

The Present System of Federal Control and Aid for Highways,
Its Results, Merits and Limitations.
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(American Association of State Highway Officials)

A careful definition of the problem set up by this topic is essential to its discussion, and such a definition rests entirely upon a careful scrutiny and analysis of the uses which we are now making and which we will make in the future, of our highways.

These uses may be defined roughly in four general classes:- first, those uses chiefly related to agriculture; second, those which are recreational in character; third, those which are commercial; and fourth, those which are military. It is believed that these uses are placed in the order of their importance as determined by their respective volumes, considering traffic in the aggregate for all of the forty-eight states. Admittedly, there are sections, perhaps of some considerable area, in which the ranking order of these classes would be changed, but conceding this it does not modify the principle that the roads which we are building must serve these four classes of traffic and that a failure to provide adequately for any one of these classes means a shortcoming, at least in the methods adopted by both the states and the nation, so those laws which we now have must be judged in the light of the degree to which they are now providing, or, if given sufficient time, will provide for these classes of traffic; and certainly provisions for these classes is the whole object of the enactment of either state or national highway laws, or the establishment of state or federal highway departments. This statement should be reiterated until the attention of road builders is focused upon the proper objective. It sometimes would seem that we are likely to lose sight of the object we are attempting to obtain in discussing the manner or the means through which we shall operate, and at such times it seems highly desirable to analyze in some detail the uses of the roads for which we are attempting to provide.

The first class, - those uses related to agriculture, - includes the town to farm and farm to town traffic characteristic of the more purely agricultural districts, the country to city and city to country traffic, which is fast-growing and highly important where adequate roads have been built radiating into the country districts from the large centers of population, and the traffic carrying crops of food-stuffs from productive areas which are isolated from rail transportation. Under this class should also be included the social, educational and religious activities which produce traffic from the farms to the schools, to the churches, and to the community centers.

The second, - the recreational class, - includes two distinct types of traffic, - local and tourist. Local recreational traffic is continuous, and is not definite in its character. The automobile has been the means of combining a great deal of business and pleasure traffic, and of the two kinds of recreational traffic the first is far more important, because it affects so much larger a percentage of our population, and the recreational value of the continuous outdoor driving, and the increased social intercourse which has resulted, can scarcely be estimated in their effect upon a large percentage of the population, whose social and recreational activities up to the advent

of the moderate-priced motor car were very limited.

The tourist traffic is a growing and highly important one, and this growth should be enlarged by providing adequate roads, so that interstate and transcontinental traffic will be encouraged. There is not a single state in the union that does not possess localities of interest to the population both within and without the states. There is perhaps no better way to promote a broad Americanism than to make it possible through the building of roads, for the people of one state to know in a more or less intimate way something of the worth and beauties of the neighboring states, and this interest and knowledge should be sufficiently extensive to take in the national parks, forest areas, former battle-fields, and the many points which, through historical association and tradition, or because of their natural characteristics and environments, hold much of value to every man who places his country above all others. While traffic that may be included under the term "tourist" is fast growing, it is very small in comparison to the other recreational uses that are being made of the roads, and it is impossible now to foresee that this class can ever be more than a minor percentage of the local recreational use of the highways. During the season of 1918, 54,596 private automobiles entered the eleven national parks, while during the same season approximately 450,000 people visited these same parks. These figures may be taken as indicating something of the tourist travel by highways when it is considered that a large amount of our western automobile travel makes the national parks its objective; but considering that this traffic is spread over a period of several months, it will be seen that if all of the automobile travel were confined to a single road, it would then only equal a daily traffic equal to that on many country highways outside of the influence of any large city, and would not begin to compare with the traffic on our heavy traveled thoroughfares in populous districts; but considering that the total number is spread over many western roads, it will be seen that this traffic is only incidental to the local uses which are made of the main thoroughfares.

The third class, - the commercial use, - is not strictly defined by this term, but as used in this discussion refers to the traffic on the highways resulting from the transportation of commodities between centers of population as differentiated from the collection of crops and distribution of commodities in the rural districts. This class of traffic would cover the carriage of commodities, much of it in package form, which now makes up the bulk of short haul freight and express. No doubt there will be a very large increase in this class of traffic on the highways, but the traffic which developed during the war is not normal and will not continue as the normal conditions re-assert themselves. Just what will be the length of haul which, because of its economy will go to the highways, has not yet been determined, but the only studies made by the Bureau, and these during the period of the war, indicate that 100 miles seems to have marked the limit of such hauls. Even conceding that this class of traffic will develop very largely, it must of necessity be confined to those areas where the terminal points consisting of comparatively large centers of population, are close enough together to allow at least daily one-way trips of the unit of transportation used, and our studies indicate that the limit is being reduced to perhaps 50 miles. It is not intended to over emphasize this limitation and is useful here only to point out that such studies as have been made up to this time indicate this fact.

The fourth, - the military uses of the highways, - is given fourth place not because of its lack of importance, but because the probable strictly military significance of the highways has been very considerably misunderstood. Any system of highways which will serve the first three classes of traffic will adequately serve the military requirements except in certain particular areas. In such areas the highways must be provided which are demanded by the military authorities as a part of their plans for their military operations; but it must be accented that military highways as such are confined to restricted areas, and outside of these so-called vital areas, any system of highways that adequately serves the agricultural and commercial traffic will serve also the military purposes in either war or peace times. If, therefore, it is conceded that practically all of the traffic which we are now carrying on the highways has been defined in the foregoing classes, it is at once evident that, with the single exception of tourist traffic, the uses of the roads are largely local. There are no traffic counts which have been made sufficiently extensive to indicate that a general statement may be made that will correctly represent by percentages the use of the roads that is local, but those traffic counts which have been made would place this use as high as 90 to 95 per cent, and it is very questionable if this percentage will increase very materially even as the roads are improved, for, although the total traffic on improved roads increases rapidly, it is doubtful if the average daily local traffic will fall below 90 per cent, except on those roads which, because of their particular location, are built primarily for tourist travel.

These statements, it must be remembered, are intended to be very general in their character, and to cover the country as a whole, but it must be conceded that more than 90 per cent, and possibly more than 95 per cent, of the demand for better highways, arises from the local need for such improvements. The development of a national highway system must therefore take this fact into consideration, as opposed to the development of a system of national highways. There would be no advantage gained by considering the local uses of the roads as secondary. No plan of administration predicted on such an assumption can prevail, because it is an economic fallacy. That there is a demand for better facilities for tourist travel there can be no doubt, and that there is an increasing demand in localities for better facilities for through transportation of commodities, is equally apparent, but that these needs now justify national intervention solely in their behalf, or that they are of such a nature that they cannot be met by a properly planned national system of highways, is open to serious question.

There is no evidence of fact shown by traffic counts, or any highway use of importance, that justifies a presumption that a need of national consequence is being overlooked. Now that we have the public support of a program of expenditures that will enable every highway building organization to proceed as rapidly as the material resources can be developed, we must meet, in the development of our highway systems, the economic needs of the nation for highways in the order of their importance. That these highway systems must be laid out along sane and sound economic lines is all the more important when it is evident that such a procedure will eventually produce systems of highways suited to the special needs of each locality, and yet be entirely adequate to meet all the requirements which those who are particularly

interested in a system of national highways specify.

At the present time there is no more important problem confronting the American people than that of increasing the comfort and desirability of rural life, thereby stimulating the production of food products, and of equal importance to this is the necessity for providing better methods of distributing food products, and especially the perishable food products, to the consumer, without loss of time, and without these products passing through so many hands between the producer and the consumer.

Federal intervention through federal aid, if of assistance to these ends, is reasonable and proper from such standpoints alone; indeed, such intervention may be said to have become imperative. The city population of this country has for years been growing rapidly, while the growth of the rural regions in many places has been negligible, and too often has actually been negative. The towns have held too many attractions in the way of social, recreational and educational advantages, but through the use of the motor car in conjunction with improved roads, these advantages in favor of town life can be largely overcome.

Beyond any doubt the war accented the need for more and better highways during the period of rail congestion, but if there is one need that the after-war conditions have brought close to every individual in the nation, it is a need for an adjustment of conditions that will allow people to be properly fed and clothed within the limits of their incomes; and so far as improved highways will help to accomplish this, they certainly will be held to fill a great national need. The population of the country has more than doubled since 1880. At that time only a little over thirty per cent of the population was recorded by the Census Bureau as urban, or some sixteen million out of a total population of fifty million. Today out of a total population of approximately 105,000,000, about half, well over 50,000,000, are urban dwellers. The effect of this condition is reflected in production figures. In 1880 the production of wheat was about 450,000,000 bushels per year, while during the period prior to the war it was only slightly over 700,000,000 bushels. Similarly, in the case of corn, the production in 1880 was about 1,700,000,000, while prior to the war it was about 2,500,000,000. War conditions as to production were abnormal, so pre-war figures have been used (instead of the later figures. From these figures it appears that the production of food has increased about as the rural population has increased. It is true that there has been some gain in the production of the individual on the farm, but the fact still remains that the total population has been increasing much faster than the rural population, and any effort that the Federal Government can make to improve rural conditions that will insure a sufficient rural population, and to provide means for bringing the producer and the consumer closer together, is justifiable, and from this standpoint alone Federal aid for roads can certainly be considered to be at this time of great national assistance in one of the greatest of the national problems which we have.

The results accruing from the Federal Aid Road Law up to the present time, because of the conditions during the period from which we are just emerging, cannot fairly or honestly be reckoned in the number of miles of finished road. The big result, so outstanding as to over-shadow every other consideration, which can be primarily credited to the Federal Aid Road Act, is the amount and character of advanced road legislation which has been written into the laws of

every one of the 48 states. These laws, in connection with the Federal Aid Road Act, have established on a firm basis, with adequate support funds, highway departments in all of the states which did not have highway departments prior to 1916. In the states which had highway departments prior to that time the legislatures have enlarged and strengthened the authority and increased the support funds of those departments. This legislation has in general provided for more than the building of the Federal aid roads, and in some of the states has included provisions for the building of the roads from the greatest to the least important. In addition to the legislation, great sums of money have been made available through the levying of special or general taxes, and through the authorization of bond issues. The Federal Aid Law should not be credited entirely with this changed viewpoint on the part of the public indirectly by the making available of such large sums, but it can be credited with appealing in a most forceful way to that characteristic of the human race which is perfectly willing to exert itself greatly to secure some award. Probably without Federal aid the conditions after the war and the changed attitude of the public generally toward public spending on a large scale would have made themselves manifest, but certainly the Federal Aid Road Act can be credited with having turned the attention of the public toward the expenditure of public funds for highway purposes. It was not possible to go ahead with the actual production of roads on any considerable scale during 1917 and 1918. During the present year a large mileage of roads has been placed under contract, but the production has still been disappointing, due to conditions which are now well understood, but during this period there has been a remarkable development in the fixing of systems through the classification of roads, so that now we have in each state a system of main or state roads more or less definitely fixed, and in many of the states other systems of lesser degrees of importance. Many of these systems have been worked out very carefully and painstakingly, in fact it is doubtful if the highest administrative and executive officers of the State highway departments have devoted as much of their personal attention to any other single phase of the highway work as they have to the actual classification of roads. For the last three years this has been perhaps the chief and most important work that these men have accomplished, and its importance should not be underestimated.

The proper classification of roads is basic and fundamental, and it has been demonstrated in those states which have carried out this classification in a careful, thorough manner, that people acting through their state legislatures have provided the ways and means for carrying out the program of improvement in accordance with the importance of these roads. Let it here be clearly understood that the people of this country will support a policy of road building which is based on their economic needs. It has been pretty well demonstrated in individual states that the mileage of the primary state roads cannot be restricted to too small a percentage of the total. Most of the states have found it necessary to add to their original conceptions of an adequate system a considerable mileage, and where this action has not been initiated by the States highway department itself, it has resulted through legislative action. It has been pretty definitely established that a system of primary roads must be sufficiently extensive to give service to all parts of the state. It is hardly safe to fix the percentage without further inquiry, but it seems evident from the result in states which have made a careful study of their

economic needs, that in the neighborhood of 5 to 7 per cent of their total mileage will be included in their primary system. This percentage may change slightly for the nation as a whole. Unquestionably at the present time Federal aid should be restricted to the State systems, and since it is true that the state primary systems can in general be divided into roads of first and second importance, it might serve the economic needs of the states to confine federal aid expenditures to the roads of the first class in the primary systems. It is likely that this will be more possible in the older states than in the newer states where it is absolutely necessary to develop a considerable mileage of roads in order to give the people access to all of the different sections of the state. That is, there are some sections in which a small mileage of high class roads is necessary to meet the traffic demands, and there are other sections in which a longer mileage of cheaper roads will adequately serve the traffic needs, and which is the only policy that the public will support at the present time.

The step which seems necessary now is a definite plan of cooperation between the states and the federal government, which will insure that the primary systems of each state are connected up with the primary systems of the adjoining states, and that these systems, by agreement between the state and federal authorities, be held to until they are properly improved.

Up to the present time the Bureau of Public Roads has made its objective the perfecting of administrative relations with the states. These relations have in general been placed on such a basis that better engineering standards can be developed and enforced, and it is undoubtedly a duty of the Federal Bureau to stand behind the states in their efforts to provide roads that will be adequate not only for present traffic but for future traffic. This point is of great significance, particularly in those states where roads are being built from bond issues and where it is doubtful if adequate maintenance funds will be provided for those types of roads which will require high maintenance costs. It is true that the Federal Aid Act requires the greatest cooperation between state and federal authorities in order to make the plan outlined by the law an efficient method of operation, and yet it has its fundamental basis a plan of action that will have to be used more and more in carrying out large public or private enterprises that are undertaken in this country, and the sooner this fact is recognized and put into operation the better it will be for the industrial life of the nation.

There is now comprised in the 48 state highway departments and the federal department a very large proportion of the engineers of this country who have had actual highway experience, and these agencies can, through cooperation, provide the most effective administrative organization that it is possible to devise. The fact that a considerable portion of these administrative officials are in close contact with the public in all the different localities of the nation, insures the development of the roads which will answer the greatest economic needs. In the law itself there are certain modifications which undoubtedly should be provided for in the extensions of appropriations for carrying out this act. One of these is the \$20,000 per mile limitation, which is not now so much of a handicap but may later become so. There are roads being built where the grades themselves, because of the topography,

will cost without surfacing nearly up to the limitation now imposed by the law. After these road grades are properly settled they should be surfaced where the traffic justifies. In many of the sparsely settled western states there are large areas of federally owned lands through which the state systems must be projected, and in many cases the roads through areas of this character are necessary links in transcontinental lines. To prevent an undue burden falling upon the states which can ill afford to build such roads, consideration should be given to the extension of the appropriations which are now made for the building of roads in the forest areas. These roads in general are of two classes, - those which are necessary for the administration of the forest areas themselves, and those which form important links in the state systems. Again, there are roads notably in the western states but found also in some other localities, which are of greater importance as links in trans-state or trans-continental lines of travel than they are to the immediate locality. If the states in which such roads occur follow a program of providing first those roads which meet the greatest economic needs of their people, some of the through roads will necessarily be delayed for some time, and the advantage of a long line of improved roads on either side may be largely lost because of unimproved stretches. To take care of cases of this kind consideration should be given to a provision which will allow the bearing of a greater part of the cost from the Federal aid funds than the fifty per cent now specified. Such a procedure would undoubtedly be fair and reasonable, but if adopted it should be carefully restricted and guarded so that the roads which ought to be improved as links in long lines of travel will receive first attention. These points summarize the most important modifications which it seems now necessary to make in order that the present Federal Aid law through cooperation between the state highway departments and the Federal Bureau of Roads may meet satisfactorily the national need for improved roads, and insure the completion of roads in the order in which they meet the economic needs of the individual communities and thus of the whole nation.