A NEW LOOK AT THE FEDERAL-AID PROGRAM

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This 47th annual meeting of the American Road Builders' Association is an appropriate time to pause and look back over the road we have traveled, and attempt as wisely as possible to evaluate the current Federal-aid program in the light of existing highway service requirements and the probable needs that will emerge in the years immediately ahead.

We have come a long way since the enactment of the initial Federal-aid legislation in 1916, but we still have a long way to go to reach the goal set by Congress in the Federal-Aid Acts of 1944 and 1948 for the improvement of our highways in the postwar years.

Nearly five years have elapsed since the end of the war. During this period there has been an unprecedented increase in highway usage. The number of motor vehicle registrations has risen in each successive year, breaking all previous records. Today there are close to 44 million automobiles, trucks and buses rolling over our nighways, as compared with 32 million in 1940, an increase of almost 37 per cent.

Traffic has increased not only in volume but in weight. An estimated 7,800,000 commercial vehicles, including trucks and buses, were registered last year. This is 67 per cent more than the 1940 total. Motor vehicles of all classes traveled about 425 billion miles on our roads and streets last year. This, too, was an all-time record.

The present demand for highway service is on a scale not approached at any time in previous experience, and it will continue to increase. The fact that industries, business firms and individuals use the highways in such great numbers, fight their way through traffic congestion, and are not deterred by obsolete road conditions, is strong evidence of the necessity of the travel.

To assist the States in meeting the urgent need for improved highway facilities, five postwar fiscal year authorizations of Federal funds have been made available - 500 million dollars each for 1946, 1947 and 1948, and 450 million dollars each for 1950 and 1951.

This postwar program, set in motion by the Congress in October 1945, was slow in getting under way, but it has gained momentum during the past two years. Many of the conditions that hampered and delayed construction in the early postwar years have changed. Shortages of materials, rising prices, scarcity of technical and supervisory personnel, are no longer the delaying factors they were in 1946 and 1947. The highway construction price index of the Bureau of Public Roads declined in each quarter of 1949, dropping 12.1 points during the year. Many new contractors entered the highway construction field, and there is evidence that the contracting industry can handle a much larger volume of work.

Progress in construction during the year was relatively good, and the outlook for the future is more favorable. Considering dollar volume only, the program is going forward at a record rate. The dollar investment in construction completed in 1949 was the highest in the 34-year history of Federal aid.

Construction put in place cost 837 million dollars, of which the Federal share was 425 million dollars. Federal-aid projects completed and opened to traffic during the year included 19,851 miles of primary, secondary, and urban highways, 3,140 bridges, and 645 railway-highway projects. Since the war, 62,000 miles of Federal-aid projects have been completed, at a total cost of more than two billion dollars.

State highway departments made a commendable showing in the volume of contracts let during the past year for all classes of road work. The contract total for all projects under State supervision, including Federal-aid construction, amounted to nearly one billion, 187 million dollars for improvements on more than 45,000 miles of road.

In the face of continually mounting traffic demands, and the many difficulties which have plagued the road-building industry, this record of accomplishment is one of which we have every reason to be proud - but not complacent. Every survey of transportation needs in recent years has revealed a staggering total of highway deficiencies. Although excellent progres has been made in a number of States, the rate of construction throughout the country as a whole is lagging far behind actual needs.

The Committee on Highway Finance of the American Association of State Highway Officials, after reviewing various reports and estimates of highway needs, has found that an annual expenditure of well over four billion dollars for the next 15 years is required to improve the condition of the Nation' streets and highways to justifiable standards. This would include about

one billion dollars for maintenance and half a billion dollars for interest and retirement of highway debt now outstanding, and for highway administration.

Such a program would mean an investment of at least 30 per cent more than the total highway expenditures of 1949 - a comparatively small increase if we consider that within 15 years the roads involved would be improved to give the service required. At the present rate of expenditures, it is doubtful if our roads will be as adequate 15 years from now as they are for today's traffic. Furthermore, at the rate maintenance costs are increasing under the necessity of patching up a growing mileage of obsolete, worn-out roads merely to keep them in service, maintenance soon will be consuming the greater part of all highway revenue.

In 1936 maintenance expenditures for all roads were about 24 per cent of the total highway program; in 1941, 31 per cent; and in 1948, nearly 39 per cent. This rise can be halted only by an increase in the rate at which capital improvements are made.

It is obvious that capital improvements cannot be made fast enough to reverse immediately this rising trend in maintenance costs, but it is estimated that with a four billion dollar program, maintenance costs will average only about 25 per cent over the 15-year period, and the percentage will be considerably lower toward the end of the period.

There are several reasons why we are failing to meet present highway needs. One reason, as already indicated, is the enormous increase in highway travel since the war. Another reason is the failure of the public in many

States, or of their elected representatives at least, to appreciate the urgen of the situation and the necessity to provide additional funds for capital investment; and the necessity to revise and modernize highway legislation. Only a few State highway departments, for example, have adequate legal authority to acquire necessary rights-of-way promptly, to protect arterial routes by the control of access, or to cooperate effectively with local offici urban or rural. It is significant that in nearly every State where the highwa "case" has been fully documented and adequately presented to the public by thorough Highway Needs Study, the majority of its recommendations have been translated into legislation.

But we Road Builders have had our blind spots too. We are only now beginning to see clearly many of the changed conditions of the present highway era, and to appreciate fully that we must change many of our concepts and methods of doing business in order to meet these changed conditions effectively. To illustrate, most of us, as a matter of course, regarded the postwar Federal-aid program as simply an enlargement of the prewar program, to be administered in the same pattern. Now, it is abundantly clear that the 1944 Act did not simply expand the going Federal-aid primary program which had been in operation 28 years since the initial highway legislation. Rather, the 1944 Act established two new programs of great importan and authorized the designation of a National Interstate Highway System comprising 40,000 miles of the most heavily traveled routes in the existing Federal-aid primary system.

The two additional programs extended Federal aid to secondary rural roads and arterial routes in urban areas. Launching these programs as definite new undertakings involved new areas of administration for most of the State highway departments and created a multitude of new problems quite different from the problems encountered in the earlier rural primary road program.

Previously, problems that developed in the regular Federal-aid primary program were resolved through negotiations that were restricted to Federal and State road-building agencies. In the secondary and urban programs launched since the war, it has been necessary to include county and city officials and representatives of other interested agencies. It has been necessary to reach agreement upon secondary and urban systems, upon an equitable and balanced distribution of funds, upon general standards of design and their application to specific projects, and upon each year's program.

In the secondary program, careful consideration must be given to the interests of different sections of the State in which highway needs and local desires for road improvement may vary greatly. An equitable distribution of highway funds according to local needs must be accepted as a guiding principle of good administration by any State or Federal agency.

The urban program presents a multiplicity of problems which necessitate extensive conferences and negotiations between representatives of many agencies. The planning of large-scale improvements, the acquisition of land for adequate rights-of-way through densely populated sections of the

city, legal processes in condemnation actions which often are necessary, the relocation of individuals dispossessed from homes or business properties along the right-of-way, the demolition of structures, and numerous other difficulties must be ironed out before construction can be started. No longer can we expect to get plans for major projects into action in the course of a year. In most instances the preliminary work that must be done before construction can get under way takes two or three years, or even longer.

A review of the three postwar Federal-aid programs - primary, secondary, and urban roads - brings sharply into focus the fact that the time element cannot be ignored. We must make ample allowance for the time that is required to reach an agreement and translate plans into action. In the current programs, the steps that must be taken to reach an agreement upon a common objective have extended to a large number of all the existing agencies having jurisdiction over public roads.

The experience of these postwar years indicates that we are in a very real sense engaged in a production-line process in the construction and reconstruction phase of our work, and the flow of projects through each stage along this production line must be geared to the following stage in order to sustain a high rate of production of completed work.

Take, for example, the stage of programming projects. In Federal-aid procedure, this stage includes all the preliminary work, such as surveys, plan preparation and acquisition of right-of-way, necessary to prepare a project for a call for bids, the next stage, which we call the "Plans Approved" stage.

It is currently requiring an average of 11 months - almost a year - for a project to move through the programming stage. Bear in mind that in the program stage the Federal funds required for the estimated cost of each project are set up and reserved for that project. On August 1 of last year, 365 million dollars of the postwar Federal funds - 84 per cent of an annual authorization - were tied up for projects which had not moved out of the program stage. Some projects had been in that stage almost four years. One-half of the total of 365 million dollars had been programmed more than 16 months.

There is obviously considerable room for improvement here. It is not good administration to tie up construction funds that might be providing new facilities during this period. Basically, what is needed is better advance planning to provide a reservoir of projects from which to select for the current program those that can be advanced to construction rapidly. Specifically, current programs should be overhauled and all "dead wood" removed. Of that total of 365 million dollars which I mentioned as tied up in the program stage on August 1, almost one-third was for projects where Federal funds were requested for the preliminary steps of surveys and plans, or rights-of-way, or both, as well as construction.

These preliminary steps represent only a part of the total cost of projects. Programming all the work, including construction, at one time takes up all the Federal share of the entire cost from one fiscal year's apportionment, in spite of the probability that the funds will not begin to be

fully utilized at least until the following year, and not for several years in the case of large and complex urban projects.

Public Roads is proposing the separate programming of surveys and plans (generally termed "preliminary engineering") and right-of-way acquisition as the initial step in the programming procedure. Thus only the funds necessary for this step need be taken up from one year's apportionment, while construction funds programmed as a second step could come from the following year's apportionment. This procedure will be optional as to its use by each State. Where adopted, it should have the effect of providing the plans during one year for the construction program to follow the second year. It eventually should provide a backlog of plans available for stepping up employment if needed, and we believe will do away with many of the petty irritations which are the outgrowth of pressures to get work done.

Too often since the war, not only in highway construction but in all public works, we have found ourselves engaged in "slap dash" engineering because of our failure to realize that major improvements cannot be planned and placed under construction over night. It is essential that we determine this year what projects shall be undertaken next year, so that planning and construction can proceed in an orderly, careful manner rather than in helter-skelter fashion.

The importance of intelligent advance planning in its bearing upon the progress of the highway program has long been recognized by Public Roads. The States have been encouraged to build up a shelf of plans from

which suitable projects can be selected and advanced to the construction stage at the appropriate time. However, as suggested a moment ago, there is no advantage in letting project plans accumulate dust on the shelf. This backlog of plans should be reviewed frequently, and those which are not suitable for early construction or no longer are desirable because of changed conditions should be removed from the shelf.

By planning projects well in advance, we can get plans into action more quickly. At present there is too great a lapse of time between the date Federal funds become available and the date of contract awards, when the funds begin to produce useable improvements. The importance of this time element in its effect upon the road program cannot be over-emphasized, whether considered from the angle of the road-building and allied industries, that of the responsible government officials, or that of the general public as users of highways.

The need for advance planning and early improvement of strategic highways required for the national defense is more urgent today than ever before. One of the lessons we learned in World War II was that highways for national defense must be constructed between wars. After the shooting starts, all our energy and resources must be directed toward military activities and the winning of the war. There is no time for the preparation of extensive plans or the construction of projects that may take months or years to complete.

The routes of greatest strategic importance are those contained in the National Interstate Highway System. These are the Nation's most heavily traveled highways, and it is on them that the most serious deficiencies exist.

The relation of the Interstate System to the national defense is indicated by the following excerpt from a report of the Secretary of Defense:

> "The National Military Establishment considers a relatively small connected system of highways interstate in character, constructed to the highest practical uniform design standards, essential to the national defense. Because of the time required, and cost, such a system must be planned for and constructed during peacetime."

The National Interstate System as now designated by the State highway departments in cooperation with Federal authorities comprises 37,800 miles of main thoroughfares - 31,831 miles in rural areas and 5,969 miles in urban areas. Approximately 2,200 miles of the 40,000 miles authorized for the system have been reserved for connections through cities and circumferential routes around them.

Although the system includes only slightly more than one per cent of the country's total mileage of roads and streets, its rural sections, if adequately improved, would serve more than 20 per cent of the traffic carried by all rural roads. Its urban sections as thus far designated would serve more than 10 per cent of the traffic moving over all city streets.

Routes in the Interstate System are most deficient in sight distance and in the width of pavements, shoulders and bridges. The recent report to Congress, "Highway Needs of the National Defense," estimated the cost of

improvements to correct these deficiencies at $11,266,000,000, on the basis of 1948 construction costs.

Completion of proposed improvements on the Interstate System in a period far shorter than 20 years would result in much greater economic and social benefits. The needs of the national defense, in the light of recent international developments, require a substantially more rapid improvement.

Highways are an absolute necessity, in peace and in war. Whatever the cost, we must have properly designed, well-built highways for the transportation of essential commodities in peacetime and for war production and the movement of troops and military supplies in time of war.

These facts were clearly recognized by President Truman in his budget message to the Congress in January, when he pointed out that "major development of our highway system is required to overcome obsolescence and to handle safely and efficiently the steadily increasing traffic loads. This is primarily the responsibility of States, counties and municipalities. The Federal Government must, however, continue providing financial assistance to the extent necessary to assure a basic system of national roads, built to uniformly adequate standards . . . ." "Increased emphasis," he added, "should be placed upon the Interstate Highway System, a limited network of routes which is of greatest national importance to peacetime traffic needs as well as to our national defense."

In summary, it has become increasingly apparent that highway construction, at the current rate of progress, is not keeping pace with the rapidly

growing demand for highway service, despite the large volume of work completed during the past two years. Every practicable measure, including the advance preparation of plans and avoidance of unnecessary delay in the movement of projects from the programming to the construction stage, should be adopted to speed up the program. Improved highways are essential to the Nation's economic welfare and to the national defense. Major improvements are time-consuming operations; they cannot be planned and constructed on short notice. If our highway plant is to be kept operating with a reasonable degree of efficiency, we must set our sights not only on next year's traffic needs but on traffic requirements that may develop in the next 10 or more years.