

## SUMMARY OF FEDERAL HIGHWAY PROGRESS

Paper by Thos. H. MacDonald, Chief, U. S. Bureau of Public Roads, Annual Convention American Road Builders' Association, Chicago, January 22, 1934

During the period that the providing of jobs for the unemployed has been the big national problem, there has been a constant flow of suggestions to Washington that the best way - that the only sure way - to supply these needed jobs, is for the Federal Government to undertake the building of a great highway from coast to coast. Sometimes these suggestions are made definite by the mention of the route or the particular city through which such a highway should pass. Sometimes there are other details as to the design, materials or methods of organization. Frequently there are offers to undertake the management of such an enterprise.

While a good many of the varied suggestions of this type are plainly inspired by some motive not altogether unselfish, perhaps the majority are sincere and predicated upon the honest belief that by undertaking such a program the Federal Government would actually be able to take up all surplus labor. Of course this does not represent the viewpoint of those who have undertaken to give serious consideration to the dimensions of the problem of unemployment, or rather the dimensions of the cumulative series of unemployment problems with which the country has been confronted. Neither does it indicate any adequate comprehension of the scale upon which the Administration has been attacking the problem of

unemployment and the other problems arising out of, or rendered acute by, the depression.

There is no possibility of indicating the scale of any one of the major attacks now being carried forward by the Federal Administration through statistics. Information of this type is widely available constantly, but it does not produce a real comprehension. Perhaps it might be possible to illustrate something of the scale of the single operation of road building undertaken through the Bureau of Public Roads and the State highway departments with the allotment of \$400,000,000 which became available early in July after the passage of the National Industrial Recovery Act.

A transcontinental highway extending from the Atlantic to the Pacific Coast would be in the neighborhood of 3,000 miles long. The exact length would depend somewhat upon the particular line chosen. During a period of less than six months, from July to January, under the Federal Public Works appropriation, construction has been actually undertaken of a road mileage sufficient to build six transcontinental lines. For those who desire a wide highway from coast to coast, if these six lines were brought together into one great highway, construction would now be under way to provide a surfacing upwards of 110 feet wide on a road bed about 200 feet wide, over a right of way 400 feet wide.

Such an example may help to give some conception of the scale of the construction work on highways which has been actually undertaken in less than six months. Again consideration has been

given to the building of roads from the United States of North America through Mexico and Central America into South America to reach the capitals of all the countries and to tie the whole Western Hemisphere together by overland routes.

The average reaction to such an undertaking is that while it might be desirable, it is impossible and impracticable. As a matter of fact it is only about three thousand miles from the United States border at Laredo, Texas, to the Panama Canal, or a distance approximating the distance across our own country from east to west.

The highway work which has been undertaken for the major purpose of relieving unemployment in the past six months, without taking into account the incidental road and trail work done by the CCC camps, or the highway work that will be accomplished through the CWA program, but only the program administered through the Bureau and the State highway departments, would be equal to six highways from the United States border to the Panama Canal. This mileage would extend a road from the United States through Mexico, Central America and connect all the capitals of South America. Assuming that the remainder of the program continues in about the same proportion, this single program will produce a mileage equal to a highway around the world, although I do not assert there will be sufficient bridges included to span the oceans.

Actually, this work has not been concentrated upon any single line or class of highways, but has been distributed widely to reach

into nearly every county of every State. There are included mile-ages of both secondary or farm roads as well as municipal streets which are a part of important highway routes, thus distributing work where work is needed to reduce unemployment which would not be easily accomplished by single line construction.

A summary of the work now under way as of January 1st is as follows:

U. S. PUBLIC WORKS HIGHWAY PROJECTS  
SUMMARY BY TYPES OF CONSTRUCTION

AS OF DECEMBER 31, 1933

T Y P E S	NRH PROJECTS		IRVY PROJECTS		NPS PROJECTS		T O T A L	
	ESTIMATED TOTAL COST	MILES	ESTIMATED TOTAL COST	MILES	ESTIMATED TOTAL COST	MILES	ESTIMATED TOTAL COST	MILES
GRADED AND DRAINED.....	19,838,939	2,402.0	2,046,594	92.9	10,284,007	1,643.1	32,169,540	4,149.0
SAND CLAY, UNTREATED.....	853,926	228.6	79,996	12.1	1,774,452	329.2	2,708,374	569.9
TREATED.....	2,388,851	314.7	138,980	16.6	1,676,916	226.4	4,204,747	557.7
GRAVEL, UNTREATED.....	17,025,173	2,185.6	630,927	66.9	14,990,160	2,721.0	32,646,265	4,973.5
TREATED.....	4,027,759	431.8	609,616	39.6	7,490,845	846.3	12,038,220	1,317.7
MACADAM, UNTREATED.....	1,677,416	103.3	146,409	7.0	488,541	93.5	2,312,366	203.8
TREATED.....	2,015,140	122.4	357,442	11.4	1,504,827	104.7	3,877,409	238.5
LOW COST BITUMINOUS MIX...	12,346,259	1,451.7	733,257	48.0	2,838,124	291.4	15,917,640	1,801.1
BITUMINOUS MACADAM.....	5,930,043	249.5	1,613,929	33.1	2,704,465	178.5	10,248,437	461.1
BITUMINOUS CONCRETE.....	9,076,174	363.0	10,834,456	167.1	2,895,746	175.9	22,806,376	706.0
PORTLAND CEMENT CONCRETE.	59,176,502	1,865.6	24,132,858	430.0	8,108,774	225.3	91,418,134	2,520.9
BLOCK.....	1,704,414	30.0	2,453,070	28.0	351,050	5.0	4,508,534	63.0
BRIDGES & APPROACHES.....	18,617,074	50.8 (1601)	6,831,849	7.5 (199)	6,812,839	13.9 (631)	32,261,762	72.2 (2431)
GRADE SEPARATIONS ).....	2,892,474	7.1	2,239,437	3.0	679,166	2.0	5,811,077	12.1
RAILROAD-HIGHWAY )		(82)		(45)		(23)		(150)
GRADE SEPARATIONS ).....	68,450	.2	635,443	.3			703,893	.5
BETWEEN HIGHWAYS )		(2)		(7)				(9)
MISCELLANEOUS.....	107,892		48,674		59,844		216,410	
T O T A L .....	157,746,491	9,822.3	53,532,937	963.5	62,569,756	6,861.2	273,849,184	17,647.0

NOTE: THE FIGURES IN PARENTHESES INDICATE THE NUMBER OF STRUCTURES.

The above summary covers about two-thirds of the program. The projects on the Federal-aid highway system and on secondary roads, however, are advanced in a greater percentage than the municipal projects. This lag in municipal projects is characteristic and was to be expected since the undertaking of work within the cities projected the highway departments into a field which they had not heretofore occupied and for which there were no preparations.

The same lack of plans existed for secondary roads but more of the highway departments were engaged in some measure in this field and the type of work generally undertaken was of the lower cost type similar to that on which they were already engaged.

The municipal program, however, on January 1st was more than 50 percent under way and these projects are being rapidly matured now. The entire program should reach 22,000 to 23,000 miles, roughly divided in the same proportion as to types as the approximately 18,000 miles included in the schedule of work already under way.

This side of the picture has been presented first to emphasize that which will remain when the \$400,000,000 shall have been expended. These miles of newly constructed highways are not the reason for, but the results of a policy inaugurated to provide opportunities for employment. The extent to which this purpose is being and will be accomplished is indicated by our estimate that this highway program will provide a cumulative total employment in direct labor on the jobs of 2,500,000 man months.

Beginning with August the daily average employment directly on the work was gradually stepped up until it reached for November, 132,000 men. This figure is for continuous employment and must not be confused with the number of individuals given work. Our records so far show a ratio of 1.8 individuals included on the pay rolls for each one reported continuously employed. That is, the work to provide continuous job employment for 132,000 men, represented in November employment for longer or shorter periods of 236,000 individuals directly on the work. Nor does this take into account the auxiliary industrial employment.

For November our estimates for direct and industrial employment indicate that the highway program was carrying a total of 330,000. The total was held to approximately the same figure for December and to date there is no indication of a falling off during January and February. There will unquestionably be a rapidly increasing rate of employment through March, April and May, to a peak in June and July of about 280,000 average daily continuous employment. Nearly one-half million individuals will go on the pay rolls to fill this number of jobs continuously. This employment will hold through July and part of August and will then fall rapidly until the first of the year when the work will have been practically completed.

The completion of this program as Federal appropriations now stand will end the Federal cooperative highway work with the State highway departments unless there is additional Federal legislation meantime to provide for its continuance.

The present Public Works highway program, while being carried on generally in accordance with the existing Federal-aid highway legislation, has been modified by incorporating a number of important new principles. A decided stimulus has been given the elimination of dangerous grade crossings through the underwriting of the entire cost from the public funds and relieving the railroads of contributions which have been heretofore required generally under State laws.

The law itself emphatically declared for greater progress in the elimination of highway hazards by making it possible to include the entire cost as a charge against the public funds. In keeping with the spirit of the Act, the Secretary, through the Special Board for Public Works, announced the principle that approval would not be given to projects which would require involuntary contributions on the part of the railroads. Considering the financial plight of many of the railroads where improvements were most seriously needed, any other course would have led to the incongruous situation of the Government taking steps to aid the railroads financially on one hand, while on the other making it possible for the States, through the operation of State laws, to make assessments in some States running into considerable totals upon the railroads for such improvements.

As a commentary upon this particular subject, many State laws now in effect are the product of a time long past when relative traffic conditions on the railroads and the highways had no relation to those of the present. While improved economic conditions will be reflected in rail earnings, this will not do away with the



desirability of a thorough revamping of a large number of the State laws with reference to the division of costs for grade crossing improvements.

A second policy which we believe important has been the elimination of the purchasing of materials, notably cement, by the States. There was a time, when this policy first came into use, when a number of advantages accrued to the States, but these advantages had long since disappeared and very serious disadvantages and dishonest practices were creeping into the situation. The public has a right to a clean administration of the public funds, and insofar as it lies within the power of the Bureau of Public Roads, every policy which results in manipulation or attempted manipulation of contracts will be discarded.

The previous principle of the Federal highway legislation to hold the Federal appropriations on a limited system of highways was modified by the new Public Works law to permit the improvement of the major routes into and through the municipalities. While this slowed down the immediate beginning of the work, because of projecting the highway departments into an almost entirely new field, it does place the construction work in the vicinity of greatest need for employment, and has the advantage of not dislocating labor from its established environment. This work is also directed toward the improvement of unquestionably one of the worst conditions affecting traffic that now exists, and the Bureau is very much in sympathy with the work in the municipalities, although it has increased the

difficulties of administration both for the State highway departments and for the Bureau.

Out of this program, however, will come some notable improvements in traffic conditions all over the country, and when the depression shall have passed there will remain tangible benefits more than justifying the expenditures. Also, the use of Federal funds for the improvement of secondary roads has brought opportunities for employment most seriously needed and is leaving behind facilities amply justifying the expenditures.

Another principle that has been emphasized is that of more adequate rights of way and intelligent and extensive landscaping consistent with the purposes of the utility which is being provided. Roadside improvement has been too long neglected. While there may be those who are reluctant to undertake any considerable amount of this work until we shall have more adequately improved the roadways themselves, an analysis of the necessary cost of more beautiful highways will not support a longer deferment of this type of work. The Bureau is not only in sympathy with this character of improvement but is a very insistent exponent.

It has long been recognized that the social and recreational use of the highways accounts for a large part of the traffic upon them. Complete analysis of the taxes and imposts indicates that highway users are paying heavily for their privileges. The total income from all kinds of taxes paid in 1932 by highway users approximated \$1,000,000,000.

As a matter of simple fairness the highway user should not be denied appropriate roadside improvements generally. The selfish interest of the road builder who desires to increase the highway earnings, should prompt him to provide attractive highways that will lead to their greater use. In the future it will not be sufficient for States to supply good roadways. They will necessarily have to meet the competition of States that are providing beautiful highways.

Highways and the New Deal

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