in more enlightened concepts of the purposes and functions of the System. The largest element of increase has come about through changes in the law or practice resulting in better and safer design, through more reliable traffic forecasting, and through more detailed knowledge of site conditions and needs. All these have been occasioned by our receptiveness to and response to changing concepts and desires of our public.

It is no secret that the present $46.8 billion estimate is not enough to complete the System anywhere near on schedule in 1972. The Bureau is putting the finishing touches on a new estimate that will be submitted to Congress in January and I want to thank you for your cooperation in providing us with the raw material. This estimate obviously will be higher and will reflect not only increased construction costs, but new safety features and even higher design standards. In brief, the estimate we will be submitting in January 1968, will be based upon a far different System than was contemplated in 1956, 1958, 1961 or even 1965. Probably of greater significance, it will be actually part of a much broader report, also to be submitted in January and every second year thereafter, on the highway needs of the Nation. This will be of tremendous significance in shaping the future of the highway program.

Among other things it will include a review of the existing Federal-aid systems and consideration of need changes; an analysis of present and anticipated future deficiencies in the rural and urban networks; and analysis of the needs for future highway improvements as reported by the State highway departments; and a discussion of highway financing, existing trends and future options.

This covers a multitude of problems. In connection with the report, a nation-wide system classification was conducted, incorporating 66,000 miles of the most important rural corridors not included in the present Interstate System. The study of this mileage was developed in three increments with the purpose of providing a factual basis for considering the possibility of (1) Expanding the Interstate System, (2) Establishing a new Federal-aid system intermediate in function between the Interstate and the other mileage in the present Federal-aid primary system, or (3) a combination of both.

I am not going to forecast the findings of the study but no doubt some additions to the present Interstate System will be proposed. It is certain that many more miles of freeways will be needed under some type of program, especially in the urban areas, where most of our people live and urbanization continues to increase at a troublesome rate. As I mentioned earlier, by 1990, we will have more people in urban areas than we have in the whole country today.

So our plans for future road networks must be accommodated particularly to this ever-increasing urbanization, and the assessment of highway needs that will emerge in our report next January no doubt will be heavily weighted toward that end.

Whatever the new estimate of cost of the Interstate System may be, and whatever recommendations are made as to its future, we can be confident of one thing: After some 30 years of studying it, reporting on it to Congress, winning the legislation to advance it toward completion, and actually building it, our reports to Congress in January will certainly not have been "thrown together" nor "imperfectly conceived."

Right now we are probably confronted with more problems at one time than we have ever faced in more than 50 years of the Federal-State program. I am not referring especially to the threat of cutbacks or other financing problems which have been more or less with us since the beginning of Federal-aid. Nor am I thinking particularly of troublesome route location problems, difficult as they are, nor of the thousand and one "normal" difficulties that we encounter.

Our great and fundamental problem, I think, is what appears to be a widening anti-highway feeling that expresses itself in many ways -- one of which is the frequent criticism that we are either unable or unwilling to develop any new ideas, that we are intent merely on bulldozing roads along a straight line at lowest cost without regard to any other human values. It is expressing itself in universal panaceas such as mass rail transit, which is offered as the answer to everything. It is expressing itself to some extent in the creation of State Departments of Transportation to supersede the highway departments. This is not necessarily bad but it is a straw in the wind.

There is an apparently growing feeling that highways are too complex and far-reaching in their implications to be left exclusively to the State highway departments and the Bureau of Public Roads. Our answer to these criticisms will require us to be more aggressive in the development of the programs which we know are right. None of us likes compulsory legislation, controls, penalties and sanctions such as we now have in the fields of planning, safety, beautification, and the like. Let me suggest to us all that the best way to avoid these is to be out in front, keeping pace with the public demand and need within reason, and demonstrating that we are carrying out a program essential to the economic and social development of the Nation and sensitive to the value of its citizens. I say emphatically that there is no substitute for demonstrated experience such as we have heretofore and are presently giving to the American public - and it is dangerously foolish to entrust important decisions on a subject as important as our national highways to inexperienced and untried amateurs.

Some of the most serious questions confronting us are those now being raised as to the place of freeways in the urban scheme of things. All answers to these questions must come from the Administration and Congress. All that I'm sure of is that the Bureau of Public Roads and the State highway departments must continue to present their best combined judgment of national highway needs -- both urban and rural -- on the basis of the same careful and dispassionate study that went into the development of the Interstate System.

We must do this with an eye on that Census Bureau clock, which in the year 2000 will be registering 300 million people, instead of the mere 200 million clocked this morning. Let us strive therefore to use our vast experience and demonstrated capability to improve to the utmost our field of public service for the benefit of these added millions and others yet uncounted.