

## The Post-War Highway Program

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We are nearing the end of our third year at war. Before the year ends the battle of Europe may be brought to a victorious conclusion. In the forging of that victory, when it surely comes, highway transportation will have made a mighty contribution, and a magnificent sacrifice.

At the battle front the glory of its contribution has been manifest in the rapidity of our advance from Normandy to the Siegfried Line. On the home front its record of service, equally proud if less spectacular, is written in terms of millions of workers transported daily to and from war plants over access roads quickly built. It is written, too, in terms of the ceaseless flow of equipment and munitions that has poured from plants to ports over strategic highways that were ready when war came, and have been kept in uninterrupted use with a remarkable frugality of precious manpower and material.

Of part of the sacrifice, rationed motor-car owners are intimately aware. Their yielding of a long-accustomed freedom to move when and where they pleased in vehicles of their individual ownership is recorded in a decline of the annual vehicle-mileage of passenger-vehicle

travel from 135 billion in 1941 to a probable 75 billion in 1944. And hard-pressed truck owners, too, have felt some part of the sacrifice that has been made, as daily they have plied their fewer and aging vehicles with heavier loads to maintain almost undiminished a prewar total of 46 billion ton-miles of commodity transportation.

But there is another, and perhaps greater sacrifice of highway transportation, steadily mounting if yet uncounted, the cost of which may not be fully appreciated until the war ends. Then, with vehicle assembly lines again moving, and repair services restored to normal, the price of the war's depletion and deterioration of our motor vehicle plant will be fully realized in the cost of replacing some millions of scrapped vehicles and reconditioning the survivors for more efficient operation. Then also, there will remain to be paid the cost of the war's depletion and deterioration of the highways.

For, from the moment of our entry into the war, the normal process of construction, reconstruction and maintenance essential to the preservation and required upbuilding of the country's system of roads and streets has been held partially in abeyance. Throughout the three years of the war's duration a rigid test of war need, applied to construction and maintenance alike, has permitted only that work to proceed which could be determined to be of vital necessity to the war effort. The work undone, that but for war restrictions

would have been done during these three years, measures the extent of the depletion and deterioration of the highway plant to date.

There is no ready catalogue of this needed work unperformed. But despite the lessened traffic volume of the war years, it would not be unreasonable to assume that the total of work actually required in each of these years has not differed greatly from the average of work performed in the years immediately preceding the war. If, then, we deduct the volume of work actually performed the difference will represent a reasonable approximation of the work deferred. If it may be assumed that the post-war return from the wartime peak to more normal conditions of peace will reverse the trends of the period of entrance into the war, then the period, 1940-41, may be considered to represent conditions most nearly approximating those that will obtain in the post-war years.

Employing this device, and measuring all work in terms of the 1940-41 dollars required for its performance, we can approximate the extent of the war's deferment of needed work on the country's roads and streets as follows:

On all roads and streets the normal expenditure of the later years of peace was roundly 2,040 million dollars--about 1,430 million for construction and 610 million for maintenance.

During the three years of war, expenditure has averaged 780 million dollars--360 million for construction and 420 million for maintenance.

The indicated 1,070 million-dollar annual reduction of construction expenditure represents approximately in its entirety work undone that will have to be done when the normal process is resumed. Perhaps 100 million dollars of the 190 million-dollar reduction in annual maintenance expenditure represents either work foregone for which eventual reconstruction will substitute or merely a reduction in the standards of service rendered, the effect of which will be erased upon a resumption of normal maintenance. The cost of the remainder of repairs that eventually will have to be made up is therefore conservatively estimated at 90 million dollars for each year.

After the three years of reduced operation these figures indicate that we have accumulated an arrearage of 3,210 million dollars worth of construction and approximately 270 million dollars worth of maintenance work, or a total of 3,480 million dollars worth of presently needed work unperformed. Since all of these figures are expressed in terms of post-war costs which may be reasonably anticipated, they represent physical volumes of work required to be made up which are the close equivalent of the physical volumes sacrificed during the war.

If, in 1945, cessation of the war in Europe were to permit the resumption of an unrestricted normal program of construction and maintenance; and if, additionally, it were decided to attempt in three post-war years to catch up the average deferment of the three war

restricted years, the requisite expenditure in each of the three post-war years, would be approximately 2,500 million for construction and 700 million dollars for maintenance--a total of 3,200 million dollars.

Approximately 3.2 billion dollars, then, may be estimated to be the annual cost of a post-war continuance of the prewar normal road and street program with simultaneous liquidation of the wartime lag in a period of three years, beginning in 1945. It will be realized that this is an estimate very broadly computed. If we may venture somewhat further upon the support of the underlying facts, we might estimate the portion of the annual expenditure required for rural road work at 2,310 million dollars--1,790 million for construction and 520 million for maintenance--and the portion for city street work at 890 million dollars--710 million for construction and 180 million for maintenance.

And finally, it may be estimated that a program of needed road and street work of the defined proportions and elements would employ for three years after the war the labor of 865,250 on-site and 1,263,850 off-site workers, or a total of 2,129,100 workers.

That, in the highway field, preparation for the more immediate post-war construction needs is at least as far advanced as in other public works fields, is indicated by the report recently submitted by the Federal Works Agency, in collaboration with the Bureau of the Census, to the Special Committee on Post-War Economic Policy and Planning of the House of Representatives, headed by Representative William M. Colmer.

Of a total of \$1,189,000,000 worth of public works of all classes reported as completely planned, the highway and bridge works included represented 41 percent, or a total of \$487,546,000, all other classes of works making up the 59 percent remainder of \$701,463,000.

For works reported in the stage of active design the foregoing proportions are approximately reversed, with highway and bridge projects forming 53 percent and all other classes of projects 47 percent of a total program in that stage estimated to cost \$2,706,000,000.

In these two most significant stages - the stages of plans complete and actual design in progress - the highway and bridge program totals \$1,916,000,000 or more than 49 percent of a total, including other classes of public works, of \$3,895,000,000.

Thus, in the two more definite stages of planning for post-war public works of all classes, there runs approximately the same equal division between the planning of highways and bridges on the one hand and all other classes of public works on the other that has existed for years between the same groups of works accomplished.

In the earlier stages of planning conception - defined by the FWA report as the "Preliminary" and "Idea" stages, the highway projects reported as under consideration have a total estimated cost of \$6,364,000,000, other public works projects in the same stages \$7,073,097,000, the highway projects again approaching half of the total.

Of the highway projects for which plans have been completed, projects of the State highway departments make up \$219,151,000 of the

\$487,546,000 total, the remainder of \$268,395,000 consisting of projects reported by counties and cities.

In the "Design" stage, State highway department projects make up \$957,242,000 of the \$1,428,544,000, total, with city and county projects accounting for only \$471,302,000.

The volume of highway and bridge projects reported by cities totals \$2,689,662,000 in all stages of planning progress, including the rather indefinite "Preliminary" and "Idea" stages. City highway and bridge projects reported as completely planned or under design total only an estimated cost of \$530,405,000, about one year's work at the prewar rate of construction progress. These city totals are those reported by 593 cities of all sizes; and it is worthy of note that more than 83 percent of the projects reported in the "Completed" and "Design" stages are located in cities of more than 100,000 population.

It is noteworthy also that the cities reporting more than half a billion dollars' worth of highway and bridge projects planned or in design, say that they have funds actually in hand or arranged for to finance only about \$80,000,000 worth of this work. It is true that the planning of the State highway departments embraces a substantial volume of highway and bridge work in cities, funds for the execution of which are perhaps more definitely in sight. But with full allowance for this possible addition, the planning preparation of the cities for immediate post-war undertakings is far from adequate; and a similar and perhaps less satisfactory state of preparation exists in the counties.

In sum, the situation revealed by these reports to the Federal Works Agency with respect to the present preparation for a prompt beginning of well planned street and highway work at the close of the war is not a heartening situation. There is general agreement that great needs exist, and that such needs can be properly met only by the most careful planning. There is a general and pronounced feeling that such planning should be undertaken well in advance of the occasion and opportunity for execution, and fear that failure to do so will result in another resort to the generally deprecated expedient of made work to relieve another employment emergency. But, if such a contingency is to be avoided, the FWA reports strongly indicate that the planning effort now being made will have to be materially increased in respect to all classes of highways - both urban and rural.

To those whose interest in post-war public works is centered primarily upon the volume of employment such works may afford during a short period of possible economic emergency and the extent of plan preparation in relation thereto, the estimate of the potentiality of road and street work to provide useful 3-year employment for more than two million workers, may seem to answer approximately the essential immediate question.



There are others, however, and many such, I presume, among the membership of this Association, whose concern in public works to be undertaken after the war is engaged less with the employment to be thereby afforded than with the character and lasting utility of the works to be created.

Those so minded are likely to think of the post-war period not as an early one, two or three years of possible economic emergency, but rather as a new long period of peaceful development, in which, by sustained and orderly planning and constructive performance, it may be possible to proceed far toward the realization of long-time public improvement goals.

In the field of highway construction this type of thinking is strongly influential. Upwards of twenty years ago it was the influence responsible for the designation of the State and Federal-aid highway systems as master plans that were to set the course for two fruitful decades of sustained constructive activity. Eight years ago, the initial goals in sight, it was the influence that caused the undertaking of State-wide highway planning surveys, the purpose of which was to establish the dependable factual foundation for new master plans. And, since by these means, the essential facts have been brought to light, it is this type of thinking that has been responsible for the gradual, but steady evolution and wide acceptance of new guiding principles that are destined to give altered form and direction to the highway program of a long post-war future.

Early enunciation of the new principles is to be found in the Public Roads Administration report, *Toll Roads and Free Roads*,

published as a Congressional Document in 1939. In its initial recommendation of an Interregional highway system to be improved in balanced relation to other main highways and secondary roads; in its emphasis upon the necessity for improvement of the routes in cities that are at once the trans-city connections of major intercity highways and principal arteries of internal movement between the periphery and center of the cities themselves; in its prominent indication of the need for an earlier and more liberal acquisition of rights-of-way; and in its advocacy of the establishment of qualified public authorities to deal with the assembly of land for highway and related public improvement purposes, this report signaled a point of departure from old concepts and practices and the setting of a new course of highway development.

Significant steps in the new direction have since been taken in a large number of States by the designation of systems embracing the more important secondary rural roads, and in a smaller number of States by the enactment of legislation providing for the limitation of access to major highways. In national legislation the Defense Highway Act of 1941 has made provision for the advance planning of sections of the strategic network with special emphasis upon the planning of routes into, through and around cities, and the July 1943 amendment of the Federal Highway Act, besides extending the provision for advance planning with Federal assistance to the planning of useful post-war improvements of all classes of highways, has extended the availability of Federal funds, previously limited to expenditure for construction, to the matching of State funds for right-of-way acquisition.

More recently the report of the National Interregional Highway Committee, published as a Congressional Document in January of this year, under the title "Interregional Highways", has seconded and more definitely formulated the earlier proposal of an interregional system and reemphasized the primary need for improvement of portions of the system within, around, and at the approaches to cities. Particularly at the city termini of the highways, it has pointed to the needs that exist for facilities to permit a closer correlation of highway transportation with other modes of transportation - by rail, air, and water; and for terminal facilities for the highways themselves, terminals for trucks and busses, and off-street parking facilities for passenger cars. Outlining the considerations to be weighed in the selection of routes for inclusion in such a system, this report makes its most significant contribution in a clear and detailed definition of standards proposed for widespread consideration and substantially uniform application in the form proposed or an agreed modification thereof to future improvements on the system, by whatever authorities such improvements may be made.

In the proposal of these standards, a conception of the post-war period as a long period of refining development of the existing primary highway system was the basic thought. That the existing system stands in need of such further and refining development there is no denial. Product of years of rapid and progressive change in the character of motor vehicles, and corresponding change in concepts of highway adequacy; product of a diversity of standard and objective

inherent in the multiplicity and wanting accord of its creating agencies; and product, too, of the many compromises between desire and possibility essential in any program of pioneer upbuilding; the primary highway system as it exists today is far from a system of balanced adequacy. Too truly it may be described as a system that is best where it might be worse, and worst where it should be best.

To correct this condition of pronounced disharmony in the product of the prewar past is the major task of the post-war future. Obviously it is a task that will occupy the greatest endeavors of all highway constructive agencies far beyond a possible early period of post-war economic stress. But that it is a task that should be promptly and rightly begun the moment the war ceases, is no less apparent. And that the steady and purposeful direction of this task toward an eventual substantial balance of adequacy among all our street and highway facilities - that this steady and purposeful direction shall be obstructed and diverted as little as possible by hasty and ill-advised expedient in the immediate post-war years, seems certainly to be greatly desirable.

But if there is to be any such orderly and purposeful progress toward a well defined goal, there must be in feasible degree a common recognition of the purpose and a mutual agreement upon the order among many public agencies, of the cities, of the counties, of the States and of the United States. For, no single control will exist in the development of even so small a part of the total highway system as may be included in an interregional system. Even to the

development of such a system, and in far greater measure to the essentially related refinement of other parts of the existing highway improvement, many and varied agencies must contribute their efforts. Particularly in the hurry to be ready with something to do against a possible employment emergency in the early post-war years, there is great danger that the scattered and independent efforts of agencies, so many and varied, may result inharmoniously, and that much may be done that, far from contributing to a systematic betterment of existing conditions, may actually create new discords and inadequacies to add to the burden of future corrective effort.

It was with the hope that this danger might be in some degree averted and that some clearer sense of direction might be given toward a desirable long-time post-war goal that the proposals of the recent interregional highway report were formulated and presented. And, to this end the standards of design tentatively advanced were regarded as no less essential than the equally tentative proposal of routes to constitute the system. The two parts of the proposal as made were intended to suggest possible answers to questions of the "where" and "how" of an important segment of the post-war highway program. There was no expectation that either would win unaltered acceptance. Both were advanced for consideration, in the hope that after the modification that such consideration might suggest, new and widely accepted conclusions might emerge that would serve to sound the pitch for a truly concerted future improvement of the country's most important urban and rural highways.

There is excellent prospect that this hoped for accord may be very largely achieved. Whatever else the pending Federal highway legislation may provide when it is finally enacted, the provision for official designation of an interregional highway system now seems certain of inclusion. And an active weighing and discussion of the standards proposed in relation to thousands of specific post-war planning projects is fast leading to what may shortly become a widespread agreement among the principal highway agencies at all levels of government.

In most respects the discussion reveals a general recognition of the need for standards of the order of those proposed. To two of the broader proposals there has been marked dissent, which in each case is founded upon a misunderstanding of the proposal as made. Particular reference to these two proposals is desirable here to clarify the purpose of each and correct the rather general misunderstanding that is tending in some measure and in each instance to defeat a purpose regarded as basic to a sound future highway development.

The proposal most widely misunderstood is that regarding a provision for limitation of access to the interregional routes. This proposal has been generally understood to suggest the immediate denial of access to all sections of the system from all abutting lands and most intersecting highways. There was no such impractical suggestion. The report holds that it is desirable "as promptly as possible, to provide for the legal designation of all routes of the recommended system, in both their urban and rural sections, as limited-access

highways." This is a proposal to vest a power of limitation in the appropriate highway authorities. It is not a proposal for the uniform and general exercise of the power to be conferred. A distinction in this respect is clearly drawn in the report. It is stated that the purpose of the general legal designation is to "empower administrative authorities, wherever and whenever necessary for the convenience of express traffic and the promotion of safety, to deny access xxxx from abutting lands or control or limit such access as may be found desirable, and similarly to deny or limit access, as desirable from other public roads." And, to make the distinction more emphatic, the report repeats that: "The proposal to confer this essential power does not suggest that it be inflexibly or arbitrarily used;" and explains in detail the difference between the conferral of a desirable power applicable to the entire system and the exercise of that power generally in an inflexible, arbitrary, and unnecessary manner. The actual proposal is a proposal of legal means enabling action as needed. As unfortunately misinterpreted, it is widely understood to be a proposal of immediate action in a manner described in the report as arbitrary and unnecessary.

The other proposal widely misinterpreted is one that was intended to suggest a desirable allowance in present design for changes likely to be required by traffic growth in a period of 20 years. On this point there is some lack of clarity in the language of the report and more reason for the mistaken assumption that what was intended was a present design and construction of facilities in all respects adequate

for the estimated traffic of 20 years hence. The actual purpose was to leave to case decision the extent of the desirable anticipation of future traffic requirement in present construction, but in any case to make positive allowance, so far as possible, for the adaptation of present construction to the foreseeable needs of a 20-year future.

The misunderstanding that has existed with reference to these two details of the interregional reports' proposals has not been wholly unfortunate, if in the explanation it has been possible to underline two ideas important to a sound preparation for the post-war development of the highway system, which are: (1) That the provision of essential legal powers and administrative means adequate to cope with recognized new needs; and (2) a due allowance in all early planning for the changes certain to be required by future traffic growth, are matters that should concern us all at this moment, at least as greatly as the stocking of presently acceptable plans for construction against the possibility of an employment emergency.

In attempting to develop these two principles this paper has been perhaps unduly occupied with reference to the proposed inter-regional system. If so, there has been no purpose to magnify that system beyond its actually large proportions in the whole highway scheme. The same sort of careful thought that has been given to the planning of that system should be extended to the planning of other parts of the total road and street system, especially to the similar planning of adequate systems of secondary or farm-to-market roads,



and of new systems of express or arterial streets consistent with sound plans for the rehabilitation of the cities.

Unfortunately, a few notable instances excepted, the accomplishment in these directions is not a substantial one. And there is accordingly the greater possibility of benefit in the provisions of pending Federal legislation for expenditure on these classes of facilities, especially in those requiring a systematic selection of routes to be improved.