

**PUBLIC WORKS**

**PLANNING**



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**DECEMBER - 1936**

**NATIONAL RESOURCES COMMITTEE**

**Reprint of Findings, Recommendations, and  
Report of the National Resources Committee**

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# **PUBLIC WORKS PLANNING**

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## **NATIONAL RESOURCES COMMITTEE**

**DECEMBER 1936**

**REPRINT OF FINDINGS, RECOMMENDATIONS,  
AND  
REPORT OF THE NATIONAL RESOURCES COMMITTEE**

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NATIONAL RESOURCES COMMITTEE

INTERIOR BUILDING

WASHINGTON

*December 1, 1936.*

The PRESIDENT,  
*The White House.*

MY DEAR MR. PRESIDENT:

We have the honor to transmit herewith a report of the National Resources Committee on Public Works Planning.

This report recommends a proposed policy for planning, programming, timing, and division of costs of public works. These recommendations are based on special investigations by the Water Resources Committee on drainage basin problems and programs, by the Projects Division of the Federal Emergency Administration of Public Works on a 6-year program of Federal construction, and by a special research staff on division of costs of public works.

The report on Drainage Basin Problems and Programs, constituting part II of this statement, represents a first attempt through the joint efforts of Federal, State, and local agencies, official and nonofficial, to formulate a national water plan and program. Project lists embodied in that report provide a reservoir of undertakings intended to cover a period of 10 or more years. They have been selected as parts of the ultimate plan of development for the drainage basin in which they are located without reference to Federal or non-Federal financing.

This program should not be regarded as fixed or final. Year by year adjustments in it will be needed in the light of new knowledge, shifting needs, and perhaps altered policies.

The statements on the timing and division of costs of public works emphasize the need (1) for developing a long-time public-works policy, and (2) of relating this policy to business cycles or other crises. Procedures are laid down to avoid some of the past difficulties in the choice of projects, the timing of their construction, and the division of costs. As a means of organizing long-time public-works plans, we suggest:

1. A national development agency or public-works authority.
2. A panel of appraisers under this agency for allocation of costs.
3. A fiscal advisory committee to adjust public-works programs to the national needs for economic stabilization.

Sincerely yours,

HAROLD L. ICKES  
*Secretary of the Interior, Chairman*

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*Secretary of War.*  
HENRY A. WALLACE,  
*Secretary of Agriculture.*  
DANIEL C. ROPER,  
*Secretary of Commerce.*  
FRANCES PERKINS,  
*Secretary of Labor.*

HARRY L. HOPKINS,  
*Works Progress Administrator.*  
FREDERIC A. DELANO.  
CHARLES E. MERRIAM.  
•  
HENRY S. DENNISON.  
BEARDSLEY RUMML.

## *Foreword*

The American people, through their various governmental agencies, spent over three billion dollars on public works in 1930. Judging by past experience, it is plausible to assume that some thirty-odd billions of dollars will be expended for the development of our natural resources and for the provision of new facilities during the next 10 years through public-construction enterprises. How can we safeguard the wise investment of this large sum? How can we be sure that projects undertaken by local, State, and Federal agencies fit together into a comprehensive picture or program?

To assist in the formulation of a national public-works policy, the National Resources Committee (National Planning Board of the Public Works Administration 1933-34 and the National Resources Board, 1934-35) has assembled data and prepared studies on a number of the major aspects of the problem. Basing its statements on research reports made for it on *Criteria and Planning for Public Works*, by Russell Van Nest Black, *Public Works in Prosperity and Depression*, by Arthur D. Gayer, and *Economics of Planned Public Works*, by J. Maurice Clark, the National Resources Board in its report of December 1934 summarized the problem and made a series of recommendations.

Further studies in public-works planning, requested by the President, on division of cost and responsibility for public works, a 6-year program of public works, and the drainage-basin study have since led to the preparation of this report which is organized as shown by the accompanying table of contents.

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# PUBLIC WORKS PLANNING

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**Public Works Planning was published December 1, 1936, and transmitted to the Congress by President Roosevelt on February 3, 1937.**

This reprint includes only the Findings, Recommendations, and Part I—Report of the National Resources Committee of that report. The remaining parts of the original document have been reprinted in separate publications as noted below.

### Part II.—Drainage Basin Problems and Programs

(Reprinted in "Drainage Basin Problems and Programs—December 1936")

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## FINDINGS AND RECOMMENDATIONS

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### *The National Resources Committee Recommends:*

#### A. The Establishment of a National Public Works Policy

based on:

1. *Unified plans for many-purpose projects.*—The conservation and wise development of our national resources involves continuous study and collection of data by planning agencies at all levels of government—local, State, and Federal. These plans must be related to secure correlation of effort toward agreed objectives. Not only must the proposals of different units of government be correlated, but the different purposes of functions of separate projects must be adjusted and planned to avoid interference of one project with another while at the same time encouraging local initiative and responsibility. Nowadays most large-scale public works can or should be made to serve a number of purposes, but to ensure this requires forethought, planning, and correlation. The drainage basin report, constituting part II of this document, provides numerous examples of the problem and of ways to meet it through planning. The general problem is discussed on pages 7 to 9.

2. *Selection and analysis of projects.*—Experience with river and harbor appropriations has demonstrated the desirability of project analysis by technically qualified engineers before and supporting congressional action. The Emergency Public Works Administration has submitted all projects to analysis by engineers, lawyers, and a finance division. The same principle is applicable in relation to public works in other fields and among different types of projects. The criteria to be applied in the selection of desirable projects should include not only engineering soundness and financial, economic, or legal tests, but also conformity to larger plans in which the project plays a part, such as unemployment situations. Examples of the kind of criteria involved are given on pages 9 to 12 of this report together with suggestions for the procedures and organization through which these criteria can be applied.

3. *Advance programming of public works.*—Development of a consistent 5- or 6-year program of regular public works with annual revision, as provided in the act establishing the employment stabilization office, will provide a reservoir of selected projects which can be utilized in periods of economic depression. Annual revision of the program is necessary to secure orderly sequential relationships among related projects and to fit the program to changed conditions or new criteria. Unemployment conditions, financial status, fiscal poli-

cies, and similar considerations are involved. Experience of the Public Works Administration and Federal Employment Stabilization Board have amply proven that advance programs can be developed and that they are useful. A discussion of this subject is contained on pages 19 and 20 of this report.

4. *Revision and adoption by Congress of a 6-year program.*—It is properly an administrative function to propose a balanced program of public works—involving both budgetary and planning considerations, and it is for Congress to revise, modify, alter, and adopt a list of projects. This is the procedure now followed with river, harbor, and flood proposals and for public buildings. Congress approves projects in two categories—for construction or for study, and the approved lists cover work over a period of years. The control of approved projects rests entirely with Congress and the President, but the order of their construction is determined by the size of appropriations and the efficient conduct of the work. This procedure is applicable to other public works and should be extended to cover them.

5. *Timing of public works in relation to other efforts toward economic stabilization* involves large issues of fiscal policy. The committee recommends correlation of timing of public-works activities with other public fiscal policies through a fiscal advisory committee appointed by the President. This fiscal advisory committee would advise as to the manner in which public funds shall be provided to meet the expenses needed during any given period.

6. *Congressional appropriations* will, of course, determine the extent of the work to be undertaken in any fiscal year, and the existence of an approved 6-year program or list will facilitate the expansion or contraction of expenditures as the Congress may authorize. Again the experience with river and harbor work, with public buildings, and with public roads, is significant. Lump-sum appropriations for application to a list of approved projects or for expenditure in conformity with closely defined regulations have made possible much more efficient use of available funds than specification of fixed amounts for individual projects. Unexpected legal obstacles, overestimates and underestimates of cost, organization of engineering supervision, and similar factors, all argue for the lump-sum method of appropriation.



7. *Negotiation.*—Six-year programs for State and municipal public works are needed as well as a Federal program. In so-called normal times the volume of State and municipal construction is 6 to 10 times the Federal program. The correlation of Federal activities with regional, State, and local public works is important both for the full value of the works themselves and for the relationships among the projects in construction or operation. Several States and local governments have already adopted the practice recommended and now have 5-, 6-, or 10-year programs of public works or long-range financial programs for construction. State planning boards in all parts of the country are now preparing and revising State programs.

A second essential to establishment of working relations among Government units at varying levels to permit correlation of public works is agreement and adoption by legislative authorities of procedures for division of responsibility and costs. These matters are discussed in part III\* of this report with the conclusion that administrative negotiation of agreements within lines laid down by act of Congress is the only practicable method of procedure. A single agency to conduct the negotiations is needed to prevent unfairness or misunderstanding among the bureaus and agencies concerned. Grant of authority, by Congress, to a suitable single agency for these negotiations within broad limits is recommended.

### B. The Reorganization of Agencies to Implement This Policy involving:

1. *An advisory national resources board.*—The permanent establishment of an advisory planning board is needed for (a) correlation of planning within the Federal Government; (b) correlation of planning among Federal, State, and local jurisdiction; (c) stimulation and assistance to the planning agencies within the Federal Government and in regions, States, and localities; and (d) fundamental research directed toward the development of basic national policies and programs.

A director for planning, with an adequate staff, is recommended to keep in touch with other planning agencies and with departments and bureaus and to carry on such investigation as may be appropriate to the work of the board. A series of technical committees will be needed with representatives of Federal interests and especially qualified citizen members. The board should have authority to assist and encourage

8. *Allocation to construction services.*—After adoption by Congress of a 6-year program of approved projects and appropriation of funds for 1 year's work, decisions must be made as to the order of work and the agencies responsible for each undertaking. These decisions can obviously be taken with greatest knowledge and judgment by an agency like the Bureau of the Budget or the Public Works Administration, or an interdepartmental committee set up for the purpose. Such an agency can enormously assist the construction bureaus by allotment of funds and projects to utilize special engineering skills and to provide continuity in the field and office work of these bureaus.

9. *Construction* by established Federal, State or local agencies as may be appropriate can be provided through the negotiating and allotment procedure outlined above. The National Resources Board in 1934 suggested the desirability of more flexible arrangements among Federal and State agencies for pooling engineering or other special talent needed for large-scale public works.

10. *Operation* of multipurpose projects involving more than one State or Federal agency raises a series of questions treated in other reports of the National Resources Committee.<sup>1</sup> A variety of devices should be tried since no one method now appears generally applicable or obviously superior.

\*See reprint "Division of Costs and Responsibility For Public Works."

<sup>1</sup> Regional Factors, 1935, and Regional Planning, Pts. I, II, and III, 1936.

regional or interstate planning agencies, and State or local planning agencies through assignment of consultants or other assistance.

2. *A national development administration* or other suitable agency, based on the existing powers of the Public Works Administration and the Federal Employment Stabilization Office. In previous reports of this Committee,<sup>2</sup> recommendations have been included for a permanent agency to prepare and revise annually 6-year programs of public works, to negotiate for division of costs with Federal, State, and local governments, and to allot funds to Federal and non-Federal agencies.

3. *A fiscal advisory committee* appointed by the President. This committee would advise as to the

<sup>2</sup> Compare: See Report of the National Resources Board, Dec. 1, 1934, p. 5, and Report of the National Resources Committee on Regional Factors, December 1935, p. xi.

x

*National Resources Committee*

manner in which public funds shall be provided at any particular phase of the economic cycle, and corre-

late the timing of public works with other Federal fiscal policies.

**C. Investigations and Research  
concerning:**

1. Joint investigations of *selected river basins* by State and Federal agencies to provide bases for interstate action or permanent programs of water use and control utilizing the National Resources Committee for correlation and coordination.

2. Joint investigations of *division of fields of taxation* by Federal, State, and local interests.

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**PART I**  
**REPORT OF THE NATIONAL RESOURCES COMMITTEE**

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# PART I—SECTION 1

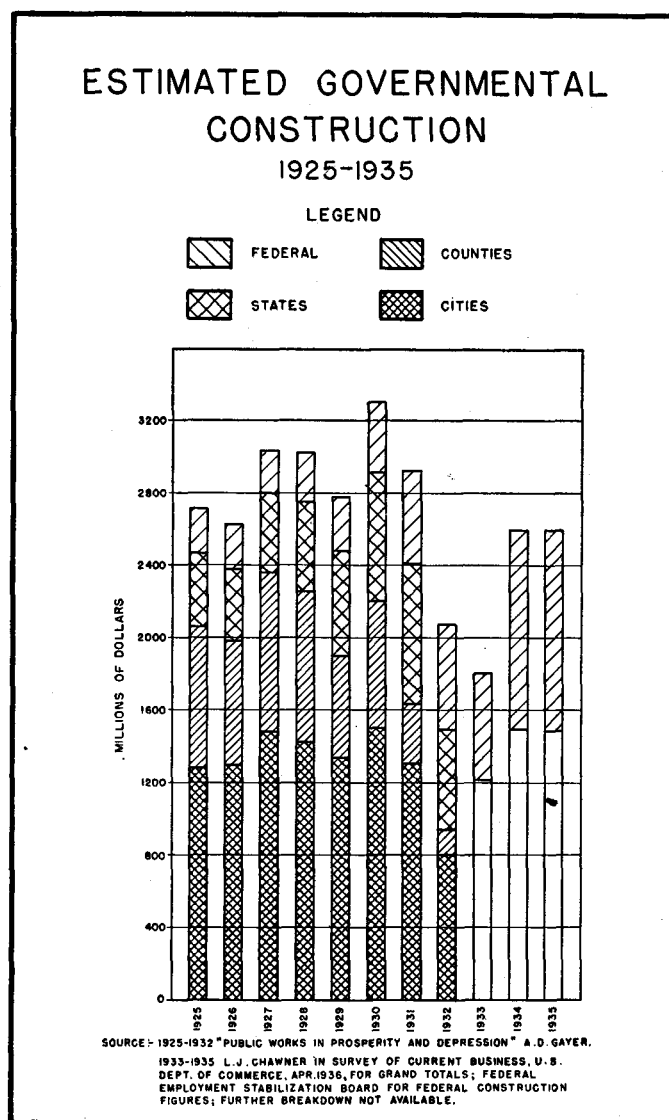
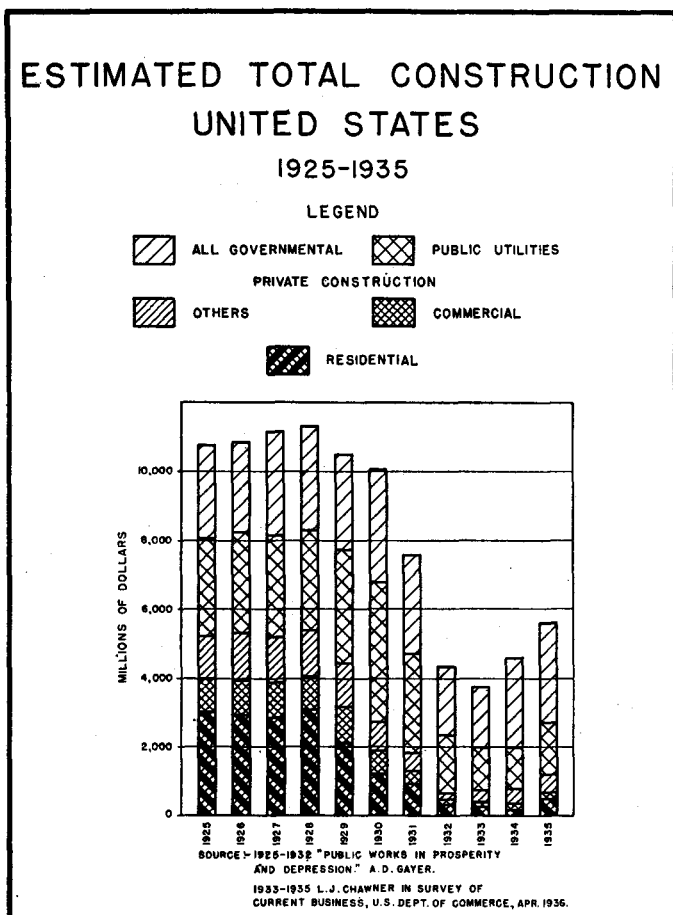
## THE PROBLEM—VOLUME AND TYPES OF PUBLIC WORKS

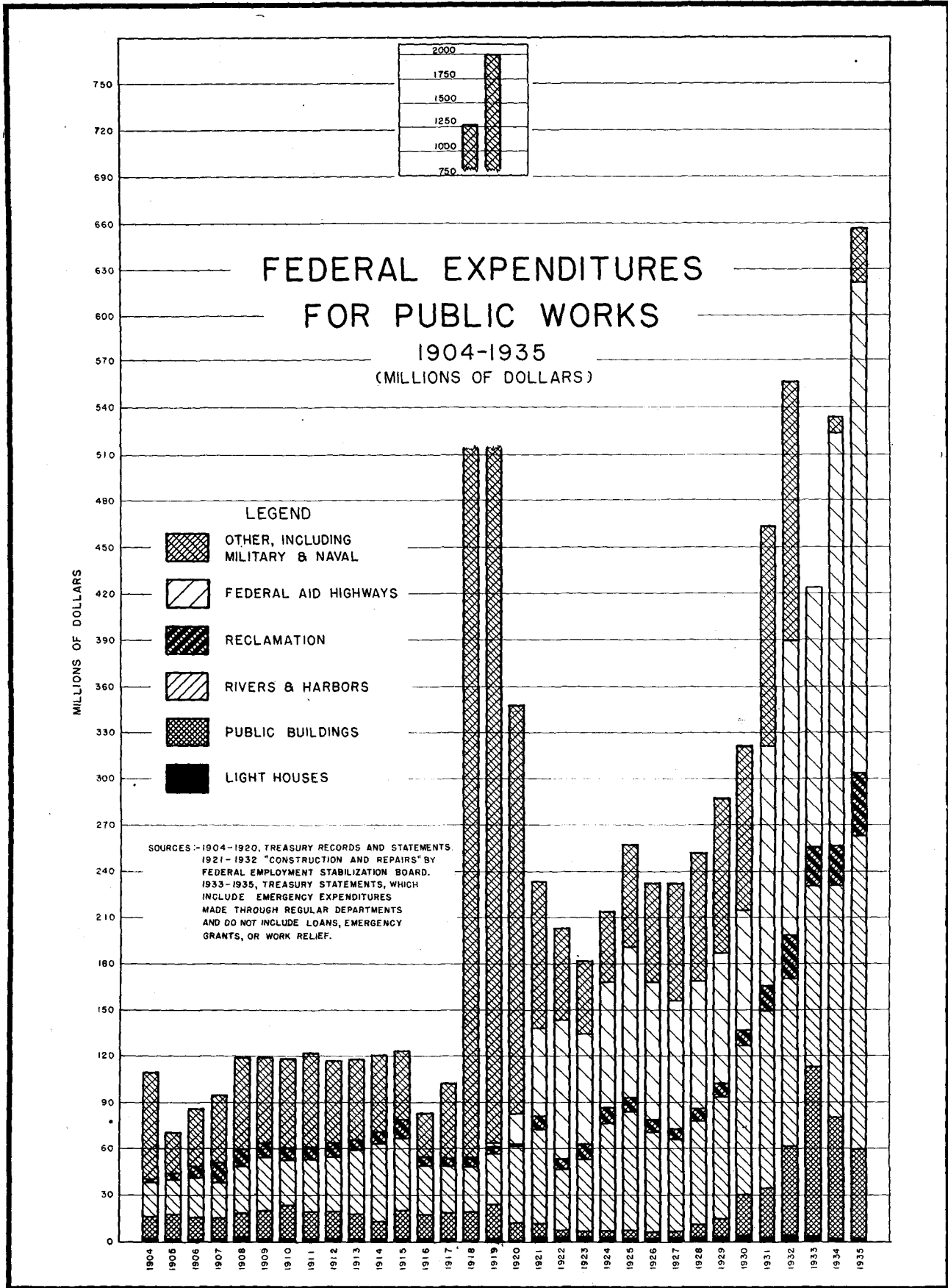
The American people are builders. The huge sums we spend on construction are evidence of a desire to further the wise development of our resources and to provide ourselves and our descendants with better facilities and improved living and working conditions. The part which the Federal Government plays in this development is usually a minor one so far as volume of work and cost is concerned, but it has been an important factor in the establishment of policies for the conservation and development of our resources—both physical and human. As a basis for Federal policy making, we should know something of the trends in the recent past and the problems to be faced before we plan ahead.

(1) *Total construction.*—Public and private construction activities accounted for upward of \$10,000,000,000 of work annually before the depression, and for the employment of some 3,000,000 workers. Public utilities were spending about a quarter of this money,

and private construction of housing facilities, office buildings, and other private operations accounted for over \$5,000,000,000 annually. Between a quarter and a third of the total work was paid for in “normal” times by local, State, and Federal Governments.

In addition to the value of public works in supplying needs or new facilities, public construction has long been advocated as a balance wheel to lessen the violence of the fluctuations of the business cycle. The experience of the last few years, with expanded Federal construction through the regular and emergency agencies, has shown many of the possibilities in this procedure and has also shown the difficulties. In the light of that





experience, what long-range policy should we now adopt?

(2) *Governmental construction.*—For many years past the total construction and repair work undertaken by local, State, and Federal agencies has been increasing, but with the depression there was a marked drop in 1931–32. Part of the great gap left by the stoppage of work under city and county jurisdiction has been filled by the expansion of the Federal program, so that today the proportion of work financed directly or indirectly by Federal funds is a major factor in the total program. How to reestablish a more normal balance among the several levels of Government handling construction work is a second problem in the organization of a future public works policy.

(3) *Federal construction.*—Public works have been a major activity of the Federal Government from the outset. Approximately 10 percent annually of the total expenditures by the Federal Government has gone into construction during the last 100 years. The growth of public-works expenditures has kept pace with national wealth and manufactures.

The story of public works undertaken by the Federal Government is, of course, as old as the Government itself. The first public work undertaken by the Congress was in 1791 through the appropriation of \$23,000 for lighthouse stations and lighthouses—an activity which has continued on a modest scale to the present day.

The second construction item which appears in the Federal accounts is for public buildings, starting in 1792 and growing steadily, despite occasional reduc-

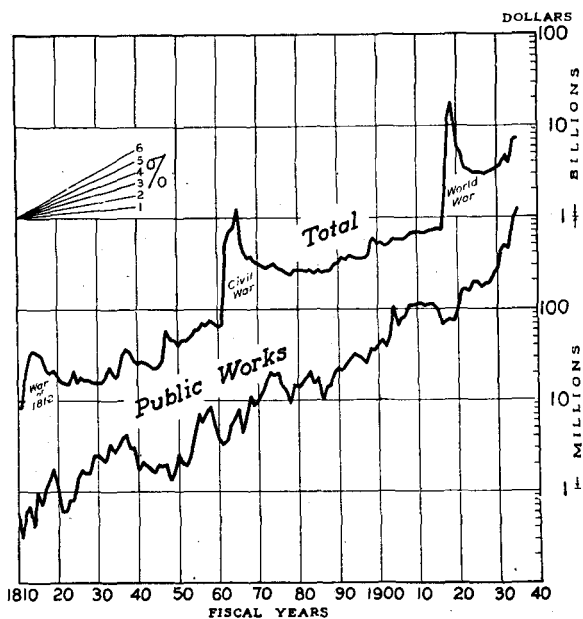
tions, as in the economy years of 1922 to 1929. There has been great variation in public-works items from year to year. In the last 50 years public buildings have constituted as high as 38 percent of the total expenditures for Federal public works in 1888 and as low as 1.1 percent in 1919. In 1930 they constituted 10 percent of the total Federal works expenditure.

The third public works activity of the Federal Government to be started shows in the accounts for the year 1794, with \$42,000 for construction of military and naval equipment. Naval vessels are not included in the schedules under this heading. In 1920 military expenditures constituted 75 percent of the construction program; in 1930, 20 percent. Looking back over the record for the last 50 years, 20 percent is a low average for these expenditures.

It was not until 1822 that the public-works program of the “Era of good feeling” got under way with expenditures for rivers, harbors, and flood control. These activities grew rapidly, and for many years prior to 1900 constituted more than half of the Federal expenditures for public works. In more recent years the average has run about 27 percent.

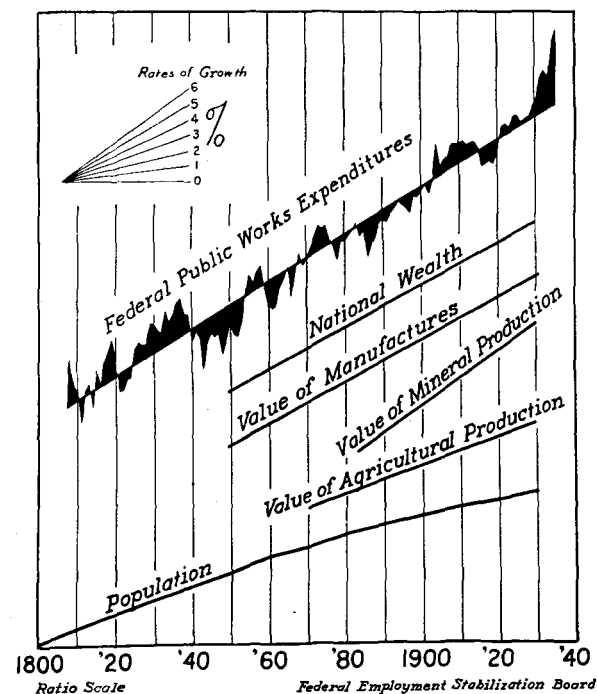
Reclamation projects are the next main category of Federal public works, beginning in 1903 and constituting in the years prior to the emergency program from 4 to 6 percent of the Federal program.

One of the youngest Federal activities in the public-works field started in 1919 with the first appropriations for Federal aid highways. This activity has grown by leaps and bounds and constituted 50 percent of the total



Source: Treasury Department Records  
Ratio Scale Federal Employment Stabilization Board

FEDERAL EXPENDITURES



Ratio Scale Federal Employment Stabilization Board  
FEDERAL PUBLIC WORKS EXPENDITURES WITH TRENDS OF NATIONAL GROWTH

Federal construction bill in 1922, and averaged over 40 percent during the period prior to the depression.

The proportion of the total Federal construction funds allotted to each purpose has varied from year to year so that no average percentage can adequately picture the situation and the trends. A generalized picture of the Federal public works program based on expenditures in the period from 1920 to 1930, with allowance for growth of the Federal highway program, shows:

Lighthouses (1 percent).....	\$2,500,000
Public buildings (8 percent).....	20,000,000
Rivers and harbors (27 percent).....	67,500,000
Reclamation (4 percent).....	10,000,000
Federal highways (40 percent).....	100,000,000
Military and naval (20 percent).....	50,000,000
Total (100 percent).....	<u>250,000,000</u>

These relative amounts varied from year to year to reflect the policy of the period.

(4) *The emergency public-works program.*—But, with the emergency program of public works begun before the close of the Hoover administration, and the work relief undertakings of the Civil Works Administration and its successors, great changes have taken place in Federal construction activities. The use of public works to “prime the pump”, to provide employment for persons on relief, and an expanded and more vigorous conservation policy have all contributed to these changes.

The definition of public works has been expanded. Public work now includes the collection of basic data, mapping and preparation of plans. The term also covers a variety of services such as forestry, pest control, soil conservation, housing, and rural electrification.

This list has been still further expanded in the efforts of the Works Progress Administration to provide

useful work for persons on relief in accordance with the principles established by the President.

How much of this expanded work program is to be continued is for Congress and the President to determine. Some curtailment is to be expected as the critical period of the depression is left behind. But though the activities were often instigated primarily to provide useful work for the unemployed many other services, new to the list of Federal public works since 1933 have filled so vital a need that they will undoubtedly continue. Allowance must be made in a continuing Federal public works policy for further changes in the fields to be covered by Federal expenditures for public construction.

(5) *The problem.*—Therefore, in formulating a national public works policy, the problem involves discussion and decisions on at least the following points:

1. *The planning of projects.*—Large and small, in various parts of the country—to secure a reservoir of useful projects integrated into an orderly program for development of resources and facilities.
2. *The programming of work.*—Timing the construction of planned projects in relation to need, to effect on the business cycle and to sources of labor and materials.
3. *Dividing the cost and responsibility* among the Federal, State, and local Governments and private interests concerned, and
4. *Executing the work* with efficiency and dispatch through administrative procedures of negotiation, allocation, and contract or force account.

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## PART I—SECTION 2

### PLANNING AND SELECTION OF PROJECTS

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Construction always involves planning. The carpenter who “lays out his work” is planning his job with an eye to the usefulness and appearance of the finished product as well as to the efficiency of his actions in producing it. The architect of a skyscraper or modest home, the engineer responsible for a great bridge or a dam, the sculptor before his block of marble—they are all planning. Planning for public works involves both the imagination to see the result in its true physical, social, and economic perspective, and the technical knowledge as to what is needed and how to achieve the desired result.

In this sense numerous officials in bureaus and departments at all levels of government are engaged in planning public works. They are proposing new construction, improvements, and repairs needed for their community or State, or organization. Responsive to the demands of citizens or through their own desires to anticipate such demands, the number and the field of public works are constantly expanding. The same men or their fellow workers are designing, estimating, and constructing these works.

But the very multiplicity of the projects and agencies proposing them is confusing. The proposals from different bureaus do not always fit together—they may compete or collide, or there may be an hiatus between them. A collection of projects, each in itself meritorious and well designed, does not make a comprehensive plan. Someone must take the larger view and plan on a broader scale, so that the parts can be seen in their true relationship to the whole.

#### 1. Planning Organization

The city planning movement grew out of this need for a preview of the future development of our towns and cities. What picture or goal of efficient and satisfying living and working conditions could be created as a guide for city development? Social, economic, and administrative objectives are involved as well as physical problems. How could the activities of citizens and city officials be coordinated and concentrated on efforts toward that goal? The purpose justified experiments and trial. Today there are 1553 town, city, and county planning commissions trying to develop comprehensive plans for the future of their communities and seeking to coordinate action by private and public groups to carry out the plan.

(a) *State planning.*—Just as a proposal by an individual bureau cannot be judged for merit or time of

construction without knowledge of how it fits in the larger plan of the whole town, city, or county, so also the value and place of the city plan must be appraised in the light of a larger picture of the State or region. Until very recent years we have had no State plans. Now there are 47 State planning boards and 35 of them are operating on a continuing basis under acts or resolutions of State legislatures. In its report on “State planning—progress and activities”, the National Resources Board included a recommendation “*that the States provide for permanent establishment and adequate financial support for State planning boards where this has not already been done.*”

These State planning agencies are engaged in the preparation of “master” plans for the development of State resources. They are assisting and cooperating with local planning agencies on the one hand, and with adjoining States and the Federal Government on the other hand. Here again the “physical” plan is only one part of the planning job.

(b) *Regional or interstate planning.*—But again, resources and hence the projects to develop them are no respecters of political boundaries. Interstate or regional planning agencies are also needed. Here, also, the National Resources Committee has recommended<sup>1</sup> “*establishment, from time to time as needed, of regional planning commissions \* \* \* as advisory bodies for planning purposes in their respective areas.*”

In different parts of the country, as in the Pacific Northwest,<sup>2</sup> the metropolitan area of St. Louis,<sup>3</sup> New England,<sup>4</sup> the Delaware River Valley, and the Tennessee Valley, experiments are under way for the preparations of plans covering interstate areas—harmonizing the proposals from the different States and showing the possibilities which lie ahead for regions as well as localities.

(c) *National planning.*—The need and method of planning for these areas are both applicable to the national field. Through the National Planning Board of the Public Works Administration, and its successors, the National Resources Board and the National Resources Committee, close relations have been developed with regional, State, and local planning agencies and

<sup>1</sup> See Regional Factors in National Planning, report by National Resources Committee, 1935.

<sup>2</sup> See Regional Planning, Pt. 1, Pacific Northwest, report of National Resources Committee, 1936.

<sup>3</sup> See Regional Planning, Pt. 2, St. Louis Report, report of National Resources Committee, 1936.

<sup>4</sup> See Regional Planning, Pt. 3, New England, report of National Resources Committee, 1936.



among the many planning arms of the Federal departments and bureaus. Again the need is for definition of goals and for coordination and understanding among the agencies both within the national Government and between them and the States in proposing and selecting projects for construction.

Within the Federal Government there are planning agencies of one kind or another for each of the departments and bureaus concerned with public works. The Corps of Engineers and the River and Harbor Board are planning navigation, flood control, and power projects. The Bureau of Reclamation and the Bureau of Agricultural Engineering are concerned with irrigation and drainage works. The Procurement Division of the Treasury and the Bureau of Public Roads plan buildings and highways. Each of these agencies and many others in the Government have specialists available and at work on the particular types of construction with which their bureaus are concerned. What is needed is *a general staff to bring together agencies working in related fields and to advise and suggest to the President and Congress plans and policies for future action.* Through its several committees and other work, the National Resources Committee and its predecessors have been temporarily performing some of these functions, pending the establishment of a permanent national planning board.<sup>5</sup>

A national planning board should be strictly an advisory agency with powers to carry on research and analysis of facts, to cooperate with Federal, regional, State, and local planning officials and organizations, and to submit findings and recommendations to the President and Congress.

(d) *Private planning agencies.*—Outside all local, State, and Federal planning activities, there are, of course, a large group of organizations and institutions interested in and supporting planning effort. Through professional societies like the American City Planning Institute and engineering groups, through organizations of officials like the American Society of Planning Officials and the related agencies in the Public Administration Clearing House, and through citizen groups like the American Planning and Civic Association, citizen support of planning has been focused on the problems now under study by the public planning agencies.

## 2. Making the Plans

These planning agencies and many others are engaged in making plans, for large projects and small, and for the coordination or correlation of plans into a composite whole. For every plan or project we must

have facts, the cooperation of those interested, appraisal of needs, and design.

(a) *Basic facts.*—These must be supplied on a great variety of subjects, from many sources and by many agencies. It is ordinarily not the function of the planning agency to itself seek new facts—that is the field of organizations like the Central Statistical Board, the Geological Survey, or the Board of Surveys and Maps. However, the planning agency is often acutely aware of the lack of basic data and can stress the need to fill lacks or deficiencies.<sup>6</sup> Sometimes it can best prove the need through a demonstration research project. Planning is the analysis and interpretation of facts as a basis for policy.

(b) *Coordinated studies.*—The joint study of common problems by agencies at one level of government or at several levels is necessary to secure the understanding and participation of those responsible, specially qualified, or principally concerned. No public work can go ahead without the agreement and approval of many groups. No public work can pass the tests of usefulness, economic feasibility, and engineering excellence without the careful preparation of plans by technically qualified engineers, economists, and other specialists. Planning studies, therefore, involve coordination among technicians and specialists in different types of public works, among government agencies at all levels, and among leaders in the confidence of the public.

The experiences of the National Resources Committee in recent months with the drainage basin study, the report on the Red River of the North, and the joint investigation of the upper Rio Grande Valley (as discussed in the original volume) prove that the apparent difficulties can be overcome, and that, with forbearance, understanding, and much hard work, agreement can be reached. These studies have involved cooperation of Federal bureaus and their field representatives, State planning boards, and other State agencies. Through the consultants and advisers of the Resources Committee, continuing contacts have been made possible in the field, and the coordinating committees of the resources organization have served the same purpose in Washington.

The accompanying report on "Drainage Basin Problems and Programs"\* illustrates the need for coordination of a great variety of future investigations through continuing contacts with Federal bureaus and State planning boards. The several studies proposed fall logically in the field of a number of specialized bureaus and departments, but the full value of the money proposed to be expended can be obtained

<sup>5</sup> See Reports of National Planning Board, 1934, National Resources Board, Dec. 1, 1934, and Progress Report of National Resources Committee, 1936.

<sup>6</sup> For example, see reports (a) National Resources Board, December 1934, on a National Mapping Program; (b) National Resources Committee, 1936, on Deficiencies of Hydrologic Data; (c) National Resources Committee, 1936, Interim Report of Urbanism Committee.

\*"Drainage Basin Problems and Programs," published December 1936.

only if the work is laid out to secure an interplay of suggestions and proposals among the group of agencies having related interests.

The experience of the Water Resources Committee indicates the desirability of coordinating proposed studies in the water field utilizing the committee as a clearing house of information as to the various study projects under way and possibly as an allotting agency to secure the best distribution of available funds among the many investigation projects now recommended.

(c) *Appraisal of needs.*—Planning in a rapidly changing world cannot be all-inclusive. A first requisite to wise planning is, therefore, to find the strategic points in a working system, and without seizing more points than are necessary, to bring to the critical or significant problems the insight, inventiveness, and cooperative spirit for appropriate action. In planning public works, this means determination of the needs and opportunities for development of resources and facilities.

The answer to the question—what to plan?—appears in a variety of forms.<sup>7</sup> Sometimes the desires of citizens or special-interest groups are clear, sometimes the replacement of structures of recognized utility is the logical next step, or the expansion of policies previously established. No one is responsible for filling up the gaps and crevices between policies and projects. In every case the place of the project in a well conceived general or larger plan is one test of value which must not be overlooked.

There is need for—

1. Better informational service as to what proposals are under consideration in various bureaus, and for

2. An initiating and coordinating agency to check up and follow through the various aspects of such general public-works policies as may be approved by the administration or requested by the Congress. From a well-organized information service, the needed projects to fill up the gaps would soon be apparent and a suggestion to an appropriate agency would almost invariably produce cordial cooperation.

In the past there has been no lack of proposals or suggestions as to what to plan. There is no reason to suppose that the future will be less fruitful in ideas and projects. Rather, the problem lies in the wise selection of proposals which merit the time and expense to develop designs, cost estimates, and necessary data for true appraisal of value.

(d) *Design.*—The development of working plans for a large-scale public work is an expensive undertaking. The job is properly regarded as part of the construction cost. But enough of a design or preliminary investigation to determine economic feasibility, multiple uses involved, and legal or engineering difficulties, is a pre-

requisite to judgment as to whether or not the cost of more detailed plans is justified. At this stage, the engineer or planner with wide experience and reputation has a special role to play because he can appraise these problems in a broader light and with sureness of judgment. If he is a great engineer or designer as well as experienced, perhaps he can also see new combinations or ways of meeting the problem. The design stage in project planning is the test of creative genius and ability.

Every well-organized public-works department or bureau has its own designing staff or utilizes engineering consultants, or both. One of the organization problems in the public-works field is the interchange and availability of the expert knowledge in one bureau by the staff of other bureaus in the Federal, State, or local Government. Greater flexibility in the use and exchange of expert services is needed in our governmental organization.

### 3. Selection of Projects

The question of which projects should be included in the larger general plan is basic. We can divide the question in two parts—inclusion in the plan for placing and designing the project, and inclusion in the program or timing of construction. Here we are considering criteria of need, engineering feasibility, and economic justification.

The National Resources Board, in its December 1934 report, recommended consideration of the following criteria for selection of public works:

1. The criterion of balance, including considerations of proper proportion between expenditures, within a limited budget, for the several kinds of public works and based primarily upon balance and proportion in the several services rendered.

2. The criterion of service standards, whereby deficiencies are measured by arbitrary standards of service established at or somewhat near the peak of actual accomplishments, plus reasonable probability.

3. The criterion of essential services, applicable to such basic needs as those of water supply, sewage disposal, and fire protection, with the chief determinant simply that of whether physical conditions and degree of population concentration make these services essential to a community well-being.

4. The criterion of cost, including the following factors: Amount of total available income (dependent upon community wealth, upon public opinion, and upon public view as to what represents the real cost of public improvements); funds available for a given class of public works as determined by balance; and value to be received and benefit to be derived from a given project at a given cost, in consideration of all other needed improvements of the same class.

5. The criteria of relative need and relative benefit of individual projects in relation to and in consideration of all other needed improvements, as determinable by coordinated and comprehensive plan. These criteria are the determinants of sequence of projects.

6. The criteria of trends, and of growth and development potentialities, by which the extent and character of future requirement improvements and services may be measured. Such

<sup>7</sup> Cf. National Resources Board, Dec. 1, 1934, p. 54.

trends and potentialities in turn are determinable by exhaustive survey and analysis of conditions and trends, and by comprehensive long-range planning.

7. The criterion of emergency, with application varied according to whether projects involved are those for the replacement of necessary public works destroyed by fire, flood, or other catastrophe or whether these public works represent speeded-up execution of normal expansion of development of improvements and services.

8. The criterion of social and economic desirability, which for practical application must be based largely upon such arbitrary standards as may be established under item 2 above. (Many conceivable public works are quite without economic utility or social desirability, as determinable by applied common sense. The economic and social desirability of expansion of accepted and useful services is relative and in the last analysis limited only by public opinion and by limits set upon public expenditure by public opinion.)

These generalized criteria together provide a basis for planning—for the coordinated long-range plan itself is the summation of a series of just decisions. Each type of public works involves additional special problems, and individual projects must be judged in the light of special requirements over and above the general criteria listed above, although it will be noted, that this statement of criteria includes the various considerations which are ordinarily referred to as “economic feasibility”, “present and future need”, “timeliness”, etc.

These criteria are suitable for use in relation to the median or normal program, but in the selection of projects for an expanded program in periods of depression not only these criteria but additional factors must receive consideration. An example of the type of question involved in depression periods can be taken from the experience of the Public Works Administration and the recommendations of the National Planning Board in 1933, which showed:

*Planning considerations.—*

*Conformity with comprehensive city, regional, or State plan.—* Indicate whether plan is city, regional, or State plan, whether official or unofficial, and give status of plan, date of plan, consultant, recommendation of planning board, if any, present membership and consultant to board and date of recommendation.

*Metropolitan or regional significance.—* Consider relation of project to similar or affected proposals in same metropolitan or regional district.

*Priority of projects.—* Consider comparative importance and desirability of the project to other proposals in same district which have been, or may be submitted, particularly where bonding power or other limitations are likely to limit number of projects which can be undertaken.

*Sequence.—* Consider relation of project to other dependent construction, as bridge approaches before bridges, or sewers before pavements. Is full use of project provided for which completed?

*Regenerative character.—* Consider stimulative effect of project upon other or additional construction by private or public agencies. Desirability and kind of additional work.

*Competitive character.—* Is facility provided by project in competition with existing facilities of same kind, or of same general purpose, such as railroad versus highway, public versus private waterworks, etc?

*Permanence.—* Is project a palliative or final answer to specific need? Is the utility of the facility provided measurable in terms of years?

*Continuing costs.—* Consider possible additional outlays required for maintenance and operation and who will bear such costs.

*Changes in community.—* Consider effect of direction of community growth, location of industries, population trends, etc., on continuing utility of project.

*General.—* State additional significant facts on social economic desirability of the projects. Has the proposal in its general and economic aspects your approval based on your best judgment?

These points were covered in Bulletin No. 1 of the Public Works Administration. The application forms required additional information, on the time for starting construction, the man-year costs, availability of the site, type of personnel employed on the site and in the manufacture of materials, climatic conditions, etc.

A third set of criteria relates to the availability of labor supply. The United States Employment Service, which now has offices reaching every community throughout the country, maintains a continuing register of all persons who are voluntarily seeking work, either on public or private enterprises.

In any given month, therefore, a very large proportion of the total number of persons who are unemployed and seeking work are actively registered with the Employment Service. With respect to all such registrants the Employment Service now compiles data which will indicate the number and geographic distribution of such persons, their age, sex, veteran and relief status, the industry to which they were attached, and of greatest significance, their occupational skills and fitness. A comparative study of changes in the occupational and geographic distribution of the available labor supply from time to time will offer valuable indications of occupational trends and of developing shortages and surpluses. Such data should and could be used as one of the criteria in determining the type and location of public work projects.

One advantage in advance programs of public works is that knowledge of the labor requirements of the various projects would permit the Employment Service to handle clearances of labor with the minimum of cost to the contractor and of risk to the employee, and at the same time facilitate the early initiation of the project. Knowledge of the volume of unskilled and semi-skilled labor needed for direct construction projects, as well as knowledge of the industries which will be affected by the proposed program of public works projects will permit the Employment Service to implement its present program of industrial and occupational readjustment of the rank and file workers.

Still another problem in the selection of projects for a long-range plan is the geographic distribution of allotments for construction projects. Here again

some experience has been obtained through the work of the Public Works Administration. The National Planning Board in September 1933, after review of the criteria for geographic allotments in a critical economic period, suggested consideration of:

1. Population by States or regions.
2. Unemployed by States or regions.
3. Relief funds by States or regions.
4. Families given assistance by States or regions.
5. Federal income by States or regions.
6. Area.
7. Combinations of some of the foregoing, with varying weights for different factors.

Each of these possible methods of testing distribution of funds has its own advantages and limitations, and each may contribute significant considerations to be kept in mind.

*Population* provides a general test by comparing percentage of funds with the percentage of population in the several States. The advantage of this method lies in its simplicity. But the needs of the States, from the social or economic point of view, may or may not be proportionate to population. Just as the aid to the unemployed provided by a project cannot be judged wholly on a basis of location, so also the need for aid cannot be judged wholly on a basis of population.

*Unemployment figures* would presumably show the need for aid if they were available or accurate. Even if such figures could be obtained, they would not show the whole story, for they would not include many cases of distress which are well known to exist. Self-employed rural distress cases, for instance, would not be covered by this classification.

*Relief funds* also are incomplete as a guide.

*Families receiving aid* as shown on the tables compiled by the Federal emergency relief are, perhaps, the best indication of need so far available. . . . .

*Area* bears less relation to need than any of the methods just discussed, and is therefore not recommended.

*Combinations*, with varying weights for different factors. The Recovery Act, in section 204 (b), established a basis for allocation of highway funds, as follows:

- Seven twenty-fourths by area;
- Seven twenty-fourths by mileage of rural delivery routes; and
- Ten twenty-fourths by population.

This combination of factors is obviously not applicable to the whole program of public works, because of its special relation to post roads and omission of unemployment relief as a factor. The existence of this method as a part of the basic act does, however, suggest the advantages of a weighted factor combination as a test for distribution of projects.

The best combination appears to be an average of the population, unemployment, relief, and family figures discussed above. This average may prove useful as a measuring stick if allocations are figured 60 percent, in accordance with location of the project and remainder distributed by source of materials and similar considerations.

#### 4. Experience and Organization for Selection of Projects

The construction activities of the Federal Government and the procedures established by Congress provide numerous examples of the possibility and desirability of review and selection of projects long in advance of expected construction.

The experience of the Corps of Engineers with river and harbor work is perhaps the best example. The first step in a river or harbor improvement is authorization by Congress for a preliminary examination and survey. In effect, this authorizes the Chief of Engineers to direct the district engineer in whose district the proposed improvement lies to make a preliminary examination and to report to him whether there appears to be sufficient merit in the proposal to justify a thorough examination.

The district engineer's report passes via the division engineer to the Board of Engineers for Rivers and Harbors (of seven engineer officers) which reviews all river and harbor improvements from an engineering viewpoint. The board report, with those of the district and divisional engineers, is passed on to the Chief of Engineers who directs a survey if found justified. If a survey is not found justified, the case is closed by the submission to Congress of the report on the preliminary examination.

The report on a survey so authorized presents a definite plan of improvement, estimates of costs and of benefits, and a favorable adverse recommendation. The report is reviewed by the division engineer, the Board of Engineers for Rivers and Harbors, and the Chief of Engineers. It is transmitted by the Secretary of War to the Congress and referred by the Speaker to the proper committee of Congress—the Committee on Rivers and Harbors in the House and the Committee on Commerce in the Senate. Upon passage of "an authorization to improve" bill through both Houses of Congress and signature by the President, the proposed improvement becomes an adopted project. The actual construction work begins on it when Congress provides the necessary funds.

Since 1914 it has been the custom to make appropriations in lump sums each year for rivers and harbors improvements which have been authorized by Congress, and the allotments from this lump-sum appropriation to the separate projects are made by the Secretary of War, upon the recommendation of the Chief of Engineers of the Army. If there are any projects in the pending authorization bill upon which work should not be carried on, the President or the Secretary of War is still in a position to order that no allotments shall be made for these projects.

A somewhat similar situation exists in the field of public buildings, where the Secretary of the Treasury and the Postmaster General are authorized by the Public Buildings Act of 1926 to report annually to Congress as to needed public buildings. They are responsible for the preparation of a "program" and money is appropriated largely on the basis of the estimates submitted by the office of the supervising architect.

The Bureau of Public Roads in its work on the Federal-aid highway system has similarly developed procedures for selection of desirable road projects so as to secure conformity of individual units of construction with the ultimate national highway system. Through the authority granted to the Bureau for negotiation and agreement with States, projects can be developed and selected a year or more in advance of proposed construction.

In the days before the Budget, Congress did all the selection of public-works projects, acting under pressure from the various bureaus and departments most concerned. The activities of the bureaus have now been funneled through the Budget so that much of the jockeying for position among Government agencies has been stopped. Congress naturally retains the basic control of the finances of the Government.

During the last few years an experiment has been tried through delegation of authority to the President to formulate and construct a "comprehensive program of public works." The success of that experiment cannot be judged adequately as yet. It seems certain that many unnecessary or unwise projects have been rejected and equally certain that not all the approved projects have been as carefully related as advance planning would have made possible. This situation is the inevitable result of the necessary speed demanded by a grave emergency, lack of previous experience in such programs, and lack of plans upon which to base the program.

The procedure which the Public Works Administration has been following has been summarized in the following terms:

All projects requested by Federal agencies pass through the Projects Division in the Public Works Administration, with the exception of those involving construction of Federal buildings, such as post offices and similar structures. The Projects Division examines all projects from the standpoint of engineering, finance, and economics. In some types of work, notably river and harbor improvements, such examinations and studies have previously been made by the Corps of Engineers. In these cases, when the project has been recommended by the Corps of Engineers, no further examination along these lines is deemed necessary.

Non-Federal projects, with the exception of transportation and housing loans, begin in the office of the State engineers (P. W. A.) and pass with its recommendations to the Projects Division at P. W. A. headquarters in Washington. They are then examined from financial, engineering, and legal points of view in the divisions bearing those titles. Transportation and housing projects do not go through the State offices, but begin at once in Washington where they are ex-

amined separately in special divisions devoted to those subjects. In case a project was rejected, review was possible by a technical board of review attached to the deputy administrator's office.

The accompanying report on drainage basin problems and programs has again shown the practical value of priority lists and selection of projects to conform with a long-range plan for development of large areas. In recent months, at the request of the National Resources Committee, the Projects Division of the P. W. A. has secured the cooperation of all construction agencies of the Government in the preparation of a 6-year program of public works. (See below, p. 19.)

From the experience of the last few years with rivers and harbors, public buildings, public roads, and the Public Works Administration, it would seem to be entirely practicable for the Congress to approve or amend a general program submitted by the President covering a number of years, and then to make annual appropriations to be applied to the construction of projects within the program in the discretion of a National Development Administration or the President.

A certain degree of flexibility in the allocation of funds to specific projects within an approved program is desirable, if not absolutely necessary. Only through such flexibility can we secure the full usefulness of the money to be spent and prevent tying up funds in incompleting projects or in excessive reserves held for undertakings the cost of which was overestimated. By leaving some discretion to the executive branch in the handling of specific construction jobs, the work of various construction agencies can be more effectively integrated and continuity of staff maintained. If Congress absolutely controls the program, it would be reasonable to place on the administration responsibility for the effective use of the money within the approved program. This method of procedure would also not encroach in any way upon the prerogatives of the Budget Bureau, but would provide the possibility of speeding up public works in time of depression because of the availability of planned projects awaiting only funds to begin actual construction.

These examples illustrate the fact that in several fields the responsibility of the executive for the presentation of a program of public works is already recognized. The apparent need now is to expand the type of projects included in the program so as to cover all of the major fields of Government construction. A central public-works authority or National Development Administration might be made responsible for the preparation of such a program or reservoir of projects for submission to the President, just as the Director of the Budget is responsible for presenting a fiscal program for his action, and for transmittal to Congress.

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## PART I—SECTION 3

### PROGRAMMING THE WORK

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#### 1. State and Local Inventories and Programs

Experience in cities and States throughout the country, especially emphasized during the recovery program, has shown that advance planning and programming of State and local public works produces better improvements for less money.

*Financial advantages.*—The responsible authorities in any city or State can plan and budget the year's expenditures for capital improvements to better advantage if they have a clear picture of the probable requirements for similar items over a period of 5 or 6 years. They need this information in relation to their budgeting for debt services, for current expenses, and for possible revenues. With a reservoir of planned projects to draw upon, the order of work can be adjusted from time to time. Sometimes projects can be deferred without disadvantage until material prices, land prices, etc., are more favorable, thereby effecting considerable savings of public funds. Other projects can be pushed ahead when favorable opportunities present themselves.

A further advantage in advance planning and budgeting of construction needs lies in the hope that, by wise handling of the city's finances, the ordinary and inescapable needs for construction may eventually be met out of current revenues. The city of Milwaukee, Wis., is working toward this goal, and its city planning board reports that this is one of the chief purposes of its programming.

*Better projects.*—That advance planning and programming of local improvements results in a better selection of projects and consequent improvement in public facilities is also amply attested by experience. Planning, even for 1 year, should result in projects which in themselves are properly designed to fit their respective needs. Planning projected into future years yields the additional benefit of planned sequence of projects, arranged in order of their need and according to the community's ability to finance them.

*Relations with other governments.*—Advance programming also facilitates mutually advantageous arrangements among neighboring or overlapping governmental units. Just as planning is needed as the basis of cooperative compacts or agreements among States in broad development projects, so there are many instances where intercity or city-and-county plans projected into long-time programs will point the way to advantageous cooperation among local governments, both in financing and in operation.

Local public works programs, covering a period of years, may be of great value in the development of State financial policies and particularly in relation to legislation concerning the debt limits of municipalities. The experience of the Public Works Administration in the analysis of non-Federal projects has repeatedly shown the need and value of a long-term plan.

*Timing for economic stabilization.*—Much has been said and written about the timing of public works, not only for purposes of local economy as suggested above, but as a means of providing employment in times of business depression. Since State and local public construction normally amounts to about four-fifths of the annual expenditure for public works, the effect of properly timing local activities is relatively very important. The increasing practice of planning and building up a reservoir of local construction projects is probably due in no small measure to the situation created by the lack of well-considered projects at the beginning of the present work relief program. Today, with the help of the Public Works Administration and the Works Progress Administration and of staffs supplied to State and local planning boards by the Works Progress Administration, much progress in advance planning of needed improvements is being made, and many localities are now provided with good priority lists of needed projects, accompanied by drawings and specifications. If these plans and programs are revised annually and kept up to date, these communities will be armed in another crisis against the pressure groups interested in particular ill-assorted or unplanned projects.

*Programs and budgets.*—The relationship between a long-range program of public works and a long-range budget has often been misunderstood. Both are needed if public works are to be utilized to reduce the violence of the business cycle. The long-range capital budget has been utilized, in fact, whenever cities and States have borrowed to finance permanent improvements—the capital budget extends over the whole period until the bonds are paid off or the improvement wears out. We have been so concerned to establish budgetary procedure balancing the budget of a single year, that we have sometimes overlooked the significance of our long-range plans and made a fetish of the annual budget as contrasted with a 4-, 5-, 6-, or 10-year budget.

Legislation requiring budgets for local units of government has been passed in varying forms by 33 States, and administrative supervision by the State is pro-

vided in 21 States. But few of these laws, however, apply to capital improvement budgets. The next step is to secure the development of these capital improvement budgets to accompany and carry out the programs of needed public works.

*General consideration.*—No statement of the value of advance programming would be complete without mention of another, less tangible but quite important, benefit which this sort of public business practice returns to the community. The existence of a long-range public improvement plan, with projects arranged in order of need and suitability, means that the local officials dealing with finance are equipped with tools necessary to satisfactory performance; and that the personnel in the engineering, designing, and construction departments will be enabled to work economically and effectively.

The existence and public knowledge of a plan serves to arouse and assist in maintaining civic interest in the community's development. A publicized priority list will act both to stimulate citizen cooperation toward a progressively improved program and to relieve local officials of the sole responsibility for dealing with importunate groups interested in expenditures for particular purposes.

#### **Experience in Programming**

In a number of instances prior to 1931, State and local governments had developed long-term bond or financial programs of capital improvements projected from 5 to 10 years into the future. Most of these programs grew out of efforts to justify special projects or bond issues, and few, if any, of them made provision for annual revision or extension to insure continuity of advanced study of public improvement needs. One of the few exceptions is the procedure followed by the city of Cincinnati, Hamilton County, and the local school board which jointly operate under a long-term financial program for capital improvements covering a period of 5 years in advance. The Cincinnati program is annually reconsidered, revised, and extended 1 year, thereby insuring always a 5-year program.

One of the earliest long-time programs for any local governmental unit was that of the Minneapolis Board of Education, which in 1916 provided for the financing of permanent improvements and extensions of the school plant to meet the educational needs anticipated during the succeeding 5 years. One of the earliest city-wide programs for general public improvements to be adopted at the polls was that of St. Louis voted in the election of 1923. This program included 21 separate projects at a total estimated cost of \$88,372,500, and was financed by bonds and appropriations to be made during the ensuing 10 to 15 years. The program covered all departments of the city government except schools and transportation. Likewise, the city of San Fran-

cisco, faced with the need for extensive costly improvements with limited financial resources, formulated a 10-year development program in 1924, which, however, owing to governmental reorganization, was not carried beyond the stage of public hearings. An interesting feature, however, of this program was the proposed classification of projects under the following four headings for the establishment of priorities: (1) Immediate necessities; (2) other necessities to be included in the 10-year program; (3) desirable projects to be taken up after completion of those in first two groups; (4) projects incompletely formulated or not approved.

Long-time bond or financial programs for public improvements have been prepared for other cities, including Detroit, Mich.; Kansas City, Mo.; Newark, N. J.; Kalamazoo, Mich.; Toledo and Dayton, Ohio; Buffalo, White Plains, and Rye, N. Y.; Los Angeles, Calif.; Boston, Mass.; Dallas, Tex.; Des Moines, Iowa; Richmond and Roanoke, Va. While some of these were officially adopted, very few, if any, contained any provision for annual revision and extension. Long-term county bond programs have been recommended for Wayne County, Mich.; Los Angeles County, Calif.; and Mercer County, N. J.

In connection with a survey of city planning recently undertaken by the research committee on urbanism, 102 cities throughout the country returned reports which, among other information, indicated the extent to which advance programming of public improvements is now practiced. From a summary of these reports, it appears that 22 cities have adopted a policy of advance programming, although in 13 instances the policy is stated to be unofficial. The periods for which the programs are projected vary from 5 to 50 years. Continuous or annual revision is practiced in five cities.

While in many instances State departments have planned and budgeted their individual construction programs, there is little record to show that State governments have been interested in the advance planning and programming of their total construction requirements.

Generally speaking, the interest which State governments exhibited prior to the inauguration of the State planning movement, dates from the relief and employment problems of the depression. In some States, through various official and unofficial reports, recommendations were made in 1930-31 similar to those advocated by the Federal Employment Stabilization Board.

In Massachusetts a special committee on stabilization of employment made a study of public and private employment facilities and of the use of public works construction as a stabilizing influence. The report made to the Commonwealth in 1931 summarized the essentials of a public works control plan and recom-

mended an act to establish a State public works planning board. The suggested bill provided that the proposed board should examine the construction plans of all State departments, and should annually formulate from these a State construction program for the ensuing 5-year period. It also provided for the annual submission to the board of forecasts of county construction prepared by county commissioners.

Various State departments in California have programmed their individual future construction requirements. Such programs have been in operation for 5- to 10-year periods in respect to roads, conservation, park development, and construction of State institutions. The California State Unemployment Commission recommended in 1932 that this practice be expanded to include all State and local governments. The Commission proposed the appointment of a public works planning board, with authority to prepare a 10-year construction program for all State public works, including the tentative assignment of each project to a given year. It also recommended that this board should have power to administer the program so as to restrain construction during years when business and employment are active, and to accelerate it in periods of depression. The program was to be revised every 2 years, and extended 2 years into the future. These recommendations were embodied in a bill which was introduced into the State legislature.

In 1931 the Pennsylvania Committee on Unemployment in its report to the Governor recommended that "a long-range planning board for public works should be set up \* \* \* which will prepare a 6-year plan of projected public construction by the State and the local bodies. This plan should be revised every biennium and thus always projected 6 years into the future; it should list the specific pieces of work to be undertaken, the time schedule to be followed for the same, and should hold a considerable proportion in reserve to be launched during periods of depression." The committee also recommended that plans for projects to be launched in depression periods should be drawn very far in advance, and that in many cases bond issues should be authorized. These proposals were presented to the legislature in 1933 in two separate bills, and again in the extra session of 1933, but did not become law.

The Wisconsin Legislative Interim Committee on Unemployment in 1931 recommended the long-time programming of public works by the State, and a reserve fund for use in times of emergency. A New Jersey commission to investigate municipal taxation reported in the same year the advisability of advance programming of State and local construction. Similar proposals were made to the legislatures of New York, Washington, and Minnesota.

*Stabilization Board.*—Upon the formation of the Federal Employment Stabilization Board, the Federal Government turned its attention to planning and coordinating the construction activities of all Federal agencies with the thought that, through proper planning and timing, this Federal construction might be utilized as a "balance wheel" for the stabilization of employment. One of its duties was to assist local and State governments in the establishment of long-range public-works programs. A special demonstration was made of the 6-year programming of public works by the municipal departments of the District of Columbia for the years 1933-39, since the District Government came within the terms of the Employment Stabilization Act as a Federal agency. This act definitely provides for annual revision of the program and extension for 1 year. Under the provisions of the act, all District of Columbia agencies expending funds for construction or repair of public improvements were required to program such expenditures 6 years in advance, specifically designating expenditures to be made in each of the 6 years on the basis of their order of priority.

*Public Works Administration.*—As soon as the Federal Emergency Administration of Public Works was organized and began operation, it was flooded with requests from State and local governments for assistance in financing their construction. Many sound projects were proposed. Many other projects submitted proved to be impossible or impractical proposals. Because of the depression, the engineering and designing departments of States, cities, and counties had been so reduced that detailed plans and specifications were not available by which to judge the projects upon their individual merits. Perhaps even more serious was the fact that the preparation of broad and balanced plans for community development had also been for several years practically suspended, so that the individual projects, even when apparently sound in themselves, could not be judged in their relations to other projects.

*State planning boards.*—The National Planning Board, established in 1933 as a part of the Public Works Administration, offered assistance to States in setting up State planning boards. It proposed to furnish technical advisors or consultants, to be nominated by the newly formed State planning boards, and compensated by the National Board after approval of the nominations. Needless to say, an immediate function of the newly organized State planning agencies was to consider the whole matter of public construction. The boards originally set up by Governors' appointment have rapidly been replaced by permanent statutory boards, so that at the present time there are 46 State planning boards in operation, of which 33 are set up by State law or resolution. The program in each State has



mended an act to establish a State public works planning board. The suggested bill provided that the proposed board should examine the construction plans of all State departments, and should annually formulate from these a State construction program for the ensuing 5-year period. It also provided for the annual submission to the board of forecasts of county construction prepared by county commissioners.

Various State departments in California have programmed their individual future construction requirements. Such programs have been in operation for 5- to 10-year periods in respect to roads, conservation, park development, and construction of State institutions. The California State Unemployment Commission recommended in 1932 that this practice be expanded to include all State and local governments. The Commission proposed the appointment of a public works planning board, with authority to prepare a 10-year construction program for all State public works, including the tentative assignment of each project to a given year. It also recommended that this board should have power to administer the program so as to restrain construction during years when business and employment are active, and to accelerate it in periods of depression. The program was to be revised every 2 years, and extended 2 years into the future. These recommendations were embodied in a bill which was reintroduced into the State legislature.

In 1931 the Pennsylvania Committee on Unemployment in its report to the Governor recommended that "a long-range planning board for public works should be set up \* \* \* which will prepare a 6-year plan of projected public construction by the State and the local bodies. This plan should be revised every biennium and thus always projected 6 years into the future; it should list the specific pieces of work to be undertaken, the time schedule to be followed for the same, and should hold a considerable proportion in reserve to be launched during periods of depression." The committee also recommended that plans for projects to be launched in depression periods should be drawn very far in advance, and that in many cases bond issues should be authorized. These proposals were presented to the legislature in 1933 in two separate bills, and again in the extra session of 1933, but did not become law.

The Wisconsin Legislative Interim Committee on Unemployment in 1931 recommended the long-time programming of public works by the State, and a reserve fund for use in times of emergency. A New Jersey commission to investigate municipal taxation reported in the same year the advisability of advance programming of State and local construction. Similar proposals were made to the legislatures of New York, Washington, and Minnesota.

*Stabilization Board.*—Upon the formation of the Federal Employment Stabilization Board, the Federal Government turned its attention to planning and coordinating the construction activities of all Federal agencies with the thought that, through proper planning and timing, this Federal construction might be utilized as a "balance wheel" for the stabilization of employment. One of its duties was to assist local and State governments in the establishment of long-range public-works programs. A special demonstration was made of the 6-year programming of public works by the municipal departments of the District of Columbia for the years 1933-39, since the District Government came within the terms of the Employment Stabilization Act as a Federal agency. This act definitely provides for annual revision of the program and extension for 1 year. Under the provisions of the act, all District of Columbia agencies expending funds for construction or repair of public improvements were required to program such expenditures 6 years in advance, specifically designating expenditures to be made in each of the 6 years on the basis of their order of priority.

*Public Works Administration.*—As soon as the Federal Emergency Administration of Public Works was organized and began operation, it was flooded with requests from State and local governments for assistance in financing their construction. Many sound projects were proposed. Many other projects submitted proved to be impossible or impractical proposals. Because of the depression, the engineering and designing departments of States, cities, and counties had been so reduced that detailed plans and specifications were not available by which to judge the projects upon their individual merits. Perhaps even more serious was the fact that the preparation of broad and balanced plans for community development had also been for several years practically suspended, so that the individual projects, even when apparently sound in themselves, could not be judged in their relations to other projects.

*State planning boards.*—The National Planning Board, established in 1933 as a part of the Public Works Administration, offered assistance to States in setting up State planning boards. It proposed to furnish technical advisors or consultants, to be nominated by the newly formed State planning boards, and compensated by the National Board after approval of the nominations. Needless to say, an immediate function of the newly organized State planning agencies was to consider the whole matter of public construction. The boards originally set up by Governors' appointment have rapidly been replaced by permanent statutory boards, so that at the present time there are 46 State planning boards in operation, of which 33 are set up by State law or resolution. The program in each State has

from the first been developed entirely under the direction of the State officials and citizens comprising the boards. Always the national planning agency has stressed the importance of properly planning and programming public construction by the State planning board for State departments, and by local planning agencies for city, town, and county construction. It has stressed, also, the advantages which accrue from cooperation between local and State planning agencies.

*The 1935 public-works inventory.*—In the latter part of 1934 the State planning boards were requested by the National Resources Board (successor to the National Planning Board) to aid in securing a quick summary or inventory of public construction projects. Procedure was set up by which it was hoped that project applications could be considered and reviewed in the State, so that the flood of miscellaneous applications, partly well-planned projects and partly the expression of not too well-considered ideas for local improvement at Federal expense, might be converted into organized inventories of projects needed for community development. These summaries, by States and one for the Nation, would then form a possible basis for the Nation-wide program of construction under the recovery drive. For this inventory the State planning boards had the cooperation of the Public Works State engineers and the Federal Emergency Relief Administration, which furnished staffs to the various State boards in amounts necessary to supplement State appropriations and personnel loans for planning.

For the conduct of the inventory, all agencies of State and local governments concerned with construction were supplied by the Public Works Administration with a general questionnaire asking for information regarding the reporting unit, such as population, dominant character, industries, transportation, and utilities. Accompanying this questionnaire were two schedules for listing and describing projects selected for inclusion in the national inventory. A weekly progress report was sent to Washington, where current lists of projects were made available for official use before the final tabulation was made.

The results of this first inventory of public construction projects were made available in March 1935. The inventory provided a valuable record of useful and desirable State and local works projects, the data concerning which have now been tabulated for immediate official use and future reference. A wide variety of projects was submitted in the inventory totaling some 135 different types. By the grouping of types into general classes it is found that, on the basis of estimated costs, approximately 22 percent are streets and highways, 14.5 percent reclamation, flood control, water-power development, 11.5 percent water supply and

sanitation projects, 9 percent buildings other than schools such as public buildings, housing, terminals, and markets, 8 percent heavy engineering structures such as bridges, tunnels, wharves, and transit improvements, 7.7 percent transportation, 6.6 percent schools, 5 percent grade crossing eliminations, 4 percent various utilities, 3.2 percent recreation, 8.5 percent miscellaneous projects such as aviation, water navigation aids, pest and disease control, fire protection, mapping surveys, and planning projects.

Inventory returns were received from 21,200 reporting units of which 3.4 percent were State, 14 percent county, 42 percent municipal, 38.8 percent township and special district, and 1.8 percent miscellaneous. There were listed 137,400 State and local projects estimated to cost approximately \$20,366,500,000. Of the total estimated cost only 5 percent or \$1,066,000,000 represented the amount included for necessary purchases of land for projects. It may be noted that the total of more than twenty billion dollars is approximately the estimated total of capital outlay for public works for the 8-year period of 1935 to 1942 based on extension into the future of the average annual capital outlay for the entire United States (national, State, and municipal) of about \$2,400,000,000 for the 10 years 1921 to 1930.

Analysis of the comments of the reporting units, the State planning boards, consultants, and P. W. A. State engineers revealed that, based on total estimated cost, 62 percent of the projects were reported as needed. About 27 percent of these, representing 17 percent of the total cost of projects in the inventory, were considered to be revenue producing.

Many of the State planning boards, in collaboration with the P. W. A. State engineers and State relief directors in some cases, have augmented and further analyzed the data produced by this inventory, the results of which they have incorporated into significant reports.

A variety of means were used by the different State planning boards to secure accurate reports and complete coverage. In Iowa the survey included interviews not alone with responsible officials but with representative citizens as well. In Kansas projects submitted by local agencies were revised by technicians on the planning board staff or attached to State departments, and were then returned for review to the reporting agencies. In Tennessee the engineers and architects of the State, and all civic clubs, were requested to assist in securing a full inventory from their communities.

In Michigan the State was divided into nine districts or regions, within each of which available projects were inventoried and classified in the light of geographic and social characteristics of the region. The completed long-term program for the State comprises some 12,000 projects, to cost a total of nearly a billion and a half

dollars. The State program includes highways, conservation projects, State buildings, aeronautic development, State educational institutions, and items of other State agencies empowered to construct or to function in relation to public works. The report of the Michigan State Planning Commission says of these department programs that they "are not conceived hurriedly to meet in any way the exigencies of this inventory. They are well thought out. They are the result of longer time views than merely emergency considerations of this State's needs." The district programs include primarily items of water supply, sewage treatment, industrial wastes, flood control, and drainage. Projects submitted by local units of government were reviewed by the commission in the light of regional conditions and programs.

The New York State Planning Board reported a total of 3,719 projects, of which 802 were submitted by State departments, 77 by New York City, and 10 by the Port of New York Authority. The total cost of these projects is estimated at just under 2½ billion dollars. The New York City projects amount to approximately one-half of the total. Projects were reported by 333 governmental units and agencies out of a total of 519 queries. The official report of the inventory by the New York State Planning Board states that it "has given the State planning board a tremendous amount of material in regard to available projects many of which are vitally related to any general plan for the future physical development of the State. It has also brought forcibly to the attention of municipal and county officials the advantages of city and regional planning in developing their own programs for public works."

A number of the State reports prepared in connection with the inventory include a tentatively proposed long-range public works program while others confine their initial approach to setting up general groups of projects which should be undertaken or present a statement of principles or criteria to guide the formulation of a specific program. All the reports, however, bring together and relate information, recommendations and the results of studies which have been made by various agencies in the past as well as the present. By so doing they have made a valuable contribution to the body of data essential to the intelligent appraisal, selection, and programming of public works projects by Federal and State agencies.

It was not expected that such a hastily organized review and consideration of project applications would result in a final and entirely acceptable program of public construction for each community. In many instances, of course, the preparation of the inventory resulted in construction of the projects as set up therein, sometimes by the Public Works Administration and

sometimes by the Federal Emergency Relief Administration, or the Works Progress Administration. But whether or not the inventory resulted in any community in immediate construction, a distinct benefit was realized in practically every instance by directing the attention of local officials to the need for comprehensive and well-balanced plans and programs for community development.

*1936 six-year programs.*—Encouraged by the results of this first Nation-wide inventory, the National Resources Committee, in July 1936, suggested to all State planning boards the annual revision of the inventory of local and State construction. Initiative in this was left entirely to the State boards, attention merely being called to the desirability of continuing the public works programming effort.

To assist such boards as wished to undertake the new inventory, the National Resources Committee, in cooperation with the Public Works Administration, the Works Progress Administration, and other Federal agencies, prepared a "Suggested Procedure for Public Works Programming" which was offered to all States as a possible basis for action.

While it was pointed out that early returns from State-wide programs or inventories might be helpful to the Federal Government in considering national needs in relation to the work relief program, no definite date was suggested for reporting, and the State boards were in no way urged to undertake the job from the standpoint of fitting in with a Federal program. Emphasis was placed rather upon the need of continuing and expanding the practice of advance planning and budgeting by local governmental agencies.

The method of securing data was left wholly for the individual State planning boards to determine, and as a result a variety of techniques have been developed. The relative success of these different methods will be analyzed when the returns are complete, with a view to suggesting for future use those which seem to be best adapted for the preparation of long-term programs of non-Federal public works. Special public works committees, often representing such outside interests as the State League of Municipalities and the State University, have generally been appointed by the boards to handle the inventory, but the details of the procedure have, of course, been largely dependent upon the funds and technical assistance available.

In most cases, project reporting forms were sent out by State planning boards with covering letters to heads of State departments, and to officials of local government throughout the State. In Florida, the only State in which every county has an organized planning council, the project reports are being gathered largely by these councils, with unusual success, it now appears.

In New York State, the Division of State Planning has made use of its weekly news letter service, which reaches about 200 newspapers throughout the State, to explain the aims of the inventory and the procedure involved. All regional, county, and local planning boards in the State were asked to assist local officials in preparing project reports.

The North Dakota State Planning Board arranged a series of meetings in the various counties of the State at which local officials were able to learn at first hand the purpose of the program and the method of conducting it. These meetings were conducted by members of the planning board staff in cooperation with representatives of Federal construction agencies. A similar series of meetings reaching all the counties of the State was conducted by the Indiana State Planning Board.

The Public Works Committee of the Oklahoma State Planning Board assembled a staff of six competent field workers who made personal contact with every county board, county school superintendent, and independent school district in the State, and visited every city of more than 400 population. Approximately 1,000 of these field contacts were made. Each field representative took with him copies of the 1935 public works inventory for his district; he had also been furnished with an analysis of the sewer and water conditions in each community he was to visit, together with a list of possible projects which might suggest needed public improvements to the various officials. The State planning board also prepared and mailed in advance to each community, a list of the projects submitted by that community in the 1935 inventory, with a letter requesting that officials review the list and make any corrections or additions they deemed desirable.

The Colorado State Planning Commission, because of limited personnel available for field work, covered only selected areas of the State. Forms were sent out to officials in only one area at a time, after which field representatives visited that area to assist officials in filling out the forms.

The Michigan State Planning Board, which prepared an exceptionally thorough long-term public-works program in 1935, is bringing the earlier inventory up to date, and assigning priorities for 1937.

In all the States, the reporting officers have been asked by the State planning boards to list their projects numerically in the order in which it is hoped they will be constructed, and to rate them approximately for permanent social need, financial advisability, and employment potentialities. The sum of these ratings stands as the total rating of the project from the point of view of its sponsor.

A logical development of the current program, sponsored and encouraged in 43 States by the State plan-

ning boards, should be the rapid adoption of advance programming procedures by local governments throughout the country. With the continuing support of the State planning boards, the present inventory should be successfully completed and a basis should be laid in each community which will enable it to carry on its own local programming as a continuous process. Further experience will undoubtedly develop better techniques and performance which will be of value not only to local governments but to the States. In addition to the benefits to the communities themselves, the State planning boards should profit by the present inventory in many direct and indirect ways.

Public works programming has hitherto lagged in local communities because the relation of local construction to the more extensive programs of State and Federal Governments has not been made sufficiently clear. The emergency public works activities of the Federal Government, however, have served to demonstrate the functional unity of all public construction at whatever level it may take place, and to emphasize that it is the local community that has most to gain from long-range programming of public works.

It is definitely to the advantage of town and city to know in advance what construction of county roads and State and Federal highways will be undertaken in any ensuing 6-year period, to know what river and harbor development will be begun, what State and Federal public buildings are contemplated for construction. And it is as surely to the advantage of the local community to plan its own construction activities to fit into the pattern of proposed work by other governmental units. Only by making its own intentions as to schools, streets, and public utilities known can these be fully integrated with the plans of other and overlapping jurisdictions.

There must thus be not only careful planning of public construction by each governmental unit, but also coordination of all these plans to prevent duplication and waste, and to promote orderly and unified development. The public works inventory serves this purpose, and through their work in coordinating State and local programs, the State planning boards have shown themselves to be the potential instruments for carrying out a permanent policy of public works planning. The planning boards are in position to serve as public works councils, stimulating interest in programming construction on the part of local governments, supplying advice and technical skill, and integrating from the larger point of view of the State as a whole the various programs prepared by counties, townships, and municipalities.

The State planning boards have contributed to the success of the inventories and their participation has strengthened the position of the boards for the future

planning and correlation of public works. In many cases the projects reported are stated in most general terms, and, before they can be adequately evaluated, more information is needed as to the long-range plans which may lie behind immediate proposals. The inventories have placed the boards in position to seek out the background material, and have justified them in requesting further information from reporting authorities in order to make the best use of the material already secured. In brief, the inventories have served to assist State planning boards in their coordinating functions among State and local authorities, particularly in bringing out long-range programs not previously available from cooperating agencies.

**2. Federal Efforts and Experience**

Procedure for approval of river and harbor projects developed over a period of years had shown the practical possibility of a reservoir of approved projects when the act to establish a Federal employment stabilization board was passed in 1931. That act made it compulsory for all construction agencies of the Federal Government to develop a reservoir of projects and added that proposals should be arranged in order of proposed work for a period of 6 years in advance. The time element and the budget idea were thus added to the problem of wise selection and programming of projects.

The Federal Employment Stabilization Act set up a board composed of four Cabinet Members whose duty it was "to advise the President from time to time of the trend of employment and business activity and of the existence or approach of periods of business depression and unemployment in the United States or in any substantial portion thereof; to cooperate with the construction agencies in formulating methods of advance planning; to make progress reports and to perform the other functions assigned to it." It was required to take into consideration indexes of employment, and the act authorized emergency appropriations upon the request of the President to combat unemployment in periods of depression. Congress declared it to be its policy to have available a "6-year advance plan, with estimates, showing the projects allotted to each year."

A beginning has thus been made toward the formulation of a balanced program of Federal public works. The budget procedure provides one kind of program, and the reservoir of projects, prepared in accordance with the Stabilization Act, has stimulated the bureaus and construction agencies to think in terms of years instead of for the single year ahead.

The 6-year program prepared by the stabilization board proved enormously valuable in the quick development of Federal projects at the outset of the work of

the Public Works Administration, but the organization of the board in the midst of the depression period has prevented the full use and development of its possibilities. The board was abolished and its functions were transferred by Executive order to the Department of Commerce in March 1934. With the inauguration of a special study for the National Resources Committee on a possible future 6-year program in 1936, the records of the board have been transferred to the projects division of the Public Works Administration.

On the authority of the President, the projects division of the Public Works Administration, acting for the National Resources Committee, requested the Federal agencies concerned with construction and repair operations to revise their 6-year programs in June 1936, so that, in effect, the work of the stabilization board has been continued. In response to this request 71 bureaus and independent offices submitted programs which include nearly 10,000 items, totaling \$5,040,000,000 for the 6-year period.

The following table shows the total estimated expenditures for this reservoir of projects for each fiscal year:

First year.....	\$1,058,568,650
Second year.....	891,762,972
Third year.....	809,801,895
Fourth year.....	760,410,881
Fifth year.....	737,084,401
Sixth year.....	753,733,438
Total.....	5,011,362,237

An analysis of these funds by type of work shows the following distribution:

	<i>Percent</i>
Streets and highways.....	25
Irrigation, drainage, and flood control.....	24
Buildings and equipment.....	17
Soil conservation.....	8
Forest conservation and development, game protection, and pest control.....	6
Grade-crossing elimination.....	6
Water navigation aids.....	6
Total.....	92

The remaining 8 percent is distributed among recreational projects, vessels, aviation aids, and facilities, slum clearance, and low-cost housing projects, water and sewer projects, and similar items.

For each project, listed by the various bureaus, information is recorded in the program covering location, type of work, estimated total cost, authority from Congress, previous funds allotted, proposed expenditure for each fiscal year, status of plans, and status of land or site, as well as data on number of men to be employed on the site, total man-hours, estimated man-year cost, and how soon work at the site may be begun.

Each bureau recommended an order of priority in importance as well as in time for each project so that the program in any one year could be expanded or contracted by reference to these priorities. Flexibility of the program is limited in some respects, however, by the authority granted by Congress for obligation of funds in future years to cover completion of construction contracts or in relation to State cooperation as in the case of the highway program.

The limited time available between approval by the President in June of the procedure to make the 6-year program and the date fixed for delivery, December 1, 1936, has precluded discussion of the details of the program with each reporting agency and the development from such discussions of priorities as between projects and bureaus. The date of delivery also affects the usefulness of the program to the Director of the Budget in formulating the Budget for the next fiscal year. The program, as submitted, however, is a partial and incomplete example of the kind of reservoir of projects and statement of priorities which the committee recommends for annual revision and extension.

In future years the full usefulness of a 6-year program can be obtained if the National Development Administration or other public works agency secures the recommendations of the Federal bureaus for their future work by May 1, permitting time for the analyses and discussion of projects and interrelation of priorities among the several bureaus before the Director of the Budget formulates the budget recommendations for the succeeding fiscal year. Both the powers of the Federal Employment Stabilization Act and the procedures for cooperation between the Bureau of the Budget and the agency preparing the 6-year program as described in that act are adequate to provide for the successful development and annual revision of a 6-year program if these powers are conferred on a permanent national development administration as now recommended.

### 3. Theory and Practice of a 6-Year Plan

If public works are to be utilized to mitigate the violence of business cycles, it is obvious that projects must be ready for construction, authority to proceed must be promptly forthcoming, and cash must be available to pay for the work.

If projects are to be ready for immediate construction whenever the word is given to "go", a great deal of preparatory work is necessary. Land must be acquired, authority provided or legal agreements reached, plans and specifications made ready and currently revised—these and other similar steps can often be taken long ahead of actual construction. Appropriations and staff organization can be arranged most efficiently for such work in the light of a program over a term of years. A part of the preparatory work may per-

haps prove useless since, with the passage of time, needs or new ways of doing things may become obsolete, but in many other cases purchase of land and efforts to obviate legal tangles will prove to be economical when undertaken years in advance of development. In brief, it is safer to err on the side of preparedness.

We do not hesitate to provide large sums during peacetimes for the preparation of plans, and even building of battleships or forts, to meet a war emergency. It would be logical to spend a fraction of those sums for drafting plans and specifications, purchase of needed lands, legal arrangements, and other preparations in times of prosperity to have projects ready for construction in another economic emergency.

Not only plans but authority must be provided in advance. The Congress has adopted a policy of authorizing projects or lines of action before making appropriations to carry them out. In the case of river and harbor works, projects are approved and authorized specifically long in advance of intended construction. For public roads and large-scale operations extending over a period of years, authority has been granted to obligate the Government to contracts and agreements anticipating future appropriations. There is ample precedent for advance authority to cover a major program of public works.

The 6-year plan started in 1931 also implied another theory in relation to the budget. Construction agencies, preparing the long-range plan, were led to think of budget requirements in terms of years instead of an annual budget. Part of the preparation for an expanded construction program is, therefore, the wide acceptance of the theory of the long-term budget and public willingness to provide the authority and cash to make it work.

To have available a reservoir of projects, it should be the function of a permanent public-works agency or national development administration to prepare 6-year programs for action by the President and transmittal to Congress. As in the case of the budget in relation to financial affairs, it is or should be a responsibility upon the Executive to present to the legislative branch a balanced construction program. Balance must be maintained among types of projects, among construction agencies, in the location of projects among the States, people, needs, etc. Programming involves the time element—the long-range timing of public works in relation to business cycles and a sequential relationship among the projects themselves. The Congress and State legislatures changed the budgets submitted to them, and would doubtless change the program from time to time, but the existence of a carefully organized plan should assist the Congress as much as the executive departments.

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## PART I—SECTION 4

### TIMING AND DIVISION OF COSTS

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vious section and in part II\* of this report the National Resources Committee presents a long-time program of public works, including a detailed study of 100 drainage basins and a wide range of other public works developed largely with the assistance of the Public Works Administration and the State planning boards.

The present section deals with a plan for the better administration of long-time public-works programs. This includes:

1. A national development administration or public-works agency (discussed on pp. IX, 12, and 20).
2. A panel of appraisers to allocate costs.
3. A fiscal advisory committee.

The fundamental reason for attempting to divide the cost of public works is that they may not equally benefit the citizens of the governments concerned in joint undertakings. The attempt to divide costs is thus an effort to do justice to the citizens or economic groups inhabiting the territories served by particular governments. When costs are being apportioned among the various units of government, what is being done is fixing the tax burden of particular taxpayers or groups of taxpayers. In last analysis, costs are not being divided among governmental units but among citizens and taxpayers in given areas. The problem is thus one of the justice of the incidence of taxes paid, in relation to the incidence of benefits received from governmental activity. Absolute justice would require consideration of all the effects of taxation and expenditure on individual welfare, necessitating in the case of division of costs of public works the appraisal of net personal advantages, a task so difficult that it would break down in execution, even if suitable techniques were assumed to be available for measurement. As a practical matter, therefore, costs must usually be divided among particular governmental units unless benefits are so unequal as to warrant the creation of special areas within which costs can be more fairly distributed, or the recouplement of costs for greatly unequal advantages reaped by the specially advantaged individuals. Yet the fundamental fact that any division of cost is an assignment of the burden among individual taxpayers cannot be lost sight of.

In the past in divisions of the cost of public works among particular governments, the relative incidence of

taxation and the effects of expenditure have had little weight. The sharing of costs of public works and other activities has been accomplished mainly through the extension of grants-in-aid, recently supplemented by loans to subordinate governments. While the result of the grant-in-aid policy has been to effect a sharing in the cost of various enterprises, the divisions themselves have often been of incidental importance. The National Government has been interested, for example, in the stimulation of certain activities such as roads or perhaps in the equalization of conditions and advantages. Under the circumstances, refined methods of dividing costs have not been attempted. The formulas for sharing costs have been influenced by considerations of political expediency, by the formulation of arbitrary rules of thumb as to apportionment, and by adherence to custom and past experience. For the most part, the divisions have been based on the principle of equal contributions—50-50, by the central and other governments regardless of the type of projects to which they were applied. In some instances special fees, charges, or assessments were made for special services or benefits. When Federal undertakings were of more limited scope, these divisions were more satisfactory than they are today. Now, public works range from local paving, sewer, waterworks, or similar improvements, to vast drainage, irrigation, flood-control, or power projects affecting a large section of the Nation. With so wide a difference in the scope and type of projects as now exists, the rough and ready apportionments of the past are not always appropriate, especially in times of economic emergency.

The present-day problem is threefold—(1) the systematic preplanning and sound financing of long-time public-works programs in ordinary times; (2) in depression periods; and (3) the interrelation of the two. It must always be borne in mind that war emergencies have been an upsetting factor in public-works policies; and due allowances for such crises must be made in organizing public-works plans and authorities.

Preplanning and programming of public works of the type indicated in the National Resources Committee's reports on drainage basins and on a wide range of other enterprises will go forward, it is hoped, on a sounder basis than ever before.<sup>1</sup> Whatever the amounts expended upon works—Federal, State, and local—these outlays will be better organized, with less overlapping, less confusion, and less waste, both in

\*Reprinted in "Drainage Basin Problems and Programs, December 1936."

<sup>1</sup> See National Resources Board of 1934, pp. 42 to 62.

money and in terms of useful public services. If a permanent national development or public works authority is set up as here recommended, or other like organization, the tasks both of long-time planning and of administration will be greatly facilitated.

But, further, it is believed that in the future public works may be widely utilized as one phase of an economic stabilization program. On this basis the effects of public-works construction upon the business cycle will then be emphasized. The construction of projects will be expanded in emergencies, with a lesser program provided for other periods. Such a conception of public works has an important bearing upon divisions of cost, for at certain times the secondary effects, such as reemployment, will be more important than at other periods, though the value of improvements in themselves must always be considered. At other times the secondary effects will be unimportant and the direct values of projects will be primary. This becomes the more important because the capacity of local agencies to finance public works is least at precisely the time of the greatest need for an expanded program. At all times the public-works policy must be harmonized with the general fiscal policy of government.

It is difficult to see how the old system of arbitrary apportionments can be applied either to long-time planning of works or to employment stabilization without modification in procedure and in substance. A different apportionment will be necessary in periods of depression from that used at other times. Many new factors must now be taken into account and new formulae must be appropriate to the projects to which they are applied. It therefore appears necessary, as soon as practicable, to place these determinations of cost divisions in the hands of administrative agencies who will weigh and balance all the factors. Consequently it is recommended that the authority of the Federal public works agency to which is assigned the development of a public-works program should include not only the listing of the physical and engineering features of each approved project but also the recommendations for a division of its cost.

This entire program should be worked out cooperatively with representatives of all units of government involved in the costs of the projects, assisted by panels of competent authorities. This will mean that the plans for public works will include the form of future financing. Impartial boards or panels of assessors or appraisers might be set up in some instances, and authorized either to decide the ratio of financial burdens for the several localities, or at least to make advisory recommendations, which presumably would be followed. In some cases the device of the interstate compact might usefully be employed.

An adjudication by persons of competence with technical knowledge of the necessary kinds of facts provide a way out of many difficult situations. The determination might conceivably be brought about by judicial determination, but often time is of the essence of a contract and an administrative procedure might for this reason be preferred. Such impartial assessors might be appointed either by the United States Government alone, or by the different authorities acting in cooperation. Obviously none of the authorities is bound to pay what seems to it more than a fair share of the improvement cost, and, unless agreements are reached, the project will simply not go forward.

As the considerations applicable to a scheme of division of costs must contain so great an element of judgment, the Congress need not delegate all authority over public-works costs to an administrative agency no matter how wise or competent it might be. The Congress might appropriately fix definite categories of expenditures and as to some of them require contributions within defined limits by cooperating governments. But within limits, amounts would be fixed by the public-works agency after administrative adjustment. Thus the policy, limits, and framework for the apportionment of costs could be specified by Congress allowing ample freedom at the same time for administrative determination of the details. Within such a framework the administrative authorities could develop equitable policies with reference to the division of costs. For the present, until such a careful division of costs can be worked out in detail, the percentage divisions and other arrangements which have become customary could be used.

Among the factors relevant to the determination of cost division are the following:

(a) The type of project, with reference to which the interests of particular governments, national or local, are appraised. Such interests are usually estimated according to some rough appraisal of benefits to the citizens of the territories affected.

(b) The degree of administrative authority and responsibility in the planning, supervision, and execution of projects appropriately lodged with particular governments.

(c) The ability of various governments to assume costs, either via taxation, borrowing, or the exchange of services as may be appropriate.

(d) The phase in the economic cycle in which the project is to be undertaken.

The exact weight to be ascribed to these factors cannot be made a matter of general rule. But if the cooperating units have a voice in their determination, and if expert advice is secured, it is believed that more



equitable divisions of cost can be effected than if the allocations are fixed by legislative action alone. The rigidity of such determinations is replaced by flexible administrative decisions. Abuse of such authority can be safeguarded by limitations and declarations of policy prescribed by Congress.

In order to enable the administrative agency to plan wisely for the future, as well as to profit by the mistakes of the past, a thorough and impartial inquiry into the capital improvement program of the recent depression should be undertaken. This should include the results and experiences of the Civil Works Administration, Public Works Administration, Works Progress Administration, Reconstruction Finance Corporation, Federal Emergency Relief Administration, and other agencies. A thorough analysis of the grant-in-aid policy should also be made, including the results of the policies of apportioning grants and the matching of funds.

Inasmuch as the ability of subordinate governments to assume financial obligations for public works is inevitably connected with any divisions of cost that are developed, plans for the future should include not only a thorough inquiry into Federal, State, and local finances but an attempt to correct those conditions which have prevented subordinate governments from carrying a fair portion of the load during the past depression. The problems of finance and of intergovernmental relations can thus be brought into clear relief. Unless improvements are made in these fields in the near future, planning for the future as to public works will be seriously handicapped. This inquiry should be the task of a national authority, with broad powers of inquiry, an adequate staff, and an ample budget. It should also be a cooperative undertaking of the Federal,

State, and local governments; otherwise questions of jurisdictional authority would hamper its work.

So important is the complete coordination of fiscal policy and public-works financing and timing with the monetary and credit policy of the Nation that it is proposed that final review and recommendations in this field be made by a fiscal advisory committee appointed by the President. This fiscal advisory committee would advise as to the manner in which public funds shall be provided at any particular phase of the economic cycle, and correlate the timing of public works with other Federal fiscal policies.

For any correlation of Federal fiscal policies with fluctuation in governmental spending or with the problems of unemployment, the amount of Federal as compared with State and local spending is a major factor. The totals which the standard or customary division of costs would assign to Federal and to non-Federal accounts must be considered as well as refinements made necessary from a fiscal point of view. These shifts in totals may be accomplished through a selection of projects in relation to the emergency or by such percentage or other changes in the standard divisions as may be within the limits imposed by Congress.

These proposals for handling the problems of division of costs will in the first place allow of a more just and appropriate distribution of burden than the fixed overall percentage system could possibly accomplish. In the second place, they will make possible orderly adjustments to the variations in local "ability to pay" which always occur with the changes in general business activity. They therefore conform to a long-range program for the utilization of public works as one instrumentality in our fight for stabilization and against the evils of unemployment and depression.