

THE FEDERAL HIGHWAY ACT.

By Thos. H. MacDonald, Chief, Bureau of Public Roads.

The other day the President approved an act of congress which appropriates \$75,000,000 as Federal aid to the States for road construction. As a farmer you have a peculiar interest in that act. It will mean more to you, perhaps, and farmers generally, than to any other class of our citizenship, though its benefits will extend to all classes. I am sure, therefore, that you will be glad to know a little more about the purpose of the act and what it will accomplish.

To begin with, the act is not a new departure in Federal legislation, but rather the ratification of a principle established 5 years ago in the Federal aid road act, the value of which has since been fully proved by the test of results accomplished. The earlier measure appropriated the same amount as the new act, -- \$75,000,000, and that amount was increased by \$200,000,000 in 1919. What the new appropriation will mean to you, I shall allow you to conclude for yourself when I have told you what has been done with the \$275,000,000 previously appropriated.

On October 31, approximately \$200,000,000 of the whole amount had been allotted to the construction of roads in every State -- the exact amount was \$199,923,427. To match that amount the States had set aside \$265,529,090, making a total of \$465,352,517, part of which has already been spent for completed roads, and part of which is being expended on roads which are now under contract.

The roads to be paid for by this money total exactly 27,000 miles in length. What that means you will perhaps appreciate better if I say that it would encircle the globe at the equator and extend as far as from

New York to San Francisco on the second lap. The equivalent of three roads from the Atlantic to the Pacific -- 9,555 miles -- has been entirely completed, and the contractors discharged. The balance of 17,445 miles is still under construction, but 69 per cent or roughly, the equivalent of 12,000 miles has been completed. So that we may say that approximately 21,000 miles of road have been completed in the five years since the July day when President Wilson signed the first act.

At that time there were 257,000 miles of surfaced road in the whole United States. For 100 years previous the Federal Government had taken no part whatever in the improvement of the roads of the country, so that it can claim no credit for this mileage, but today for every mile of road that is being built without Federal assistance there is another mile the construction of which is made possible only by the Government.

The new act simply makes provision for the continued participation of the Government. The \$75,000,000 which has been appropriated, when matched by the State funds required by the act will add to the country's growing highway system 10,000 miles more. Every mile means an improvement in the economic and social conditions of farm life. Every mile brings the school and the church closer to some farming community; and each new road completed means an easier and a quicker haul to the railroad shipping point or the city market for some group of farmers.

In one respect the new law is a decided improvement upon the previous one. It requires that every cent of the money it makes available shall be spent upon a predetermined system of connected roads. It limits the extent of that system to a mileage of road which may be

constructed in a reasonable length of time. As a result of careful observation we have found that about 7 or 8 per cent of our intricate net work of two and a half million miles of roads carry nearly 90 per cent of the country's traffic, so the new law wisely limits the system of improved Federal-aid roads in each State to 7 per cent of the State's total mileage. Not more than three-sevenths of that system will be made up of roads of interstate importance -- the roads which connect the larger cities. Four-sevenths -- more than half -- must be secondary roads. They are the roads which connect one county with another, which reach out into the farm lands and draw them closer to the county seat and the railroad.

In order to insure that these roads will not be neglected while the main highways are being built, the law provides that not more than 60 per cent of the money may be spent on the primary highways. At least 40 per cent must be used to build the intercounty roads. From the standpoint of mileage that means much more than the percentage might seem to indicate. The cost of a mile of road of the character required to carry the heavy traffic of the main highways is much greater than the expenditure which will pay for a perfectly satisfactory secondary road. Basing my estimate on our experience with the roads that have been built, I should say that the division of the money which the new law requires will provide more than 2 miles of secondary or inter-county road for every mile of main highway. And bear in mind that 90 per cent of the traffic which will use even these main highways will be distinctly local in character.

Though the act of 1916 contained no provision requiring such a division of the Federal funds, the money has nevertheless been expended

substantially in accordance with the terms of the new act. The mileage of road previously constructed which will not be included in the new systems when they are decided upon will be exceedingly small, and the mileage which will fall into each of the two classes will be divided in practically the proportions required by the law.

Before I go further, let me say that if you entertain any fear that your section will not receive its fair share of the Federal appropriation you may definitely put that fear aside as unfounded. There is no possibility that the politics may play any part in the apportionment of the money. Perhaps that is the reason the Federal-aid plan has been approved by each of the great parties. The money appropriated is divided among the States exactly in proportion to their requirements in accordance with a mathematical formula. Using the area and population of each of the States and the existing mileage of roads in them which carry the United States mails as measures of their need for roads, the money is apportioned to each State in the proportion which the total of these factors in the State bears to their total for the United States as a whole. This provision was a feature of the first act and it is continued in the new legislation because it is so obviously fair and just to all States. The only change which is made is that which gives to each of the four States with the smallest apportionment a minimum of one-half of one per cent of the total fund, slightly more than they would get were the general rule applied. These States are Delaware, New Hampshire, Rhode Island and Vermont, and each of them will receive the same amount under the new law -- \$365,625.

The roads built under the previous law have been built under the

immediate supervision of the highway departments of the various States. Those that will be built under the new law will be constructed in the same way. The plans must meet with the approval of the Secretary of Agriculture, who has delegated to the Bureau of Public Roads the duty of passing upon them, and the construction work must be carried out in a manner acceptable to the Federal authority. But the selection of the roads to be improved and the preparation of the plans for their improvement rests with the State, which also directs the work of construction.

The original purpose of the Government in providing for the cooperative supervision of the work was to encourage the development of strong and efficient State highway departments. At most only about one half of the roads constructed in the country are built as Federal-aid roads. With the other half the Government has nothing whatever to do. It is important that each State shall have a branch of its own government competent to direct the improvement of these roads. Five years ago nearly half of the 48 States had no agency of this character, and it was in the hope of improving this condition that a provision was inserted in the original law requiring that each State should create such an agency before it could share in the benefits of the act. I regard it as one of the most beneficial results of that legislation that every State now has a State highway department which, in nearly every case, is capable of administering the road work of the State efficiently and economically. In a few States there is still an opportunity for improvement. Without exception the fault in these cases lies not with the personnel of the highway department but with the laws creating the departments and limiting their functions.

In the construction of each road proposed for improvement the Federal funds allotted to the State may be used to the extent of 50 per

cent of the cost, with a maximum limit of \$20,000 a mile exclusive of the cost of bridges longer than 20 feet. This was the plan under the previous law and it remains the general rule under the new law, which however makes an exception in the case of the States more than 5 per cent of the area of which is unappropriated public land. In these States large parts of which are lands owned by the Federal Government not taxable by the State the new law provides that the Government's share of the cost may be increased by a percentage equal to one-half the percentage of public lands in the State. Thus, under this plan, Nevada, with public lands amounting to --- per cent of her area may receive Federal aid to the extent of --- per cent of the cost of the roads constructed. In Nevada and the States similarly situated the limit of \$20,000 per mile is increased in proportion to the ratio of Federal participation.

As to the kinds of roads that will be built under the new law -- they will not be materially different from those which have been built under the old law, and that means practically all kinds. The new law requires specifically what the old one implied and what common sense dictates, that the roads shall be built to carry the traffic which it may reasonably be expected they will be called upon to carry. The heavy traffic roads will be surfaced with high-type pavements such as concrete, brick and asphaltic concrete; but there are large areas of our country where less costly roads, such as well-built gravel roads will amply serve the purpose if properly maintained.

"What is the best type of road to build?" There is seldom a day passes but that some one asks that question. Invariably our reply is: "There is no one type that is best for all conditions."

It would certainly be illogical to require that a road connecting two great centers of population such as New York and Philadelphia, should be no more costly than a road between the two Colorado towns of Buena Vista and Canyon City. Building highways is a means to an end -- that of carrying most economically the traffic developed in the communities served.

No effort has been made by the Bureau of Public Roads to encourage the construction of any particular type of road. Though there have been those that have urged that no roads should be constructed except of the highest and most expensive types, we have never been able to so interpret the needs of the country.

With proper maintenance a gravel surface -- one of the cheapest types -- will give satisfactory service on many miles of our roads. Without maintenance the best of road pavements will soon be destroyed by heavy modern traffic. Continuous, pains-taking maintenance is the open secret of the States which have done most to improve their roads, and the lack of it has been the cause of more failures than any other one cause.

Every mile of road built represents an obligation -- an obligation upon the road builders and upon the community to hold intact the public investment in it.

To safeguard the investment made in Federal-aid roads the first act prescribed a penalty to be laid upon any State which should fail to keep the roads constructed with Federal assistance in good condition of maintenance. The Secretary of Agriculture was authorized to withhold allotments of Federal aid from any State which failed in its duty in this respect. In the new law the penalty has been made still more

drastic. In addition to authorizing the withholding of aid, the Secretary is ordered to see that the proper attention is given to the roads, if he has to have the work done himself. Before proceeding to that length he is required to serve notice upon the delinquent State, but if after ninety days from the receipt of the notice, the road is still in need of maintenance the Secretary is to have the necessary work done and charge the cost to the States apportionment of the Federal fund. Even after the road has been repaired no further payment of Federal aid will be made to the State until it has reimbursed the money spent for the repairs. This money, so returned, will not be placed to the credit of the State, but will be paid into the general fund, and reapportioned among all the States for new construction.

In the Federal aid work thus far we have not found that any State is disposed to neglect the duty of maintenance. Such trouble as we have experienced has been due to the failure to provide sufficient money to pay for the repairs which are needed. The new law makes the provision of the amount of money estimated as needed for the construction and maintenance of roads with Federal aid a condition of the apportionment. Such money also, according to the law, must be under the direct control of the State highway department. With these provisions there should be no room for doubt that the roads constructed will be as nearly as it is possible to make them adequate for all the purposes they are intended to serve; and that the money spent will not be wasted for lack of suitable maintenance.