

## HIGHWAY PROGRESS RESPONSIBILITY

Paper presented by Thos. H. MacDonald, Chief,  
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A fallacy all too common in our approach to large public affairs is the attempt to impose finality. No greater basic error can be made than to apply the same yardstick of time and horizon to society as a whole as to the individual. Many matters can be pretty final for the individual and nothing can be final for the public; unless and until Gabriel blows his horn. This quality of continuity of a State or a nation must at all times be a major element in reckoning a sound course and fixing public policies that can be expected to keep us reasonably near this course. Our modern trans-oceanic liners may have gyro compasses that will hold to a predetermined straight line more accurately than a helmsman at the wheel, but this does not relieve the captain and crew from even greater diligence in a quick turn to avoid a sudden danger such as an iceberg in the North Atlantic. But these are only minor deviations. From time to time the compass course itself is changed - always with the one motive, - that of reaching the port of destination.

Only as an idealistic conception can the port of destination of any big public enterprise be established, yet this is sufficiently definite if the vision is far-reaching. So in this field of highway improvement the ideal conception is the building and maintenance of roadways that in all respects are adequate and justified by their service to the public.

The long years of continuing effort thus implied impose upon the highway officials in charge at any particular time - not the completion of the task but the responsibility to do everything possible to hold the course true toward this destination. This responsibility goes far beyond the duty, important as it is, to keep abreast and to utilize every sound technical and administrative development. It requires the analysis of operations, laws, finances, needs, and the effect of both favorable and adverse conditions and policies. It requires that the facts as thus determined be brought to the attention of, and kept persistently before, the public mind, with sound recommendations that will keep this public enterprise on its charted course.

Such I conceive to be the responsibility for highway leadership.

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For this annual meeting of the North Atlantic State Highway Officials it has seemed desirable to me to present certain conclusions as to the future of highway administration which can only be placed properly before the public and the lawmakers by the highway organizations of each individual State. Conditions vary widely among our States, even in the area represented by this organization. The differences become much greater as all of the States are included in the general averages. Thus in considering important national trends, national averages are enlightening. They show major trends

but they can not show the weight of effect upon the individual State. To do this requires an analysis of the facts existing in the records of the State and local highway departments, and the production of conclusions based upon this analysis as a guide to future policies in each State.

In a paper "Review of Highway Progress" prepared for the American Road Builders annual meeting last month, I gave a summary report of the production of roads, expenditures, trends in unit prices and a comparison of road building in the five years 1925-1929 with that of the five-year period 1930-1934. Reference is made to that paper for support of the following statements and conclusions as to trends.

#### Production of Roads.

For the pre-depression period 1925-1929, the State highway departments, with and without Federal participation in the cost, annually completed 27,640 miles of all types of construction. In the succeeding five-year period 1930-1934, the annual completion jumped to 37,582 miles, or nearly 10,000 miles per year above the preceding five-year average. For the last two years of the second period, 1933-1934, of an annual average completion of 36,012 miles, the Federal funds allotted to the States and administered through the Bureau of Public Roads, not including funds used by the States from other Federal sources, accounted for an average of 20,048 miles. The facts are not available as yet for the calendar year 1935, but

the same relative results will undoubtedly be true, and also for the present year - 1936. Federal appropriations for highways have accounted for bringing the annual completion to this high figure. With the very large curtailment of Federal highway appropriations for this purpose which very soon must be faced, the production of roads by the State highway departments will be decreased by a large percentage. This will easily reach 30 per cent. Unless the diversion of the income from the gas and motor vehicle fees is stopped and these funds restored to the highway departments, the construction program will probably fall off 50 per cent or more by next year.

#### State Highway Funds.

This story is repeated by quoting the funds available for expenditure from State revenues for construction. The average expenditures for the five-year period, 1925-1929, were \$367,000,000; for the five-year period, 1930-1934, - \$403,000,000; and for the two-year period, 1933-1934, - \$234,000,000. Both of these latter figures include some, but unknown, amounts of Federal funds, but not the funds administered through the Bureau of Public Roads.

Without attempting to be precise, the decrease in State funds for construction by the highway departments has fallen in excess of 30 per cent. This loss will not be felt this year so much because of the support now available of Federal funds, but it will show sharply next year with the exhaustion of the Federal balances.

The situation here defined includes most of the States, and it is certainly an important duty of each highway department to analyze the facts for its own State and to place these fairly before the general public, the State officials and the State legislatures. The Federal government has made a determined effort to hold employment in this field at a high figure. It cannot be expected that Federal expenditures in anything like the scale of these immediate years will be continued. It is important that the heavy construction industries, skilled and unskilled workmen, and contractors, be kept employed, and much larger support funds must be provided by the States to continue this employment. Preparations must be made this year; next year will be too late. This loss in State construction expenditures will not be made up from local road funds since these show average losses for the two-year period - 1933-1934 - of nearly one-half under the average for the 1925-1929 period.

The Rise in Maintenance and  
Miscellaneous Expenditures.

There has been a sharp rise in the expenditures for maintenance equipment, interest and miscellaneous items. The total State expenditures in 1934 for these purposes were nearly \$300,000,000. This sharp rise in maintenance expenditures reflects the increased maintenance liability growing out of the increased use on the low cost roads of bituminous and other dust reduction surfaces. This trend, however, is important, since the growth in mileage of such surfaces is bound to increase as the highway departments are responding to the public pressure to extend these safer and more adequate

types of surfaces. We must, therefore, face total increased maintenance expenditures, not only for this reason but also because there was an increase in net surfaced mileages for the five-year period, 1930-1934, of 80,664 miles of all types on the State highways.

Extension of State Control  
to Secondary Roads.

In the three-year period, 1932-1934, there was an increase in the surfaced mileage of secondary roads under State control, of 51,000 miles. As is well known, a number of States have placed all or a large part of the local roads under State control, and there is a growing sentiment in this direction. It is not, however, so well known, and it is important to observe, that in no case has the transfer of these largely increased responsibilities been accompanied by a transfer of the funds in whole which were formerly used by the local officials upon these secondary or local roads.

The addition of this increased load to the revenues used formerly for the more limited system of State highways would have stopped all important new construction in a number of these States had it not been for the increased Federal appropriations. When these appropriations are no longer available, these States face the problem of not being able to finance any new construction.

As a general policy the extension of State supervision or control over local roads is a policy that can be in the public interest, but as it has been put into effect it is not. Here again only the greatly increased inflow of Federal funds has covered the inevitable result.

A policy good in itself and worthy of public support has been so far thrown out of balance by two powerful selfish motives.

There has been continuous pressure to place all roads under the State highway departments for the purpose of placing the cost of all highway improvement and maintenance upon the revenues from the road user, thus relieving other sources of revenue. There has also been the political motive to build the highway organization, - which to be successful must be non-partisan, - into a political machine. Thus we have had a marked trend in the inauguration of the two diametrically opposed policies which are full of disaster for the future of our highways - that of a large increase in the required expenditures and that of a large diversion of the road user funds to other purposes.

Increase in Surfaced Mileage  
of Secondary Roads.

One of the most striking developments of this present period is the accelerated rate in increase in surfaced mileage, largely of the low cost type, on secondary or local roads under the control of the local governmental units. For the five-year period, 1930-1934, this increase amounted to a total of 218,000 miles, nearly 212,000 of which were of the low cost type. This increase was nearly double that of the preceding five-year period, but it does not reflect a larger support by local units, - rather, greatly increased support from Federal funds from the Public Works Administration, the Federal Emergency Relief Administration and other Federal agencies established to provide employment.

Future Financing of Railway-Highway  
Crossing Improvements.

The States must take notice of the changed situation in the financing of railway-highway crossing improvements. Until the Federal appropriation under the Public Works Act of 1933 permitted the cost from Federal funds without State contribution except for the acquirement of property and the adjustment of property damages, the costs have been apportioned in accordance with the State laws.

Many of these laws were drafted when the relative traffic on the railroads and the highways was very different than it has since become. The fixing of an arbitrary percentage in the law to be paid by the railroads was a quite natural development of this period. Now, however, the situation has materially changed. The Supreme Court of the United States has taken cognizance of the changed conditions in the opinion dated March 4, 1935. (No. 183-October Term, 1934). It is not necessary to go into this opinion in detail here. It is sufficient for my purpose now to place before the State highway departments the thought that this opinion brings into question every State law in which the percentage of cost to be assessed against the railroad is a definite and fixed percentage. The opinion of the Court states: "We have also no occasion to consider whether the Railway should bear a proportion of the cost of the underpass less than one-half. The propriety of a lesser charge was not, and could not have been, considered by the Commission; and it was not considered by either of the lower courts. It is conceded



by counsel for the State that the only questions now reviewable are the validity of the statute which compelled the State Highway Commission to impose upon the Railway one-half of the cost, and the validity of the order made thereunder."

This opinion reversed the action of the Supreme Court of Tennessee which had previously upheld the action of the Highway Commissioner in assessing, in accordance with the law, 50 per cent of the cost of the improvement against the Railroad, and remanded the case to the court for further proceedings not inconsistent with the opinion. Since the improvement of grade crossings will continue to be an important and necessary part of highway improvement, and since the Federal funds which may be used to pay the whole cost will be exhausted, it is inevitable that in the future the use of State funds will be involved in such projects, with or without participation on the part of the Federal government. If, therefore, the State highway commissions are to have laws not in conflict with the very definite opinion expressed in this case which becomes a precedent of high importance in this field, it is necessary to secure a revision of those requirements which are arbitrary as to division of costs, and to rewrite the laws providing for the adjustment of costs on the basis of the facts in each particular case and in accordance with the benefits to be derived by the parties at interest. State laws relating to this subject must be modernized to recognize the materially changed conditions as to highway and railway transportation, and the opinion to which reference is here made should be given

full weight in the drafting of these revisions. A marked advance has been made in the cooperative relations between the highway officials, State and Federal, and the railroad companies under the grade crossing program now being financed largely from Federal funds. Even though the construction costs are in the main carried from these funds, there are important additional costs for property damages and for the preparation of plans.

It is gratifying to report that generally a fine attitude of cooperation has characterized the approach of all parties. It is also noteworthy that the program will provide for the improvement of many of the most dangerous grade crossing situations that we have in the United States.

#### Modernizing Existing Highways.

In the same class as the necessary grade crossing improvements is the necessity for the revision of many of the earlier constructed highways carrying the principal traffic flows to promote highway safety and economy in highway transportation. Basically, in dealing with the subject of highway safety progress must come through various methods, - public education in the proper use of facilities, adequate regulations and law enforcement and, very important, the greater recognition of the involuntary reactions involved in human behavior on the highways. This latter element in safety becomes of peculiar importance to the State highway departments since it requires the design of highways possessing

the quality of uniform safeness. So long as long stretches of approximately straight alignment exist with long sight distances, the remaining sections of the highways must be brought as near the same standards of safe use as possible. This factor of involuntary reactions will be recognized by each individual as a personal characteristic which tends to become more and more governing as his familiarity with, and use of, the motor vehicle increases. It is the cause for the growing conviction that a feeling of security is responsible for a large percentage of accidents.

#### Facing the Needs Honestly.

There can be only one honest conclusion drawn from these facts which are neither guesses nor estimates but are the summaries of the official records painstakingly gathered. The trend is markedly to divert the special road user taxes from the State highway departments and at the same time to add mileages beyond their ability properly to improve and maintain.

The dishonest answer is that we have enough roads and can take a road building holiday. This in the face of the fact that the average annual special taxes 1932-1934 were in excess of one billion dollars, paid by the road users with the sole justification that these special taxes are levied and collected for the maintenance and extension of highway services and facilities.

It is a dishonest answer because obsolescence and depreciation do not indulge in holidays. In all seriousness, I record the fact

that because of the public pressure for a rapid increase in the mileage of surfaced roads, the highway officials have been forced to spread the funds so thin that a very large part of the capital invested is now in jeopardy. Here are the facts. The so-called stage or progressive method of road construction was, and is, sound, if its processes are carried into operations properly timed. Low cost surfaces must be strengthened and reconstructed within their reasonable life; otherwise their annual maintenance mounts to excessive costs while their salvage value is rapidly lost.

The State and Federal highway departments in adopting the policies to the extent they have, understated the underlying economics and proceeded in the faith that the increased earnings from the roads thus improved would prove a profitable investment and that they would be permitted to follow the logical course of using the increased income to strengthen and raise the low cost types to standards that can be economically maintained, but the earnings are being diverted and new mileages to be improved are being added.

To make the picture more definite, here is a statement of the conservative reconstruction needs of the highways only under the jurisdiction of the State highway departments.

1.	Total surfaced mileage State highways . .	271,614	
2.	Total unsurfaced mileage State highways .	52,698	
	Annual construction program required:		<u>Per yr. Miles</u>
3.	To provide roadways on unsurfaced mileage in 10 years . . . . .		5,269
4.	To reconstruct low type existing mileage in 15 years . . . . .		10,800
5.	To reconstruct high type existing mileage in 40 years . . . . .		2,740
6.	Secondary surfaced roads under control of State highway departments . . . . .	74,450	
7.	Unsurfaced . . . . .	95,794	
8.	To provide roadways on unsurfaced mileage in 20 years . . . . .		4,800
9.	To strengthen and reconstruct low type mileage in 30 years . . . . .		2,400
10.	To reconstruct high type mileages in 40 years . . . . .		<u>50</u>
	Total annual construction and reconstruction program required under State highway departments . . . . .		26,059

I make no claim for exactness in this summary. Most of you will make the criticism, wholly justified, that the life expectancy is too long because of the already long years of service of much of our surfaced mileage. There can, however, be no disagreement with the general conclusion that the annual construction and maintenance program that the State highway departments must carry on without the addition of a single new mile, is greater than for the pre-depression period 1925-1929, unless we are to wreck our highway finances on the rock of excessive maintenance costs. These are the requirements due to normal depreciation only. The factor of obsolescence, due primarily to increased volume and speed of traffic, will add another large increment of multiple-lane roadways, railway and highway grade crossing

eliminations, and miles of realignment. The element of uniform safety must be given major weight.

To this picture of the immediate and future requirements of the State highway department for annual support funds, must yet be added a like analysis of the needed development of local roads. Where these two are brought together, the magnitude of the unsoundness of diversion of the road user funds from the highways should be apparent to anyone who can be convinced by facts.

No one realizes more fully than I, the utter futility of expecting a generalized statement for the nation as a whole to carry conviction to the public and the officials of a State. It is for this reason that the Bureau of Public Roads is vigorously urging upon each State highway department the complete survey of highway status, finances, needs. Only in this way can the State highway department hope to save the rapidly developing adverse situation. This is their responsibility for highway progress. When a complete report is made, then the responsibility for action rests upon the Governor, the legislature and the public at large.

The policies of private industry are determined usually by a few individuals entirely familiar with the details of the business, many of whom have spent a lifetime in the service. In the conduct of this great industry of road improvement, the highway officials are dependent upon the action of State and national law making bodies. There is a single fact which ought to be kept before every member of these bodies. For the past three years the average cost

to the average motorist for every special tax which he has paid is under \$43 per year. This includes State and Federal special taxes and licenses, and even Federal excise taxes on the manufacture of motor vehicles. This job of providing road service cannot be done for any less cost and more likely it will increase.

Political campaigns are being made in certain States to reduce motor vehicle license fees. There are earnest efforts being made by industry to lower or remove excise and gasoline taxes. In the face of the needs for support funds, these are moves that are not in the interest of the public or eventually in the interest of those who favor the reductions. There is the further fact that under the Federal law a reduction below the amounts used for highway purposes from these special taxes in 1935 will result in a loss up to one-third of the Federal aid funds to any State where a reduction occurs. The fight of those who are interested in the future of highway progress must be against diversion, not against reduction.