

THE NEW FEDERAL HIGHWAY PROGRAM

By Thos. H. MacDonald,
Commissioner of Public Roads.

The National Conference on Planning
Philadelphia, Pa. - May 13, 1941.

Since the motor vehicle came into use there has never been a time when the building and improvement of highways measured up fully to the demands and needs of the highway users. Nor has there ever been a time when the provision of revenue for highways has been adjusted to the dual necessities of conserving the plant already built and providing the new and more ample facilities actually required.

In recent years the public official charged with the responsibility of highway administration has occupied a position very similar to that of a man burdened with old debts and faced with increased demands for expenditure and a relatively reduced income.

One of the most interesting examples of planning on a national scale - interesting as much by reason of the faithfulness with which the plan was carried out over a long period as for the fitness and high success of the plan itself - was the plan for improvement of the Federal-aid highway system created by the Federal Highway Act of 1921.

Through the decade of the twenties and well into the thirties, this Federal-aid plan, involving a degree of Federal-State cooperation not previously achieved, was followed with remarkable fidelity. To this well considered program and to the similar programs of the States, tied to the predetermined State highway systems, the country owed the orderly and very satisfying progress that was made toward the creation of a system of adequate roads during the period defined.

I speak of the satisfying progress then made to remind you that there was in those years less of criticism and much

more of pride in the achievements of our highway program than there is today. I like to remember on occasions when I hear some veteran section of highway roundly condemned for its all-too-apparent shortcomings, with what acclaim the opening of that same section was greeted by a waiting public 15 years before. Yes, there was a time not many years since when most of existent improvements on our road systems were thought by engineers and using public alike to be very satisfactory indeed; and they were so esteemed because they were in fact substantially adequate to the needs of the day of their creation.

The fact that we have now accumulated a considerable backlog of too-long deferred reconstruction and modernization of those highway veterans of the twenties is due in part to an overlong continuance of satisfaction with them in some quarters, and in part to a too rugged constitution which enables them to continue to serve their traffic in their way long after they should have yielded to a newer and more streamlined model.

It was only a few years ago when highway officials, then already cognizant of the coming reconstruction need, were countered in their recommendations by demands for a "highway holiday" made by persons in places of such influence as to make their demands effective, for it was they who were responsible for the first diversions of needed revenue from the highways to other purposes. Those demands were based upon the erroneous assumption that we had a highway system that was "good enough" and one that would stay "good enough", without renewal, during a period of slackened appropriation. It is to the fact that obsolescence and the procession of highway usage would not halt in obedience to the command of these holiday makers and revenue diverters that we owe much of the present inadequacy of our highway plant. Add, as a further reason, the general paralysis of effective action to remedy the manifold ills of the cities, (because the most urgent of highway problems cluster in about the cities) and you have a sufficient answer to the causes of nearly all of the highway inadequacies that we deplore.

It was in 1935, while the revenue-diverting efforts of those who thought the highways "good enough" were still at their height, that a Statewide highway planning survey was begun in the first State. Others followed in quick succession until the studies had been begun in all States, the

District of Columbia and Hawaii. One of the purposes in these surveys was to gather the facts that would dispel the "good enough" idea. The broader purpose was to provide a sound factual base on which to establish the revised highway programs and policies that are needed to cope with problems of a sort that were not apparent when the policies and programs still followed were devised.

It had been our hope that the clear indications of these surveys would have led, before now, to the establishment of a vigorous attack by the Federal government upon some of the newer phases of the highway problem, a Federal attack which would supply the needed incentive and correlating directive to State and local attacks upon the same problems. A first draft of a plan of campaign was presented in the report "Toll Roads and Free Roads" which the President transmitted to Congress with recommendation of favorable action in the spring of 1939.

All such hopes are now deferred by reason of the more urgent necessities of the general defense program; and so once again, as has happened more than once in the past, needs of the moment have intervened to divert and delay a logical evolution of the program of road and street building. But this time there is no question that the needs of the moment are the higher needs, and there is also no question that they are in many cases acute needs, which involve directly the efficiency of the defense program.

That there is not more to be done at this time of emergency to fit the roads of the country to the uses of national defense is due to a long prevision of these uses and a systematic provision of reasonably consistent roads and structures in the Federal-aid program. When the original Federal-aid system was in process of selection, the War Department was requested to make recommendation of the highway routes of importance to meet the potential demands of military usage. This request was promptly and intelligently met by the War Department in findings which were incorporated in a route map now known as the "Pershing Map of 1922". All of these recommended routes were provided for when the Federal-aid system was established. There have been periodic revisions, and during the past two years the Army General Staff, the State Highway Departments and the Public Roads Administration have cooperatively made a most careful review, followed by detailed revisions.

In its present form, this system of important military routes is known as the strategic network, and incorporates approximately 75,000 miles of the major roads of the nation. It represents the agreement of the military and civil highway officials, both State and Federal, as to the long distance routes that will best serve the defense requirements of the nation. The benefits that accrue from long-time planning, and that in times of emergency become priceless, may be illustrated by the bridges on the main lines of the strategic network. On all such sections of the network there are 16,692 bridges, 85 percent of which are so designed as to be capable of carrying, within the limits of allowable overstress, the heaviest loadings of military ordnance likely to be moved upon the public highways, up to and including the 55-ton tanks. While the remaining 15 per cent needing strengthening or rebuilding present a considerable program, it is insignificant when compared with the chaotic condition that could easily have resulted had there been no planned program for the supply of just such facilities and had that program not been consistently followed over a span of two decades. Again, however, a substantial adequacy of most of the important military roads gives rise to an unwarranted skepticism of the seriousness of the deficiencies that exist and that are shown to exist by the very complete and careful inventories of the highway planning surveys. When such skepticism dangerously delays the undertaking of improvements urgently needed, highway officials possessed of a healthy respect for the essential time element in construction may be pardoned a spasm of consternation. It is very difficult indeed for those who are daily confronted with highway traffic problems to understand the apparent disregard of the essential element of transportation in many of the operations undertaken in the defense program. Because it falls within the line of their normal occupation the highway officials have followed with unusual interest the evidences of a similar disregard in some of the nations involved in the war in Europe. They hope that our own country will be spared the harsher penalties of that disregard; but they know that in a nation on wheels, such as ours is, every concentration of men and materials creates inevitably problems of highway traffic which are the greater and more difficult of solution in proportion to the size of the concentration. The virtually unparalleled concentrations now being planned will inevitably be gravely embarrassed in the absence of a more understanding provision than has yet been made for the service of the transportation needs they will generate.

Naturally, the earliest need is felt on the roads and streets that give local access to the army posts and navy establishments and to the industrial sites where the defense effort first concentrates. Studies of the probable needs of this category were begun by the Public Roads Administration and State highway departments early in 1940. In response to a direction of the President these studies were broadened and revised as required by later developments, and a report of the more important needs was prepared as of February 1 of this year. The findings of that report were based upon an estimate of the needs at 247 military and naval reservations and defense industry sites. Since its date the total number of reservations and sites has risen, as of April 26, to 288, and the addition of 100 more in the very near future is the least that can be expected. At nearly all of such reservations and sites there are needed highway improvements, some of the most urgent character.

In the same report we presented the determined needs of improvements on the strategic network, scaled down to the very minimum of absolute necessities.

As of the date of the report, the total cost of necessary access road improvements was estimated at \$220,000,000; the cost of minimum improvements necessary on the Strategic Network at \$458,000,000. Making full allowance for work which might be done with already available Federal and State funds, the report recommended immediate appropriation of \$150,000,000 expendable to pay the whole or any part of the cost of access roads, and of \$100,000,000 expendable when matched with State funds for improvements on the Strategic Network.

Every possible effort has been made to apply to these necessary defense road improvements the presently available funds administered by the Public Roads Administration and the Work Projects Administration, which are the only Federal funds available for the purpose. After all had been done that could be done in this way, there remained unprovided for on April 26 at only 204 of the 288 reservations and sites certified as important up to that date more than \$122,000,000 worth of unfinanced work, work that can not be undertaken on the terms applying to the expenditure of presently available funds.

Similarly, despite a willingness of State cooperation indicated by an obligation of more than 50 percent of the apportioned Federal-aid funds to defense road needs, it will be impossible in any near future to meet even the minimum requirements of the Strategic Network with Federal-aid funds appropriated for the program as now constituted.

The acuteness of the need is increasing, with implications of severely handicapping the efficiency of the defense effort. However, early action on this matter now appears probable, and the provision that may thus be made to meet the pressing needs of national defense will constitute the principal new element in the Federal highway program, which otherwise still follows the familiar Federal-aid pattern evolved through a score of years.

One recommendation that was made in the defense road report went beyond the urgent needs of the present. It was a recommendation of the appropriation of \$12,000,000 to be matched equally by the States and used as a fund for the detailed planning of a shelf of important deferrable highway projects to be undertaken after the present emergency. Identical in motive with the similar recommendation of the National Resources Planning Board applying to public works of all kinds, it is the hope that this money if provided will permit a definite start to be made upon the planning of some of the more important facilities comprised in the Interregional highway system recommended two years ago in the report "Toll Roads and Free Roads".

Added confidence that a program such as was roughly sketched in that report will eventually receive Federal support is given by the President's recent action in appointing a National Interregional Highway Committee to advise the Federal Works Administrator after a review of the available information on the need for such a program and the means by which it may be accomplished.

But the recommendations made in the report of two years ago did not stop with the suggestion of the Interregional System. On the contrary, they contemplated nothing less than a plan for the balanced development of rural roads and city streets of all classes.

In a brief statement the recommended program would consist of a balanced development of the following elements.

1. The further improvement of the presently designated State and Federal-aid highway systems as ordinary rural roads, revised by local modification as necessary to enable them to support and efficiently discharge their traffic with a maximum of safety. This will involve some strengthening and widening of existing surfaces and the local correction of excessive curvature and gradient and deficient sight distance to accommodate present and reasonably anticipated speeds.
2. The designation, location and development of a new system of interregional highways joining as directly as practicable the larger cities of all States. Designed especially for service of the highway movements of longer range, these routes should by-pass all smaller towns and should embody the principle of limitation of local access wherever necessary to secure the safety and dispatch of the express movement. Wherever practicable they should follow the general lines of existing primary highways, but should depart from them as necessary to effect direct connection of primary controlling points and obtain adequate width of right of way and the control and protection of their accesses.
3. The further improvement of roads secondary to, and feeding the primary highways, as required for the economical service and safe conduct of their traffic; and the careful extension of improvement to presently unimproved roads of this class only as justified by traffic requirements and definite social and general economic considerations, and as such extensions are seen to be capable of support within the limits of revenues specifically anticipated. The further improvement of roads of this class should be

made consistent with the probable future use of the rural lands served by them, as such probable future use is indicated by surveys now being conducted by State and local agencies under the inspiration and coordinating direction of the Public Roads Administration, Federal Works Agency.

4. In, and in the vicinity of cities continuance of a normal program of street reconstruction and repair, and, added thereto, a planned development of arterial routes connecting peripheral areas and important rural highways with the principal urban center, and similar arterials located or circumferential lines to accommodate traffic interchanging between the various external highways and peripheral areas. The added facilities should also include other major arteries, as required, to join directly the recognized subordinate foci of urban development.
5. As an especially desirable feature of the program in all its parts, the elimination of railroad grade crossings in the order of the determined relative hazards and economic losses entailed by them, and a similar separation of the grades of important highways at heavily traveled intersections.

It is believed that such an integrated program should be, and now can be defined, by agreement, in each State and in the country at large, upon the general objectives to be attained in a relatively long period (say 20 years), and by the more detailed planning of a consistent partial program realizable within the limits of the definitely scheduled and anticipated revenues to accrue within a shorter period (say 10 years).

It is to some such total program as this, the Federal Government taking its appropriate share, that we look forward, hopeful that it may be in some measure realized in a happier and more peaceful period after the war.