PROJECT NOTE NO. 33

OUR WATER RESOURCES

The Need for a Unified National Policy

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CONTENTS

LIST OF TABLES

FOREWORD

The long-range development of the natural resources of the United States is a vast undertaking, affecting all aspects of American life. As the Water Resources Policy Commission has asserted, "How great a share of this investment in the future should be financed by the Federal government and what should be the division of responsibility between the many agencies of Federal, state, and local government, private groups, and individuals, are matters of proper concern to every citizen."

The sums which the Federal government has already invested or planned to invest in future water resources development are a substantial factor in the total Federal budget and in the over-all national economy. The present lack of a unified national policy on water resources means continuing waste of money and effort in the pursuit of conflicting goals. The American people, through their elected representatives, must examine those diverse goals and help fashion a national policy that will avoid waste and give proper direction to future water resources development.

Of serious implication, also, is the increasing activity of the Federal government in the development of hydroelectric power as a part of irrigation, navigation, and flood control projects. The result has been the firm entrenchment of the Federal government in the electric power field. This, too, needs careful examination. It relates closely to the over-all problem of how directly the Federal government should be involved in business-type enterprises.

This study traces broadly the development of Federal water resources programs. Particular attention is directed to reclamation and irrigation, rivers and harbors and navigation, flood control, power, and multiple-purpose projects. In pointing out the conflicting policies and lack of direction that underlie these programs, the Tax Foundation, a private, non-profit research organization, seeks to help inform the thinking citizen who has ultimate responsibility for far-reaching decisions that must soon be made on water resource development.

THE TAX FOUNDATION

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CHAPTER I

INTRODUCTION

The Federal government's major water resource activities are reclamation and irrigation, power, multiple-purpose projects, rivers and harbors and navigation, and flood control. These activities involve the following agencies: Bureau of Reclamation, Corps of Engineers, Bonneville Power Administration, Southwestern Power Administration, Southeastern Power Administration, Federal Power Commission, Tennessee Valley Authority, Department of Agriculture, International Boundary and Water Commission.

The government's over-all program for water resources cuts across several functional categories in the Budget. While the major part of the work is classified under natural resources, other water resource developments are carried out under programs for agriculture, transportation, and communication. Expenditures for all these water resources and related developments are scheduled to be higher in fiscal 1954[1] than they were in 1952 or 1953. Table 1, besides showing the expenditures for these programs during the fiscal years 1952-1954, indicates the various agencies involved in water development activities.

More than half of the expenditures in 1954 will be for 133 river basin development projects and units presently under construction by the Bureau of Reclamation and the Corps of Engineers, the two major agencies in this field. Much of the work is multiple-purpose development for irrigation, flood control, navigation, and hydroelectric power. The Budget also recommends starting construction on eight new projects and five additions to existing projects, with an ultimate cost of $325 million, of which about $16 million is scheduled to be spent in 1954.

Construction of navigation facilities by the Corps of Engineers is limited in the 1954 Budget primarily to projects already under way. But, in addition, the Budget provides for new projects involving a total cost of $42 million, of which an estimated $4 million is to be spent in 1954. The Budget also recommends appropriations of $22 million to accelerate upstream flood prevention work by the Department of Agriculture, compared with $8 million in fiscal 1953.

In recent years the attention of Congress has repeatedly been called to the need for new concepts and procedures in handling water resources development. A reconsideration of the Federal government's role in the development of the water resources of the country takes on added significance with the advent of a new national Administration. The new President, in his State of the Union speech on February 2, 1953, said:

> "The best natural resources program for America will not result from exclusive dependence on Federal bureaucracy. It will involve a partnership of the states and local communities, private citizens and the Federal government, all working together. This combined effort will advance the development of the great river valleys of our nation and the power that they can generate."

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[1] Data for 1954 appearing herein are taken from The Budget of the United States Government for the Fiscal Year Ending June 30, 1954, submitted to Congress in January 1953 by former President Truman.

Table 1

FEDERAL EXPENDITURES FOR WATER RESOURCES AND RELATED DEVELOPMENT

Fiscal Years 1952-1954
(Millions)

Program and Agency	1952	1953[a]	1954[a]
Total	$983.3	$1,015.2	$1,068.7
Predominantly Single-Purpose Projects	302.4	300.6	296.8
Flood Control Works	173.4	163.6	173.7
Corps of Engineers	159.7	154.8	156.0
Bureau of Reclamation	10.7	5.7	13.4
International Boundary and Water Commission	2.0	2.2	2.1
Department of Agriculture	1.0	.9	2.2
Irrigation and Water Conservation Works	90.4	84.6	81.6
Bureau of Reclamation	86.9	78.9	77.2
Bureau of Indian Affairs and Other	2.8	5.3	3.7
Department of Agriculture and Other	.7	.4	.7
Navigation Facilities: Corps of Engineers	38.6	52.4	41.5
Multiple-Purpose Dams and Reservoirs with Hydroelectric Power Facilities	402.6	387.1	391.9
Corps of Engineers	287.0	275.7	306.0
Bureau of Reclamation	75.4	70.0	66.4
Tennessee Valley Authority	32.2	29.8	9.0
International Boundary and Water Commission	8.0	11.6	10.5
Steam-Electric Power Plants: Tennessee Valley Authority	147.7	189.2	235.6
Power Transmission Facilities	130.6	138.3	144.4
Bonneville Power Administration	50.8	54.0	56.0
Tennessee Valley Authority	42.1	45.8	52.8
Bureau of Reclamation	34.4	32.9	27.0
Southwestern Power Administration	3.2	4.8	4.6
Southeastern Power Administration	.1	.8	4.0

a. As estimated in The Budget of the United States Government for the Fiscal Year Ending June 30, 1954.

Source: Bureau of the Budget.

* * *

"There has been much criticism, some of it apparently justified, of the confusion resulting from overlapping Federal activities in this entire field of resource-conservation. This matter is being exhaustively studied and appropriate reorganization plans will be developed."

An examination of this area of governmental expenditures at the present time can create a sound basis for proper decisions in any forthcoming re-evaluation of national policy in regard to all water resource activities.

The Federal government's interest in water resources was first expressed in an Act of August 11, 1790 which permitted the levying of a duty on ship tonnage for the purpose of protecting and preserving rivers and harbors. The Army Engineers were called upon to improve navigable waterways by an Act of April 30, 1824. As early as 1879 Congress empowered the Secretary of the Army to lease water power to a private company. The Federal Water Power Act of 1920, while encouraging private development of water power, was sufficiently broad and flexible to permit the evolution of Federal power policy toward Federal development and operation of all water power subject to the jurisdiction of Congress, if the public interest should point in that direction. The Reclamation Act of June 17, 1902 provided for examination and survey of potential developments and construction of irrigation works to reclaim the public lands. The first Federal flood control statute was the Act of March 1, 1917 on debris control of the Sacramento River; next came the Mississippi Flood Control Act of May 15, 1928. The Tennessee Valley Authority was created by an act of Congress on May 18, 1933. From these beginnings stemmed programs that have already cost billions of dollars and may cost tens of billions more in the future.

At the outset, it is important to bear in mind that throughout any discussion on individual water activities, the problem of multiple-purpose projects is ever-present. The multi-purpose project, serving many uses, is a relatively new concept deriving its impetus from the broadening of the government's original water resource policy, when Congress approved the Boulder Canyon project in December, 1928. Construction for the conservation of water resources thus came to embrace the idea of the multiple-purpose project--an idea that has assumed increasing importance ever since.

CHAPTER II

RECLAMATION AND IRRIGATION

Federal reclamation programs are designed to conserve, utilize and further develop the water resources of the West through the irrigation of lands and the creation of new opportunities for people to establish and build communities. The purpose is promoted by river development and the utilization of underground water resources. The Bureau of Reclamation, which began in 1902, conducts its activities in 17 western states comprising a land area of more than one billion acres--more than three-fifths of the continental United States.

Expansion of Program

When the reclamation function was formalized 50 years ago, the major consideration was irrigation. But it was not long before the government was also providing water to municipalities. Supplying water from reclamation projects for municipal purposes was first authorized in the Town Site Act of 1906. Somewhat broader authority with respect to furnishing water from reclamation projects for non-irrigation uses was granted by the Miscellaneous Water Act of 1920. The Reclamation Project Act of 1939 also authorized the Bureau to furnish water for municipal and industrial purposes, either as part of multiple-purpose projects or as single-purpose projects. This act, in fact, recognized municipal water as a component of the reclamation program.

From the inauguration of Federal reclamation in 1902 through June 30, 1953, estimated expenditures of the Bureau of Reclamation's public works programs total over $2 billion. In recent years the Bureau has been constructing projects at a rate of between $200 million and $300 million annually. After fiscal 1954, the Bureau will still have a reserve of $3.3 billion worth of projects authorized by specific legislation. Additions to construction on some projects seem to go on forever. The Colorado-Big Thompson project, for instance, required a $19 million appropriation for 1952, 15 years after construction started. The Columbia Basin project, authorized in 1935, took another $27 million last year. The Klamath project, Oregon-California, authorized in 1905, will obligate $335,000 in 1954.

Large though current and recent expenditures are for these programs, they are relatively negligible in comparison with the $50 billion of projects visualized for the future.[2] Several months ago the Bureau of Reclamation submitted to Congress its proposed construction program for irrigation and hydroelectric power during the next seven years. These proposals would cost an estimated $3,870 million during the period 1953-1959 and eventually another $5,411.5 million --bringing the final total to $9,280 million. The required appropriations were estimated as follows:

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[2] J. R. Mahoney, Natural Resources Activity of the Federal Government, the Library of Congress Legislative Reference Service, Washington: January, 1950, pp. 210-212.

	(Millions)
1953	$220.0
1954	257.6
1955	346.1
1956	412.7
1957	357.0
1958	285.6
1959	231.8

This program would bring 1.4 million acres of land under irrigation and would provide a supplemental supply of water to another 1.7 million acres. The seven-year program, requiring an annual investment averaging over $300 million would be a monumental undertaking. In view of shortcomings to be described later, careful study of the whole reclamation program and the proper function of the Federal government in this field is indicated before any such plan is approved by Congress.

Repayment of Construction Costs

Reclamation law has always required the execution of repayment contracts before the delivery of water, except on public land areas. The basic principle in the 1902 act of repayment of the construction costs of reclamation projects has been maintained, although from time to time repayment periods have been lengthened to meet changed conditions. The Omnibus Adjustment Act of 1926 contained the basic requirement of execution of repayment contracts before the delivery of water. This was confirmed by the Reclamation Project Act of 1939. Both acts permit construction to proceed pending the execution of the repayment contracts, with water deliveries after completion contingent on execution of the contracts. But, repayment does not include full costs of engineering plans, specifications, surveys, accounting, Bureau administration, etc.

Former Governor Leslie A. Miller of Wyoming, who headed the Hoover Commission's Task Force on Natural Resources, in an article in the Tax Review in April, 1951, pointed out that the original concept of the reclamation program was that Federal funds would build the projects. Then the increased land values and resulting production would provide for amortization of the cost. The capital cost and interest would be repaid to the Treasury. But almost as soon as the Bureau of Reclamation began operations, it became evident that the cost of the projects would be so great that the newly-irrigated lands could not carry the burden of amortizing the investment. It was then realized that a source of considerable income was inherent in big dams, where hydroelectric power installations could be added. Power could be sold at a profit and the additional income could justify and help pay for the job. "Multiple-purpose dams" became the accepted designation of such projects.

Mr. Miller described the current financial procedure in setting up "multiple-purpose dams." All possible reimbursement is shouldered onto irrigation. Power has to carry the additional cost-load to the limit of its potential income. Next, a big share of cost is charged to "non-reimbursables"--to recreation, wild life preservation, sediment control, pollution control, general good or anything considered "benefits" to the community at large. The following tabulation summarizes the tentative allocation of estimated total construction costs of major approved projects of the Bureau of Reclamation, as of December 31, 1951 (including construction costs by the Corps of Engineers):

	(Millions)
Irrigation	$3,598.8
Commercial Power	1,497.9
Navigation & Flood Control	2,184.9
Municipal Water	28.8
Other	334.6
Estimated total cost	$7,644.9

Reimbursable construction costs of reclamation projects are repaid to the Treasury by the water users, who are expected to repay annually up to their ability. Ability to pay is determined on the basis of the anticipated increase in net farm income with proper allowances for family living and for operation and maintenance of the irrigation facilities. Where such income, with whatever power revenues may be available, is insufficient to meet the costs allocated to irrigation within the normal 40-year period, the project may be referred to Congress with a recommendation for a reasonable extension of the repayment period. Other reimbursable costs--allocated to power and to municipal and industrial water supplies in multiple-purpose projects--are repaid from power revenues and from municipal and industrial water sales.

Repayment contracts are not made with individuals but with acceptable water users' organizations, such as irrigation districts, mutual associations, reclamation districts, conservation districts, and many others. Various types of contracts have been evolved over the years to meet the general requirement for reimbursement of costs and still be within the expected ability of the water user to pay. Under the 1902 act, repayment could not exceed ten annual installments. This period has been extended so that the principal contract being executed nowadays spreads the obligation over a 40-year period, the first payment to be after the development period (during which only operation and maintenance are collected). During the development period, running from the time water is delivered to a block of land to the time payment of construction charges commences, the land is made ready for full irrigation. Usually included in the contracts are provisions for increasing or decreasing the annual installment in accordance with the variations in income from the land.

The cost per acre of reclamation projects has been rising, and in certain proposed projects it greatly exceeds the value of the land after irrigation. For instance, while the cost of existing irrigation projects in the Columbia Basin averaged only $65 per acre, the costs of projects currently under construction are increasingly beyond the repayment abilities of prospective users of irrigated lands. This fact is strikingly brought out by the data in Table 2 which show the Federal investment per acre (for those projects where the investment is over $200 per acre) and the number of years needed for recovery of the cost. The average value per acre of farm land in states like Iowa and Illinois is not as much as the irrigators' share of repayment costs per acre in many reclamation projects. Worth emphasizing, too, is the large share of costs that must be recovered through power revenue. Table 2 also indicates the tremendous increase in costs over the original estimates.

Longer repayment periods than the normal 40-year period have been authorized for individual projects by special statute. The result is that the costs of projects begun almost 50 years ago have still not been recovered. In fact, less than 12 per cent has been repaid on one of the oldest projects, 43 years after water service began. On another project, 27 years after water service started, only 6 per cent has been recovered.

Table 2

COST, INVESTMENT, AND REPAYMENT PERIODS OF SELECTED FEDERAL RECLAMATION WORKS

As of June 30, 1952

Project, Unit, or Division	State	Federal Investment Per Acre	Repayment Costs Per Acre		Over-all Pay-out Period[a] (Years)	Estimated Cost		
			Irrigators	Power (Except as Noted)		Original (Millions)	Present (Millions)	Percentage Increase
Webster Unit	Kansas	$1,337	$235	$1,102	78	$ 7.8	$ 24.7	216.7
Kirwin Unit	Kansas	1,062	256	806	66	10.0	24.0	140.0
Cedar Bluff Unit	Kansas	828	197	631	80	7.6	18.0	136.8
Cachuma	California	827	827	---	50	32.3	38.0	17.6
Frenchman-Cambridge Division	Nebraska	786	136	650	90	26.9	71.7	166.5
Kendrick (First Unit)	Wyoming	782	40	742	68	20.0	33.3	66.5
Shadehill Unit	South Dakota	698	65	633	63	2.3	11.0	378.3
Bostwick Division	Nebraska-Kansas	599	160	439	45	8.1	55.9	590.1
Weber Basin	Utah	527	350	177[b]	70	69.5	70.4	1.3
Columbia Basin	Washington	523	85	438	50	487.0	754.5	54.9
St. Francis Unit	Colorado-Kansas	521	83	438	63	13.3	15.2	14.3
Missouri Diversion Unit	Montana-North Dakota	466	192	274	76	23.8	126.7	432.4
Yakima (Kennewick)	Washington	454	271	183	66	10.7	12.9	20.6
Lower Marias Unit	Montana	448	182	266	75	19.7	64.3	226.4
Gila	Arizona	436	436	---	70	19.5	50.1	156.9
Jamestown Unit	North Dakota	406	88	318	63	7.0	8.6	22.9
Paonia	Colorado	386	136	250	78	1.0	6.7	570.0
Rapid Valley Unit	South Dakota	375	21	354	63	1.0	12.2	1,120.0
Vermejo	New Mexico	375	279	96[c]	83	2.7	2.9	7.4
Crow Creek Pump Unit	Montana	337	---	337	--	---	1.7	---
Yakima (Roza)	Washington	325	256[c]	69	66	15.0	23.6	57.3
Eden	Wyoming	308	75	233	70	2.0	6.2	210.0
Central Valley	California	302	200	24[b] 78	50	170.0	654.2	284.8
Riverton	Wyoming	247	238	6[c] 3	92	6.8	24.7	263.2

a. Includes development periods ranging up to 10 years; total period is estimated number of years necessary for return of full costs.
b. Municipal water revenue.
c. Nonreimbursable

Source: House Appropriations Committee.

A long time-lag is always experienced between appropriation of funds and actual yields from the improved land. Payment has not been completed on a single one of more than 75 Reclamation Bureau projects undertaken in the western half of the United States since 1902, and has not even started on nearly 25 projects. As of June 30, 1952, the face value of repayment contracts amounted to $628 million, of which only $99 million had accrued to the government. From Table 3 it is very clear that the government will need a long time to recover its costs in these projects. The table contains a schedule of repayments on selected reclamation projects from the year water service began to June 30, 1952.

The statutes originally contemplated that irrigation activities would be self-sustaining and self-liquidating. To be self-sustaining the revenue from water sales would have to be at least equal to the sum of the costs properly chargeable against such revenue. To be self-liquidating, the revenue would have to be sufficient not only to cover the costs, but also to afford repayment of its capital. As previously pointed out, however, usual deficits from irrigation activities have had to be met from power revenues or other sources. In this connection, the Hoover Commission Task Force on Water Resources Projects reported:

> "In part this failure of irrigation projects to carry their own weight financially is attributable to the increasing scarcity of land which can be reclaimed at a reasonable price and the concomitant tendency to reclaim land of poor quality. In the case of the Grand Coulee project, as an example, the investment in irrigation works alone, excluding any investment in the Grand Coulee Dam itself, is estimated at $366 per acre as of June 1947 prices or $428 at August 1948 prices.
>
> "For the average farmer to meet development costs of $366 per acre or of $428 per acre would be patently difficult, even without giving consideration to the additional cost of preparing his land for irrigation; and, if the farmer is unable to meet these costs, the difference between the costs of the service provided to him and his ability to pay must be met from power revenues or by the Federal Treasury.
>
> "Furthermore, the present trend toward increasing costs has, in part, tended to reduce the ability of irrigation projects to carry their own weight; and, for this reason, it has become increasingly difficult to finance irrigation works from their own revenues...."

Regarding the repayment problem, the words of the House Appropriations Committee which examined 1954 Budget requests, are worth quoting:

> "The committee is greatly concerned about the length of time it takes to get irrigation project repayment contracts executed. There are projects still in the construction stage, and in some instances almost completed, that have been under way for years and as yet no repayment contract has been negotiated. This is not good business and the committee will not be inclined to continue appropriating additional construction funds under such circumstances in the future.

Table 3

SCHEDULE OF REPAYMENTS OF SELECTED RECLAMATION PROJECTS

As of June 30, 1952[a]

Project	State	Year Water Service Commenced	Total Contracted Repayment Period (Years)	Total Value of Repayment Contracts	Accrued to Federal Government		Total Unmatured
					Amount	Percent of Total Value of Repayment Contracts	
				------Thousands------			(Thousands)
Newlands	Nevada	1903	78	$ 3,282.0	$ 2,573.7	78.42	$ 708.3
North Platte	Nebraska-Wyoming	1906	115	30,065.0	9,665.3	32.15	20,399.7
Carlsbad	New Mexico	1907	76	3,741.8	1,595.6	42.64	2,146.1
Klamath	Oregon-California	1907	75	4,274.5	2,468.7	57.75	1,805.8
Minidoka	Idaho-Wyoming	1907	76	19,788.8	13,638.6	68.92	6,150.2
Salt River	Arizona	1907	62	21,640.8	11,138.6	51.47	10,502.2
Yakima	Washington	1907	104	46,042.0	12,328.4	26.78	33,713.6
Uma	Arizona-California	1907	50	5,417.6	4,850.8	89.54	566.8
Belle Fourche	South Dakota	1908	115	4,321.2	1,343.2	31.08	2,978.0
Huntley	Montana	1908	80	1,837.4	874.5	47.59	962.9
Okanogan	Washington	1908	73	594.6	182.7	30.73	411.9
Rio Grande	New Mexico-Texas	1908	45	10,144.1	6,685.0	65.90	3,459.1
Shoshone	Wyoming-Montana	1908	231	7,395.1	2,139.6	28.93	5,255.4
Umatilla	Oregon	1908	(b)	2,236.8	973.3	43.51	1,263.5
Uncompahgre	Colorado	1908	125	6,774.3	966.4	14.27	5,807.9
Boise	Idaho-Oregon	1909	73	22,070.8	10,375.1	47.01	11,695.7
Lower Yellowstone	Montana-North Dakota	1909	67	4,087.3	1,803.9	44.13	2,283.4
Sun River	Montana	1909	148	10,113.3	1,156.4	11.43	8,956.9
Orland	California	1910	60	2,679.0	1,341.1	50.06	1,337.9
Milk River	Montana	1911	65	8,115.9	1,124.4	13.85	6,991.4
Grand Valley	Colorado	1915	98	6,060.2	1,152.6	19.02	4,907.5
Strawberry Valley	Utah	1915	99	3,349.4	2,299.8	68.66	1,049.6
Riverton	Wyoming	1925	60	7,353.2	464.4	6.32	6,888.8
Bitter Root	Montana	1930	58	992.7	322.1	32.45	670.6
Vale	Oregon	1930	75	5,012.0	353.6	7.06	4,658.4

a. Detail will not necessarily add to totals because of rounding. Periods and amounts may include more than one contract for more than one irrigation district in a given project.

b. No fixed repayment obligation or fixed pay-out period. Full return of costs to government at rates specified in contract probably will not be accomplished within useful life of project. Over-all pay-out period is estimated at 328 years.

Source: House Committee on Interior and Insular Affairs, Bureau of Reclamation.

"With further reference to such contracts, it is hoped that the Secretary will find means of shortening the ten-year development period allowed on most projects before the repayment of construction costs begin. This will, of course, return more money to the reclamation fund in a shorter period of time, and in effect cut down the cost of the project to the beneficiaries of it and reduce the number of years which the debt will be a burden to them. In addition, permission to pay out in a shorter period than the contract provides should be granted where desired by the water users."

Reclamation Fund

An important factor in the financing of reclamation projects is the Reclamation Fund, a Congress-created, revolving fund, which as of June 30, 1952, had total receipts (since 1902) of $753.6 million. This fund includes money from the beneficiaries of Reclamation Bureau facilities on account of payment of construction costs, operation and maintenance costs, water rentals and other charges, and the revenues from the sale of electric energy and municipal water, together with a percentage of moneys collected by the government on account of certain mineral and oil leases, sales of public lands and other miscellaneous purposes. The source of these receipts is given in Table 4 below:[3]

Table 4

Reclamation Fund Receipts[a]
1902 to June 30, 1952

	(Millions)
Water rentals, repayment of construction, operation, maintenance, and other	$234.5
Leases and sales of public land and timber	119.1
Oil leases	197.8
Royalties, rentals, rights-of-way and licenses	6.9
Power sales	191.4
Other	3.8
Total since 1902	$753.6

a. Detail will not add to total because of rounding.

[3] A major issue in the financing of reclamation projects is the "interest component," which could be far greater than the original construction cost of a project. In the case of the proposed Central Arizona project which was violently debated two years ago, the initial cost, officially estimated at $708 million, would have been increased by more than $2 billion paid as interest on the public debt over the repayment period.

Federal reclamation laws provide that the selling price of power derived from any Federal project shall include an interest charge of not less than 3 percent on the investment. In the past, when the Federal government paid money out of the Treasury or borrowed for reclamation projects, this 3 percent interest charge on the sale of power derived from the project was repaid into the Treasury. A few years ago, the Interior Department suggested that if the interest

These moneys are available for appropriation by Congress for reclamation projects. Which project is to be financed from the Reclamation Fund and which from the general fund is determined during the budgetary process. General investigations, operation and maintenance (with two exceptions), and general administrative expenses are all financed from the Reclamation Fund. Construction funds are allocated between general fund and Reclamation Fund on the basis of their legislative history. The larger multiple-purpose projects are financed from the general fund. Smaller irrigation developments are financed from the Reclamation Fund. The amounts to be spent from the Reclamation Fund are earmarked by the Appropriations Committee in the appropriation bill itself; each item states what amount is to be spent from the Reclamation Fund. During the fiscal years 1902-1952, a total of $685.5 million was appropriated from this fund.

From this sketch of the development of Federal reclamation, it should be apparent that the original requirement of reclamation law that power production be incident to irrigation has been modified. Reclamation projects are often power schemes dressed up as irrigation works.

(footnote - continued)
component was not required to be repaid into the Treasury, substantial sums would remain available to Interior for the development of future projects.

To construct a project, the government might have to borrow money on which the interest would ordinarily be covered by the 3 percent interest charge on power sales--with no loss to the taxpayers. Under Interior's interpretation of the Reclamation law, however, this money would not have to be paid into the Treasury and the interest on the borrowed money would become a charge against the taxpayer, compounded over the repayment period of the project. Meanwhile, the Interior Department would be free to use the interest on power sales for other purposes.

CHAPTER III

NAVIGATION AND FLOOD CONTROL

Under its constitutional power to regulate commerce among the states, the Federal government undertook responsibility for the control, improvement, and protection of navigable waters. Later, the government assumed responsibility for control of floods. The courts subsequently sustained Federal authority in the upper non-navigable reaches of waterways to protect the navigable parts and to protect interstate commerce from flood damage.

Navigation and Rivers and Harbors

Congress has enacted a great many laws directly or indirectly relating to water-borne transportation and commerce. Since 1824, navigation improvement of rivers and harbors has been the duty of the Corps of Engineers almost exclusively. This is, in fact, the one water resource activity with a minimum of overlapping jurisdiction.

In 1824 Congress authorized the President to employ officers of the Corps in making surveys, plans and estimates of roads and canals of national importance from a commercial or military point of view, or as necessary for transportation of mail. In addition to periodic grants of authority, Congress made a general provision in 1935 that navigational improvements of rivers, harbors, and other waterways were to be under the jurisdiction of the Army Engineers. Navigation projects include improvement of channels and harbors, construction of locks, dams, and canals, and construction of shore-protection works. The estimated cost of navigation projects in the Engineers' construction program, has been as follows:

	(Millions)
Total	$4,077.0
To June 30, 1952	1,731.6
Fiscal 1953	33.1
Fiscal 1954	41.3
Balance to Complete	2,271.0

The operation of projects under Army control is subject to other statutory provisions. Surplus power is delivered to the Secretary of the Interior for disposal. Provision is also made for the use of Army projects for irrigation purposes. In addition, the Secretary of the Army has authority to contract for domestic and industrial uses for surplus water. He may also construct, maintain, and operate public park and recreational facilities in reservoir areas. Provision has likewise been made for use of reservoirs and lands connected therewith for the conservation of wildlife, and for the use of dams as foundations for bridges. Thus, even these navigation projects may wind up being used for multiple purposes.

Flood Control

Federal flood control is also carried on principally through the Corps of Engineers. The program is nationwide in scope, although major emphasis is on protective works in the Mississippi River and its principal tributaries, particularly the Missouri. Large flood control projects are also under way in the Los Angeles and Central Valley areas of California and are nearing completion in the Roanoke and Savannah River Basins on the Atlantic Seaboard.