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Federal Direction of Programming and Engineering
of Emergency Road Work

Like the other classes of public works provided for in the National Industrial Recovery Act, the primary purpose of the emergency highway construction work is the relief of unemployment. There, so far as legislative provisions are concerned, the similarity ends. In all other respects the provisions made for highway construction in the law differ from those pertaining to other works.

Highway construction, is, for example, the only class of work for which a specific appropriation was made. Definite minimum amounts to be allotted to it were stipulated. All other classes of work to be undertaken are provided for by the residue of the \$3,300,000,000 appropriation.

The appropriation for highway construction was required to be apportioned among all States, the District of Columbia and Hawaii according to a definitely prescribed formula. No such provision was made with respect to any other class of work.

It is the one major class of work for which definite appropriation was made and the only class of work that the Congress

undertook to define in detail. Thus, it was by the law and not administrative action, that first, definite provision was made for allotment of appropriate parts of the apportioned funds to sections of the Federal-aid highway system, to municipal extensions of the system and to secondary or feeder roads. The law also enters into considerable detail in specifying certain definite kinds of construction to be favored, naming particularly the elimination of hazards to highway traffic at railroad grade crossings, the widening of narrow bridges and roadways, the building of foot paths, the replacement of unsafe bridges, the construction of routes to avoid congested areas, the construction of facilities to improve accessibility and the free flow of traffic and any other construction that will provide safer facilities for pedestrian and vehicular traffic.

Under the general supervision of the Federal Emergency Administrator of Public Works the highway work is administered in accordance with the Federal Highway Act, under the Secretary of Agriculture and the Bureau of Public Roads. By the same provision also the State highway departments were retained

as the State supervising agencies and the cooperative relationships between those bodies and the Federal Bureau which had worked so well in the past was preserved.

Employment and Protection of Labor Have Received First Consideration

One other exceptional condition marked the legislative provision for highway construction - an important one from the standpoint of employment. Requiring provisions establishing minimum rates of wage to be included in all contracts, the determination of the rates was specifically made a function of the State highway departments, thus differing from the provisions made for all other classes of work, on which the fixing of wages was left to the Federal Administration.

To these exceptional provisions pertaining to highway construction only the law added certain conditions relative to the terms of employment which affect all classes of work alike. These were:

1. No employment of convict labor.
2. So far as practicable and feasible the 30-hour week for labor.
3. Just and reasonable wages, sufficient to provide for the hours of labor as limited, a standard of living in decency and comfort
4. Preference in employment to residents of the county or local subdivision in which the work is to be performed, followed by residents of the local State or Territory, with first preference in each group to ex-service men with dependents to the extent that a supply of qualified workers of such preferred classes is available.

5. Use of the maximum of human labor in lieu of machinery wherever practicable and consistent with sound economy.

Conceiving the spirit of the law to call for an administration, employing as fully as possible the time-tested organization and methods developed under the Federal Highway Act, to provide quickly for widespread employment on needed highway improvements, the Secretary of Agriculture promptly issued rules and regulations to give it effect in that spirit; and all subsequent requirements imposed have had a similar motive.

In general all acts and requirements of the Federal Administration have had for their purpose one or more of the following objects:

- a) To provide widespread employment consistent with the need;
- b) To speed the beginning of work and insure, to the extent practicable, a continuous employment of labor;
- c) To convert into wages the largest possible part of the money appropriated and insure to the individual worker a reasonable wage;
- d) To prevent unfair and uneconomic discriminations and unreasonable profits;
- e) To insure a proper and useful expenditure of the money.

Widespread Employment Assured

One of the first requirements of the rules and regulations, issued by the Secretary of Agriculture and approved by the Special Board for Public Works, was the stipulation that one or more projects be provided in at least 75 percent of all counties in every State, without exception, unless it could be shown that the existing employment need was less widespread or that needed and suitable road projects were not so widely distributed. To insure a reasonable attention to the serious employment needs known to exist in the cities and, at the same time, to encourage the provision of long-needed Federal-aid road connections through the municipalities, it was required that at least 25 percent of the available funds be expended on projects involving the improvement of such municipal extensions of the Federal-aid system. Percentage limits were also placed upon the amounts to be expended upon the Federal-aid system and upon secondary roads, but these, as will be explained later, were less for the purpose of spreading employment than for the insurance of needed improvements.

Before they were allowed to propose any projects in detail the State highway departments were required to submit for approval of the Federal agencies a statement of the total amounts proposed for assignment to each of the three general classes of highways and a list of the counties in which projects would be located. This initial statement approved, they were then required to draw up and submit a program listing by location and type the projects to be undertaken and the approximate expenditure upon each.

This preliminary planning required a little time - a matter of from four to five weeks in most States. At the moment the time required may have appeared as unnecessary delay. In retrospect it is found to have insured the usual benefits of all budgeting and, in this case, the particular advantage of an assured and agreed widespread distribution of the employment afforded by the appropriation. In a number of instances it afforded the means of correcting at the outset plans for the distribution and expenditure of the money that were found to be inconsistent with the employment need. In the long run the brief initial postponement should be more than made up by the more rapid progress made possible by the preliminary agreement of the State and Federal agencies upon the general objectives.

Measures to Speed The Work

By employing the existing and long-functioning cooperating organizations of the Bureau of Public Roads and the State highway departments delays in beginning the highway work that would otherwise have been inevitable were avoided. The experienced force of the Bureau of Public Roads was ready with small addition to assume the somewhat enlarged responsibilities of Federal administration. In Washington and in the district offices there was the efficiency gained by years of experience in the administration of the closely similar Federal-aid work. The district engineers were already familiar with their districts and in close touch with the cooperating State departments

which were themselves generally long fitted by experience to deal with the task delegated to them. A broad fundamental procedure was already developed and adjusted to smooth functioning under the requirements of the Federal Highway Act. The degree of celerity consistent with orderly and responsible administration under the conditions imposed by the earlier legislation had already been achieved. The entire organization - Federal and State - had already been tried under the heightened pressure of two emergency appropriations.

The greater emergency to be met and other conditions affecting the new work have indicated the desirability of additional measures to speed the work and these have been provided as soon as the need has been recognized.

Before the law was enacted the State highway departments were informed by the Bureau of Public Roads regarding its probable terms and the conditions that would have to be met by them after its passage. At that time a number of the State organizations had been severely curtailed in consequence of the budget trimming efforts of the preceding year. The Bureau gave preliminary warning that such organizations should be promptly augmented. It called attention to the availability of large numbers of competent unemployed engineers, gave notice that the higher speed that would be expected under the coming appropriation would have to be attained without let-down of engineering standards, and urged that the departments be adequately manned to meet the coming demands. Since passage of the law it has continued with increasing insistence to demand adequacy of State organizations wherever existing weaknesses have been observed.

Federal Procedure Revised to Meet Conditions

It soon became apparent that a number of States, by reason of depleted revenues, would be unable to pay contractors promptly for work done, and that others would be unable to pay for the necessary survey and plans. It also appeared that because of limitations of law some States, having ample funds for work on the State highway systems, would be unable to use such funds to survey and plan improvements of secondary roads and municipal streets, and to make progress payments on such improvements.

To meet this situation arrangements were made to advance to States that needed it a part of the Federal funds apportioned to them to be used as a revolving fund.

To avoid all possible loss of time incident to the approval of plans, specifications and estimates for projects, the Federal Bureau's district engineers were empowered to authorize the advertising of contracts on projects approved by them without waiting for final approval by the Washington office.

When it became apparent that the customary advertising period was responsible for considerable delay in the beginning of work, the Federal rules were amended to require advertising for only two weeks and the States were urged to conform to the period thus defined instead of the longer customary periods, wherever State laws would permit.

At Washington, the previous requirements of formal signature of project agreements and certification of approval of plans, specifications and estimates by the Secretary of Agriculture were waived and these

responsibilities were laid upon the Chief of the Bureau of Public Roads in a further effort to avoid every possible delay.

Plans for Secondary Roads Prepared While Work in Progress

For the more expensive improvements on the Federal-aid system and its municipal extensions, the Bureau of Public Roads has insisted upon completeness of preliminary planning. For the simpler and less expensive improvements of secondary roads it has greatly relaxed the requirements. Such improvements, if made by forces under the direct supervision of the State highway department, may be begun, upon approval of the Federal district engineer or his representative, and without prior preparation of plans; but appropriately simplified plans, sufficient to record the work done are required to be prepared while the work is in progress.

Where such simple secondary road work is to be done by contract the only additional requirement insisted upon is that an abbreviated preliminary set of plans containing the information essential to bidders shall be available before the contract is let, to be supplemented before payment of the final voucher by the more detailed plans required for direct labor projects.

Still further to expedite the simpler direct-labor projects the Bureau has waived approval of the purchase of materials whenever award is made to a low bidder after formal or informal advertisement. For small quantities of materials that may be obtained locally from a number of independent sources, letter quotations from not less than three local dealers are considered sufficient to insure economy of

expenditure; but published advertisements are required for the purchase of large quantities that may not be readily supplied from local sources or may be obtained from more distant sources on a basis of competition with materials available near the work.

Winter Work Demanded

The States have been repeatedly urged to all possible haste in the beginning of work and to the continuous prosecution of work begun. To the fullest possible extent the continuance of work throughout the winter will be insisted upon. To this end it has been required that clauses be incorporated in the contracts advertised during the fall requiring prompt commencement of work and continuous prosecution throughout the winter to the extent predetermined as practicable.

Hand Labor Versus Machinery

To give effect to the requirement of the law requiring use of a maximum of human labor in lieu of machinery wherever practicable and consistent with economy and public advantage, a series of special provisions were prescribed to be incorporated in specifications for the purpose of defining classes of work required to be performed by hand labor. In the drafting of these requirements there was studied effort to avoid increase of employment of labor on the job at the expense of a greater displacement of labor in the equipment industry; and with few exceptions the requirements prescribed have met with little or no objection.

The general requirement of the law limiting employment to 30 hours a week was modified by the Bureau's special provisions to permit time lost by reason or inclement weather of shut downs in any one week to be made up at any time during the calendar month. If it is found by the State highway department and the Federal district engineer that sufficient labor to man the project is not available in the area of the work it is permitted to extend the 30-hour week limitation to 130 hours per calendar month; and where the location is so remote as to necessitate the maintenance of camps an 8-hour day maximum with a limitation of 40 hours weekly is permitted.

These modifications of the law's rigid 30-hour requirement are provided in view of the outdoor and seasonable character of highway work. Where certain classes of skilled labor can not be obtained from employment lists, a further modification is permitted. In such cases the limits established are 8 hours a day and 40 hours a week.

Minimum Wage Rates Adopted

Sufficient to provide, for the hours of labor as limited, a standard of living in decency and comfort - so runs the requirement of the law with respect to wages. Subject to that requirement the determination of minimum rates of wage is left by the law to the State highway departments. The rules and regulations add that wages must be paid in legal tender of the United States (since modified to permit payment by checks negotiable at face value) and no deduction may be made on account of goods purchased or obligations incurred in a commissary or store owned or controlled by the contractor.

Between the minimum wages established by the highway departments and by the Public Works Administration for other classes of work in the same States there are some discrepancies wide enough to prove embarrassing. Lacking legal authority to require amendment of the State-fixed rates, the Bureau of Public Roads has sought by establishment of rates, on work under its immediate supervision, in closer harmony with the Public Works Administration requirements, to provide an example which, if followed, will avoid serious conflict of policies.

The Bureau's schedule recognizes the need of three general scales of wages - the lowest for use in Southern States, an intermediate scale for a central group of States, and the highest scale for Northern States. For each group of States minimum rates are provided for unskilled and skilled workers and for the intermediate grade of moderately skilled laborers that on highway work are more numerous than the highly skilled workers. Also the Bureau's schedule provides different minima for workers drawn from urban and rural communities.

The schedule in detail follows:

Suggested wage rates for Public Works Highway Projects within
population
or adjacent to cities of 100,000/or more and in the area of large
industrial plants or mining operations. Wage rates in rural areas
should be not more than 25 percent below urban rates.

SOUTHERN ZONE

| | |
|----------------------------|-----------------|
| Skilled labor | \$1.00 per hour |
| Labor (intermediate grade) | .65 " " |
| Unskilled labor | .45 " " |

CENTRAL ZONE

| | |
|----------------------------|-----------------|
| Skilled labor | \$1.10 per hour |
| Labor (intermediate grade) | .70 " " |
| Unskilled labor | .45 " " |

NORTHERN ZONE

| | |
|----------------------------|-----------------|
| Skilled labor | \$1.20 per hour |
| Labor (intermediate grade) | .75 " " |
| Unskilled labor | .50 " " |

SOUTHERN ZONE

| | |
|---------------------|----------------|
| Alabama | Mississippi |
| Arkansas | North Carolina |
| Delaware (southern) | South Carolina |
| Florida | Tennessee |
| Georgia | Texas |
| Louisiana | Virginia |
| Maryland (southern) | West Virginia |

CENTRAL ZONE

Arizona
California
Colorado
Delaware (northern)
District of Columbia
Kansas
Kentucky

Maryland (northern)
Missouri
Nevada
New Mexico
Oklahoma
Utah

NORTHERN ZONE

Connecticut
Idaho
Illinois
Indiana
Iowa
Maine
Massachusetts
Michigan
Minnesota
Montana
Nebraska
New Hampshire

New Jersey
New York
North Dakota
Ohio
Oregon
Pennsylvania
Rhode Island
South Dakota
Vermont
Washington
Wisconsin
Wyoming

Among requirements designed to conserve for direct payment to labor as much as possible of the Federal appropriation, are the law's prohibition of Federal payment for right of ways; the requirement that States that have available revenues shall pay the costs of surveys and plans for projects on the Federal-aid system and municipal extensions; and the provision requiring supply of State-owned equipment on direct-labor projects rent free.

Uneconomic Discriminations and Unreasonable Profits Frowned Upon

All contracts are required to be based upon open specifications and awards must be made to the lowest and best bidder. Neither State nor local governmental agencies are permitted to compete with private contractors. The States are not permitted either directly or in the guise of requirements for prequalification of bidders to discriminate against bidders resident in other States. Contracts providing price differentials in favor of, or requiring the use of materials produced within any State are prohibited by the rules and regulations, and the accomplishment of a similar object by direct State purchase of materials is also prevented, the rules and regulations requiring the contractor to furnish all materials entering into the work.

Unless it can be shown that there are available within the State enough unemployed qualified engineers, trained in highway construction, to perform all services required, restrictions of engineering employment to residents of the State are discouraged by refusal to pay any part of the costs of surveys, plans and engineering supervision where such discrimination is practiced.

Payment of unearned profits to job brokers is prevented by the requirement of the rules and regulations that all contracts shall contain stipulations designed to insure that not less than 80 percent of the work provided for, exclusive of items not commonly found in contracts for similar work or requiring highly specialized knowledge, craftsmanship, or equipment, shall be performed by the contractor with his own organization.

The rule against payments of premiums or royalties for patented or proprietary materials, specifications or processes for distinctive types of construction, long enforced under the Federal-aid policies, is continued in force under the new law. Federal funds are not available for such payments unless the patented materials or processes are offered in open competitive bidding at the same or less cost than unpatented materials or methods equally suitable. The former policy is somewhat modified, however; to permit purchase under prescribed conditions of articles or methods of reasonable cost which constitute minor elements of a contract item, and patented manufactured articles. The exceptions recognize the desirability of providing for the purchase, under proper conditions, of a number of patented highway accessories such as guard rails, pavement joint fillers and systems, concrete curing methods and materials, etc.

Requirements to Insure Proper and Useful Expenditure

Dedication of a portion of the \$400,000,000 appropriation to construction of secondary or feeder roads, as provided in the National Industrial Recovery Act marks the first departure of the Federal Government from the policy of strict limitation of its aid to improvement of the principal interstate roads. To avoid unwise frittering of the expenditure upon unimportant disconnected local roads the rules and

regulations define the terms "secondary or feeder roads", as used in the act, to mean roads not now included in the Federal-aid highway system, but which are either part of a State highway system or important local highways leading to shipping points or permitting coordination or extension of existing transportation facilities by highway, rail, air, and water. Not more than 25 percent of the funds apportioned to any State may be applied to secondary or feeder roads until provision has been made for the satisfactory completion of at least 90 percent of the initially limited Federal-aid system in the State.

The rule requiring expenditure of at least 25 percent of the apportioned funds on extensions of the Federal-aid system into and through municipalities has the double purpose of providing a reasonable amount of work for unemployed workers in cities and of supplying long-needed improved connections of arterial routes through and around cities.

First in order of priority among preferred projects listed in the rules and regulations is the closing of gaps in the Federal-aid highway system. After this the projects listed are: The appropriate landscaping of parkways or roadsides on a reasonably extensive mileage; the correlating and supplementing of existing transportation facilities by road, rail, air and water, and the providing of service to freight receiving stations, airports, and emergency landing fields; reconstruction designed to reduce maintenance costs and decrease future State and local highway expenditures; the elimination of hazards to highway traffic, such as the separation of grades at crossings, the widening of narrow bridges and roadways, the building of footpaths, the replacement of unsafe bridges, the construction of routes to avoid congested areas, and the construction of facilities

to improve accessibility and the free flow of traffic.

The right is reserved by the Federal agencies to require construction of any roads that may be desired by the Federal Coordinator of Transportation to provide adequate year-round highway service in replacement of branch-line railroad service proposed to be abandoned.

Wherever practicable and feasible, as determined by the Chief of the Bureau of Public Roads, all projects on the Federal-aid highway system and its municipal extensions approved after January 1 are required to provide right of way at least 150 feet wide. Under the same conditions secondary highways are required to have at least 80 feet of right of way.

Roadside improvement, including the flattening of cut and fill slopes, the sodding or seeding of banks and shoulders, the obliteration of construction scars, the preservation of desirable existing plant growth and the planting of trees and shrubs, is also required on all projects approved after January 1, wherever practicable in the opinion of the Chief of the Bureau of Public Roads.

A recent requirement also stipulates that at least one-half of one percent of each State's apportionment must be devoted to such roadside improvement.

Requirements affecting the design of roads included in the Federal-aid highway system remain substantially unchanged by the new law and the rules interpreting it.

Municipal projects may include all work necessary for a satisfactory completed improvement, including curbs and gutters, catch-basins, drop

inlets, storm-water sewers, adequate returns at intersecting streets and the adjustment of existing facilities such as sewers, water mains, gas mains, and conduits, except when such adjustments are required by ordinance to be made by the owners of the facilities. Paving of the width necessary for accommodation of moving traffic and parked vehicles is also held to be a proper charge against the Federal funds.

Design of Secondary Roads Must be Consistent With Traffic Served

Designs of secondary or feeder roads are required to be consistent with the character of the traffic to be served. Under this classification the State highway departments may include sections of the State highway system. In such cases standards of location and design comparable to those established for the Federal-aid system are required. In other cases, secondary roads may be of local importance only. For such cases the following minimum standards have been established:

1. Adequate widths of right of way.
2. Natural rolling grades consistent with reasonable safety and easy riding profile.
3. Adequate cross road and side road drainage.
4. A graded width of road bed in easy topography of not less than 26 feet out-to-out of shoulders and in rougher topography 24 feet out-to-out of shoulders, with an absolute minimum width of grading of 20 feet over-all in mountainous country.
5. Alignment involving no sharp turns or other features likely to be dangerous for the anticipated volume of traffic.

6. A minimum surfaced width of 10 feet for single-track roadways; a minimum of 14 feet for an estimated maximum daily traffic of 350 vehicles; and a minimum of 18 feet for an estimated maximum daily traffic in excess of 350 vehicles.