

## WARTIME HIGHWAY IMPROVEMENT AS AFFECTED BY MEN, MATERIALS, MACHINERY, AND MONEY

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While the war has fundamentally and profoundly affected highway improvement, a realistic view of the situation points to certain conclusions that are reassuring. It is true that we have lost many men to the armed forces and war industries, whose services we would have been glad to retain. Also, we have been severely handicapped by the shortage or lack of certain materials upon which we have depended in the past. Furthermore, we have suffered in some departments from a lack of money, and it is probable that this difficulty will increase rather than diminish during the balance of the period of emergency. Despite these facts, however, we have been able to retain or obtain enough men to carry on in a reasonably satisfactory manner. We have learned to get along with substitute materials surprisingly well so far. The money stringency has not crippled us severely up to this time, and there appears to be substantial ground for the hope that funds adequate to carry on our activities during the emergency will be forthcoming.

### MEN

Naturally the men come first in the work of our department, and the loss of some of our competent and faithful employees has been our greatest handicap. Perhaps a few figures will be interesting in this connection. A total of 201 men have left our service to enter the armed forces of our country. These men have ranged all the way from common laborers to some of our most distinguished engineers. No department could lose the services of some of these men without being adversely affected. Among our maintenance workers, as well as among our salaried employees in our various departments and subdivisions, we have lost hundreds of our most experienced and valuable employees who have resigned to take better paying positions in private industry, usually directly connected with the war effort. For example, during the year of 1942, 45% of all our patrolmen and foremen resigned to enter private industry. During the first seven days of the present year, ten men in these grades resigned. The decline in our construction operations has made it unnecessary to retain the usual quota of project engineers and inspectors, but we have lost these men in even greater proportion than the decline in the volume of work on which they have been engaged. In our bridge-drafting room we are today employing 39 skilled designers where a year ago we

employed 66. In our road-design department we are today employing 28 men where a year ago we had 44. A year ago we had two bridge-survey parties and 12 road-survey parties. Today we have only one bridge and four road-survey parties. We have also lost some of our valued office help, such as stenographers, bookkeepers, and especially business-machine operators. Our right-of-way and roadside improvement departments have been slenderized and streamlined.

We have been able to carry on under these circumstances only because of the fact that many of our experienced employees have remained with us and have been of invaluable assistance in training new employees and in shouldering additional burdens. It is not unusual for two people to do the work formerly done by three. When we cut down our driving speed, we greatly reduce our automobile repair work. Some of our people have forgotten about such things as hours and vacations. Especially noteworthy is the service rendered "above and beyond the call of duty," as the military gentlemen would say, by many of the workers in our maintenance department during the present very severe and protracted winter. Some of our men have worked as many as 119 hours in a week, instead of the usual 40, and this only on straight time without any time and one-half for overtime or double time for Sundays and holidays. Many of these men have toiled to the point of physical exhaustion. The combination of inexperienced men with the exceptional severity of the winter has laid very heavy burdens on our experienced employees. While the severity of the winter is evident to all of us, it has been attested by the fact that up to this time we have used more



**Bituminous resurfacing and widening strip at a highway intersection.**

chemicals and abrasives in combating ice and snow than we ordinarily use in an entire winter. The work of these maintenance men, while deeply appreciated, is above all praise.

Of course the shortage of men has affected the department indirectly as well as directly. Contractors, to whom our work always has been attractive, found themselves unable to bid on our contracts in many cases in 1942 because of a shortage of labor. Very often, when the Commission asked for bids on a project, only one or two bidders submitted proposals. If we got as many as three bids on a project, it was cause for rejoicing. Several times it was necessary to readvertise to get even one bid below the engineer's estimate of cost. Three important projects were advertised at least twice without attracting a single proposal. Even when our estimates were regarded as extremely generous, and even after they had been raised, they sometimes proved to be too low to keep above the contractors' bids. Naturally, this had considerable influence on the effort of the Commission to place work under contract.

Many contractors have been substantially and even seriously delayed in the completion of their contracts by a shortage of labor. Some of our contractors have also had contracts for building defense plants, and we have been proud of their response to the nation's need for their skill. The fact that they held such contracts, however, has tended to place our work in a position of secondary importance and has further contributed to the delay in the completion of contracts. Many contractors have sought to curtail their contracts by eliminating many of the features we have all come to regard as a part of a modern highway. Not much difficulty has been experienced in getting the contractors to finish their grading and paving operations, but from there on it has been something of an effort to persuade them to stick to the finish of the shoulder work and especially of the sodding and seeding. Many of our contractors have experienced particular difficulty in securing the requisite number of trucks and truck drivers, and in some cases this has seriously delayed the completion of a project. In such cases the public in general has been very patient with the inconveniences caused by these extended delays, but in all such cases a small minority of the people have complained bitterly about the losses and inconveniences engendered.

We still have obligations amounting to about \$3,000,000 on uncompleted contracts. It is our hope that we will be able to complete all these projects, but it is by no means certain that this hope will be realized. The possibility exists that we may at any moment receive an order from the War Production Board to stop work on any or all of these contracts. If this blow falls, it will be necessary to negotiate settlements with our contractors, which will probably not be entirely satis-

factory to either party to the contract. The enforced termination of a contract is certain to result in an excessive cost for the portion completed, and unfinished work is not only likely to deteriorate rapidly but will also present a very unsightly and depressing picture to the public.

We feel that great consideration has been shown us by all the federal agencies involved in permitting us to carry on as much work as we have since the war started, and we wish to express our appreciation of that consideration on behalf of our department and the general public. The projects under construction were chosen with great care because of their utility in connection with the war effort. It has been especially gratifying to the Commission that, after every survey of the legitimacy of these projects with regard to the war effort, the federal authorities have allowed the work to proceed without interruption.

The shortage of manpower, rather than a shortage of materials, machinery, or money, is likely to be the greatest deterrent to highway construction during the remainder of the emergency. It is the opinion of the Commission that any attempt at this time to force construction work which could reasonably be deferred until after the war, is entirely out of harmony with the war effort, which is now the first concern of us all. Consequently, only projects of an emergency nature or those certified or approved as essential to the successful



Roads carrying considerable truck and bus traffic should have traffic lanes of eleven feet. This is a section of U.S. 31 south of Scottsburg receiving a concrete widening strip.

prosecution of the war will be undertaken from now on. In other words, new construction must now await the return of peace. Of course, there will be some reconstruction where failures occur, but the making of entirely new improvements from the ground up must now be deferred until conditions more nearly normal have been restored. The seriousness of this situation is emphasized by the fact that the Federal Government is even now considering the cancellation of some access-road projects on which contracts have been awarded but on which construction operations have not been started. Bear in mind that these access roads were so certified to the Federal Works Administrator by either the Secretary of War or the Secretary of the Navy within very recent months. The prospect of cancelling contracts in this category should serve to reveal to all of us the futility of thinking at this time of new construction of roads which bear no direct and important relationship to the war effort.

### MATERIALS

The changes in connection with the materials used in the construction and maintenance of highways are so well known and so thoroughly understood by every member of this audience that extended discussion of this subject is not justified. It may be well, however, to record the fact that we have long been unable to secure many metals, especially steel, except in severely limited quantities for use on approved road projects. The sale of road oil has been prohibited since last July, and it has been necessary for all of us to obtain the permission of an agency of the Federal Government to buy bituminous road materials of any kind and in any quantity. We are pleased to say that requests for the use of these materials have been approved in practically all cases to date. We have no assurance that we shall be as fortunate in this respect this year as we were last year. Even now there are some indications that we will be expected, if not ordered, to make a reduction in the quantity of bituminous material we use this year.

When the steel shortage first became serious, we thought we could manage reasonably well by substituting treated timber; but we have long been unable to obtain this material, and even the native untreated timber has often been difficult if not impossible to secure. There was a shortage of cement available to some projects last year, and, surprisingly, even a shortage of the native sand and gravel and crushed stone within the marketing area surrounding some road projects in the vicinity of defense projects. Nothing in the speaker's previous experience prepared him for a condition whereunder there would not be enough, or more than enough, sand, gravel, or stone for any project that might develop.



Many fail to realize the need of a great quantity of various types of equipment to maintain our highways. This is a view of some of the equipment and storage space at the Greenfield District headquarters.

At this time it appears unlikely that the available supply of critical highway materials will be greatly augmented this year. It is possible that the priorities system will be abandoned and that in lieu thereof may be instituted the controlled materials plan. This may operate to give us more of the materials we need if we can get them within the allotment for governmental purposes. Of course, these allotments are subject to change from time to time; and the restrictions are likely to be made more drastic rather than more liberal in the months immediately ahead of us.

### MACHINERY

We shall touch upon the subject of machinery in very brief terms. Order No. L192 restrains the purchase of equipment except when essential to the successful prosecution of the war, and the War Production Board sits in judgment on this matter. The entire output of many classes of machinery is reserved for the exclusive use of the Army, the Navy, the Maritime Commission, or Lend-Lease operations. Only after these wants have been satisfied in any case is it in order for us to expect our requirements to receive consideration. Fortunately, most highway units were reasonably well equipped with machinery at the outbreak of the war and can manage reasonably well with available equipment if machinery parts can be secured. It is our understanding that, in so far as the State

Highway Department is concerned at least, it has so far been possible to secure these requisite parts. It seems probable that the purchase of new equipment, if possible at all, during the balance of the emergency will be reduced to the irreducible minimum.

### MONEY

With the shortage of tires necessitating gasoline rationing, the proceeds of motor-vehicle taxation are certain to decline to the point where highway revenues will be very seriously and very unfavorably affected. If rationing of gasoline as it is now conducted in Indiana remains without substantial modification during the present year, it is likely that a shrinkage of 40% in the yield of the gas tax will be realized. The decline in revenues from automobile licenses will not be as severe as in the gasoline tax revenues, since it is very likely that most people will take out new licenses for their cars as long as they are able to obtain any gasoline to propel them. Probably, receipts from automobile licenses will not decrease more than 20%, and this figure may be somewhat high. These percentages are referred to the yield of these taxes in the year of 1942. Even in 1942 the decline in revenues was substantial, with the exception of the month of December, while people were still free to buy all the gasoline they wanted. In that month the decline in the number of vehicles passing the twenty automatic counters maintained by the State Highway Department was 51% compared with the same month in 1941. The decline for the twelve months of 1942 as compared with 1941 was about 24%.



Shoulder widening and finishing along State Road 67 near Gosport. Note flatter slope from wide shoulder into and beyond ditch line made possible by wide right-of-way.



**U. S. 31 By-Pass around Columbus. Note the wide shoulders and the flat cut-slopes, seeded and mulched for quick vegetation growth.**

This subject of money is one of primary concern to all of us, and we desire nothing so much as for the various units of government to present a united front in this vitally important matter. We are all familiar with the rivalry that has sometimes existed between the State Highway Department and the cities and counties with reference to the division of the proceeds of motor-vehicle taxation. The speaker wishes to assure the representatives of the cities and counties present in this audience that the present Highway Commission is sincerely desirous of working in harmony with the local units in this as in all other particulars. We recognize the need of every unit for adequate finances and, in turn, we feel sure of reciprocal understanding by local officials. All of us are interested in state highways, county highways, and city streets. It has been the thought of some of us that we should all go up or down together in this matter; that if revenues decline every unit should share in that decline. Others, just as sincerely, believe that it would be a mistake to change the present appropriations to the local units and feel that the entire loss could and should be borne by the State Highway Department. Even some long-time friends of the State Highway Department adhere to this latter view of the matter.

Our primary concern is in being as sure as possible that we will not be so short of funds that we will be unable to maintain our 10,000 miles of state highways. We have yet to hear anyone express indifference on this point. The deterioration of our state highway system to the point of destruction would be a catastrophe of such proportions that the mind refuses



to contemplate it. Perhaps a compromise, which is ever the essence of the legislative process, may be worked out whereunder the present fixed appropriations to the local units will remain unimpaired at their present levels unless the total receipts fall below a predetermined danger point, and if such a point is reached and passed by the revenues in their downward trend, this would automatically bring into action a revised scheme of allocation based on a percentage basis, which would remain effective only so long as the total of these revenues was below the predetermined level. This thought is worthy of considerable study; and since this is doubtless the only opportunity the speaker will have to present it to representatives of the cities and counties, he feels that he should make use of the opportunity to submit this proposal for such interest and value as it may possess. It now seems probable that the proposed budgeted income of the State Highway Department will not exceed \$9,500,000 per year. The extent of our decline will be realized when it is recalled that in 1941 our Department expended approximately \$27,000,000.

Some years ago a visitor from Europe made a careful study of American life and customs and of the individual American. At the conclusion of his studies he said that the discovery of one trait in the American character had surprised him greatly; this trait was the tendency of the American to dislike most that class of people from which he differs least. I wonder if we are not falling into this error when we think only of taking money from one another when we might all get together and secure enough money from some source, or sources, to provide adequately for all of us? I am thinking particularly of the opportunity for the state, county, and city officials throughout the country to join in a demand that Congress, by suitable action, take the federal government out of the field of automobile-use taxation. As you doubtless know, the federal tax on gasoline is now one and one-half cents a gallon, and in a normal year this would produce ten and one-half million dollars in Indiana. Sixty per cent of that figure would be \$6,300,000, the amount we might expect on the basis of receipts from our own taxes. This is about \$3,000,000 a year in excess of the normal federal highway aid coming to Indiana. As you know, there is also a federal use-tax on automobiles, comparable to our automobile license fee, amounting to \$5.00 per car per year, or about \$5,000,000 in ordinary times. With a 20% decline of revenue this will still produce \$4,000,000 which, added to the figure already given, would produce a net return of at least \$7,000,000 per year to Indiana over and above our normal federal-aid allotment if the federal government renounced these taxes and made them available to Indiana and if our Legislature saw fit to take advantage of them. This beneficial change in our financial condition could be brought about without imposing any taxes on the people of

Indiana in excess of what they are now paying. It would simply amount to keeping Indiana money at home instead of sending it to Washington and then getting part of it back for our use.

Even before the war there was an agitation under way, which attracted some attention throughout the country, to persuade the federal government to retire from the field of automotive taxation. It will be remembered that the federal government did not enter this field of taxation until 1932, some years after all states had state gasoline taxes. When the federal government entered this field, it did so with apparent reluctance and with many apologies, and with the solemn assurance that it was just a temporary expedient to meet an emergency for a single year. The original amount of this federal tax was  $\frac{1}{2}$  cent per gallon. It is now  $1\frac{1}{2}$  cents per gallon and apparently the federal government now regards this as a permanent source of revenue. While admitting that the federal government needs money in unprecedented amounts, the fact still remains that the state and local units also require funds if they are to maintain their highway facilities and meet their obligations, many of which are imposed by some agency of the federal government.

The tax base of the state is very narrow, while that of the federal government is very broad. Our resources are limited, while its appear almost unlimited. We are restricted for highway revenues to the proceeds of motor vehicle taxation by



**Hundreds of narrow bridges and culverts, many with very limited load-carrying capacity, are handicapping the free and safe movement of traffic.**

virtue of present laws and the force of public opinion. We will venture to say that hundreds, perhaps thousands, of miles of state and local highways would have to fail and become practically impassable before the people of this state would look with any favor at all on deriving highway revenues from any other source than the motor vehicle. Since the states pioneered in this field, and as they seem to be limited to this single source of revenue, and as this revenue has declined to such comparatively small proportions, it seems all the more incumbent on the federal government to retire from this field of taxation, at least to the extent of the gasoline and use taxes.

While we have achieved a high degree of national unity and are all solidly back of the war effort, we think it not improper to point out that the federal government has not acquitted itself with complete credit in the matter of keeping the country supplied with automobile tires. The production of synthetic rubber is experiencing delays and postponements, and no one can say when dependable tires will again become available to the average civilian. Just how long the present retreading and recapping processes can be depended upon to keep our vehicles moving is unknown. Under the circumstances it seems very unfair to the states for the federal government to continue to invade this field of taxation, which was not only pioneered by the states but is their sole reliance. We know of nothing either in sacred or profane literature which so well illustrates the unfairness of the federal government's procedure in this matter as the biblical story of the prophet Nathan and his parable of the ewe lamb, which caused King David to be his own judge. Doubtless you all recall this story. According to the parable, two men lived in a city; one was rich and the other poor. The rich man, in the words of the parable, "had exceeding many flocks and herds; but the poor man had nothing save one little ewe lamb." A traveler dropped in on the rich man, who refused to take of his own flock to feed the visitor but, instead, took the poor man's lamb. When Nathan told his story to King David, the King's anger was greatly kindled against this rich man because he did this thing, and he pronounced a very severe judgment upon the offender, whereupon Nathan said: "Thou art the man!" Of course this was only a parable. David had not really taken the poor man's lamb but, among other things, he had taken the one wife of his loyal soldier subject, Uriah the Hittite. And that was by no means all that King David did to Uriah the Hittite. The King later had fair cause to regret his unfairness to his loyal soldier. Those who wish to read the story in full will refer to Chapters 11 and 12 of the 2nd Book of Samuel. If you are inclined to say this is somewhat far-fetched, or that the parallel is not exact, I am prepared to agree with you while still saying that the policy of the federal government in this particular reminds me of this parable.



A typical stream-crossing of prewar days. With ample roadway clearance and load-carrying capacity, it should serve traffic in a satisfactory manner for many years if properly cleaned and repainted as required.

### CONCLUSION

In conclusion, the speaker begs leave to call the attention of this audience to the fact that our highways are not permanent; they are growing old and they are beginning to show some of the infirmities of age. Tremendous costs must be incurred within very few years in the repair, resurfacing, and reconstruction of our present highways. It is incumbent upon us, as responsible public officials, to warn the public of the unwisdom of allowing this great highway system to fall into a condition from which it can be restored to its present state of excellence only by the expenditure of appalling sums of money. Let us remember, also, that even before the war there was very little new mileage being added to our highway system from year to year. The problem was one largely of replacements and reconstruction, and that fact serves to illuminate our present problem of continuing this kind of work, even in war time. Let us remember, also, that, while a generation ago a road failure was a matter of local inconvenience and concern, the failure of an important state highway today may assume the proportions not only of a statewide but of a nationwide calamity.

It is our confident belief that these problems will be successfully solved, and that our government and our people will rise to the occasion and provide such funds as may be necessary to make sure that Indiana will retain her position in the very forefront of all the states in providing and preserving a system of modern highways.