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CHAPTER IV

FEDERAL CONSTRUCTION ⁴⁷

Expenditures of the federal government on public works were less in 1929 than in 1919. During the same period the amounts spent by state and local governments increased steadily. Two factors account for this condition. Even as late as 1919, local governments were still feeling the effects of war restrictions on public construction and their expenditures did not begin to rise until a year or two later. The federal government, on the other hand, continued for several years after the close of the war on a high level of expenditure for its military and naval equipment.

In the last years of the past decade the federal government has been spending annually on new construction and on repairs and maintenance, roughly two and one-half times as much as New

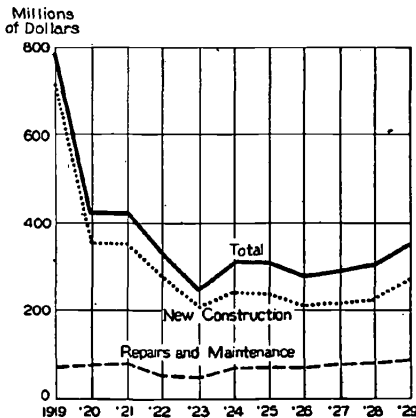
TABLE 26. — EXPENDITURES ON NEW CONSTRUCTION AND ON REPAIRS AND MAINTENANCE BY THE FEDERAL GOVERNMENT, 1919-1929
(In thousands)

YEAR	NEW CONSTRUCTION	REPAIRS AND MAINTENANCE	TOTAL
1919.....	\$716,532	\$71,597	\$788,129
1920.....	349,700	72,146	421,846
1921.....	346,704	73,892	420,596
1922.....	276,545	48,864	325,409
1923.....	204,114	43,431	247,545
1924.....	240,041	70,401	310,442
1925.....	238,282	70,838	309,120
1926.....	206,537	67,925	274,462
1927.....	213,130	76,568	289,698
1928.....	222,331	81,337	303,668
1929.....	266,149	86,287	352,436

* The quotations in this chapter describing the activities of various federal departments are taken from memoranda or letters from the various federal departments furnished, for the purpose of this study, by the Division of Building and Housing of the Bureau of Standards, United States Department of Commerce.

York City, and probably about one-tenth of the total amount spent on all public works of the country.⁴⁸ The statistics of the expenditures on repairs and maintenance appear to be more adequately reported for the federal government than are the total expenditures on permanent improvements by other agencies of government. If allowance is made for this factor, federal expenditures would be proportionately less than the present data indicate.

CHART 14.—EXPENDITURES ON NEW CONSTRUCTION AND ON REPAIRS AND MAINTENANCE BY THE FEDERAL GOVERNMENT, 1919-1929.



Federal government funds for construction are dispensed throughout the entire nation and its dependencies. Such major items as the inland waterway system, the great irrigation projects in the west, the maintenance of channels at ocean ports, the federal aid grants for state highway construction, and the ten-year building program for post offices and federal buildings to house federal government activities in cities throughout the country are well known. Activities of the Lighthouse Service and the patrol and life saving service of the Coast Guard extend throughout the whole length of our coastline. Extensive road systems are being developed in the national parks and national forests. The War Department is engaged in equipping its army posts with proper quarters for officers and men. The Veterans' Bureau has recently

⁴⁸ For the detailed tables of new construction and maintenance and repairs, see Appendix G, Tables 1 and 2. The geographical distribution of new construction, classified by types of construction, is shown in Appendix G, Table 3.

90 PLANNING AND CONTROL OF PUBLIC WORKS

been authorized to add more than fifteen million dollars worth of hospitals to its already extensive facilities in various sections of the country. Federal penitentiaries, fish cultural stations, customs houses, immigration stations, Indian schools, the nine hundred and more land stations of the Navy, the Alaskan Railway and the Panama Canal suggest the variety in type and location of federal structures. The government of the District of Columbia carries on all types of construction common in municipalities, including schools, streets, fire and police stations and park improvements.

TABLE 27. — EXPENDITURES ON NEW CONSTRUCTION BY THE FEDERAL GOVERNMENT IN 1929 AND IN PERIOD 1919-1929

TYPE OF CONSTRUCTION	EXPENDITURES	
	1929	1919-1929
Buildings and ground improvement	\$45,537,094	\$656,603,167
Roads	101,212,185	881,971,767
Drainage, irrigation, power, water, dams, etc.	29,726,305	285,266,381
Floating equipment	50,221,130	1,119,431,730
Waterways and waterfront improvements	31,294,407	295,025,527
Miscellaneous	8,158,301	41,766,155
Total for all new construction	\$266,149,422	\$3,280,064,727

During the eleven years, from 1919 to 1929, there has been a decided shift in the nature of federal expenditures for public works. Of a total expenditure in 1919 of \$788,000,000, nearly \$459,000,000 was used by the Navy Department and more than \$200,000,000 by the Quartermaster Corps of the Army; in that year the Bureau of Public Roads of the United States Department of Agriculture spent only \$3,750,000 on roads. By 1929 road building had become the leading item of federal expenditure.

Four departments of the federal government, the Bureau of Public Roads, the Navy Department, the Corps of Engineers, which does the civilian work of the War Department, and the Quartermaster Corps of the War Department, spent in 1929, \$220,000,000, out of a total federal expenditure of about \$266,000,000.

Road building in the construction budget of the federal government has come to occupy a place of growing importance, as it

TABLE 28. — EXPENDITURES ON NEW CONSTRUCTION BY LEADING DEPARTMENTS OF THE FEDERAL GOVERNMENT, 1929

DEPARTMENT	EXPENDITURES
Bureau of Public Roads.....	\$91,504,912
Navy Department.....	59,094,884
Corps of Engineers, War Department.....	56,754,535
Quartermaster Corps, War Department.....	12,787,518
Total for all departments ^a	\$266,149,422

^a This figure is not the sum of the items listed above, as it includes expenditures by all departments.

has in the public works program of the country as a whole. From a relatively low level in 1919, outlays for highway construction have risen to an average of more than \$90,000,000 a year in the period since 1924. It is noteworthy that expenditures increased rapidly during 1921 and 1922, years of depression, and fell in 1923, a year of considerable business activity.

TABLE 29. — EXPENDITURES ON ROADS BY THE FEDERAL GOVERNMENT, 1919-1929 ^a

YEAR	EXPENDITURES
1919.....	\$3,752,750
1920.....	23,538,932
1921.....	60,942,866
1922.....	93,075,012
1923.....	79,447,720
1924.....	100,786,460
1925.....	102,052,823
1926.....	89,194,519
1927.....	90,002,525
1928.....	89,368,770
1929.....	91,504,912

^a These represent only expenditures controlled by the U. S. Department of Agriculture, Bureau of Public Roads, and do not include amounts spent for road building by the Corps of Engineers, War Department.

Expenditures on maintenance and repairs have amounted during the whole period, 1919-1929, to something less than 20 per cent

92 PLANNING AND CONTROL OF PUBLIC WORKS

of the amount spent for new construction. The heaviest outlays for this purpose were made by the Navy Department, the Corps of Engineers of the War Department, and by the United States Shipping Board; but substantial amounts were also spent by the Engineering Department of the District of Columbia, the Bureau of Reclamation and by the Division of Public Buildings and Public Parks.

TABLE 30.—EXPENDITURES ON REPAIRS AND MAINTENANCE BY LEADING DEPARTMENTS OF THE FEDERAL GOVERNMENT, 1919-1929

DEPARTMENT	EXPENDITURES
Department of the Interior	
Bureau of Reclamation.....	\$24,001,052
Navy Department.....	312,098,446
War Department	
Corps of Engineers.....	223,017,719
Quartermaster Corps.....	12,205,362
United States Shipping Board.....	96,062,046
District of Columbia Engineering Department.....	25,571,654
Public buildings and public parks.....	18,333,962
Total for all departments ^a.....	\$773,235,618

^a This total is not the sum of the items listed as it includes other smaller expenditures.

The Navy Department estimates that, under present conditions, repairs to ships require \$10,000,000 annually. Maintenance and repair expenditures of the United States Engineer Corps arise out of work on canals, locks and dams; on river and harbor improvement; and on various flood control operations. The expenditures for this purpose by the Shipping Board do not include ship repairs and reconditioning, since this work is done "in private shipyards, except for an occasional reconditioning job and the periodical drydocking of the Leviathan, which is done in a Navy Yard."

The Procedure of Federal Expenditures on Public Works.— Since the Federal Budget Act was adopted in 1921 there has been a radical change in procedure for making appropriations for federal government construction. Prior to that time, expenditures for various purposes were handled by separate congressional committees, each of which had the recommendations of only one or a few bu-

reaus before it, but none of which saw all the requirements in relation to one another. There was relatively little coördination between the departments in submitting estimates, and contacts between congressional committees for the purpose of securing a proper balance between the various needs were admittedly inadequate.

Under the budget system, the estimates of the different federal departments are brought together by the Director of the Budget, who as the President's agent consults with the heads of the departments and individual establishments. The President submits estimates for all the departments at one time in the annual budget, which also shows estimated receipts. The budget estimates are reviewed first by the Committee on Appropriations of the House of Representatives; all appropriation measures must, according to the Constitution, originate in the House. After action by the House, the various departmental appropriation bills are acted upon by the Senate, and when the two agree, the measures go to the President for approval before becoming effective.

An essential feature of the budget system, which is often not fully understood, is the fact that the appropriation bills may include only such items as have been authorized already by other legislation. In some cases, a department or bureau has general authorizations that stand indefinitely. Thus, the Bureau of Lighthouses has standing authorization for the construction of lighthouses and light ships. Practically all departments have standing authorizations for necessary repair and maintenance work. On the other hand, the construction of a hydraulic laboratory at the Bureau of Standards has been held to require a special act authorizing the project before an appropriation act could be made actually providing the money. Similarly, appropriations for Mississippi flood control can be made only in accordance with general legislation on the subject, and appropriations for harbor improvements can only be made on projects that have been specifically approved in authorizing legislation. Authorizations covering construction programs requiring several years to execute are frequently made, but the authorization does not bind the Congress in making its annual appropriations to appropriate as much as has been authorized. Some projects are authorized and are never carried out.

It is a growing practice among federal departments to map out construction programs several years in advance. Thus, the Depart-

ment of Justice recently mapped out a seven-year program for construction of federal penitentiaries and other penal institutions, and this was authorized by Congress. The Quartermaster Corps of the Army is now carrying out what it regards as a ten-year army post housing program. In view of a constitutional provision against providing funds more than two years in advance for the support of the army, the program has not been formally authorized by Congress. But Congress can see that each year's appropriations are a part of the long-term program.

The appropriation bills are ordinarily passed during the winter or early spring, and the funds usually become available July 1. Items for new construction are generally available until spent, but a number of bureaus reported that they were handicapped because of provisions that the funds would lapse if not spent within the twelve months of the fiscal year. In some cases, such as river and harbor appropriations, funds are made available on passage of the act. Such a provision was included in several of the appropriation bills presented to Congress in the winter of 1929-1930, in order to permit the acceleration of proposed projects.

Most of the funds for repairs and maintenance of buildings become available July 1 and lapse if not used by June 30 of the next year. In some cases this results in urgent work being held up until just after July 1. In other cases, administrative officers hold funds in reserve until towards the end of the fiscal year as a precaution against contingencies. The fiscal calendar thus tends to throw certain types of outdoor work into the busiest season although it tends to promote the handling of repairs to heating apparatus and some other work at times of slack seasonal employment in the trades involved.

In general, the fiscal calendar seems most apt to impose limitations on units expending relatively small sums on a limited number of projects, which are probably less flexible in adjusting themselves, and where the difficulties are not so great and obvious as to compel specific remedies on the part of Congress.

In the federal government, then, the making of the budgets of public construction projects is a joint enterprise of legislative and executive agencies. An adequate view of the procedure involved in federal expenditures for permanent improvements can best be got by examining the practices of several executive departments of the federal government.

1. Road Building.—One of the most systematic of the federal programs of public works is the plan for federal-aid payments to states for coöperative highway construction and for forest road construction. Federal expenditure for this purpose has mounted in recent years to more than \$90,000,000 a year. Authorizations made by federal legislation for highway construction from 1917 to 1931 are shown in Table 31:

TABLE 31. — AUTHORIZATIONS FOR HIGHWAY CONSTRUCTION MADE BY FEDERAL LEGISLATION DURING THE FISCAL YEARS 1917-1931^a

(In thousands)

YEAR	FEDERAL AID TO STATES	FOREST ROADS ^b	TOTAL
1917.....	\$5,000	\$1,000	\$6,000
1918.....	10,000	1,000	11,000
1919.....	65,000	4,000	69,000
1920.....	95,000	4,000	99,000
1921.....	100,000	4,000	104,000
1922.....	75,000	6,000	81,000
1923.....	50,000	11,000	61,000
1924.....	65,000	7,500	72,500
1925.....	75,000	7,500	82,500
1926.....	75,000	8,500	83,500
1927.....	75,000	7,500	82,500
1928.....	75,000	7,500	82,500
1929.....	75,000	7,500	82,500
1930.....	75,000	7,500	82,500
1931.....	125,000	7,500	132,500
	\$1,040,000	\$92,000	\$1,132,000

Source: United States Department of Agriculture, Bureau of Public Roads.

^a Federal aid to states must be matched with state funds and payments may be made on monthly estimates as work progresses.

^b This authorization is for construction of roads in or adjacent to the national forests, and is expended directly by the Department of Agriculture.

Actual expenditures in each year of the decade from 1920 to 1929, both for forest roads and in the form of federal aid to states, increased from nearly \$25,000,000 in 1920 to \$108,000,000 in 1925, and have continued at the rate of more than \$90,000,000 a year since. For 1931, 1932 and 1933, federal appropriations to states have been increased by \$50,000,000, or from \$75,000,000 to \$125,000,000 a year.

Federal aid to states for highway construction is a form of public expenditure similar to grants made for various public improvements by states to local governments.

Under the terms of the Federal Highway Aid Act of November, 1921,⁴⁹ the Secretary of Agriculture is authorized to cooperate

TABLE 32. — EXPENDITURES FOR FEDERAL AID PAYMENTS TO STATES FOR COOPERATIVE HIGHWAY CONSTRUCTION AND FOR FOREST ROAD CONSTRUCTION MADE BY THE DEPARTMENT OF AGRICULTURE DURING FISCAL YEARS 1920-1929 ^a

YEAR	FEDERAL AID TO STATES	FOREST ROADS	TOTAL
1920	\$20,340,774	\$4,338,777	\$24,679,551
1921	57,462,768	5,291,539	62,754,307
1922	89,946,604	3,859,504	93,806,108
1923	71,604,709	7,109,454	78,714,163
1924	80,447,824	9,356,025	89,803,849
1925	97,472,506	10,456,608	107,929,114
1926	89,362,111	10,294,997	99,657,108
1927	82,977,566	9,542,854	92,520,420
1928	82,513,834	8,570,405	91,084,239
1929	84,006,619	9,499,690	93,506,309
	\$756,135,315	\$78,319,853	\$834,455,168

SOURCE: United States Department of Agriculture, Bureau of Public Roads.

^a The expenditures in this table for the respective fiscal years do not agree with the annual totals as shown in the tables of federal construction expenditures for roads because the latter are taken from compilations based upon the fiscal years of the respective States which end June 30, September 30, November 30 or December 31, as the case may be.

with the several states through their state highway departments in the improvement of highways. A system of highways, known as the Federal Aid Highway System, is designated by the highway department of each state and approved by the Secretary of Agriculture. Such systems are limited by the law to seven per cent of the total highway mileage in each state, and federal aid can only be allotted to roads included in the systems. When provision has been made for the completion and maintenance of seven per cent of the total, the state is authorized to add to the system of federal aid highways. Before any project is approved by the Secretary of

⁴⁹ Procedure under Federal Highway Act of November 9, 1921, United States Department of Agriculture, Bureau of Public Roads.

Agriculture, the state is required to make provision for state funds each year for the construction, repair and maintenance of all federal aid highways within the state. Standards of construction and materials, used in such construction, are set by the Secretary of Agriculture, and the work is subject to inspection and approval by him. Payments by the federal government are limited to fifty per cent of the actual cost and are not to exceed \$15,000 per mile, except in the case of bridges and for road building in states having unappropriated public lands.

2. Supervising Architect of the Treasury Department.—The procedure of this office is described as follows:⁵⁰

“Prior to the passage of the Public Buildings Act of May 25, 1926, the initiation of federal building projects, both individually and collectively, had rested entirely with the Congress. Under this procedure bills would be introduced by members of Congress for buildings in localities in which they were interested; these in most cases involving acquisition of land. Such bills were then referred to the office of the Supervising Architect for report and estimate of cost. Of authorizations established under this system there were held over from previous legislation at the time of the passage of the Act of May 25, 1926, and specifically covered by Section 3 thereof, 69 authorizations for buildings, or sites and buildings, and in addition 151 for sites only.

“With the approval of the Public Buildings Act of May 25, 1926, a totally different . . . line of approach was inaugurated. This Act while fixing the total gross outlay to which the government might be obligated for public building construction within its purview, for the states, territories and possessions of the United States; . . . confines itself as regards selection of locations, to defining in a general way only the procedure to be followed; and except as regards principally authorizations held over from previous legislation, makes no attempt to specify individual projects. The Act approved February 24, 1928, amending the above, increases the total authorization and modifies the provisions covering distribution and rate of expenditure, but does not alter the method of selection.”

⁵⁰ Memorandum of the office of the Supervising Architect of the Treasury Department to the Division of Building and Housing, Bureau of Standards, United States Department of Commerce.

98 PLANNING AND CONTROL OF PUBLIC WORKS

Gross expenditures authorized by federal legislation are as follows:

Authorized by Act of May 25, 1926:	
District of Columbia, Sec. 5.....	\$ 50,000,000
Country at large.....	100,000,000
Completion prior authorization, Sec. 3.....	15,000,000
	<hr/>
	\$165,000,000
Carried on books from prior legislation, approximately	9,000,000
Act also makes available proceeds of sales of old government properties estimated at approximately.....	48,000,000
	<hr/>
	\$222,000,000
Authorized by Act of January 13, 1928:	
District of Columbia, acquisition of land.....	25,000,000
Authorized by Act of February 24, 1928:	
Country at large, additional authorization.....	100,000,000
	<hr/>
Approximate total authorized expenditures,	
Building program	\$347,000,000

"Of this amount, to date \$189,226,010.80 has been allocated and authorized for specific projects for the country at large, and \$47,968,741.00 for the District of Columbia projects, or a total of \$237,194,751.80." As regards the preliminary steps involved in a building program for the country at large, "the length of time required to carry a project to completion is influenced by so many factors that no very definite schedule of progress is possible.

"If the acquisition of a site is involved, this transaction may involve a period of a few months to one of a year or more dependent upon the submission of reasonable proposals or the necessity for condemnation. In the latter case with a large city involved where a large site comprising several parcels may be required the delay may considerably exceed a year. With a site acquired, the procedure of obtaining survey and soil data, together with any necessary supplementary space data, the preparation and approval of preliminary sketches, etc., may require about two months.

"For the preparation of working drawings the size of a project and the number of men available for it, together with possible preliminary changes in scheme for one consideration or another, all introduce variable factors, making the probable consumption of time from commencement to the point at which they are turned over for specifications from three to eight months.

"The specification, which is usually the work of one man, will

occupy for writing, duplication, and checking from four to six weeks.

“The period on the market for bids runs generally from four to six weeks and after opening if no complications have arisen two weeks is generally required in the awarding of a contract.

“The time allowed for completion of a contract is predicated principally upon the size and estimated cost of the project and the geographical position with reference to markets of supply, both material and labor; in connection with small jobs of relatively short duration, the question as to whether or not the winter season will probably find the job open or under roof must be considered.” The thumb rule which is first applied is about as follows, subject to modification by the other factors mentioned:

For jobs up to.....\$	100,000	not	over	14	months.
	250,000	“	“	16	“
	750,000	“	“	18	“
	1,500,000	“	“	20	“
	2,500,000	“	“	24	“
	5,000,000	“	“	30	“
For jobs over.....	5,000,000	“	“	36	“

This statement by the Supervising Architect, of the elements of procedure and time involved in a federal building program, represents a view of normal operations. In the early months of 1930 when there has been the desire to accelerate federal construction operations, it has been found possible to modify many steps in this procedure and to hasten the time required for them. The speeding-up of condemnation proceedings and the employment of a larger staff of architects are a sample of the measures recently employed to facilitate the carrying out of the projected programs of public construction.

3. United States Engineer Corps.—The work of this department in the past ten years has been concerned with river and harbor improvement, lock and dam construction, construction of the Wilson Dam, flood control, operation and care of canals, and the maintenance of river and harbor improvements. In the conduct of its operations the department estimates that “a period of two weeks to a month for hired labor work and three to four months for work done by contract is required prior to commencement of construction after appropriations therefor have been made.” No serious delays are contemplated in the future for the acquisition of sites,

where the sites are to be acquired by the United States Government. It is estimated, also, by the Engineer Corps that the "detailed plans and specifications for any specific major item of the projected work for the next five years could be prepared within a period of from two to three months."

4. Quartermaster Corps.—The office of the Quartermaster General states that "under the present budget procedure it requires approximately two and one half years from the time a project is initiated in the field until the funds are made available for expenditure. This usually is the minimum interval. . . ."

"It is not always feasible to make detailed plans in advance of the appropriation; therefore, after the funds do become available it usually requires from three to twelve months to prepare suitable plans and to advertise for bids. Ordinarily the average contract time for completing construction work is approximately twelve months. . . ."

"As the beginning of the fiscal year comes in the height of the building season, it does have a tendency to retard construction work in the northern states as usually by the time plans and specifications are ready and advertising is called for, winter has already set in and work must be postponed until spring. . . ."

Future Projects.—The estimated future expenditures of the federal government are by no means an index of what will be spent during the next years. The estimate for 1930 alone is considerably below actual expenditures for new construction in 1929. At the most the figures are a rough indication of the probable cost of certain known projects of permanent improvement that are likely to be under way during the years specified.

The classification of these estimated future expenditures by controlling departments of the government throws some light on their inadequacy and uncertainty. They do not, first, include estimates of projected expenditures on roads, although here legislation has been enacted increasing the federal appropriations appreciably. The estimate of the Corps of Engineers is for the probable average expenditure during one year only made "on the assumption that work and appropriations will be continued normally as at present . . ." In the estimate of the Bureau of Reclamation there are included proposed expenditures "under the Boulder Canyon Project Act, which authorizes an expenditure of \$165,000,000. The time of

commencement of construction is dependent upon complying with certain provisions of the Act."

The Navy Department states that "new construction, amounting to about \$270,000,000 was authorized by Congress in 1928, and the last appropriation bill carries \$28,550,000 for new construction during the fiscal year 1930. It is not possible to predict what amounts will be available for this purpose during the next five or six years until appropriations are made by Congress, although it is estimated that repairs to ships will continue to require the annual expenditure of approximately \$10,000,000." The Navy Department, likewise, estimates that construction work on shore will in the next five years average \$5,500,000 a year.

The Numbers Employed on Federal Public Works.—No record is available of the number of persons employed on federal public works; nor is it possible to estimate the proportion of such work farmed out to contractors and the proportion done by hired labor.⁵¹ The Corps of Engineers of the War Department has a record of the number of employees engaged in civil work which shows that the number so employed varied from 11,500 to more than 31,000.

Control.—Some light has already been thrown on the problem of controlling federal expenditures for permanent improvements by the description of the prevailing procedure of planning projects and carrying them through to completion. In the case of these types of federal expenditure most programs appear to be considerably in arrears. The problem of control here, as in the case of the local governments, appears to be one of acceleration. The Supervising Architect of the Treasury Department believes that "in dealing . . . with federal building construction" where many steps, such as investigation, acquisition of title to the land, preparation of plans and specifications, waiting for bids, "must precede actual construction . . . it would seem to be only in very exceptional cases that a project could be got under way in any given locality in time to offer relief to an acute industrial situation. . . ." He believes also that the preparation of building plans far in advance of construction "would result more often than not in their having to be extensively revised to meet changed requirements before they are finally issued."

The Corps of Engineers believes that existing and proposed projects cannot be economically delayed, but that the "amount of

⁵¹ For some data on this matter, see Appendix G, Table 2.

TABLE 33. — NUMBER OF EMPLOYEES ENGAGED ON CIVIL WORK BY THE CORPS OF ENGINEERS OF
THE WAR DEPARTMENT, 1920-1929

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Av. for year
1920	18,661	18,500	18,200	18,113	17,466	18,801	20,477	23,039	22,352	24,023	23,367	20,257	20,271
1921	19,131	17,416	16,087	15,458	16,861	18,659	21,153	22,278	20,840	20,417	17,798	13,026	18,260
1922	13,241	11,600	11,482	25,890	22,823	16,403	19,864	23,269	23,582	23,802	22,700	18,920	19,465
1923	17,738	16,139	15,893	17,427	20,092	23,033	26,237	28,555	27,510	26,557	24,942	20,361	22,040
1924	17,909	17,893	18,454	19,763	21,579	25,054	29,742	30,362	29,183	28,138	25,894	20,197	23,681
1925	20,499	19,664	19,192	21,142	24,134	27,354	28,857	29,000	25,914	22,223	19,136	16,280	22,783
1926	14,973	14,246	14,987	17,088	21,428	24,008	26,387	24,258	21,302	18,839	18,177	15,380	19,256
1927	14,201	14,148	15,328	30,292	18,986	19,011	22,097	24,048	24,902	24,198	20,232	16,425	20,322
1928	16,445	15,893	17,505	18,341	20,914	20,524	22,664	28,042	26,899	25,824	23,980	21,436	21,539
1929	20,243	19,107	19,682	20,103	24,395	23,539	26,829	31,383	30,769	29,421	26,552	22,892	24,576
Average	17,304	16,461	16,681	20,362	20,868	21,639	24,431	26,423	25,325	24,344	22,278	18,517	

work normally projected could be increased thirty per cent without undue disorganization or increased cost."

The experience of the federal government in the past six months, however, furnishes convincing evidence that the prevailing system of appropriations and expenditures is sufficiently elastic to permit occasional acceleration in construction operations when haste and expansion are desired by the government. The removal of various barriers to quick action and the increased appropriations for roads and other projects will without doubt raise the total federal expenditures for construction in 1930 considerably above the amounts spent in 1929.