

ADMINISTRATION OF THE  
FEDERAL-AID HIGHWAY PROGRAM

STATEMENT BY THE FEDERAL HIGHWAY ADMINISTRATOR  
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BEFORE THE SENATE PUBLIC WORKS COMMITTEE

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Mr. Chairman and Members of the Committee:

I am most gratified to be with you this morning to present a stewardship report on progress of the Federal-aid highway program.

Exactly 15 years ago today, on Friday, April 15, 1955, the Public Roads Subcommittee of the Senate Public Works Committee concluded 21 days of hearings on the need for a greatly expanded national highway program. Those hearings led to the enactment of the Federal-Aid Highway Act of 1956, one of the most momentous pieces of public works legislation ever written.

I attended the 1955 Senate hearings as Assistant to the Commissioner of Public Roads. I have a special sense of pride in being here today to describe to you how the American public has benefited from fourteen years of financial assistance provided by Congress to improve the Nation's system of roads and streets.

Before moving on into a discussion of specific program status, I should stress that every American benefits from improved highways. Because the road and street network literally goes everywhere, we seldom pause to reflect how much it means to each of us.

In fact, since President Eisenhower signed the Federal-Aid Highway Act of 1956, we have provided more than 11 trillion vehicle miles of transportation over America's highways. This is equivalent of about 23 million round trips to the moon. Americans are today adding to this total at the rate of over a trillion miles per year. During the 1956-1969 period more than 4 trillion

ton-miles of commercial freight were moved by highway.

Highway transportation currently accounts for more than 8 out of every 10 dollars of the total national transportation investment, or about 16 percent of the gross national product. These statistics describe a function whose welfare is of vital concern to every American.

The returns from the Federal-aid highway programs are impressive. For the remainder of my presentation I will describe the benefits being derived from each principal program effort of the Federal Highway Administration. My remarks will follow the chapter headings of the comprehensive stewardship report which was recently furnished Committee members and staff.

Chapter 1 of the report is a statistical summary of Federal-aid highway program progress since 1956. Since 1956 the main thrust of the program has been concentrated on the development of the 42,500-mile National System of Interstate and Defense Highways.

The Interstate System is the Nation's key highway network. It has properly been characterized as the largest and most significant public works program ever undertaken.

Progress to date has been good. As of December 31, 1969, approximately 70 percent of the total system was open to traffic. Another 11 percent was under construction, and engineering or right-of-way activities were underway on 15 percent. Only 4 percent of the system mileage remained in preliminary status.

Since 1956 the States have obligated some \$38.8 billion of Federal-aid funds on Interstate projects. Federal funds generally provide for 90 percent of Interstate project costs.

The Federal-aid highway program also provides continuing assistance to the States for improving portions of the Federal-aid primary and secondary systems and their urban extensions. Since 1956 the States have obligated about \$27.1 billion of Federal funds on primary, secondary and urban projects. These projects are funded by a 50-50 Federal-State matching ratio. More than 236,000 miles of primary and secondary routes have been improved since 1956, and work is underway on nearly 14,000 additional miles.

The Federal-aid systems are by far the most popular highways with the traveling public. For instance, the 42,500-mile Interstate System which represents about 1 percent of all road and street mileage, will carry when completed more than 20 percent of all highway travel. All Federal-aid routes combined amount to less than one-fourth of total nationwide highway mileage, but they currently carry about two-thirds of all travel.

Federal-aid highways are popular with highway users because they offer significant benefits over alternate facilities. Many of these benefits accrue directly to the highway user, in terms of increased safety, reduced vehicle operating costs, time savings, and greater comfort and convenience.

As an illustration of these benefits, we know that for each 1,000 miles of Interstate highways opened to traffic, about 200 traffic fatalities which would otherwise have taken place are eliminated every year. When the entire Interstate System is open at least 8,000 fatalities will be avoided annually.

Also, estimates for the year 1968 show that savings in operating costs on the portion of the Interstate System then completed, compared to the cost of performing the same travel on roads of earlier design standards 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, and a saving of more than \$1.5 billion in the value of time saved, and the total 1968 savings exceeded \$5.5 billion. By the time the Interstate System is completed 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 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 his dollar back, with interest.

The benefits of improved highway transportation to the social and economic structure of the Nation are literally beyond measure. 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 improvement of effectiveness of such facilities and services as schools, hospitals, and churches, all add up to what can be termed improved quality of life.

The second chapter of the comprehensive report deals with the mechanism by which the Federal-aid highway programs have been financed since 1956, the Highway Trust Fund.

Prior to 1956, revenues from all Federal excise taxes on motor fuels, motor vehicles, and associated products were placed in the General Fund of the United States Treasury. Appropriations for Federal aid to the States for highway improvement were made from the Treasury General Fund. Thus 1956 there was no linkage between highway-related Federal excise tax revenues and disbursements for Federal highway aid.

This long-continuing pattern was completely changed by the Federal-aid Highway and Revenue Acts of 1956. To pay for the expanded Federal-aid highway program, Congress increased some of the highway-related excise taxes and levied some new ones. It earmarked the revenues of some (but not all) of the highway-related excise taxes to go into the Highway Trust Fund which the 1956 legislation created. The Trust Fund was made the sole source of money for the ABC and Interstate programs. Thus the Federal-aid program was put on a wholly highway-user-supported, pay-as-you build basis.

Highway Trust Fund revenues totaled \$4.690 billion during the Fiscal Year 1969. About 68 percent of Trust Fund revenues accrue from the 4 cents per gallon tax on motor fuel, and about 31 percent of the revenues come from the various taxes on vehicle and automotive products. In Fiscal 1969 about 1 percent of the revenues came from interest earnings.

The Trust Fund balance on March 31, 1970, was \$2.302 billion. This balance, most of which was accumulated during periods of reduced activity, (a counter-inflationary measure) is carried forward and remains available for expenditure as needed at a later date.

The principal highway-related excise tax not accruing to the Highway Trust Fund is the Federal excise tax on automobiles. No part of the present 7 percent tax on new automobiles accrues to the Highway Trust Fund. This tax yielded about \$1.9 billion to general funds of the Treasury during the Calendar Year 1969.

Highway Trust Fund revenues accrue through September 30, 1972, under present legislation, and are estimated to total about \$59.9 billion by that date. Expenditures through the Fiscal Year 1975 are estimated to total about \$73.4 billion, to liquidate apportionments for 1975 and prior fiscal years.

Additional revenues totaling about \$13.5 billion will be required for completion of the Interstate System according to the 1968 cost estimate and to continue other programs as projected. The additional revenues could be provided by extension of the Trust Fund, by additional tax levies, or by combination of these alternatives, as may be determined by the Congress.

Under present legislation the estimated revenues accruing to the Trust Fund through September 30, 1972, are adequate to cover only the Federal-aid highway funds apportioned to date for the Fiscal Years through 1971 plus a part of the 1972 authorization. Unless additional revenues are provided, the Fiscal Year 1972 apportionment, which must be made on or before January 1, will consist only of ABC, TOPICS and rural primary and secondary funds (in the same amounts as authorized for each of the Fiscal Years 1970 and 1971) plus about \$2.4 billion of the \$4.0 billion Interstate authorization. About \$1.6 billion of the 1972 Interstate authorization could not be apportioned under present legislation.

Chapter 3 of the stewardship report discusses the sizable list of tools which have been developed over the years to enable the Federal-aid highway program to contribute to enhancing social and environmental values.

The impact of highways on people and the environment is a factor which is considered in every stage of the project development process, from system planning through design, route location, and right-of-way acquisition, to construction and maintenance activities. 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. We estimate that about 12 percent of all Federal-aid highway program costs are directly

associated with social and environmental factors, and at least as much again is indirectly concerned with the environment.

To illustrate how highway improvements can enhance the environment, the occasion of improving a segment of highway has often resulted in the provision of park and recreation accommodations of many kinds; the improvement and upgrading of housing and the provision of decent, safe, and sanitary homes for many Americans who never before have enjoyed such facilities; the preservation of historic sites; the unearthing of artifacts of civilizations of the past; the eradication of rodents that do millions of dollars worth of damage each year; control of erosion of all sorts; the prevention of siltation of our streams and lakes and other bodies of water; and many related environmentally-desirable improvements.

In addition, the highway program has provided thousands of roadside rest areas and scenic overlooks for the enjoyment of highway users. All these tools and many more will continue to be used during the 1970's, in recognition of the increasing urgency placed on the quality of our living.

Chapter 4 further highlights one of the most significant of our social enhancement activities, relocation housing assistance.

The Federal-aid highway program is the first national public works program in history to provide the means by which displacees can secure adequate replacement housing. This, of course, is due entirely to legislation sponsored by the two Congressional Committees in 1962, 1966 and 1968.

The relocation assistance program enacted in 1968 provides for greatly increased financial assistance and counsel for those forced to move. In addition to normal moving costs displacees may receive up to \$5,000 above fair market value for homeowners and up to \$1,500 rental payments for tenants.

The 1968 Act further requires that no Federal-aid project be approved unless sufficient decent, safe, and sanitary housing is actually available for relocatees. Secretary Volpe has recently extended this provision to all programs of the Department of Transportation.

The States are making good progress toward achieving total compliance with provisions of the Federal law by the deadline of July 1, 1970. A very few States may not fully comply with the Federal law until later this year.

The benefits of the relocation assistance program to individuals are two-fold--first, the substantial additive payments enable a home owner or tenant to substantially upgrade his quality of living. The program as it is being implemented will provide improved housing for about 25,000 families per year. The second benefit is the guidance and counseling provided for as needed in such areas as finance, legal, education, health and other social fields.

The community itself benefits by replacement of substandard housing with housing that is decent, safe and sanitary and fit for human habitation. The economic well being of the community is thereby strengthened.

Because of the obvious success of the highway relocation assistance program enacted in 1968 it has served as a model for the Government-wide program now being considered by the Congress.

Chapter 5 of the stewardship report discusses the relationship of land use planning to highway planning. This is another area in which we are proud of the impact of highway-oriented activities on related functions.

There has always been an interrelationship between transportation and the use of the land it serves and helps shape. It is only in recent years, however, that it has been possible to quantify this relationship to permit a truly analytical approach to highway and land use planning.



The urban transportation planning process has led to the initiation by the States and jurisdictions within metropolitan areas of a joint land use and transportation planning effort. Basic to the plan is the establishment of goals and objectives of the metropolitan areas. Thus, for the first time cities 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. Highway department initiative, skills highly developed in the highway departments, and highway funds made this joint planning possible.

Highway departments have employed interdisciplinary design teams, including architects, economists, sociologists, city planners and others to work with local communities in planning harmonious land and highway development, to avoid parks and historic sites, to preserve neighborhood character, and to provide opportunity for appropriate use of adjacent land or space above or below the highway in urban areas. The results of this effort are becoming increasingly apparent, from the many localized examples of multiple land use to the dramatic Papago Freeway proposal in Phoenix. Better communities are resulting from these conscious efforts in highway and land use planning and development.

The highway program, under the authority given it by the Congress, is not a social program. It is a transportation program. But it is at the same time a program with deep social significance.

Chapter 6 discusses the status of the urban transportation planning process required by Section 134 of Title 23, U.S. Code.

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

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

This so-called 3-C planning process has been one of the most significant developments in the Federal-aid highway program. Its formulation was evolutionary, rather than revolutionary. Although the process was written into Federal-aid legislation in 1962, the concepts and techniques that make the process possible and worthwhile were developed through joint Federal-State highway planning over a period of years.

When the Federal-Aid Highway Act of 1962 was enacted, there were 216 urban areas of more than 50,000 population immediately affected by the planning requirements of the Act. Since then population increases have added 17 more areas to this number, bringing the present total to 233. We can anticipate that as many as 43 additional areas will be added to the list as a result of the 1970 Census of Population.

Good progress has been made across the country in this urban planning activity. In the great majority of the affected areas, the technical work of network analysis has been completed, and in many of them operations plans are being established for the continuing phases of their activity.

As a result, the urban transportation planning process is currently the most extensive, comprehensive, and effective national urban planning program. It directly relates the planning of areawide systems of 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.

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

Chapter 7 of the stewardship report summarizes activities of the Federal Highway Administration in another highly urgent area--the stimulation and development of effective public transportation.

We recognize the predominant interest of the Urban Mass Transportation Administration in solving public transportation problems. In fact, we enjoy an extremely harmonious relationship with UMTA at all levels. Both agencies recognize, however, that there are many ways by which the Federal-aid highway program can encourage highway-oriented public transportation, to the benefit of all highway users.

In recent years the FHWA involvement in public transportation matters has grown from a recognition that buses are highway vehicles and the people in them are highway users, to the point where explicit steps are being taken to provide for special treatment of bus transit by using highway funds.

The objective of this activity has been to promote the most efficient use of the public investment in the urban highway system for moving people--not only those people who can do so by private automobile, but those who move on the highway by means of buses. This emphasis yields better utilization of financial, physical, and human resources.

Federal-aid highway funds are currently participating in a number of transit improvement projects, ranging from exclusive bus lanes and extra median width for rapid transit facilities to a series of special feasibility studies and an urban corridor demonstration program conducted jointly with UMTA.

Chapter 8 deals with a series of planning surveys now underway which will form the basis for recommendations as to size and scope of the post-Interstate highway programs.

Few people realize how complicated is the process of advance system planning for a major public works venture. The 1956 Interstate highway legislation was the culmination of nearly 20 years of planning activity. Even with today's advanced knowledge, techniques, and equipment the time span is considerable.

We now estimate that the Interstate System will be substantially complete by 1975, although a number of particularly difficult segments may not be finished before 1978. In anticipation of the need to redirect program emphasis after the Interstate System the Congress in 1965 directed that FHWA and the States prepare biennial estimates of the Nation's future highway needs.

Reports were transmitted to Congress in 1968 and earlier this year which describe certain transportation problems in rather general terms. Specific needs estimates and resultant program recommendations will be presented in the 1972 report.

The 1972 report will be based on a number of unprecedented nationwide surveys and analyses, which will include classification of all roads and streets in accordance with the traffic service and land access functions which they perform (the functional classification study). Other surveys will evaluate the costs of providing needed highway improvements over a span of years and estimate benefits to highway users and to others which result from proposed improvements. Using benefits will include reductions in accident costs, travel time and vehicle operating costs. Other related economic analyses will also be conducted.

These advance planning studies are vital to the proper evolution of the Federal-aid highway programs. As transportation needs and problems change over time, so must Federal and State program emphasis shift.

Chapter 9 traces the 30-year history of the designation of the 42,500-mile Interstate System as it is currently identified. This chapter should be of special interest to newer Committee members and staff.

Chapter 10 of the stewardship report summarizes the current status of some 105 miles of urban Interstate routes, located in 11 cities, in which progress 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 1 1/2 percent of urban Interstate mileage. Only 4 percent of the urban mileage (274 miles) has not passed the route location approval stage.

Chapter 11 evaluates the relative urgency of these controversial urban Interstate routes, together with 56 miles of less controversial sections. Individual city maps are provided at the end of the chapter.

Chapter 12 presents a status report on the Equal Employment Opportunity program administered by the Federal Highway Administration.

Increasing emphasis is being placed on providing equal opportunity through training as the most promising and perhaps the only feasible way to fill the growing and widespread scarcity of skilled highway construction workers. We can report good cooperation in this area from the Associated General Contractors, the American Road Builders Association and the State highway departments.

Through contractual and other requirements which have been incorporated into the Federal-aid highway program, minority workers will be afforded every opportunity to participate in effective training programs. It is estimated that some 60 percent of the persons who enter such a program will successfully complete it. Large numbers of minority persons will be trained for highly paid jobs in highway construction, which will benefit the trainees, the highway industry and the overall public.

Chapter 13 summarizes Federal Highway Administration efforts to enhance safety at railway-highway grade crossings.

Federal-aid highway funds may be used for physical improvements at grade crossings on Federal-aid routes. Crossings at grade are not permitted on Interstate System routes as a matter of policy.

Each year the States provide an average of 350 grade separation structures and about 300 improved protective devices at crossings using Federal-aid funds. These improvements result in saving many lives.

Despite this activity railway-highway grade crossing accidents lead to 1,500-1,700 deaths annually, which is about 3 percent of all highway fatalities. Many fatalities occur on unprotected crossings of local roads, for which no Federal-aid funding is available.

The Federal Highway Administration, together with representatives of the Federal Railroad Administration and other DOT elements, is studying various means of achieving further reductions in grade crossing hazards.

Chapter 14 is devoted to the topic of bridge safety, which has been a high priority subject since the 1967 collapse of the Point Pleasant Bridge.

In 1968 an initial survey of bridge condition was completed. This survey indicated that about 70 percent of the more than 560,000 existing bridges were built prior to 1935. Most of these older structures are located on local roads, and are not eligible for Federal-aid funding.

The States have estimated that a nationwide program to repair or replace all presently deficient bridges on all road systems would cost about \$14.9 billion. Additional crossings needed over major waterways would cost an additional \$4 billion. Clearly, the area of bridge construction and reconstruction will have to receive greater priority in the next few years.

The 1968 Federal-Aid Highway Act requires that the Secretary of Transportation establish a National Inspection Standard for Bridges on all Federal highway systems. This act also requires that a continuing training program for Bridge Inspectors be established. By this legislation Congress has determined that there is a Federal interest and responsibility to provide for the safety of the public by standardizing bridge maintenance and inspection standards.

In cooperation with AASHO and the Consulting Engineering Council a Bridge Maintenance Manual has been prepared and has been approved. The National Inspection Standard will be based on this Manual.

By the end of the calendar year training symposiums will have been conducted in each of the Federal Highway Regions for the purpose of presenting the training program to the individual State Highway Departments. Training material will be provided to each of the States and BPR field personnel will assist in future training of the States' Bridge Inspectors.

BPR Bridge Engineers in the field will have the responsibility for future review and evaluation of State and county bridge inspection and maintenance practices to determine if they are in compliance with the National Standard.

Chapter 15 discusses recent cost trends in the highway construction industry.

Over the past decade, while general prices were increasing at an annual rate of 4 to 6 percent, highway prices increased at an average annual rate of only 3 percent. 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.

Highway construction provides jobs for a substantial segment of the working force. Improvements in materials, specifications and construction methods have reduced seasonal limitations in highway construction which now means less unemployment over extended periods, and greater productivity.

Chapter 16 of the stewardship report outlines several FHWA activities which are designed to improve the safety record on the highways of the United States.

In 1969 the number of traffic deaths rose to a new high. But the fatality rate--the number of deaths per 100,000,000 vehicle miles--in this Nation is among the lowest in the world. The fatality rate has shown a steady decline from 17 in 1925 to about 6 in 1960 and has held reasonably steady since then.

The substantial improvements to the road system brought about by the Federal-aid highway program undoubtedly contribute to the lowering fatality rate. Highway safety considerations in this program are multi-faceted and distributed throughout the planning, location, design, construction and operation of our highway facilities.

A special accident prevention program--referred to as the "spot improvement program"--started several years ago has just recently been made a continuing program with greater emphasis on detection of hazardous locations. "Before and after" studies show significant savings in lives and economic loss as a result of this program.

Over the past few decades we have developed an increasing emphasis on safety in the design and construction of new highways. All elements of design on Federal-aid projects must be reviewed during plan preparation to insure that features likely to contribute to the cause or severity of accidents are eliminated or minimized. What can be called "a forgiving cross-section and roadside environment" is truly the aim of the modern highway.



Other endeavors related specifically to highway safety include a program to achieve uniformity of signs, signals, and pavement markings and the highway-railway grade crossing program previously covered.

Special efforts are underway to eliminate or neutralize hazards which cannot reasonably be removed from existing highways or from plans for new highways. These include improvement of necessary but hazardous highway elements such as bridge rails, bridge piers, etc.

Major advances have been made in new devices to protect the motorists from collision with these necessary but hazardous elements. Improved guardrail and a host of other protective devices are being developed and installed.

Also, TOPICS has recently been added to the list of safety-oriented programs. TOPICS is an acronym which stands for the urban traffic operation program to increase capacity and safety for which a separate category of Federal-aid funds was first authorized by the Congress in 1968. TOPICS consists of making traffic operation improvements on a systematic basis in accordance with an areawide plan over a network of arterial and other major streets in urban areas. TOPICS helps to expand the use of such operational techniques as reversible lanes, left-turn lanes, improved channelization, and coordinated signal operation. All of these have long since proved their worth in improving traffic flow and safety; yet, they are frequently ignored or misapplied. Traffic engineering can, if permitted, give us the most benefit for our highway dollar with these techniques.

This program, in pilot form, had been initiated early in 1967 by the Bureau of Public Roads. The Federal-aid funds available then were those apportioned to the State highway departments under the ABC authorization.

In the 1968 Federal-Aid Highway Act \$200,000,000 per year for FY 1970 and 1971 was authorized for TOPICS. These funds were apportioned to the State highway departments under the same apportionment formula used for the Federal-aid Urban Program.

As of March 1, 1970, approximately 300 cities, or portions of urban areas were formally engaged in the TOPICS program. These represent all sizes of cities with about 120 being less than 50,000 in population; 130 are between 50,000 and 250,000 in population; and 50 are over 250,000 in population.

To date much of the effort has been in program development and plan preparation. Projects amounting to approximately \$26,000,000 in total cost have been programmed of which about one-half is the Federal share. Many of the cities programs are nearing the implementation stage and it is expected that most of the States will have improvement projects underway this calendar year.

It is evident that highway safety has been and will always be a major objective of the highway program. As a followup to the recent reorganization involving the National Highway Safety Bureau, the Federal Highway Administration continues to be responsible for all safety efforts involving highway facilities. This is an area in which we intend to greatly expand our efforts over the next few years.

Chapter 17 discusses the Federal Highway Administration's Highway Beautification programs.

The Highway Beautification Act of 1965 provided for control of outdoor advertising and junkyards along Interstate and Federal-aid primary highways, a total of 265,000 miles of the Nation's most important roads. Federal-aid

funds are made available for removal of nonconforming billboards and the screening or relocation of junkyards within the control zone.

The Act also provided additional funds for landscaping and scenic enhancement along all Federal-aid highways, a total of almost 900,000 miles.

To date, 32 States, the District of Columbia, and Puerto Rico, have enacted or already had legislation relating to outdoor advertising control. Forty States, the District of Columbia, and Puerto Rico have enacted or already had laws controlling junkyards. State highway department personnel employed in landscape development work more than doubled in numbers following passage of the Act.

Controversy over the Act, primarily relating to outdoor advertising control, has hampered its implementation. During the past year we have been engaged in a restudy of the program, to make it more workable. The Department's report on the restudy should be forwarded to the Congress in the near future.

The Highway Beautification Act of 1965 is the culmination of over 30 years' concern for the environment by those charged with responsibility for the Nation's highway program. The Federal-aid Highway Act of 1938 first authorized the use of regular Federal-aid funds for landscaping and roadside development as a part of the normal costs of construction. Additional provisions enacted in 1940 and 1958 were replaced and strengthened by Title I of the 1965 Act. These far-sighted enactments reflected a growing awareness of the need to protect the highway corridor, and to blend the highway into the existing landscape. They represented efforts to preserve and enhance the average American's principal view of his country.

Chapter 18 of the report contains a description of highway research and development activities.

One of the principal objectives of the 1893 Office of Road Inquiry, the forerunner of FHWA, was to foster research in highway design, highway materials, and such other matters that needed attention in that era. The need for new ideas and new concepts for bringing about better highway transportation has by no means diminished during the ensuing years. The Nation has looked to the Federal Government to provide leadership in matters of highway research. This has been accomplished over the years, not by spectacular developments, but by steady dedicated effort and successful partnership arrangements with several State highway departments, with universities, industry and other interested groups, including particularly the National Academy of Sciences, National Research Council. There exists today a National Program for Research and Development in Highway Transportation that forms a framework for research and development activities performed by a number of public and private research organizations.

Principal emphasis is currently addressed to (1) reducing traffic congestion and highway accidents, (2) blending highway requirements with other urban functions and needs, and (3) seeking the best modern technology in designing, building, and maintaining highways.

Research and development activities are undertaken through in-house staff efforts, administrative contracts, and cooperative research carried on by the States using the 1-1/2 percent of their annual apportionments which must by law be used for highway planning and research purposes.

Chapter 19 summarizes progress in the direct Federal highway programs administered by the Federal Highway Administration. These cover highways built in or adjacent to national parks, national forests or other Federally-owned lands.

Forest highways are main highways within, adjoining, or adjacent to national forests. The 25,800-mile forest highway system of roads, located in 40 States and Puerto Rico, is essential to the orderly development, management, protection and utilization of the available assets of national forests and other adjacent public lands. In many areas forest highways provide the means by which local communities transport their produce to market and receive supplies that are necessary to the local communities. In addition to the commercial and defense values of the forest highway system, they provide access to recreational areas for our growing population.

The Bureau of Public Roads generally supervises forest highway design and construction in 13 western States, which have vast areas of national forests. Nearly 90 percent of annual forest highway funds go to these States.

In the East the annual apportionment of forest highway funds to a single State is relatively small, and is usually supplemented by Federal-aid, State or local funds in order to result in a usable improvement. In these States the State highway departments normally administer the construction projects, under procedures which generally conform to regular Federal-aid projects.

Forest highway program activity for Fiscal Year 1970 has been curtailed, in conformance with President Nixon's request of September 4, 1969, for a 75 percent reduction in Federal construction programs.

Public lands highway are main highways through unappropriated or unreserved public lands, nontaxable Indian lands or other Federal reservations.

In recognition of the significant Federal interest in improving highways through these public lands, the Congress has since 1951 authorized funds specifically for projects on public lands highways.

Funds are allocated to the States by the Secretary of Transportation for those public lands projects with highest priority and need. The public lands highway program gives particular emphasis to projects which will contribute to the development of enjoyment of outdoor recreation facilities or spots of scenic beauty. Public lands highway funds need not be matched by State or local funds. In Fiscal Year 1970 allocations were made for 21 projects in 18 States.

Public lands highways program activity for Fiscal Year 1970 has been curtailed, in conformance with President Nixon's request of September 4, 1969, for a 75 percent reduction in Federal construction programs.

The Bureau of Public Roads also performs highway engineering services for other Government agencies with funds that are appropriated to those agencies. These include roads and trails for the U.S. Forest Service and the Bureau of Land Management, Defense Access Roads for the Defense Department, and park and parkway roads for the National Park Service in the Department of the Interior.

With the population becoming more interested in outdoor recreation, and with more leisure time and money available, there is every indication that construction of roads and trails in such areas as national parks and forests will continue in demand.

Chapter 20, the final chapter in this stewardship report, covers the Appalachian Highway Program.

This program was initiated as a result of the Appalachian Regional Development Act of 1965. A highway system of up to 2,700 miles, together with 1,600 miles of local access roads, were found to be necessary to advance the economic development objectives of the Appalachian Act.

Wherever possible normal Federal-State program administration provisions were extended to the Appalachian program.

As of December 31, 1969, over \$500 million in Federal funds had been obligated on Appalachian highway projects. Improvements on 350 miles of the system had been completed, and work was underway on 1,775 miles.

The Appalachian highway system, when completed, can be expected to attract industry, thereby providing employment to people of the surrounding area and increasing the radius of commuting. This has happened on a few of the completed portions of the Development System. Standards of living will be raised by the attraction of industry, and people will have better access to health facilities and schools.

A highly developed highway system will also attract tourists into the area for recreational purposes.

To complete this discussion of the administration of the Federal-aid highway programs I will review briefly the nature of the Federal-State partnership which has proven so effective for many years.

The framers of the pioneer Federal-Aid Road Act of 1916 conceived the program as a joint Federal-State undertaking and so it has remained for over 50 years despite drastic changes and expansions of the program. The success of the program has been largely due to the wise separation of powers between

the partners--the Bureau of Public Roads representing the collective Federal interest and each highway department representing the interests of their State.

The Federal interest in the highway program stems from provisions in the Constitution to establish post roads, regulate commerce among the States, provide for the national defense, and promote the general welfare. The national interest is carried out through the improvement of highways. The entire burden of highway maintenance, administration, and traffic policing and regulation properly is assigned to the States and the localities.

While the Federal-aid program is a cooperative one, Federal highway law specifies that the States are to choose the systems of routes for development, select and plan the individual projects to be built each year, acquire the right-of-way, and award and supervise the construction contracts. The States pay for the work as it progresses and then claim reimbursement from the Federal Government for the Federal-aid share of the cost. The Bureau of Public Roads and FHWA function is that of guidance, control, and approval in each succeeding step of the processes I have been describing.

One of the most far-reaching provisions of the Federal-Aid Road Act of 1916 was the requirement that States must have an adequate highway department in order to participate in the Federal-aid highway program. As a result, the Federal agency has had a single point of contact, empowered to carry out State highway development responsibilities.

As the Federal-aid program expanded gradually in the 1920's and 1930's the field organization of the Bureau of Public Roads began to acquire its present form, with a local-level contact office located in each State, and a group of multi-State regional offices reporting to the headquarters office.



Most Federal commitment decisions were originally made at the headquarters level, in the interests of nationwide consistency of operations.

In the mid-1950's it became evident that the need for adequate highways to serve burgeoning postwar traffic must result in unprecedented expansion of the Federal-aid highway programs. The greatly increased program presented an obvious requirement for streamlined administrative provisions, and major delegations of authority were made.

In 1956 then Federal Highway Administrator John A. Volpe directed that responsibility for all normal project-level Federal-aid decisions would be shifted to the State-level (division) offices of the BPR. The experiences of the succeeding years have demonstrated the wisdom of this decision, as annual workloads of up to 9,000 new projects, totalling as much as \$5 billion, have been processed by BPR staff only about one-third larger than in 1956, when the annual Federal-aid program amounted to \$875 million.

At present only a few classes of more technical decisions are made by specialized region or headquarters staff. Most of these decisions have no impact on actual progress of individual Federal-aid projects. There are instances, of course, where State, local or private appeals of BPR decisions will bring region or headquarters offices into the decision process. Generally, however, these offices provide only procedural guidance and technical staff support.

Mr. Chairman and Members of the Senate Public Works Committee, we all can point with pride to the accomplishments of the Federal-aid highway program in the years since 1956. These have been challenging years for the Federal Highway Administration, the States and the Congress as new programs have been initiated and undertaken to fill newly emerging needs.

Now, as we near completion of what is already being ranked as one of history's outstanding engineering feats, the Interstate System, we look forward with confidence to the eventful years which lie ahead. Other challenges remain to be met. The Federal-aid highway program must be redirected as necessary in order that the American public may continue to obtain the greatest amount of benefits from our limited available resources.

I will be most happy to further discuss any of the items previously covered or to answer questions which the Committee may have.