

Highlights In The Road Building Picture

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Last month a year ago Congress, by its passage of the Federal Aid Highway Act of 1944, turned a switch that cast brilliant light upon a new and broad panorama of the road building scene ahead.

The picture, first viewed from the high points of planning surveys conducted in 48 States, had been gradually laid on by many brushes studiously applied. In the light of the new Federal Act it reveals the forward way far beyond the horizon as viewed from the valley of present actuality.

A purposeful march of progress toward these more distant horizons was set in motion by a concurrent resolution of the two Houses of Congress passed in the early days of last October which, finding as a fact that the war emergency had been sufficiently relieved, sanctioned a beginning upon the extraordinary program of Federal-aid highway construction authorized by the earlier Act.

For immediate construction activity the October resolution released a Federal credit of \$500,000,000, available for expenditure during the fiscal year ending June 30, 1946 and the twelve months after that date. Since the credit is considered spent when it is allotted by legal agreement to specific projects, the actual construction provided for by the first \$500,000,000 fund can, and probably will extend beyond June 30, 1947. As the Federal fund must be matched with State and local funds under State control in generally equal amount, the eventual expenditure on this first program will be nearly a billion dollars.

Next July a second Federal credit of \$500,000,000 becomes available for allotment, and the approximate billion-dollar total resulting when this is matched with State and local funds will be subject to project obligation by June 30, 1948 and actual expenditure on construction continuing for some time afterward.

Meanwhile a third \$500,000,000 Federal credit will be similarly released on July 1, 1947 and, similarly matched, will provide for nearly a third billion dollars worth of construction to be inaugurated before, and finished in a reasonable period after June 30, 1949.

Altogether the October resolution started a program of Federal-State road and street construction that will involve nearly \$3,000,000,000 worth of work between now and 1950. And this is not quite all. There is presently available an unexpended balance of previously authorized Federal funds amounting to \$150,000,000 which, matched in the required proportion by the States, accounts for an additional sum of nearly \$300,000,000 of combined funds, increasing the total to be spent by 1950 to more than \$3,000,000,000.

On the part of the Federal government the availability of funds to meet its approximate half of this total expenditure is assured. The remainder will have to be supplied by the State highway departments from their own revenue sources and others placed at their disposal by cities and counties. The State departments start with a total unexpended balance available for construction estimated at \$650,000,000 as of January 1. Road user revenues in the form of gasoline taxes and vehicle license fees, generated in increasing amounts as time goes on, will yield a large part of the remainder.

The sum of the city and county contributions, rightly to be expected, is the least certain element in the financial prospect. The two classes of subdivisions will need a substantial part of their own revenue for the construction of streets and roads that cannot be included in the Federal-aid program and another part, likewise substantial, for maintenance purposes. How much they will allot to the important projects of the Federal-aid program is problematical. They are likely to have for expenditure in the next four years a total of at least \$3,000,000,000.

To round out the highway budget of these first four years, the States are likely to require at least \$1,200,000,000 for maintenance and we can probably count on a balance of \$300,000,000 to be available for additional independent State construction after the Federal funds have been matched and maintenance needs have been met.

In total, the probable minimum road and street expenditure for construction and maintenance in the next four years is \$7,500,000,000, an average of \$1,900,000,000 per year, with \$700,000,000 a year going for maintenance and \$1,200,000,000 for construction, five-sixths of the latter in the Federal-aid program.

If in these four years road and street construction are to be carried forward at just the normal prewar rate and the war lag of needed, but deferred work is to be caught up, the average expenditure will have to be substantially larger than this probable minimum - at a good guess about \$1,600,000,000.

Funds earmarked For These Purposes

Whether work is undertaken at the rate determined by the lower or the higher of these expenditure figures will depend upon a number of factors, among them the volume of other construction committed, both private and public, the larger or smaller competing demand for labor and materials thus generated, and, most directly, the desires and the will of the people as expressed in a multitude of policy decisions on State and local tax rates and bond issues. In any event the location and character of work done will be powerfully affected by provisions of the Federal Act. For this Act, more definitely and generously than those that have preceded it, provides for the improvement of secondary as well as primary rural roads and for arterial routes within, as well as between cities.

Of the \$500,000,000 total authorized for the present first, and the next two succeeding fiscal years, \$225,000,000 for each year is earmarked for expenditure on the principal highways included in the 232,000-mile Federal-aid system. This part of the total provision follows the long established pattern and is available for the improvement of routes of the system inside, as well as outside, of cities.

A significant departure from the past rule is the authorization of \$125,000,000 of each year's total to be used only for improvement of routes of the Federal-aid system in urban areas, which are defined as areas adjacent to, and including cities of 5,000 population or more. The effect of the Act is to reserve this part of the Federal grant fund for the improvement of major arterial routes in the larger cities and their surrounding metropolitan areas.

And, finally, the first two provisions setting apart seven-tenths of each year's fund for the construction of primary highways, the remaining three-tenths, or \$150,000,000 per year, is dedicated to the improvement of systems of the principal secondary and feeder routes, to be selected in each State.

The Act requires the three separate fractions of the total fund to be apportioned among the several States, each in accordance with a different formula intended to insure an equitable division in proportion to an approximate measure of the need existent in the States as units. It leaves to the State highway departments which, jointly with the Public Roads Administration, are charged with the duty of administration, the fair and reasonable application of the apportioned sums within each State. In the case of the funds provided for general use on the Federal-aid system this is an accustomed task. In the case of the urban-area funds it imposes the not-too-simple problem of a satisfactory division between the cities of each State; and in the case of the funds for secondary and feeder roads it presents a similar problem of acceptable division between the counties. A satisfactory solution of these new problems will be found only in the sympathetic cooperation of the State highway departments and the governing authorities of the cities and counties of their respective States.

The \$500,000,000 Federal fund for the first year has been apportioned among the States as the law provides, and the amounts thus made available of each of the three fractional funds are given in the following table.

Apportionment of Authorization for the First Post-War Year

State	Sums Apportioned For			Total
	Federal-Aid Highway System	Secondary or Feeder Roads	Urban Highways	
Alabama	\$ 4,711,985	\$ 3,732,285	\$ 1,303,288	\$ 9,747,558
Arizona	3,231,050	2,234,825	262,168	5,728,043
Arkansas	3,854,270	3,103,100	558,221	7,515,591
California	9,018,749	5,162,254	8,122,233	22,303,236
Colorado	4,039,595	2,718,345	933,647	7,691,587
Connecticut	1,395,343	766,175	2,607,495	4,769,013
Delaware	1,096,875	731,250	204,057	2,032,182
Florida	3,236,627	2,168,089	1,599,641	7,004,357
Georgia	5,648,564	4,310,453	1,622,008	11,581,025
Idaho	2,785,964	1,948,442	211,799	4,946,205
Illinois	8,847,357	4,761,820	9,510,696	23,119,873
Indiana	5,402,363	3,622,366	3,065,734	12,090,463
Iowa	5,567,260	3,979,710	1,592,107	11,139,077
Kansas	5,660,742	3,973,471	1,107,219	10,741,432
Kentucky	4,203,011	3,405,116	1,299,529	8,907,656
Louisiana	3,371,110	2,524,469	1,531,578	7,427,157
Maine	1,948,954	1,404,017	560,538	3,913,509
Maryland	1,830,936	1,170,515	1,790,081	4,791,532
Massachusetts	2,942,968	786,683	6,612,615	10,342,266
Michigan	6,826,974	4,129,025	5,682,433	16,638,432
Minnesota	6,055,101	4,170,973	2,206,152	12,432,226
Mississippi	4,041,077	3,333,877	600,115	7,975,069
Missouri	6,660,223	4,562,550	3,151,158	14,373,931
Montana	4,547,996	3,107,277	307,665	7,962,938
Nebraska	4,476,165	3,159,246	782,776	8,418,187
Nevada	2,868,043	1,921,867	60,613	4,850,523
New Hampshire	1,096,875	731,250	475,000	2,303,125
New Jersey	2,863,970	1,041,395	5,527,987	9,433,352
New Mexico	3,636,969	2,517,619	257,261	6,411,849
New York	10,840,121	4,275,825	18,776,072	33,892,018
North Carolina	5,433,060	4,453,613	1,492,475	11,379,148
North Dakota	3,347,724	2,412,044	214,578	5,974,346
Ohio	7,904,748	4,657,668	7,539,574	20,101,990

(continued)

Apportionment of Authorization for the First Post-War Year (Cont.)

State	Sums Apportioned For			Total
	Federal-Aid Highway System	Secondary or Feeder Roads	Urban Highways	
Oklahoma	\$ 5,070,405	\$ 3,723,761	\$ 1,348,164	\$10,142,330
Oregon	3,728,908	2,544,582	810,873	7,084,363
Pennsylvania	9,185,473	5,270,332	10,517,201	24,973,006
Rhode Island	1,096,875	731,250	1,123,049	2,951,174
South Carolina	3,050,328	2,518,039	654,032	6,222,399
South Dakota	3,535,472	2,515,992	222,116	6,273,580
Tennessee	4,768,902	3,668,429	1,593,037	10,030,368
Texas	14,258,270	10,043,311	4,464,068	28,765,649
Utah	2,531,450	1,685,875	433,731	4,651,056
Vermont	1,096,875	731,250	211,884	2,040,009
Virginia	4,114,033	3,191,318	1,491,272	8,796,623
Washington	3,536,808	2,394,765	1,467,429	7,399,002
West Virginia	2,474,035	2,080,317	807,692	5,362,044
Wisconsin	5,434,891	3,681,127	2,654,468	11,770,486
Wyoming	2,795,630	1,897,080	133,049	4,825,759
Hawaii	1,096,875	731,250	393,416	2,221,541
District of Columbia	1,096,875	731,250	1,146,477	2,974,602
Puerto Rico	1,110,126	1,132,458	834,529	3,077,113

In most of the States the amounts given in the table must be matched equally with funds under State highway department control. In the Western States in which there are large areas of public land still in Federal ownership, the normal 50 - 50 division is increased on the Federal side by a percentage equal to one-half of the percentage of the State's area so held by the United States. In Nevada, for example, the apportioned Federal funds can be matched on the basis of 82.7 percent Federal and 17.3 percent State contribution.

The funds authorized by the Federal Government have not yet been appropriated. Nor is there yet need for appropriation. The Public Roads Administration is authorized to receive and approve plans submitted by the State highway departments, and to approve contracts let by them for construction, up to the amount of each State's apportionment. Its approval constitutes a financial obligation of the Federal Government to pay its share of the cost involved. The State highway departments are required to meet initially the whole cost of work performed, and Federal appropriation will be made as needed to reimburse them in the amount of the Federal share.

The Federal funds authorized for the second and third years will be apportioned in due course, and immediately upon their apportionment will become available for allotment to projects and payment in the manner previously described. On the part of the Federal Government, therefore, all necessary financial provision has been made for a three-billion dollar program of construction, now set in motion, to continue over a period of four years or more. Perhaps as much as five-sixths, and probably not less

than half of all the road and street construction in the country in that four-year period - the exact proportion depending upon the amount of work undertaken independently by the States, counties and cities - will be included in this Federal-aid program. In it, moreover, there will be included generally the more important projects undertaken, projects devised to meet in reasonably balanced measure the existing improvement needs of the primary highways, both rural and urban, and the principal secondary rural roads.

It is by thus picking out and focusing first attention upon the highlights of all parts of the broad panorama of future road building needs, as painted by the highway planning surveys, that the enlightened Federal Aid Highway Act of 1944 will perform its signal service. Its financial provisions supply incentives to the cooperative action required of highway officials of the Federal, State, and numerous county and city governments to convert to reality the more prominent features of the envisioned plan of an entire road and street system improved in balanced relation to functional needs. By establishing through such cooperative effort a common sense of the general values to be created it inspires the hope that the lower tones of the pictured plan will be harmoniously reproduced by the independent initiative of many local authorities upon whom this further responsibility must continue to rest.

Road Systems To Be Designated

In furtherance of this hope the Act requires the designation of two new highway groupings designed to point attention to the location of prominent existing deficiencies.

One it defines as a national system of interstate highways to consist of not more than 40,000 miles of routes, joining by lines as direct as practicable the principal cities and industrial areas of the country, and making connections at our national borders with routes of continental importance in Canada and Mexico. It requires the selection of such a system by cooperative action of the several State highway departments and the Public Roads Administration.

The other it prescribes as a system of principal secondary and feeder, or farm-to-market, roads, unlimited in extent, to be selected in each State by the State highway department in cooperation with local highway authorities and the Commissioner of Public Roads. Only roads of sufficient importance to find a place in these systems are to be eligible for improvement with the secondary-and-feeder-road funds authorized to be appropriated.

In ordering the designation of the interstate highway system the Act follows the recommendation made by the National Interregional Highway Committee appointed by President Roosevelt. The system now in process of designation in the manner prescribed, though somewhat larger than that recommended by the Committee in its report entitled Interregional Highways, will probably in other respects closely resemble the Committee's proposal, shown in an accompanying illustration.

The Act does not earmark specific funds for the construction of this system when it is designated. It merely directs that all routes included in the new grouping, if not already covered in the Federal-aid system (most of them doubtless will be) are to become parts of, and so eligible for improvement with funds provided for, that system. In view of this fact, the question has been asked: What purpose is served by designation of the interstate system? It is a reasonable question and it has a reasonable answer.

The Federal-aid system, though it includes in its 232,000 miles generally the most heavily traveled roads of the country, contains within itself roads of a fairly wide range of importance. In its present state of improvement it is the product of twenty-five years of constructive effort, guided by standards that have been progressively lifted throughout that period in response to an increasingly exacting traffic demand. Substantial parts of it, built in the earlier years, measured now by recognized needs of the future, are found to be seriously deficient. Much, even of the more recent construction, limited in standard by the fund-spreading policy properly and consistently followed during the period of initial improvement, is not fully adequate to serve efficiently present and foreseeable traffic demands. We stand now at the point where - the system improved in varying degrees of adequacy by twenty-five past years of pioneer effort - it is the job of the future to lift the standard throughout to a level consistent with the more clearly discernible ultimate traffic requirements. In so doing it will be logical to center attention first upon the modernization of those parts of the system that serve the heaviest and most important

streams of traffic. Some modification of this rule will, of course, be necessary to provide for the reconstruction of less important sections literally worn out; but in general the future program should be directed to earliest modernization of the most traveled routes.

The planning surveys have shown conclusively that the principal cities are the sources and objectives of far the greater part of arterial highway traffic. It follows that a relatively small mileage of routes directly connecting the largest cities of the country should serve a large fraction of the nation's traffic. The Interregional Highway Committee found that its system of 34,000 miles, though it contained only one percent of the total of road and street mileage, would serve if fully improved about 20 percent of all highway traffic. The somewhat larger interstate system now being officially designated should serve close to a fourth of the highway traffic of the country.

The purpose of the designation is to bring about a general recognition of these roads as highways of great importance and promote their fully adequate improvement as a system by collective action of the highway authorities of all States and cities through which they pass.

The Interregional Highway Committee recommended in minute detail the high standards to which, in the Committee's opinion, the future construction of such important highways should conform. The Interregional Highway Committee's recommendations have been reviewed by the Committee on Planning and Design Policies of the American Association of State Highway Officials, and the slightly modified standards proposed by the latter committee have lately been adopted by the Association as its recommendation of the minimum standards that should prevail in

construction of the interstate system. A highly gratifying acceptance of the Association's recommendations is already indicated in the project plans submitted to the Public Roads Administration for new Federal-aid construction on routes likely to be included in the interstate system.

The provision of the Federal Act requiring designation of a system of principal secondary and feeder roads has met with similarly gratifying response in nearly all States. State highway departments and county officials are generally cooperating cordially in the selection of roads to comprise the system. As previously stated, the new Federal funds are available for expenditure only on roads included in the designated systems. The purpose is to select systems of such size as to be capable of improvement in a reasonable period of years and subsequently maintained with the Federal and other funds likely to be available for expenditure on the included roads. The systems will embrace the principal tributaries to the primary Federal-aid system, and though, in roads of this class, the potentiality of economic and social benefit to rural communities is of more significance in the selection than the volume of traffic presently served, it is probable that the roads selected when improved jointly with the primary system will extend the benefits of adequate service to a very large fraction - possibly 75 or 80 percent - of all rural highway transportation.

Advisory standards, consistent with the generally lesser traffic requirements of roads of this class, have been recently adopted by the American Association of State Highway Officials, and a systematic process of improvement is now beginning which, faithfully continued

for a number of years, should yield results as gratifying as those that have issued from the similar process applied in the improvement of the Federal-aid and State highway systems.

Much has been done during the war period of enforced construction deferral to prepare for the prompt launching of a vast program of highway modernization. The State highway departments alone report plans completed for nearly \$700,000,000, and in process for another \$2,500,000,000 worth of work. The highway planning surveys have painted a broad picture of the integrated, harmoniously improved street and highway system that the future should achieve. Similar studies are continuing to guide the development in detail, as witness particularly the elaborate traffic origin-and-destination surveys going forward in many cities as basis for the location and construction of new expressways. The recent Federal Act has focused attention upon the highlights of the planned road-building picture, and supplied in substantial amount financial aid toward a vigorous beginning of the work that will translate the picture into reality.

The auspices are favorable to an excellent start and a strong continuance of well planned modern road construction.

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