

PREPARING FOR THE POSTWAR HIGHWAY PROGRAM

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Twenty-fifth Annual Meeting
The Associated General Contractors of America
Chicago, Illinois, February 7, 1944

Except for very moderate balances from previous authorizations which were in effect frozen in 1941, there are as yet no provisions for a continuing Federal-aid highway construction program. The Roads Committee of the House of Representatives, 78th Congress, has set February 29 as the day to open hearings on new highway legislation. The day itself comes only once in four years. When next it appears on the calendar it will be for the year 1948. The highway accomplishments for the intervening period, in their major aspects, will have been determined by the provisions of new legislation which the Roads Committee of the House and the Post Office and Post Roads Committee of the Senate shall recommend as a result of the thorough study which these Committees will make during the immediately forthcoming weeks.

The important element of the construction industry normally occupied chiefly in the building of rural roads, bridges, city pavements, and all other forms of highway improvement, quite naturally desires to know the definite specifications and dimensions of the postwar highway program. It is more than a legitimate desire. It is a basic business need. From the extent and types of construction proposed for inclusion in the over-all highway improvement program, there must stem the multiple estimates of equipment, tools, materials, organizations, transportation, numbers of workers and all the other essential elements required. Many of these must go through the time-consuming stages of production before large scale construction operations can possibly start. Today highway officials are literally requisitioning repair parts piece by piece to keep essential maintenance equipment in operation. Consider the current status of rubber tires alone in the large sizes and heavy weights that have become an integral part of our most modern heavy highway construction equipment. The backlog of construction equipment in first-class working condition now, plus the depletion inherent in war demands yet to come, do not inspire confidence that we can quickly put into actual operation a large construction program with the essential qualities of down-to-earth prices and sound workmanship.

There has been much said with the emphasis placed upon the two elements of a highway construction program: First, the funds required, and second, the preparation of detailed project plans ready for taking of bids. So far there has been little attention given to the third and very vital element of the preparedness of the construction industry to absorb quickly, and place under way immediately, a large construction program. It is with this phase that this paper has chiefly to do.

It would be presuming to attempt any forecast of either the amount of the funds or the details of legislation which the Congress may determine after hearing the evidence soon to be presented by highway officials, by representatives of user groups dependent upon the maintenance of an adequate highway system, and by the construction industry itself. Considering all of the conditions that have prevailed during recent years, and that will continue for an indefinite period, it is not unreasonable to fear that the weak link in undertaking a large postwar construction program will prove to be the construction industry itself. Parenthetically this does not in any way overlook the tremendous accomplishments in all construction fields connected with the war effort, for which the industry has been responsible. Too high praise cannot be given for the ability and patriotic effort contributed by the construction industry to the war effort. The extent and variety of projects completed in less than record time have never before been approached. But these were war projects undertaken without counting the cost, and with the driving motive of patriotic desire of each man to contribute his full share and more.

The postwar construction program, regardless of its type, must be undertaken on a peacetime basis. Low costs resulting from organizational efficiency and high type workmanship must prevail if it is to merit continuing public support. The element of patriotic attitude, however, may well be equally important in the reconstruction period which this country must face, if the construction program is to contribute its full and important share to a sound postwar economy.

So it is vitally important that the construction industry be in a position to place before the Congress realistic estimates of the size of the highway construction program which it can be in a position to undertake, and the time rate at which the program can be placed under actual construction.

As a foundation for these estimates the experience of the past is a reasonably reliable guide as to what might be expected to be the minimum program. The following is quoted from a discussion before the American Association of State Highway Officials last December:

"Any exact balance between private and public construction is not possible. The grave danger is that neither will be adequately ready to take up the slack in employment quickly at the critical time.

"In the highway field this translates into two phases - a normal rehabilitation program, as previously stated, and an additional 'stand-by' public works program to be used to the extent private industry, including agriculture, cannot absorb all the available employment.

"In the period from 1931 to 1942, an annual average of 148,457 man-years of labor was required directly on highway construction projects to sustain the physical volume of facilities essential to the accommodation of highway traffic on the Federal-aid and State controlled highway systems. Similarly, essential State highway maintenance occasioned an average annual employment of 133,759 man-years. Considered as an index of productivity in the postwar provision of highway facilities, the prewar direct highway labor force provides the basis for the evaluation of a normal program after the war. The job labor requirement, on this basis, has been increased by one-third to permit of catching up with war-deferred construction. The prewar data have been expanded to include appropriate shares of municipal and local highway labor on the same basis. For all categories of highway service in the postwar period, there is indicated an average annual need for the employment of 327,155 man-years on highway construction, and 460,501 man-years on highway maintenance. The indicated minimum program necessary to accomplish this objective will require an estimated annual expenditure for construction of 1.7 billion dollars, and an additional 845 million for maintenance. The total expenditure of 2.5 billion dollars is expected to provide employment for approximately 1,743,000 man-years of job and industrial labor. The normal postwar construction expenditure is approximately equal to anticipated highway receipts from all sources.

"The 'stand-by' program ready for immediate use should be at least equivalent to that employed on WPA projects and PWA road and street projects at the average annual rates attained in the prewar depression period. This 'stand-by' program should be non-competitive in two major respects. It should not compete for construction workmen and materials with private construction, and it should primarily produce new facilities supplementary to, rather than competitive with, other types of land transport. This 'stand-by' program has been estimated to cost 1,557 million dollars annually, and to provide for an additional 301,254 man-years of job employment and a total of 973,050 man-years including industrial labor.

"These two phases of a potential highway program are not cloud images or founded upon theory. They are both actualities - and average actualities - of substantial time periods."

Accent has been placed upon the man-years of employment, since the fluctuating dollar values do not as clearly reflect the relative size of a program of work as does the number of men who are employed. It may be argued, of course, that in twelve years the producing ability of the man on the job and in industry has been multiplied, but so have the number of units of work required to complete highways of modern design as compared with the average design of current practice over the 12-year period.

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Further, the amount of employment opportunity offered will undoubtedly be a determining factor in the final conclusions which the Congress reaches as to the extent of the financing which will be provided from Federal funds.

The number of man-years employed on the average for the 12-year period has been used as a yard stick by which to gauge the reasonable extent of the postwar program, divided into a needs program and a "stand-by" employment program. The two together would employ the average number of individuals who have been engaged in this type of work through the years in which the maximum number has been engaged in highway work in our history.

As stated, there are three vital elements to the postwar program: First, the funds; Second, the availability of plans for the project, and Third, the preparedness of the construction industry to undertake promptly the maximum program which it seems desirable to undertake.

In the matter of funds from Federal sources, the Congress will determine the extent of Federal funds. In this connection it will be necessary to take into account the fact that major highway expenditures for a long period through State and local sources have come from receipts from motor vehicle taxes.

The following is quoted from "Traffic Needs and the Postwar Highway Program," a paper given by H. E. Hilts, Deputy Commissioner of the Public Roads Administration, before the American Road Builders' Association last week:

"We are now passing through a period which tests the ability of all projects to pay their way and Prudence dictates a reasonable economic approach to the financing of a postwar program.

"Whether the low in motor vehicle registration will be reached in 1944 is not readily forecast because of the war but the best estimate that can be made at this time indicates a drop to about 28,400,000 motor vehicles, of which about 4,400,000 will be trucks or 17.6 per cent below the peak registration year of 1941. In 1942 the drop was 5.5 per cent and in 1943 the drop was 11.5 per cent.

"Motor vehicle imposts have dropped from a peak of one billion five hundred and fifty-two million in 1941 to one billion three hundred and twenty-one million in 1942, or 9 per cent. It is estimated that imposts for 1943 will be about one billion sixty-one million, or a drop of 26.9 per cent of the 1941 imposts. Rough estimates indicate 1944 imposts will drop to nine hundred and thirty million. No reliable estimates can be made of registrations in the postwar period other than to say that estimates indicate a production of motor vehicles of something over four million vehicles for the first full year after the termination of the emergency, of which about one million will be trucks;

this would represent only about 80 per cent of the normal replacement demand in 1942. It will be from 3 to 5 years before we can reach the prewar peak providing reconversion, demobilization and relatively stable economic conditions permit a return of buyer's markets."

This decrease of income is further accented as to State and local funds available for construction by the increased maintenance costs, and this trend will continue until after the close of the war. There will then be necessary at once a large program of betterment and heavy maintenance as distinguished from replacements of deteriorated highways by new construction. Thus the relative contributions from State and Federal sources are yet to be determined, but it would appear desirable to inventory the preparedness of the construction industry against the average over-all programs which have been carried through the years of maximum employment on the highways.

For the first time, on any large scale, engineering funds for detailed plans have been made available from Federal sources to be matched with State funds prior to the time that construction funds have been appropriated. The importance of this policy can hardly be over-estimated. It represents a maturity of public thinking. In the past the failure to provide engineering funds for advance planning has generated inefficiencies and extravagances that were wholly unnecessary. Engineers have continuously worked under pressures to get construction under way after construction funds were provided, and at best have had to carry, at least within themselves, the chagrin of having failed, through lack of time, to produce the perfection in plans and specifications of which they are capable. This condition has reacted adversely upon the construction industry. A sane public policy in the letting of contracts demands that the element of uncertainty and risk be eliminated from the plans which the contractors covenant to produce. The preservation of fair competition between contractors depends upon the completeness and accuracy of the plans upon which they make their bid prices.

While sufficient progress is not yet being made in the preparation of plans for the postwar program, the current situation is hopeful. Federal funds available for postwar planning from two Acts, to be matched by the States as required by the Federal highway legislation, provide in excess of \$75,000,000 that will actually be expended for the engineering investigations and studies and actual preparation of detailed plans for specific projects.

A canvass of the State highway departments, as reported on December 1, indicates that about \$170,000,000 worth of work could be advertised in thirty days for Federal-aid and State projects, which could be increased by \$190,000,000 in 60 days and by \$373,000,000 in

six months. This does not represent the extent of plan preparation, but includes those projects for which right of way will also be available. This latter item merits further comment. While the volume of ready post-war plans is as yet inadequate, there is reason for considerable gratification that for the first time in the history of highway operations, so large a program is prepared in anticipation, but before the availability, of construction funds. The appropriation of funds has always resulted in vociferous public demands that the projects be delivered not later than tomorrow. It is to be devoutly hoped that the policy of prior planning will become fixed because of its fairness to engineers and contractors.

The location and types of highway construction to be undertaken have a material bearing upon the organization plant and equipment that will be required by the contractors. This war interval has given an opportunity to examine closely the inadequacies of highway improvement undertaken since World War I. There are certain lessons of experience which can be profitable only if they are now heeded. A highly important one of these is that in a period of national emergency we must operate upon the highways which have been previously provided. The replacement of wornout major highways during the war period has been negligible as compared with the previous normal program, and in addition there have been the demands upon these highways to carry a greatly increased flow of vehicles with heavier weights with capacity loadings. A prewar study made in 25 representative States indicated that an average of 57.1 per cent of the total daily normal traffic on all rural roads was on the Federal-aid system, which constituted 7.95 per cent of the total rural mileage. While the Federal-aid secondary system has not been completely designated, the best factual evidence indicates that the average daily traffic on this system reaches 26.9 per cent of the total traffic on all rural roads in the States under study. The combined Federal-aid system and Federal-aid secondary system for the 25 States averaged 17.59 per cent of the rural mileage, but carried approximately 84 per cent of the total rural travel. Individual States showed traffic ranging as high as 91.2 per cent. These are the roads that have had to carry the burden of the war traffic, and the major increase in the concentration of the heavier loads has been confined to a relatively small segment of the Federal-aid system. The studies and reviews in cooperation with the War Department which have been made since 1922 resulted in the selection of a system of highways of greatest strategic importance which were essentially confined to about one-third of the Federal-aid system. These are the roads which were in general the earliest built on standards designed for less traffic volume and lower average traffic speeds than during later years. It is this segment of the Federal-aid system that has suffered most from concentrations of traffic during the war period.

The recent report which the President has transmitted to the Congress recommending consideration of the establishment of an inter-regional highway system should have great influence to introduce a new attitude in the postwar design and construction programs. It is highly

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important that it be generally understood that the approximate 34,000 miles of rural and urban routes recommended by the Interregional Highway Committee to be designed and built as express highways exist today as major traffic flow lines. The Committee did not select from the more than 3,000,000 miles of public highways approximately one per cent as its recommended system casually or as an expression of opinion. This system has been established by public use. It exists today in the major traffic flow lines of the nation operating over highway facilities that are, in general, wholly inadequate for the volume of, and a reasonable rate of speed for, the traffic. This pattern is not of recent growth. It began to evolve when the first Conestoga wagons moved from Tidewater on the eastern coast inland to the Ohio River Valley. It grew from the routes created by the stream of hopeful settlers who pushed into the northwest from Missouri River points over the Overland Trail, the Oregon Trail, the Mormon Trail. It was defined by the old Camino Real, by the Santa Fe Trail. It exists because of the pattern in which our people have settled and concentrated in population areas from the landing of the Pilgrim Fathers.

There are in the United States 1,077 cities of 10,000 or more population. In these and other urban places live upwards of 70 per cent of our total population. The traffic flow lines between these points define, by the use now being made of existing highways, the routes which are incorporated in the interregional system. This selection has been made possible by the long, careful study of highway traffic made by the individual State highway departments, in cooperation with Public Roads, of how the public uses its roads. It is upon this foundation of knowledge of the facts of highway traffic that the pattern of the proposed system has been formulated. No attempt has been made to define the exact lines, since these must be determined by careful study by the individual State highway departments. It will be a major advance in highway administration if, within each department, there is established a policy of carrying forward year by year comprehensive studies of the specific routes that are to be later followed with actual construction. Year by year, with the growth of the volume of traffic carried by these routes, the problem within the metropolitan areas has steadily increased. The increased uses of city streets and their immediate projection into contiguous suburban areas are serious enough, but there has been imposed upon this localized urban traffic the increasing volume of inter-urban or interregional traffic. The urban areas provide the origin, the destination, or both, for the major per cent of the traffic which reaches the rural roads. Outside of a limited few of our metropolitan areas there has been no real start made to provide the type of facilities which are necessary to carry safely and without time loss these major traffic flow lines into and through the urban areas. There are a few outstanding exceptions which have been in use for a sufficient period of time to prove their utility and their inherent qualities of a desirable tool with

which to re-fashion the pattern of urban areas as they now exist. To eliminate some of the serious conditions and trends which have come into being requires bold policies in the supplying of area transportation facilities. Administratively, a successful attack on the internal transportation inadequacies of urban areas requires a partnership between the city, the State and the Federal Government. Technically, the attack requires the design and construction of limited access highways. These are prerequisite, but it should be accented that the urban communities in cooperation with the States should have the right to the initiative and self-determination of what they desire to make of themselves. It is not to be expected, and it is certainly not desirable, that the construction of such roads shall be overstressed in relation to the reconstruction to adequate standards of other highways, whether they are of major or secondary class. It is desirable to proceed on a well-balanced highway improvement program based on the traffic needs which are well-established and kept current by the continuing planning survey studies of the State highway departments.

This whole statement is an attempt to establish a reasonable basis within the limits of our present knowledge for the construction industry to make an inventory as to its preparedness for a postwar program. It is an expression of faith based on a long experience with State and Federal legislative bodies that constructive legislation results when convincing information is presented. Very frequently State legislatures and the United States Congress are criticized for failure to enact broad constructive measures. This is not fair. Legislation that expresses the will of this branch of our Government, State or Federal, is evolved by committees which listen frequently over long periods to the testimony which is presented in open committee hearings. If the evidence presented is inadequate, inaccurate, or merely wishful thinking, any disappointment with the resulting legislation must fairly recognize the cause.

As a closing thought, regardless of the other features that may be incorporated in new Federal highway legislation, experience supports the observation that the contracting industry can, with a high degree of certainty, rely upon the maintenance of the policy of cooperation on the part of the Federal Government with the States through the State highway departments, and upon the maintenance of the principle of carrying on the construction program under the system of competitive bidding which has long proved successful.