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APPROVED

JUL 8 - 1976

8/7/8/76

THE WHITE HOUSE

ACTION

WASHINGTON

Last Day: July 10

July 6, 1976

Posted
7/9/76

Archives
7/9/76

MEMORANDUM FOR

THE PRESIDENT

FROM:

JIM CANNON

SUBJECT:

H.R. 12545 - River Basin Monetary
Authorization Act of 1976

Attached for your consideration is H.R. 12545, sponsored by Representative Jones and 12 others.

The enrolled bill provides increased authorizations totalling \$602 million for thirteen comprehensive river basin plans previously approved by Congress for flood control, navigation and other purposes. The amounts which are authorized are consistent with those recommended for the purpose by the Administration. The individual amounts are detailed in the OMB enrolled bill report at Tab A.

OMB, Max Friedersdorf, Counsel's Office (Lazarus), NSC and I recommend approval of the enrolled bill.

RECOMMENDATION

That you sign H.R. 12545 at Tab B.





EXECUTIVE OFFICE OF THE PRESIDENT
OFFICE OF MANAGEMENT AND BUDGET
WASHINGTON, D.C. 20503

JUL 2 1976

MEMORANDUM FOR THE PRESIDENT

Subject: Enrolled Bill H.R. 12545 - River Basin Monetary
Authorization Act of 1976
Sponsors - Rep. Jones (D) Alabama and 12 others

Last Day for Action

July 10, 1976 - Saturday

Purpose

Provides increased authorizations totalling \$602 million for thirteen comprehensive river basin plans previously approved by Congress for flood control, navigation and other purposes.

Agency Recommendations

Office of Management and Budget	Approval
Department of the Army	Approval

Discussion

After authorizing river basin plans and major projects, Congress subsequently authorizes appropriations needed to carry out these plans and projects during the ensuing one or two years. H.R. 12545 provides the necessary authorization for this purpose for fiscal year 1977 in the amounts and for the projects indicated below. The amounts which



the bill would authorize are consistent with those recommended for the purpose by the Administration.

<u>Basin</u>	<u>Amount</u>
Alabama-Coosa River Basin	\$6,000,000
Arkansas River Basin	6,000,000
Brazos River Basin	19,000,000
Columbia River Basin	39,000,000
Mississippi River and tributaries	220,000,000
Missouri River Basin	85,000,000
North Branch, Susquehanna River Basin	72,000,000
Ohio River Basin	23,000,000
Red River Waterway project	60,000,000
San Joaquin River Basin	46,000,000
Santa Ana River Basin	2,000,000
South Platte River Basin	22,000,000
Upper Mississippi River Basin	2,000,000

Nasmi R Sweeney

Acting Assistant Director
for Legislative Reference

Enclosures



THE WHITE HOUSE

ACTION MEMORANDUM

WASHINGTON

LOG NO.:

Date: July 2

Time: 330pm

FOR ACTION:

NSC/S
Steve McConahey
Ken Lazarus
Max Friedersdorf
George Humphreys

cc (for information):

Jack Marsh
Jim Cavanaugh
Ed Schmults

FROM THE STAFF SECRETARY

DUE: Date: July 6

Time: 1000am

SUBJECT:

H.R. 12545 - ~~River~~ -River Basin Monetary Authorization Act of 1976

ACTION REQUESTED:

For Necessary Action

For Your Recommendations

Prepare Agenda and Brief

Draft Reply

For Your Comments

Draft Remarks

REMARKS:

please return to Judy Johnston, Ground Floor West Wing

PLEASE ATTACH THIS COPY TO MATERIAL SUBMITTED.

If you have any questions or if you anticipate a delay in submitting the required material, please telephone the Staff Secretary immediately.

K. R. COLE, JR.
For the President



DEPARTMENT OF THE ARMY
WASHINGTON, D.C. 20310

1 JUL 1976

Honorable James T. Lynn

Director, Office of Management and Budget

Dear Mr. Lynn:

This is in reply to your request for the views of the Department of the Army on enrolled enactment H. R. 12545, 94th Congress, an act "Authorizing additional appropriations for prosecution of projects in certain comprehensive river basin plans for flood control, navigation, and for other purposes."

The Department of the Army strongly recommends that the enrolled enactment be favorably considered.

The enrolled enactment authorizes additional appropriations for thirteen comprehensive river basin plans authorized for construction by the Corps of Engineers. Additional authorization will be required in Fiscal Year 1977 if work on projects within the thirteen basins is to continue.

Monetary authorizations first were put into effect by the Flood Control Acts of 1936 and 1938. They limit authority to appropriate and expend funds within specified basins or on specified major projects to levels below the total costs of the authorized basin developments or projects.

In this manner, Congress can review and control the rate of accomplishment of basin plans and major projects to which the monetary authorizations apply. When the monetary authorization limit of a plan or project is approached, legislation is required to provide additional authorization so that appropriation can be made to permit the plan to continue.

The thirteen basins, the original authorizing acts and the additional amounts of authorization for each basin which the enrolled enactment would provide are shown below. The enrolled enactment further provides that the total amount authorized to be appropriated shall not exceed \$602,000,000.



Basin	Act of Congress	Amount
Alabama-Coosa River Basin.....	Mar. 2, 1945	\$6,000,000
Arkansas River Basin.....	June 28, 1938	6,000,000
Brazos River Basin.....	Sept. 3, 1954	19,000,000
Columbia River Basin.....	June 28, 1944	39,000,000
Mississippi River and tributaries..	May 15, 1928	220,000,000
Missouri River Basin.....	June 28, 1938	85,000,000
North Branch, Susquehanna River Basin.....	July 3, 1958	72,000,000
Ohio River Basin.....	June 22, 1936	23,000,000
Red River Waterway project.....	Aug. 13, 1968	60,000,000
San Joaquin River Basin.....	Dec. 22, 1944	46,000,000
Santa Ana River Basin.....	June 22, 1936	2,000,000
South Platte River Basin.....	May 17, 1950	22,000,000
Upper Mississippi River Basin.....	June 28, 1938	2,000,000
Total.....		\$602,000,000

Without such increases, in authorizations, work in these basins would be seriously disrupted during Fiscal Year 1977.

Sincerely,



Victor V. Veysey
Assistant Secretary of the Army
(Civil Works)

THE WHITE HOUSE

ACTION MEMORANDUM

WASHINGTON

LOG NO.:

Date: July 2

Time: 330pm

FOR ACTION: NSC/S
Steve McConahey
Ken Lazarus
Max Friedersdorf
George Humphreys

cc (for information): Jack Marsh
Jim Cavanaugh
Ed Schmults

FROM THE STAFF SECRETARY

DUE: Date: July 6

Time: 1000am

SUBJECT:

H.R. 12545 - River -River Basin Monetary Authorization
Act of 1976

ACTION REQUESTED:

For Necessary Action

For Your Recommendations

Prepare Agenda and Brief

Draft Reply

For Your Comments

Draft Remarks

REMARKS:

please return to Judy Johnston, Ground Floor West Wing

*Revised approval
Guth*

PLEASE ATTACH THIS COPY TO MATERIAL SUBMITTED.


If you have any questions or if you anticipate a
delay in submitting the required material, please
telephone the Staff Secretary immediately.

I James M. Cannon
I For the President

THE WHITE HOUSE

WASHINGTON

July 6, 1976

MEMORANDUM FOR: JIM CAVANAUGH
FROM: MAX L. FRIEDERSDORF 
SUBJECT:

H.R. 12545 - River Basin Monetary Authorization Act of 1976

The Office of Legislative Affairs concurs with the agencies
that the subject bill be signed.

Attachments

NATIONAL SECURITY COUNCIL

July 6, 1976

MEMORANDUM FOR: JAMES M. CANNON
FROM: Jeanne W. Davy *JWD*
SUBJECT: H. R. 12545

The NSC Staff concurs in the proposed Enrolled Bill H. R. 12545 -
River Basin Monetary Authorization Act of 1976.

EXECUTIVE OFFICE OF THE PRESIDENT
OFFICE OF MANAGEMENT AND BUDGET
WASHINGTON, D.C. 20503

JUL 2 1976

MEMORANDUM FOR THE PRESIDENT

Subject: Enrolled Bill H.R. 12545 - River Basin Monetary
Authorization Act of 1976
Sponsors - Rep. Jones (D) Alabama and 12 others

Last Day for Action

July 10, 1976 - Saturday

Purpose

Provides increased authorizations totalling \$602 million for thirteen comprehensive river basin plans previously approved by Congress for flood control, navigation and other purposes.

Agency Recommendations

Office of Management and Budget	Approval
Department of the Army	Approval

Discussion

After authorizing river basin plans and major projects, Congress subsequently authorizes appropriations needed to carry out these plans and projects during the ensuing one or two years. H.R. 12545 provides the necessary authorization for this purpose for fiscal year 1977 in the amounts and for the projects indicated below. The amounts which

RIVER BASIN AUTHORIZATIONS

MAY 3, 1976.—Committed to the Committee of the Whole House on the State of the Union and ordered to be printed

Mr. JONES of Alabama, from the Committee on Public Works and Transportation, submitted the following

REPORT

[To accompany H.R. 12545]

The Committee on Public Works and Transportation, to whom was referred the bill (H.R. 12545) authorizing additional appropriations for prosecution of projects in certain comprehensive river basin plans for flood control, navigation, and for other purposes, having considered the same, report favorably thereon within an amendment and recommend that the bill as amended do pass.

The amendment is as follows:

Strike out all after the enacting clause and insert in lieu thereof the following:

That (a) in addition to previous authorizations, there is hereby authorized to be appropriated for the prosecution of the comprehensive plan of development of each river basin under the jurisdiction of the Secretary of the Army referred to in the first column below, which was basically authorized by the Act referred to by date of enactment in the second column below, an amount not to exceed that shown opposite such river basin in the third column below:

Basin	Act of Congress	Amount
Alabama-Coosa River Basin.....	Mar. 2, 1945	\$6,000,000
Arkansas River Basin.....	June 28, 1938	6,000,000
Brazos River Basin.....	Sept. 3, 1954	10,000,000
Columbia River Basin.....	June 28, 1944	39,000,000
Mississippi River and tributaries.....	May 15, 1928	220,000,000
Missouri River Basin.....	June 28, 1938	85,000,000
North Branch, Susquehanna River Basin.....	July 3, 1958	72,000,000
Ohio River Basin.....	June 22, 1936	23,000,000
Red River Waterway project.....	Aug. 13, 1968	60,000,000
San Joaquin River Basin.....	Dec. 22, 1944	46,000,000
Santa Ana River Basin.....	June 22, 1936	2,000,000
South Platte River Basin.....	May 17, 1950	22,000,000
Upper Mississippi River Basin.....	June 28, 1938	2,000,000

(b) The total amount authorized to be appropriated by this Act shall not exceed \$602,000,000.

H.R. 12545, as reported, authorizes additional appropriations for projects in thirteen river basin plans authorized for construction by the Corps of Engineers.

Monetary authorizations first were put into effect by the Flood Control Acts of 1936 and 1938. They limit authority to appropriate and expend funds within specified basins or on specified major projects to levels below the total costs of the authorized basin developments or project. In this way they give the Congress opportunity to review and control the rate of accomplishment of the basin plans and major projects to which they apply.

In these basin plans, the Congress has approved an entire plan for development of a river basin in the interest of flood control, navigation, power, and allied water uses, but limited the amounts of funds to anticipated appropriations for a specified period of years, allowing accomplishment of only part of the plan. Subsequently the Congress has augmented some of the previously approved plans, by authorizing additional projects, or modifications of projects, and increased the monetary authorization to provide for additional appropriations. When the monetary authorization limit of a plan is approached, legislation is required to provide additional authorization so that appropriations can be made to permit the plan to continue. If such legislation is not forthcoming when needed, construction of projects in the basin plan cannot proceed, even if funds have been included in appropriation acts for this purpose. At the present time there are 29 basin development plans subject to basin monetary authorization limitations.

There are 13 river basins for which additional authorizations will be required in FY 1977 if work on projects within these basins is to continue. The basins, the original authorizing acts and the additional amounts of authorization which H.R. 12545 would provide are shown in the following table:

Basin	Act of Congress	Amount
Alabama-Coosa River Basin.....	Mar. 2, 1945	\$6,000,000
Arkansas River Basin.....	June 28, 1938	6,000,000
Brazos River Basin.....	Sept. 3, 1954	19,000,000
Columbia River Basin.....	June 28, 1944	39,000,000
Mississippi River and tributaries.....	May 15, 1928	220,000,000
Missouri River Basin.....	June 28, 1938	85,000,000
North Branch, Susquehanna River Basin.....	July 3, 1958	72,000,000
Ohio River Basin.....	June 22, 1936	23,000,000
Red River Waterway project.....	Aug. 13, 1968	60,000,000
San Joaquin River Basin.....	Dec. 22, 1944	46,000,000
Santa Ana River Basin.....	June 22, 1936	2,000,000
South Platte River Basin.....	May 17, 1950	22,000,000
Upper Mississippi River Basin.....	June 28, 1938	2,000,000
Total.....		\$602,000,000

There follows a description of the various river basins and projects to which the additional authorization may be applied. The Committee wishes to emphasize that this list of projects may not be all-inclusive and is not intended to preclude the use of these authorizations on other projects for which funds may be appropriated in the Fiscal Year 1977 Appropriations Act.

DESCRIPTION OF BASINS

ALABAMA-COOSA RIVER BASIN

The Alabama-Coosa River System drains an area of 22,800 square miles, of which about 130 square miles are in Tennessee, 5,350 square miles are in Georgia and 17,320 square miles are in Alabama. The basin has a maximum width of 110 miles and extends about 320 miles from southeast Tennessee and northwest Georgia diagonally across Alabama to the southwest corner of the State.

The River and Harbor Act of March 2, 1945, provides for the initial and ultimate development of the Alabama-Coosa Rivers and Tributaries for navigation, flood control, power development, and other purposes. The Act includes authorization for modification of the original plan as may be advisable from time to time in the discretion of the Secretary of the Army and the Chief of Engineers for the purpose of increasing the development of hydroelectric power. This Act also authorized the appropriation of \$60 million dollars. Additional monetary authorization has been provided by subsequent acts, bringing the total monetary authorization to \$275 million.

Projects for which additional authorization is planned to be used:
Carters Lake, GA

Jones Bluff Lock & Dam, AL

Following is a detailed description of the individual projects for which additional monetary authorization is provided:

Project: Carters Lake, Coosawattee River, Ga.

Location: The project is located on the Coosawattee River 26.8 miles above its mouth, in Murray and Gilmer Counties, Georgia.

Authorization: 1945 River and Harbor Act.

Benefit-cost ratio: 3.5 to 1.

Description: The project provides flood damage reduction along the lower Coosawattee and the Oostanaula Rivers to Rome, Georgia, by reducing flood stages varying from 5.6 feet in the upper part of the 74-mile length of river to 1 foot at Rome. It would provide an estimated 406,200,000 kwh of electric energy annually and a dependable capacity of 500,000 kw. The project is needed to help supply the current power demand of the area. The resulting stream flow regulation from power operations at Carters would also generate an additional 30,000,000 kwh at power plants downstream on the Coosa River. The reservoir will also provide additional recreation facilities for the area.

Status: (Jan. 1, 1976)	Percent complete	Completion schedule
Entire project.....	97	June 1977.
Lands and damages.....	99	March 1976.
Relocations.....	100	June 1973.
Reservoir.....	100	February 1974.
Begin Impoundment.....		November 1974.
Dams.....	100	December 1975.
River Diversion.....		January 1964.
Power plant.....	98	April 1976.
Power-On-Line:		
1st unit.....		July 1975.
2d unit.....		November 1975.
3d unit.....		January 1976.
4th unit.....		March 1976.
Roads.....	94	April 1976.
Recreation facilities.....	65	June 1977.
Buildings, Grounds, and Utilities.....	100	September 1975.
Permanent operating equipment.....	20	April 1976.

Summarized financial data

Estimated total appropriation requirement.....	\$107,200,000
Future non-Federal reimbursement.....	92,755,000
Estimated Federal cost (ultimate—Corps of Engineers).....	14,445,000
Estimated non-Federal cost.....	92,755,000
Reimbursement: Power.....	92,755,000
Total estimated project cost.....	107,200,000
Allocations to June 30, 1975.....	103,046,000
Conference allowance fiscal year 1976.....	2,954,000
Allocation fiscal year 1976.....	2,954,000
Conference allowance 1976 transition quarter.....	0
Allocation 1976 transition quarter.....	0
Allocations to date.....	106,000,000

Project: Jones Bluff Lock and Dam, Alabama.

Location: The project is located on the Alabama River, 245.4 miles above its mouth, in Lowndes and Autauga Counties, Alabama, 15 miles southeast of Selma, Alabama.

Authorization: 1945 River and Harbor Act.

Benefit-cost ratio: 1.8 to 1 for the authorized project to Montgomery of which Jones Bluff L&D is an integral unit.

Description: The Alabama-Coosa Basin is rich in natural resources. Its economy heretofore has been largely agricultural. Considerable industrial expansion is now taking place. Development of the Basin's water resources is essential to meet the present day requirements. The reservoir formed by Jones Bluff Lock & Dam extends 82 miles up the Alabama and Coosa Rivers to Wetumpka, Alabama. It constitutes a vital link in the canalization of the Alabama River, which provides a 9-foot deep navigation channel to Montgomery, Alabama. The estimated future annual commerce on the Alabama River is over 3 million tons. The proposed power installation at Jones Bluff, 68,000 kw., will provide 328,900,000 kwh of energy annually for which there will be a ready market. Navigation to Montgomery and the additional power to be generated will be very beneficial in the development of the tributary area. The reservoir also will be accessible to a large part of the population of central Alabama for recreational uses.

Status: (Jan. 1, 1976)	Percent complete	Completion schedule
Lands and damages.....	99	April 1976.
Relocations.....	100	March 1970.
Reservoir.....	100	January 1972.
Dam.....	100	January 1976.
River closure.....		October 1970.
Lock.....	100	November 1971.
Lock in operation.....		January 1972.
Powerplant.....	87	January 1976.
Power-on-line:		
1st unit.....		June 1975.
2d unit.....		July 1975.
3d unit.....		September 1975.
4th unit.....		October 1975.
Roads.....	36	September 1979.
Channels.....	100	November 1971.
Recreation facilities.....	6	September 1979.
Buildings, grounds, and utilities.....	100	November 1974.
Permanent operating equipment.....	81	September 1976.
Entire project.....	81	September 1979.

Summarized financial data

Estimated total appropriation requirement.....	\$84,000,000
Future non-Federal reimbursement.....	49,432,000
Estimated Federal cost (ultimate—Corps of Engineers).....	34,568,000
Estimated Federal cost (U.S. Coast Guard).....	78,000
Estimated non-Federal cost.....	49,432,000
Reimbursement: Power.....	49,432,000
Total estimated project cost.....	84,078,000
Allocations to June 30, 1975.....	66,026,000
Conference allowance fiscal year 1976.....	5,500,000
Allocation fiscal year 1976.....	5,500,000
Conference allowance 1976 transition quarter.....	1,800,000
Allocation 1976 transition quarter.....	1,800,000
Allocations to date.....	73,326,000

ARKANSAS RIVER BASIN

The Arkansas River Basin contains an area of about 160,500 square miles. The basin is about 870 miles in length in an east-west direction and approximately 185 miles in average width. It extends from the Rocky Mountains on the west to the Mississippi River on the east. The drainage basin occupies parts of the States of Colorado, New Mexico, Kansas, Oklahoma, Texas, Missouri, and Arkansas.

The general comprehensive plan for flood control and other purposes in the Arkansas River Basin was adopted by the Flood Control Act approved June 28, 1938, which authorized an appropriation of \$21 million for partial accomplishment of the plan. The plan has been further amended and modified and additional monetary authorization provided by subsequent acts.

The River and Harbor Act of July 24, 1946, authorized construction of a multiple-purpose plan for improvement of the Arkansas River Basin, Arkansas and Oklahoma, for navigation, flood control, and other purposes and authorized the appropriation of \$55 million for partial accomplishment of the plan. This plan has likewise been modified by subsequent acts, and additional monetary authorization provided.

The Flood Control Act of July 14, 1960, incorporated the authorized flood control plan and the multiple-purpose plan into a single plan of development and provided that all authorizations made available for the Arkansas River Basin would be applicable to the combined plan of development. The monetary authorization provided for the combined plan totals \$1,415.7 million.

Projects for which additional authorization is planned to be used: McClellan-Kerr Arkansas River Navigation System Navigation Lock and Dam, AR and OK

Fort Gibson Lake, Units 5 and 6, OK

Ozark Lock and Dam, AR

Recreation at completed projects:

Canton Lake, OK

Dardanelle Lake, AR

Elk City Lake, KS

Navigation Locks and Dams, AR
Toronto Lake, KS

Following is a detailed description of the individual projects for which additional monetary authorization is provided.

Project: McClellan-Kerr Arkansas River Navigation System, Locks and Dams.

Description: The authorized project provides for the improvement of the Arkansas River and its tributaries by the construction of dams and channels to serve navigation, afford additional flood control, produce hydroelectric power, and provide related benefits, such as recreation and wildlife propagation. The navigation feature of the project consists of a 9-foot navigation channel from the Mississippi River to Catoosa, Oklahoma, 15 miles east of Tulsa. The route follows the White River and the Arkansas Post Canal a distance of 19 miles to the Arkansas River; thence up the Arkansas River 374 miles to the mouth of the Verdigris River in Oklahoma; and thence up the Verdigris River to Catoosa, a distance of 50 miles. The Arkansas River is a major tributary of the Mississippi River and enters the Mississippi River about 575 miles above the Head of Passes, Louisiana. The project is located in 15 counties in Arkansas and 6 counties in Oklahoma.

Authorization: 1946 River and Harbor Act and Water Resources Development Act of 1974.

Benefit-cost ratio: 1.5 to 1 (Multiple-Purpose Plan for Lower Arkansas River Basin).

STATUS—MAJOR CONSTRUCTION (JAN. 1, 1976)

Feature	Percent complete	Completion schedule
Entire project.....	95	September 1981.
Entrance channel.....	100	
Norrell lock and dam (No. 1).....	100	
Lock and dam No. 2.....	100	
Lock and dam No. 3.....	100	
Lock and dam No. 4.....	100	
Lock and dam No. 5.....	100	
David D. Terry lock and dam (No. 6).....	100	
Murray lock and dam (No. 7).....	100	
Toad Suck Ferry lock and dam (No. 8).....	100	
Lock and dam No. 9.....	62	September 1981.
Lock and dam No. 13.....	100	
W. D. Mayo lock and dam (No. 14).....	100	
Chouteau lock and dam (No. 17).....	100	
Newt Graham lock and dam (No. 18).....	100	
Maintenance and repair fleet and marine terminals.....	86	September 1977.

Summarized financial data

Estimated Federal cost (Corps of Engineers).....	\$524, 000, 000
Estimated Federal cost (U.S. Coast Guard).....	2, 268, 000
Estimated non-Federal cost.....	0
Total estimated project cost.....	526, 268, 000
Allocations to June 30, 1975.....	493, 079, 000
Conference allowance for fiscal year 1976.....	5, 350, 000
Allocation for fiscal year 1976.....	4, 907, 000
Conference allowance for 1976 transition quarter.....	1, 600, 000
Allocation for 1976 transition quarter.....	1, 500, 000
Allocations to date.....	499, 486, 000

Eufaula Lake, OK
Fort Gibson Lake, OK

Project: Fort Gibson Lake, Oklahoma, power units 5 and 6 (Continuation of planning).

Description: The project is located in Wagoner and Cherokee Counties, Oklahoma, approximately 12 miles northeast of Muskogee, Oklahoma. The plan of improvement is to add two additional 11,250 KW power units to the four currently in operation.

Authorization: Flood Control Act of 1941.

Benefit-cost ratio: 1.4 to 1.

Summarized financial data

Estimated total appropriation requirement.....	\$12, 400, 000
Future non-Federal reimbursement.....	12, 400, 000
Estimated Federal cost (ultimate).....	
Estimated non-Federal cost.....	12, 400, 000
Reimbursement: Power.....	12, 400, 000
Total estimated project cost.....	12, 400, 000
Preconstruction planning estimate.....	800, 000
Allocations to June 30, 1975.....	
Conference allowance for fiscal year 1976.....	350, 000
Allocation for fiscal year 1976.....	350, 000
Conference allowance for 1976 transition quarter.....	100, 000
Allocation for 1976 transition quarter.....	100, 000
Planning allocation for fiscal year 1977.....	350, 000
Balance to complete preconstruction planning after fiscal year 1977.....	

Project: Ozark Lock and Dam, Ark.

Summarized financial data

Estimated total appropriation.....	\$86, 000, 000
Requirement: Future non-Federal reimbursement.....	45, 334, 000
Estimated Federal cost (Ultimate).....	40, 666, 000
Estimated non-Federal cost.....	45, 334, 000
Reimbursement: Power.....	45, 334, 000
Total estimated project cost.....	86, 000, 000
Allocations to June 30, 1975.....	84, 700, 000
Conference allowance for fiscal year 1976.....	
Allocations for fiscal year 1976.....	¹ 100, 000
Conference for 1976 transition quarter.....	
Allocation for 1976 transition quarter.....	¹ 50, 000
Allocation to date.....	84, 850, 000
Needs for fiscal year 1977.....	¹ 850, 000
Balance to complete after fiscal year 1977.....	¹ 300, 000

¹ To be handled by transfer as needed.

Authorization: 1946 River and Harbor Act.

Location and description: Ozark Lock and Dam is located on the Arkansas River, Mile 251.0, in Franklin County about 1 mile downstream from the town of Ozark. The project provides for navigation on the Arkansas River and generation of hydroelectric power by construction of a lock, dam with a controlled spillway, and powerhouse. The dam is 2,200 feet long and rises 58 feet above the streambed. It consists of a concrete section 1,767 feet long and an earth-fill section 433 feet long. The powerhouse contains five 20,000-kilowatt, hydroelectric generators. The lake will provide a storage capacity of 148,400

acre-feet for navigation and power. At the top of the conservation pool the lake will have a surface area of about 10,600 acres and a shoreline of 173 miles. The navigation lock is 110 feet wide, 600 feet long, and has a lift of 34 feet. Construction began in December 1964, and the lock and dam was completed in 1969, and the power plant was completed in 1975.

Monetary authorization through fiscal year 1977: The additional monetary authorization are required to meet the following needs:

Modifications and claims to seven existing counties.....	\$100,000
Real estate deficiency awards.....	650,000
Engineering and design, supervision and administration.....	100,000
Total	850,000

BRAZOS RIVER BASIN, TEX.

The Brazos River rises in eastern New Mexico and flows southeasterly 1,210 miles to the Gulf of Mexico near Freeport, Texas. The basin has an overall length of about 640 miles and a maximum width of approximately 120 miles. It contains an area of about 44,670 square miles.

The Flood Control Act of 1954, approved September 3, 1954, adopted the basinwide plan of improvement in the Brazos River Basin and authorized the appropriation of \$40 million for initiation and partial accomplishment of the plan. Subsequent legislation has authorized additional amounts for continuation of the plan, and modified it to include additional projects. The monetary authorization provided to date totals \$160 million.

Projects for which additional authorization is planned to be used:

Aquilla Lake, TX
Millican Lake, TX
San Gabriel River, TX

Recreation at Completed Projects:

Proctor Lake, TX
Summerville Lake, TX
Stillhouse Hollow Lake, TX
Waco Lake, TX

Following is a detailed description of the individual projects for which additional monetary authorization is provided:

Project: Aquilla Lake, Texas.

Location: The Aquilla Dam at mile 23.3 on Aquilla Creek, a left bank tributary to the Brazos River in Hill County, Texas.

Authorization: 1968 Flood Control Act.

Benefit-cost ratio: 1.4 to 1.

Status: Jan. 1, 1976

	Completion schedule
Entire project	September 1983
Lands and damages.....	September 1981
Relocations	September 1983
Reservoirs	September 1981
Dams	September 1982
Recreation facilities	September 1982
Buildings, grounds, and utilities.....	March 1980
Permanent operating equipment.....	March 1981

NOTE.—Land acquisition and construction not started.

Summarized financial data

Estimated total appropriation requirement.....	\$47,800,000
Future non-Federal reimbursement.....	10,130,000
Estimated Federal cost (ultimate).....	37,670,000
Estimated non-Federal cost.....	10,130,000
Reimbursement:	10,130,000
Water supply	None
Other costs	
Total estimated project cost	47,800,000
Allocations to June 30, 1975.....	1,360,000
Conference allowance for fiscal year 1976.....	1,500,000
Allocation for fiscal year 1976.....	1,500,000
Conference allowance for 1976 transition quarter.....	700,000
Allocation for 1976 transition quarter.....	700,000
Allocations to date.....	3,560,000

Project: Millican Lake, Texas (continuation of planning).

Description: The authorized Millican dam site is located at river 24.1 on the Navasota River about 18 miles southeast of Bryan, Texas and about 7 miles north of Navasota, Texas. The improvement provides for a concrete and earthfill dam, 83 feet high and 25,300 feet long including 472-foot gate-controlled concrete spillway. The total controlled storage would be 1,550,400 acre-feet including 784,800 acre-feet for flood control, 680,200 acre-feet for water supply and 92,400 acre-feet for sediment reserve. The project includes improvements of the existing downstream channel for flood release purposes. Location of the project is in Brazos, Grimes, and Madison Counties, Texas.

Authorization: 1968 Flood Control Act.

Benefit-cost ratio: 2.0 to 1.

Summarized financial data

Estimated total appropriation requirements	\$160,000,000
Future non-Federal reimbursement	57,970,000
Estimated Federal cost (ultimate)	102,030,000
Estimated non-Federal cost.....	57,970,000
Reimbursable costs:	53,600,000
Water supply	4,370,000
Recreation	None
Other costs	
Total estimated project cost	160,000,000
Preconstruction planning estimate	2,700,000
Allocations to June 30, 1975	1,439,000
Conference allowance for fiscal year 1976	450,000
Allocation for fiscal year 1976	450,000
Conference allowance for 1976 transition quarter.....	110,000
Allocation for 1976 transition quarter.....	110,000

Project: San Gabriel River, Texas.

Description: The improvement will consist of a system of three lakes located in Williamson County in the San Gabriel River watershed. Granger Dam will be located at river mile 31.9 about 7 miles east of Granger, Texas. North Fork Dam will be located at river mile 4.3 on the North Fork of San Gabriel River about 3.5 miles northwest of Georgetown, Texas. South Fork Dam will be located at river mile 4.7 on the South Fork of San Gabriel River about 3 miles south-

west of Georgetown, Texas. Construction of the South Fork Lake will be deferred until the need for water supply develops.

Authorization: 1954 and 1962 Flood Control Acts.

Summarized financial data

Estimated appropriation requirements.....	\$118,000,000
Future non-Federal reimbursement.....	28,961,000
Estimated Federal cost (ultimate).....	89,039,000
Estimated non-Federal cost.....	28,961,000
Reimbursement—Water supply.....	28,961,000
Total estimated project cost.....	<u>118,000,000</u>
Allocations to June 30, 1975.....	31,343,500
Conference allowance for fiscal year 1976.....	7,000,000
Allocation for fiscal year 1976.....	7,000,000
Conference allowance for 1976 transition quarter.....	3,000,000
Allocation for 1976 transition quarter.....	3,000,000
Allocations to date.....	41,343,500

BENEFIT-COST RATIO: 1.7 TO 1

STATUS: (JAN. 1, 1976)

	Percent complete	Completion schedule
Granger Lake:		
Entire Granger Lake.....	35	September 1981
Lands and damages.....	94	December 1977
Relocations.....	8	September 1980
Reservoirs.....	3	September 1981
Dams.....	24	September 1980
Roads.....	6	June 1980
Recreation facilities.....	0	September 1981
Buildings, grounds, and utilities.....	90	June 1980
Permanent operating equipment.....	8	December 1980
North Fork Lake:		
Entire North Fork Lake.....	38	September 1981
Lands and damages.....	92	December 1977
Relocations.....	75	December 1976
Reservoirs.....	23	September 1980
Dams.....	20	March 1980
Roads.....	21	March 1980
Recreation facilities.....	0	September 1981
Buildings, grounds, and utilities.....	100	December 1975
Permanent operating equipment.....	9	December 1980

NOTE.—South Fork Lake: Construction deferred.

COLUMBIA RIVER BASIN

The Columbia River Basin drains an area of 259,000 square miles, of which 219,000 square miles are in the United States and 39,500 square miles are in Canada. The basin includes most of the States of Oregon, Washington, and Idaho; western Montana; small areas in Nevada, Utah, and Wyoming; and the southeastern drainage of the Province of British Columbia, Canada. The river flows a distance of 462 miles in Canada and 745 miles in the United States, for a total distance of 1,207 miles.

The Flood Control Act of June 28, 1938, approved the general comprehensive plan for flood control and other purposes in the Willamette River Basin and authorized \$11,300,000 for the initiation and partial accomplishment of the recommended plan. Individual projects were authorized in the Columbia and Willamette River Basins by the Flood Control Act of June 22, 1936, and subsequent acts. The Flood Control Act of May 17, 1950, approved a general comprehensive plan for both the Columbia and Willamette River Basins for flood control and other purposes and authorized the appropriation of \$115 million for the partial accomplishment of the plan. This monetary authorization has been increased by later acts. Monetary authorization provided to date totals \$1,974.3 million.

Projects for which additional authorization is planned to be used:

Cougar Lake, OR
Dworshak Dam & Reservoir, ID
Gate Creek Lake, OR
John Day L&D—Lake Umatilla, OR & WA
Libby Addl Units & Rereg Dam, MT
Libby Dam—Lake Koocanusa, MT
Libby Rereg Dam, Power Units, MT
Strube Lake & Cougar Addl Units, OR
The Dalles Addl Units, WA & OR
Willamette R. Basin Bank Prot., OR
Recreation at Completed Projects:

Cottage Grove Lake, OR
Fall Creek Lake, OR
Fern Ridge Lake, OR
The Dalles L&D, WA & OR

Following is a detailed description of the individual projects for which additional monetary authorization is provided.

Project: Cougar Lake, Oregon.

Location: On the South Fork McKenzie River, 4.4 miles above the mouth, about 42 miles easterly of Eugene, Oregon.

Authorization: 1950 and 1954 Flood Control Acts.

Benefit-cost ratio: 3.5 to 1.

Description: Cougar Lake provides essential flood protection to the McKenzie River development as well as being an important unit in providing flood control for 175 miles of the Willamette River flood plain. About 171,300 acres of agricultural lands and several cities and their suburbs, including portions of the Portland, Oregon area, are afforded increased flood protection. The project effectively reduced the flood stage by 2.6 feet at the mouth of the McKenzie River for a flood having the magnitude of the historic flood of December 1964. These reductions at Harrisburg and Albany downstream were estimated at 1.9 feet and 1.5 feet, respectively. The project produces at site power and provides increased flows to downstream non-Federal power plants at Leaburg and Oregon City, all of which helps in meeting the growing power market in the Willamette Valley. In addition to providing flood control and power benefits, provides benefits to irrigation, navigation, and recreation. The average annual benefits are listed below:

Summarized financial data

Estimated total appropriation requirement.....	\$57,500,000
Future non-Federal reimbursement.....	-20,554,000
Estimated Federal cost (ultimate).....	36,945,400
Estimated non-Federal cost.....	20,554,600
Reimbursement:	
Power.....	17,432,500
Irrigation.....	3,122,100
Total estimated project cost.....	57,500,000
Allocations to June 30, 1975.....	55,589,000
Conference allowance for fiscal year 1976.....	740,000
Allocations for fiscal year 1976.....	740,000
Conference allowance for 1976 transition quarter.....	300,000
Allocations for 1976 transition quarter.....	300,000
Allocations to date.....	56,629,000

STATUS (JAN. 1, 1976)

	Percent complete	Completion schedule
Entire project.....	97	September 1977.
Land acquisition.....	99	June 1976.
Relocations.....		September 1964.
Dam.....		October 1974.
Fish facilities.....	85	September 1976.
Buildings, grounds, and utilities.....	14	September 1977.
Permanent operations equipment.....		December 1964.
Powerplant:		
Unit No. 1.....		March 1964.
Unit No. 2.....		February 1964.
Effective flood control.....		November 1963.

Project: Dworshak Dam and Reservoir, Idaho.

Location: On the North Fork Clearwater River in Idaho 1.9 miles above its confluence with the Clearwater River, about 43 miles east of Lewiston, Idaho.

Authorization: 1958, 1962, and 1968 Flood Control Acts.

Benefit-cost ratio: 3.9 to 1.

Description: Dworshak is an important project of the Major Water Plan proposed for the development of water resources of the Columbia River Basin. This project will provide power, flood control, navigation, and recreation benefits. The latest load-resource studies prepared by Bonneville Power Administration indicate that the projected power loads of the Pacific Northwest will require power from the Dworshak project in addition to other new scheduled resources. The Dworshak project, in addition to producing power at the site, will be used to regulate flows to firm-up power at the projects downstream from the mouth of the Clearwater River. The storage space will also be used to control flood flows on the Clearwater River downstream from the dam to Lewiston, Idaho, and also as a unit in the Columbia System it will reduce flood flows in the Columbia River below the mouth of the Snake River. The navigation benefits will be derived from improved conditions for log transport on the pool and by making it possible to raft

Summarized financial data

Estimated total appropriation requirement.....	\$312,000,000
Future non-Federal reimbursement.....	271,505,000
Estimated Federal cost (Initial).....	40,495,000
Estimated non-Federal cost.....	271,505,000
Reimbursement: Power.....	271,505,000
Total estimated project cost (Initial).....	312,000,000
Total estimated project cost for ultimate power installation.....	517,000,000
Allocations to June 1975.....	289,309,000
Conference allowance for fiscal year 1976.....	4,000,000
Allocations for fiscal year 1976.....	4,350,000
Conference allowance for 1976 transition quarter.....	1,500,000
Allocations for 1976 transition quarter.....	1,450,000
Allocations to date.....	295,109,000

STATUS (JAN. 1, 1976)

	Percent complete	Completion schedule
Entire project.....	93	September 1979.
Lands and damages.....	87	Do.
Relocations.....		June 1973.
Reservoir.....	86	September 1979.
Dam.....		September 1974.
Fish and wildlife facilities.....	92	September 1979.
Powerplant.....		December 1973.
Recreation facilities.....	43	September 1979.
Flood control storage.....		June 1972.
Complete reservoir filling.....		June 1974.
Power on the line (initial):		
Unit 1 - 90,000 kW.....		March 1973.
Unit 2 - 90,000 kW.....		April 1973.
Unit 3 - 220,000 kW.....		Do.

Project: Gate Creek Lake, Oregon

Summarized financial data

Estimated Federal cost.....	\$73,900,000
Estimated non-Federal cost.....	0
Cash contribution.....	0
Other.....	0
Total estimated project cost.....	73,900,000
Allocations to date.....	840,000
Balance to complete (Corps of Engineers).....	73,060,000
Preconstruction planning estimate.....	1,750,000
Amount that could be used in fiscal year 1977.....	300,000

Authorization: Flood Control Act of 1962.

Location and description: Gate Creek Lake is located in Lane County, Oregon on Gate Creek, a tributary of the McKenzie River, at stream mile 2.0 about 27 miles east of Eugene, Oregon. The plan of improvement provides for an earth and gravel embankment dam, gated spillway, outlet tunnel and outlet regulating works.

Proposed operations for fiscal year 1977: The amount of \$300,000 could be used to resume preconstruction planning and initiate environmental investigations and studies.

Justification: The reservoir will provide 50,000 acre feet of usable flood control storage and will be operated as a unit of the coordinated reservoir system planned for the Willamette Basin in the interest of flood control jointly with conservation of water for navigation, future irrigation and other uses. Gate Creek Lake is one unit of three multiple purpose reservoirs authorized for the McKenzie River Basin. The project will regulate flood flows from a tributary drainage area of 46 square miles which is so oriented that its flood contribution to McKenzie River floods is greater than the area indicates. This regulation will complement that accomplished by Cougar Lake and Blue River Lake in reduction of flood flows in the lower McKenzie River and on Willamette River downstream of the mouth of the McKenzie River. During the December 1964 flood, Gate Creek Lake would have reduced the peak flow at Coburg 11,000 second-feet, corresponding to a stage reduction of 1.4 feet. Total average annual benefits creditable to Gate Creek Lake are estimated at \$6,107,500, excluding irrigation benefits, of which flood control benefits amount to \$5,815,500, and other benefits including downstream power, recreation and navigation amount to \$292,000. The benefit-to-cost ratio is 2.3 to 1.

Project: John Day Lock and Dam—Lake Umatilla, Oregon and Washington.

Location: On the Columbia River at the head of The Dalles Dam pool, river mile 215.6, about 100 miles east of Portland, Oregon.

Authorization: 1950 and 1965 Flood Control Acts.

Benefit-cost ratio: 13.4 to 1.

Description: This project is an essential unit in the authorized slack-water navigation and hydroelectric development of the lower 360 miles of Columbia River and the lower 140 miles of Snake River. The power generated at John Day Dam, in addition to the other new resources, is required to meet the continually growing regional power needs.

Construction of this project completes the slack-water development of the Columbia River portion of the Columbia-Snake navigation system by providing slack water extending from the head of The Dalles project pool to tailwater of the McNary project, a distance of approximately 77 miles. Waterway commerce passing the John Day site in 1974 totalled approximately 3,216,191 tons, comprised mainly of petroleum products, grain, and fertilizer. Commerce moving over the John Day pool is expected to increase progressively as the slack-water development is extended upstream and as the regional economy expands to an estimated annual average traffic of 7,100,000 tons at a transportation saving of \$3,776,000 annually. Lake Umatilla is a part of the comprehensive system of reservoirs for the regulation of floods on the lower Columbia River. Storage space of 500,000 acre-feet provided by the lake will be effective in reducing downstream flood damages. Because of its downstream location, it will afford final control for the late changes in predicted flows.

In addition to the above, irrigation benefits will be realized due to a 55- to 75-foot reduction in pumping lift to 150,000 acres of arid irrigable lands and improvements. The lake will also provide recreational benefits.

Summarized financial data

Estimated total appropriation requirement-----	\$496, 000, 000
Future non-Federal reimbursement-----	—363, 026, 800
Estimated Federal cost (Corps of Engineers)-----	132, 973, 200
Estimated Federal cost (U.S. Coast Guard)-----	332, 500
Estimated non-Federal cost-----	363, 026, 800
Reimbursement: Power-----	363, 026, 800
Total estimated project cost (Initial)-----	496, 332, 500
Total estimated cost of ultimate installation-----	556, 832, 500
Allocations to June 30, 1975-----	471, 308, 000
Conference allowance for fiscal year 1976-----	5, 525, 000
Allocations for fiscal year 1976-----	5, 175, 000
Conference allowance for 1976 transition quarter-----	1, 300, 000
Allocations for 1976 transition quarter-----	1, 100, 000
Allocations to date-----	477, 583, 000

Status (Jan. 1, 1976)	Percent complete	Completion schedule
Entire project-----	96	June 1981.
Land acquisition-----		June 1971.
Relocations (except deferred construction)-----		June 1968.
Dam-----		April 1968.
Lock-----		May 1968.
Fish facilities-----	74	June 1981.
Powerplant-----		June 1972.
Effective flood control-----		May 1968.
Power on line:		
Unit 1-----		July 1968.
Unit 16-----		November 1971.

Project: Libby Additional Units and Reregulating Dam, Montana :

Summarized financial data

Estimated Federal cost-----	\$193, 000, 000
Estimated non-Federal cost-----	0
Cash contribution-----	0
Other-----	0
Total estimated project cost-----	193, 000, 000
Allocations to date-----	2, 105, 000
Balance to complete-----	190, 895, 000
Amount that could be used in fiscal year 1977-----	2, 000, 000

Authorization: Flood Control Act of 1950.

Location and description: Four additional units are to be installed in the Libby Dam powerhouse located on the Kootenia River, about 17 miles upstream from Libby, Montana. The Reregulating Dam is located about 10 miles downstream of the main dam. The proposed project provides for installation of four additional units at Libby Dam with a capacity of 420,000 kilowatts, bringing total installed capacity at the main dam to 840,000 kilowatts. The construction of a reregulating dam with a usable storage capacity of 28,000 acre-feet will be required to permit peaking operation of the eight power units at Libby Dam. The reservoir will require the relocations of the Burlington Northern Railroad, Montana State Highway 37 and the Forest Development Road.

Proposed operations for fiscal year 1977: The amount of \$2,000,000 could be used to initiate construction.

Justification: The Pacific Northwest has experienced power curtailments in the past as development of new power generation capacity has not kept pace with power demands in spite of denial of additional Federal power for new industrial loads. Load resource studies by Bonneville Power Administration indicate even greater power deficits at the end of this decade and in the early 1980's. Early installation of the last four units at Libby Dam will provide an essential part of the generation required by the Federal system to serve the load requirements in the 1982-1983 power season and thereafter. The reregulating dam is required to minimize the effects of peaking operations at the Libby Project. Average annual benefits, all power, are estimated at \$23,462,000. The benefit-to-cost ratio for this project is 1.7 to 1.

Project: Libby Dam-Lake Koocanusa, Montana.

Location: On the Kootenai River about 17 miles upstream from Libby, Montana, and 219 river miles above the confluence of the Kootenai with the Columbia River.

Authorization: 1950 Flood Control Act, and Public Laws 89-789, 90-239, 90-483, 91-282, 91-625, 91-611, and 93-251.

Benefit-cost ratio: 3.0 to 1.

Description: The Libby project is an integral unit of the Major Water Plan for water-resource development of the Columbia Basin. Flood storage provided by the project will aid in reducing flood damages on the Lower Columbia River and on the Kootenai River downstream from the dam. Power will be realized from at-site generation and from controlled release of storage for power generation at downstream hydro plants.

The project, in combination with Canadian storage and existing storage in the Columbia Basin, will permit control of the maximum flood of record on the Lower Columbia River (1894 flood with peak discharge of 1,240,000 c.f.s. at The Dalles) to less than 800,000 c.f.s. at The Dalles. On the Kootenai River downstream from the dam, in combination with the existing levee system, flood storage provided by the project would practically eliminate flood damages along the Kootenai River in the Kootenai Flats area, which extends about 70 miles downstream from above the town of Bonners Ferry, Idaho, to Kootenay Lake. In this area, partial protection is provided by a levee system which protects 34,400 acres of fertile farmland in the United States, including the town of Bonners Ferry, and 17,500 acres in Canada. The area of leveed land flooded in the United States portion of Kootenai Flats amounted to 32,000 acres in 1948, 4,800 acres in 1950, 6,600 acres in 1954, 17,000 acres in 1956, 7,000 acres in 1961, and 5,800 acres in 1967.

When included in a system consisting of projects now existing and under construction, Canadian storage, and without Kootenai-Columbia diversion as proposed in the treaty with Canada, the project would initially generate an average of 2,128,660,000 kWh annually at site and be credited with about 2,076,000,000 kWh annually at downstream plants.

The Pacific Northwest has experienced power curtailments in the past as development of new power generation capacity has not kept pace with power demands in spite of denial of additional Federal

power for new industrial loads. Load resource studies by Bonneville Power Administration indicate even greater power deficits at the end of this decade and in the early 1980's. The Columbia River and its tributaries are endowed with the largest potential hydroelectric capacity of any stream in the Nation. Development of this hydro capacity along with thermal resources is required if the regional power needs are to be met. Early installation of the four initial units at Libby Dam-Lake Koocanusa project will provide an essential part of the generation required by the Federal system to serve the load requirements in the 1975-1976 power season and thereafter.

Summarized financial data

Estimated total appropriation requirement.....	\$480,000,000
Future non-Federal reimbursement.....	-363,514,000
Estimated Federal cost (initial—C. of E.).....	116,486,000
Estimated Federal cost (U.S. Forest Service recreation facilities).....	960,000
Estimated non-Federal cost.....	363,514,000
Reimbursement: Power.....	363,514,000
Total estimated project cost (initial).....	480,960,000
Total estimated project cost for ultimate power installation.....	706,960,000
Allocations to June 30, 1975.....	429,170,000
Conference allowance for fiscal year 1976.....	14,800,000
Allocation for fiscal year 1976.....	16,000,000
Conference allowance for 1976 transition quarter.....	5,000,000
Allocation for 1976 transition quarter.....	3,700,000
Allocation to date.....	448,870,000

STATUS (JAN. 1, 1976)

	Percent complete	Completion schedule
Entire project.....	92	September 1981.
Acquisition of Libby Reservoir.....		July 1972.
Relocations:		
Railroad.....		December 1971
Other.....	96	December 1977.
Reservoir clearing.....		October 1972.
Dam.....		Do.
Effective flood control storage to spillway crest.....		May 1972
Power on the Line.....	95	
Unit 1.....		August 1975.
Unit 2.....		October 1975.
Unit 3.....		January 1976.
Unit 4.....		April 1976.

Project: Libby Reregulating Dam, Power Units, Montana (Continuation of Planning)

Location and description: The Libby reregulating damsite is at river mile 208.9, about 7 miles upstream from the town of Libby, Montana, and 10 miles below the Libby main dam. The plan of improvement provides for installation of three power units in the reregulating dam. The total output of the three units is 76.4 MW.

Authorization: Water Resources Development Act of 1974 (Section 1)

Benefit-cost ratio: 3.3 to 1.

Description: The Pacific Northwest has experienced power curtailments in the past as development of new power generation capacity

has not kept pace with power demands in spite of denial of additional Federal power for new industrial loads. Load resource studies by Bonneville Power Administration indicate even greater power deficits at the end of this decade and in the early 1980's. The Columbia River and its tributaries are endowed with the largest potential hydroelectric capacity of any stream in the nation. Development of this hydro capacity along with thermal resources is required if the regional power needs are to be met. Early installation of these power units will provide a portion of the generation required by the Federal system to serve the load requirements in the region. Average annual benefits, all power, are estimated at \$8,101,000.

Summarized financial data

Estimated total appropriation requirement.....	\$33,000,000
Future non-Federal reimbursement.....	-33,000,000
Estimated Federal cost (ultimate).....	None
Estimated non-Federal cost.....	33,000,000
Reimbursement: Power.....	33,000,000
<hr/>	
Total estimated project cost.....	33,000,000
Preconstruction planning estimate.....	610,000
Phase I estimated cost.....	75,000
Allocations to June 30, 1975.....	75,000
Conference allowance for fiscal year 1976.....	250,000
Allocation for fiscal year 1976.....	200,000
Conference allowance for 1976 transition quarter.....	75,000
Allocation for 1976 transition quarter.....	75,000
Allocation to date.....	350,000
Planning allocation for fiscal year 1977.....	260,000
Balance to complete preconstruction planning after fiscal year 1977.....	0

Project: Strube Lake and Cougar Additional Unit, Oregon.

Summarized financial data

Estimated Federal cost.....	\$45,600,000
Estimated non-Federal cost.....	0
Cash contribution.....	0
Other.....	0
<hr/>	
Total estimated project cost.....	45,600,000
Allocations to date.....	0
Balance to complete (Corps of Engineers).....	45,600,000
Preconstruction planning estimate.....	1,400,000
Amount that could be used in fiscal year 1977.....	150,000

Authorization: Flood Control Acts of 1950, 1954 and 1964.

Location and description: Strube Lake would be located in Lane County on the South Fork of the McKenzie River at river mile 2.5, about 2 miles downstream from Cougar Dam and 45 miles east of Eugene, Oregon. The plan of improvement provides for an earth and gravel embankment, a gate controlled spillway section, and power plant with capacity of about 4,500 kilowatts. Additional power facilities at Cougar Dam would consist of a 35,000 kilowatt unit including powerhouse and penstock.

Proposed operations for fiscal year 1977: The amount of \$150,000 could be used to initiate preconstruction planning and preparation of the environmental impact statement.

Justification: This project will be operated as a unit of the coordinated reservoir system planned for the Willamette River Basin. The proposed plan of improvement at Strube Lake will provide 3,000 acre-feet of usable water storage for reregulation of discharges from the Cougar Dam powerplant. Power developed at Strube Lake would be approximately 4,500 kilowatts. Reregulation of the existing Cougar Dam discharges would permit Cougar to operate as a peaking plant with an increase of 35,000 kilowatts over the present plant capacity of 25,000 kilowatts. This project will therefore provide significant energy and peaking capacity. Average annual power benefits are estimated at \$3,692,000. The benefit-to-cost ratio based on Strube Lake functioning as a reregulating reservoir and Cougar as a peaking plant is 1.22 to 1.

Project: The Dalles Additional Units, Washington and Oregon

Location: On Columbia River mile 193 and 90 miles east of Portland, Oregon

Authorization: 1950 River and Harbor Act

Benefit-cost ratio: 15.9 to 1

Description: The Pacific Northwest has experienced power curtailments in the past as development of new power generation capacity has not kept pace with power demands in spite of denial of additional Federal power for new industrial loads. Load resource studies by Bonneville Power Administration indicate even greater power deficits at the end of this decade and in the early 1980's. The Columbia River and its tributaries are endowed with the largest potential hydroelectric capacity of any stream in the Nation. Development of this hydro capacity along with thermal resources is required if the regional power needs are to be met. Installation of the eight units required by the Federal system served the load requirements in the 1973-1974 power season and thereafter. Total average annual benefits are estimated at \$48,952,000 of which power amounts to \$48,879,000 and recreation amounts to \$73,000.

Summarized financial data

Estimated total appropriation requirements.....	\$69,700,000
Future non-Federal reimbursement.....	-64,955,700
Estimated Federal cost (ultimate).....	4,744,300
Estimated non-Federal cost.....	64,955,700
Reimbursement: Power.....	64,955,700
Estimated total project cost.....	69,700,000
Allocations to June 30, 1975.....	49,941,000
Conference allowance for fiscal year 1976.....	700,000
Allocations for fiscal year 1976.....	700,000
Conference allowance for 1976 transition quarter.....	300,000
Allocations for 1976 transition quarter.....	300,000
Allocations to date.....	50,941,000

¹ Construction of the Dalles Dam with an initial power installation of 14 units (78,000 kW capacity each) has been completed at a cost of \$247,000,000. The \$69,700,000 estimate is to extend the powerhouse to include 8 additional power units; modify the spillway to minimize the harmful nitrogen supersaturation during peak discharges; modify the power intake facilities to improve fingerling passage through the dam; and provide additional recreation and visitor facilities to meet increased demands.

PHYSICAL DATA

[Power installation: Presently planned—8 units (Nos. 15 through 22) at 85,975 kW; 687,800 kW. Head—81 feet (average).
Lands and damages—Acres—0.55 for access road to Maryhill Park. Relocations—None.]

STATUS (JAN. 1, 1976)

	Percent complete	Completion schedule
Entire project.....	74	February 1980.
Fish facilities.....	(1)	Do.
Powerplant.....		September 1974.
Unit 15—85,975 kW.....		January 1973.
Unit 16—85,975 kW.....		Do.
Unit 17—85,975 kW.....		February 1973.
Unit 18—85,975 kW.....		Do.
Unit 19—85,975 kW.....		April 1973.
Unit 20—85,975 kW.....		May 1973.
Unit 21—85,975 kW.....		October 1973.
Unit 22—85,975 kW.....		November 1973.

¹ Not started.

Project: Willamette River Basin Bank Protection, Oregon.

Location: Along the banks of the Willamette River from New Era (river mile 33) to a point above Eugene at the confluence of the Middle Fork of the Willamette and the Coast Fork (river mile 185) a distance of 152 miles and along 287 river miles of the lower reaches of nine of the major tributaries.

Authorization: 1936, 1938, and 1950 Flood Control Acts.

Benefit-cost ratio: 3.0 to 1.

Description: This project is an integral part of the comprehensive plan for flood control and other purposes in the Willamette River Basin. Prolonged periods of near bankful flow, which will be normal condition during reservoir releases following floods, will result in severe bank erosion. Such erosion is a continuing process. Erosion destroys productive farm lands, roads, bridges and other improvements. Erosion also opens overflow channels and the resulting overflow destroys valuable property and cuts off areas from their normal access requiring construction of new roads and bridges. The increase in population and agricultural development of the Willamette Valley has resulted in subdivision to many tracts which are intensively cultivated. Continuation of the bank protection program is necessary to avoid substantial loss by destruction of irreplaceable fertile land. Continued unchecked erosion at such locations not only increases the cost of corrective work but adversely affects downstream locations and channel capacities. Estimated annual benefits for reduction in flood damages total \$2,676,000.

Summarized financial data

Estimated Federal cost.....	\$19,800,000
Estimated non-Federal cost.....	325,000
Cash contribution.....	None
Other costs.....	325,000
Total estimated project cost.....	20,125,000
Allocations to June 30, 1975.....	14,864,000
Conference allowance for fiscal year 1976.....	400,000
Allocations for fiscal year 1976.....	400,000
Conference allowance for 1976 transition quarter.....	950,000
Allocations for fiscal year 1976 transition quarter.....	900,000
Allocations to date.....	16,164,000

PHYSICAL DATA

Bank stabilization—dumped stone, drift barriers and channel improvements; approximately 236 locations, 510,000 linear feet.

STATUS: (JAN. 1, 1976)

	Percent complete	Completion schedule
Prior work, 214 locations.....		
Entire project.....	89	September 1981.

MISSISSIPPI RIVER AND TRIBUTARIES PROJECT

The Mississippi River and Tributaries Project embraces an area of about 35,500 square miles. It extends from Cape Girardeau, Missouri, a short distance above the confluence of the Mississippi and Ohio Rivers, southward more than 600 miles to the Head of Passes, Louisiana, near the mouth of the Mississippi River. The area, varying in width from 30 to 125 miles, includes the lower portions of large tributaries which are subject to inundation by backwater from the Mississippi River during extreme floods.

The Flood Control Act of May 15, 1928 authorized a plan for flood protection in the alluvial valley of the Mississippi River, and such bank revetment and contraction works as required to provide a channel depth of 9 feet and a width of 300 feet below Cairo, Illinois. The 1928 Act also authorized the appropriation of \$325,000,000 to accomplish the plan of protection, which was designated as the Mississippi River and Tributaries Project (MR&T). Subsequent acts have modified the original plan to include additional projects and have increased the total monetary authorization. The present plan for the Mississippi River and Tributaries Project provides for five reservoirs, hundreds of miles of levees, channel improvements, river cutoffs, and major drainage works through the alluvial valley. Also, accomplishment and maintenance of a 12-foot navigation channel from Cairo, Illinois, to Baton Rouge, Louisiana. The monetary authorization provided to date totals \$2,317,922,000.

Projects for which additional authorization is planned to be used:

Atchafalaya Basin, LA
 Bayou Cocodrie and Tributaries, LA
 Cache Basin, AR
 Channel Improvement, AR
 Eastern Rapides and South-Central Avoyelles, LA
 Lower Red River, LA
 Lower White River, AR
 Lower White River, AR
 Mississippi River Levees, AR
 Old River Control, LA
 Reelfoot Lake—Lake No. 9, KY, TN
 St. Francis Basin, AR, MO
 Teche-Vermilion Basin
 Tensas Basin, AR & LA
 West Kentucky Tributaries, KY

West Tennessee Tributaries, TN
 Yazoo Basin, MS
 Bushley Bayou, LA
 Greenville Harbor, Mississippi
 Mississippi River, East Bank, Vicksburg-Yazoo Area, MS
 Mississippi River, East Bank, Natchez Area, MS
 Harris Fork Creek, KY & TN (Subject to Congressional authorization).

Recreation at completed projects:

Arkabutla Lake, MS
 Enid Lake, MS
 Granada Lake, MS
 Sardis Lake, MS

Following is a detailed description of the individual projects for which additional monetary authorization is provided:

Project: Atchafalaya Basin, Louisiana

Location: The project is located in south-central Louisiana below the latitude of Old River and west of and generally paralleling the Mississippi River. The basin floodway is approximately 110 miles long by 15 miles wide. The Atchafalaya River flows through the middle of the basin.

Authorization: Flood Control Acts of 1928, 1934, 1936, 1938, 1941, 1946, 1950, and 1954.

Benefit-cost ratio: 10.6 to 1.

Description: The Mississippi River below Morganza Floodway is capable of carrying 1,500,000 cubic feet per second without threatening the integrity of the levees along its banks which protect thickly populated areas, highly developed agricultural lands, industries and the City of New Orleans as well as a number of lesser populated communities. Studies indicate that the project flood against which the flood control protection works are designed will be of such magnitude that 3,000,000 cubic feet per second will pass the latitude of Old River. Since the Mississippi River below this latitude can carry only one-half this amount, the other one-half must be diverted from the main channel. The diversion is made through Old River Control Structure and the Atchafalaya River, and through the Morganza and West Atchafalaya Floodways. In order to prevent diverted waters from spreading over the rich and highly developed agricultural lands in the Atchafalaya Basin, these rivers and floodways have been leveed to confine the diverted flow. It is essential that the work proceed vigorously and as expeditiously as possible, in order to eliminate unnecessary damage. This floodway system is for all practical purposes a part of the main river system, inasmuch as the integrity of the main river system depends upon its utilization. Since this construction began, people have developed farms and industries in the areas adjacent to the floodway with full confidence that they would receive protection. Therefore, overtopping or crevassing of the levees would cause far more damage than when the project was first started. The main protection levees in the lower reaches are deficient because of consolidation of the soft underlying soils, especially those below the latitude of Krotz Springs. Early construction of these levees to the approved grade is essential not only for flood protection, but as a

means of access for the movement of men and equipment to any spot threatened by floods.

The Atchafalaya Basin project is one of the components which comprise the plan of improvement for the control of floods of the Mississippi River and its tributaries. The contribution of each element to the overall plan is inseparably related to that made by the others. Therefore, their benefits are inseparable and a composite benefit-cost ratio for the Main Stem components is necessary. The components are: Mississippi River Levees, Channel Improvement, South Bank Arkansas and South Bank Red River Levees, the Atchafalaya Basin, Old River, and a few miscellaneous items. The benefit-cost ratio was derived by measuring the total benefits credited to these Main Stem components against their total cost.

<i>Summarized financial data</i>	
Estimated Federal cost.....	\$849,000,000
Estimated non-Federal costs.....	5,920,000
Cash contribution.....	1,750,000
Other.....	4,170,000
	854,920,000
Total estimated project cost.....	854,920,000
Allocations to June 30, 1975.....	239,884,000
Conference allowance for fiscal year 1976.....	20,000,000
Allocation for fiscal year 1976.....	19,000,000
Conference allowance for 1976 transition quarter.....	5,000,000
Allocation for 1976 transition quarter.....	4,900,000
Allocations to date.....	263,784,000

STATUS: (JAN. 1, 1976)

	Percent complete	Completion schedule
Lands and Damages.....	29	September 1989.
Relocations.....	51	Do.
Locks-3.....	25	September 1987.
Fish & Wildlife Facilities.....	0	September 1985.
Roads, Railroads & Bridges.....	13	September 1989.
Channels and Canals.....	26	December 1989.
Levees and Floodwalls.....	28	Do.
Pumping Plants (9 completed).....	90	March 1977.
Recreation Facilities.....	0	September 1988.
Flood Control and Diversion Structures.....	100	Do.
Bank Stabilization.....	27	December 1989.
Buildings, Grounds and Utilities.....	100	Do.
Entire Project.....	28	Do.

Project: Bayou Cocodrie and Tributaries, Louisiana.

Location: The project is located in Rapides, Avoyelles, Evangeline and St. Landry Parishes in central Louisiana. It consists of diversion channels and channel improvements between the Bayou Rapides Control Structure near Alexandria and the Bayou Courtableau Drainage Structure near Courtableau.

Authorization: Flood Control Act of 1941 and Water Resources Development Act of 1974.

Benefit-cost ratio: 1.4 to 1.

Description: Construction of the project will produce lowering of flood heights and provide facilities for improving the normal drainage of the large areas of land now held in a non-productive status or in a state of limited development because of inadequate drainage. The fa-

cilities for diversion of flow from the Bayou Rapides area will provide relief from floodwaters during high stages of Red River when the capacity of the pumping station at Alexandria, Louisiana, is exceeded. The overall project will reduce the flood losses on approximately 61,700 acres of crop and pasture land and the reduction of flooding will permit the increased utilization of about 39,500 acres of cleared and wooded land; irrigation benefits will accrue to about 2,000 acres. At the lower end of the project, enlargement of Bayou Courtableau from 3.7 miles north of Washington to Courtableau will resolve the flood problem in the area, accelerate outflow and produce lowered durations as well. Addition of the barrels to the Courtableau Drainage Structure will accommodate the increased flow through the West Protection Levee into the Atchafalaya Basin.

Summarized financial data

Estimated Federal cost: Corps of Engineers.....	\$14,500,000
Estimated non-Federal cost.....	237,000
Cash contribution.....	0
Other.....	237,000
Total estimated project cost.....	14,737,000
Allocations to June 30, 1975.....	3,474,000
Conference allowance for fiscal year 1976.....	300,000
Allocation for fiscal year 1976.....	300,000
Conference allowance for 1976 transition quarter.....	60,000
Allocation for 1976 transition quarter.....	60,000
Allocations to date.....	3,834,000

STATUS: (JAN. 1, 1976)

	Percent complete	Completion schedule
Lands and damages.....	0	September 1979.
Relocations.....	51	December 1981.
Channels and canals.....	24	December 1982.
Flood control and diversion structures.....	13	June 1980.
Entire project.....	25	December 1982.

Project: Cache Basin, Arkansas.

Location: The project is located in northeastern Arkansas in Monroe, Woodruff, Jackson, Cross, Poinsett, Craighead, Lawrence, Greene, and Clay Counties.

Authorization: Flood Control Act of 1950 and Water Resources Development Act of 1974.

Benefit-cost ratio: 3.6. to 1.

Description: The project will benefit approximately 694,300 acres, of which about 674,900 acres are cleared land. The improvements in the farm area consist of farm buildings, small urban centers, highways, railroads, and utilities having an estimated value of over \$135,026,000. The project would prevent 90 percent of the total damages expected to occur above the vicinity of Cotton Plant, Arkansas. Extensive damages occurred in this area in July 1928. If this flood were to recur today, damage estimated at \$17,000,000 would result. At the end of

an estimated 20-year construction period, the project will satisfy about 27 percent of the Lower White Basin rural flood control needs; however, benefits will accrue upon completion of each item of construction. Construction of the project will tend to stabilize the area's predominantly agricultural economy.

Summarized financial data

Estimated Federal cost.....	\$86,000,000
Estimated non-Federal cost.....	10,100,000
Cash contributions.....	0
Other.....	10,100,000
Total estimated project cost.....	96,100,000
Allocations to June 30, 1975.....	1,905,000
Conference allowance for fiscal year 1976.....	3,000,000
Allocation for fiscal year 1976.....	2,315,000
Conference allowance for 1976 transition quarter.....	1,100,000
Allocation for 1976 transition quarter.....	1,100,000
Allocations to date.....	5,320,000

Physical data

Lands and damages.....	70,000 acres.
Relocations:	
Roads (\$12,507,000).....	61 bridges.
Railroads (\$2,173,000).....	5 bridges.
Channels and canals.....	231.0 miles.

STATUS: (JAN. 1, 1976)

	Percent complete	Completion schedule
Land acquisition.....	2	September 1982.
Relocations.....	0	December 1991.
Fish and wildlife facilities.....	0	June 1988.
Channels and canals.....	1	June 1996.
Entire project.....	2	June 1996.

Project: Channel Improvement, Arkansas, Illinois, Kentucky, Louisiana, Mississippi, Missouri, and Tennessee.

Location: The project is located in the Mississippi River and along its banks from the vicinity of Cairo, Illinois, to the Head of Passes, Louisiana, a distance of approximately 966 miles.

Authorization: Flood Control Acts of 1928, 1936, 1938, 1941, 1944, 1962, 1965, 1966, and 1970.

Benefit-cost ratio: 10.6 to 1.

Description: The Mississippi River, with a drainage area of about 1,245,000 square miles, has a wide range of flow, increasing from an approximate minimum of 90,000 cubic feet per second (675,000 gallons per second) to a maximum of 2,345,000 cubic feet per second (17,587,000 gallons per second) which occurred in 1927 at the latitude of Red River Landing. The project flood is 3,000,000 cubic feet per second (22,500,000 gallons per second). Part of the tremendous energy of this volume of flowing water is directed toward a relentless attack on the banks of the river, causing the unprotected banks to cave into the river. As this caving progresses, the attack becomes more direct, the

bedway moves in toward the levee, and more sand is placed in the river and deposited downstream in the form of a sand bar. This bar gradually builds out into the channel and deflects the river's attack to the opposite bank. As the cycle is repeated, the river tends to meander and lengthen. Revetment is needed to prevent the river from recapturing the length taken from it by the cutoffs which reduced flood heights. It is needed at localities where direct attack against a bank is occurring. In localities where the river alignment is satisfactory but the banks are unstable, caving should not be allowed to develop. Stabilization of the river's course is vital to the provision of an effective channel for carrying flood flows, safe dependable navigation, low maintenance, and the protection of completed works. Dikes are used to limit the meander patterns where the greater protection afforded by revetment is not required and to assist the river in developing a desirable pattern as a preliminary step to revetting the bank. Dredging is used to reduce flows in auxiliary channels and to obtain desirable alignment at critical localities. Batture protection works prevent erosion of the land lying between the river bank and the levee.

From Cairo, Illinois, to Head of Passes, Louisiana, the river is being stabilized under a definite plan. Progress will continue with the funds requested. The rate at which the work can be carried on has a direct bearing on the costs involved due to the large expense in mobilizing and demobilizing the construction plant required for this seasonal operation. Failure to continue work on the definite plan in the manner proposed will have an adverse effect on the revetment completed, and thus delay the completion and increase the cost of the Channel Improvement Project as well as greatly increase the annual maintenance costs.

The Channel Improvement Project is one of the components which comprise the plan of improvement for the control of floods of the Mississippi River and its tributaries. The contribution of each element to the overall plan is inseparably related to that made by the others. Therefore, their benefits are inseparable and a composite benefit to cost ratio for the Main Stem components is necessary. The components are: Mississippi River Levees, Channel Improvement, South Bank Arkansas and South Bank Red River Levees, the Atchafalaya Basin, Old River, and a few miscellaneous items. The benefit to cost ratio was derived by measuring the total benefits credited to those Main Stem components against their total cost.

Summarized financial data

Estimated Federal cost.....	\$2, 027, 000, 000
Estimated non-Federal cost.....	1, 505, 000
Cash contributions.....	1, 220, 700
Other cost.....	234, 300
Total estimated project cost.....	2, 028, 505, 000
Allocations to June 30, 1975.....	882, 872, 000
Conference allowance for fiscal year 1976.....	40, 500, 000
Allocations for fiscal year 1976.....	41, 780, 000
Conference allowance for 1976 transition quarter.....	15, 000, 000
Allowance for 1976 transition quarter.....	15, 000, 000
Allowance to date.....	939, 652, 000

Physical data

Lands and damages:	
Acres.....	22, 642.
Type.....	Predominantly woodland.
Revetments.....	968 miles.
Dikes.....	296 miles.
Dredging.....	As required
Foreshore protection.....	100 miles.
Pumping plants.....	1.

STATUS JAN. 1, 1976

	Percent complete	Completion schedule
Lands and damages.....	95	September 1992.
Channels and canals (dredging).....	64	September 1992.
Recreation facilities.....	15	December 1977.
Bank stabilization.....	44	September 1992.
Pumping plant.....	100	
Entire project.....	45	September 1992.

Project: Eastern Rapides and South-Central Avoyelles Parishes, Louisiana (Continuation of planning).

Location and description: The project is located in central and south-central Louisiana, southeast of Alexandria along and south of the Red River to the Red River backwater area and the west Atchafalaya Floodway, and thence southward along and to the west of the west Atchafalaya Basin protection levee to the latitude of Charenton, Louisiana. The plan of improvement provides for flood control by the enlargement of existing channels and the construction of new channels, disposal levees, and a diversion structure in the west Atchafalaya Basin protection levee. The construction of the above improvements will require additional improvements and mitigation measures to maintain existing fish and wildlife and recreational use. Public access to the improved channel at the Lake Pearl weir will be provided by extension of an existing road on the south side of the channel. Parking facilities will also be provided. The overall plan of improvement includes major drainage laterals and group and on-farm drainage systems to be provided under Public Law 566 by the United States Department of Agriculture, Soil Conservation Service.

Approximately 206,000 acres in the area are subject to flooding under existing conditions, resulting from inadequate capacity of the existing streams and channels and inadequate natural outlets, resulting from construction of the levee system in the area. The flood problem has been aggravated in recent years by the rapid conversion of pasture, timber, and other marginal lands to the growing of soybeans since a profit can be realized even though the crop is flooded occasionally. Frequent flooding, which has occurred four or more times in some years, has substantially impaired development of usable lands in the flood plains and adjacent areas. Thus, the full potential agricultural ment of the area would require a major outlet channel to remove the area has not developed to its optimum. To realize optimum development of the area would require a major outlet channel to remove the flood threat and to carry the increased runoff from improved drainage contemplated in the area.

Authorization: Flood Control Act of 1970.

Benefit-cost ratio: 1.3 to 1.

Summarized financial data

Estimated Federal cost.....	\$31,900,000
Estimated non-Federal cost.....	2,210,000
Cash contribution.....	0
Other.....	2,210,000
Total estimated project cost.....	34,110,000
Preconstruction planning estimate.....	1,800,000
Allocations to June 30, 1975.....	615,000
Conference allowance for fiscal year 1976.....	340,000
Allocation for fiscal year 1976.....	335,000
Conference allowance for 1976 transition quarter.....	0
Allocation for 1976 transition quarter.....	0
Planning allocation for fiscal year 1977.....	100,000
Balance to complete preconstruction planning after fiscal year 1977.....	750,000

Project: Lower Red River—South Bank Levees, Louisiana.

Location: The project extends from the hills at Hot Wells, Louisiana, along the south bank of Bayou Jean de Jean to the Red River in the vicinity of Boyce, Louisiana, thence southward along the right descending bank of the Red River to Moncla, Louisiana.

Authorization: Flood Control Acts of 1928, 1941, and 1965.

Benefit-cost ratio: 10.6 to 1.

Description: The South Bank Red River—Lower Red River Levee system protects 1,739 square miles of urban, agricultural and wooded lands. The entire area would sustain either direct or indirect damages by levee failure or overtopping. Flooding would be extensive in the lower areas and to a lesser degree in the higher areas.

The South Bank Red River—Lower Red River project is one of the components which comprise the plan of improvement for the control of floods of the Mississippi River and its tributaries. The contribution of each element to the overall plan is inseparably related to those made by the others. Therefore, their benefits are inseparable, and a composite benefit-cost ratio for the Main Stem components is necessary. The components are: Mississippi River Levees, Channel Improvement, South Bank Arkansas and South Bank Red River Levees, the Atchafalaya Basin, Old River and a few miscellaneous items. The benefit-cost ratio was derived by measuring the total benefits credited to these Main Stem components against their total cost.

Summarized financial data

Estimated Federal cost.....	\$29,700,000
Estimated non-Federal cost.....	0
Total estimated project cost.....	29,700,000
Allocations to June 30, 1975.....	11,552,000
Conference allowance for fiscal year 1976.....	90,000
Allocation for fiscal year 1976.....	90,000
Conference allowance for 1976 transition quarter.....	50,000
Allocation for 1976 transition quarter.....	50,000
Allocations to date.....	11,692,000

Physical data

Levees: Average height—18 feet; Length—59.8 miles; Levee protection: 10 miles.

Lands and damages: Acres—1,113; Type—All highly developed farm lands. Relocations: Cemeteries, utilities and structures (\$117,000).

STATUS: JAN. 1, 1976

	Percent complete	Completion schedule
Lands and damages.....	100	
Relocations.....	4	December 1985.
Levees.....	55	June 1986.
Levee protection.....	16	June 1985.
Entire project.....	38	June 1986.

Project: Lower White River, Clarendon Levee, Arkansas.

Summarized financial data

Estimated Federal cost.....	\$790,000
Estimated non-Federal cost.....	176,000
Cash contribution.....	0
Other.....	176,000
Total estimated project cost.....	966,000
Allocations to date.....	485,000
Balance to complete.....	305,000
Amount that could be used in fiscal year 1977.....	150,000

Authorization: Flood Control Act of 1965.

Location and description: The project is located in the City of Clarendon, in Monroe County, Arkansas, about 100 miles above the Mouth of the White River. The plan provides for enlargement of the existing 6.1 miles of the levee at Clarendon; replacement or extension of the drainage culverts through the enlarged levee; replacement of outmoded, inoperative flap gates; and scour protection by means of riverbank revetment for the levee foreshore in the vicinity of Arkansas Highway 79.

Proposed operations for fiscal year 1977: The amount of \$150,000 would be used to initiate and complete levee slope work on 4.4 miles, to render it in maintainable condition in order to turn over to local interests.

Justification: The project affords flood protection to the City of Clarendon, Arkansas, and to the developed rural lands adjacent thereto. The total acreage involved is approximately 2,100, with a total population of about 2,750. A benefit-to-cost ratio has not been computed for the project since it was authorized based on the need to insure the safety of the existing levee.

Project: Lower White River, Augusta to Clarendon, Arkansas.

Summarized financial data

Estimated Federal cost.....	\$4,330,500
Estimated non-Federal cost.....	674,800
Cash contribution.....	0
Other.....	674,800
Total estimated project cost.....	5,005,300
Allocations to date.....	1,378,000
Balance to complete.....	2,952,500
Amount that could be used in fiscal year 1977.....	620,000

Authorization: Flood Control Act of 1941.

Location and description: The project is on the east bank of White River from Augusta, Arkansas (Mile 203) to Clarendon, Arkansas (Mile 100), and on the west bank at Georgetown, Arkansas (Mile 173). The project is located in Woodruff, Monroe, and Prairie Counties, Arkansas. The plan provides for a levee along the east bank of White River from the vicinity of Augusta to Clarendon, a levee around the town of Georgetown on the west bank, and structures to care for interrupted drainage. The work consists of 47.35 miles of levee and the necessary drainage structures.

Proposed operations for fiscal year 1977: The amount of \$620,000 would be used to place gravel on the existing levees to provide all weather surface for inspections and access during high water.

Justification: The construction of the protective works from Augusta to Clarendon gives protection against the maximum recorded stages to a large area of farmlands. The flood plain between Augusta and Clarendon is characterized by swamps, bayous, lakes, and abandoned stream channels. The flood plain consists of approximately 450,000 acres, of which practically all the area involved is highly productive farmland. The major towns in this area are Georgetown, Des Arc, and DeValls Bluff. The benefit-to-cost ratio is 4.2 to 1. The average annual benefits are broken down as follows:

Flood control	\$821,000
Area redevelopment	20,000
Total	841,000

Project: Mississippi River Levees, Arkansas, Illinois, Kentucky, Louisiana, Mississippi, Missouri and Tennessee.

Location: The Mississippi River Levee system on the west bank extends from Allenville, Missouri, on the Little River Diversion Channel generally southward to the vicinity of Venice, Louisiana, and on the east bank from Hickman, Kentucky, to opposite Venice, Louisiana, except where interrupted by hills and tributary streams. Included in the system are the levees which protect Mounds, Mound City and Cairo, Illinois, and the New Madrid Levee and Floodgate.

Authorization: Flood Control Acts of 1928, 1936, 1938, 1941, 1946, 1950, 1954, 1962, 1965, and 1968 and PL 92-222.

Benefit-cost ratio: 10.6 to 1.

Description: The Mississippi River Levee system provides complete protection to 23,600 square miles and partial protection to an additional 3,780 square miles in the alluvial valley subject to flooding by the project flood. The alluvial valley is over 650 miles long and varies in width from 20 to 90 miles. Numerous railroads, highways, and airfields connecting the transportation centers of New Orleans, Memphis, Cairo, St. Louis, Chicago, and Louisville lie within the protected area as do several major transcontinental communication routes. In addition to the vast highly developed and productive agricultural areas, the levees afford protection to many large and varied industries whose products have a vital bearing on the welfare, economy, and defense capabilities of this country.

The Mississippi River Levees Project is one of the components which comprise the plan of improvement for the control of floods of the

Mississippi River and its tributaries. The contribution of each element to the overall plan is inseparably related to that made by the others. Therefore, their benefits are inseparable and a composite benefit-to-cost ratio for the Main Stem components is necessary. The components are: Mississippi River Levees, Channel Improvement, South Bank Arkansas and South Bank Red River Levees, the Atchafalaya Basin, Old River, and a few miscellaneous items. The benefit-to-cost ratio was derived by measuring the total benefits credited to these Main Stem components against their total cost.

Summarized financial data

Estimated total appropriation requirement	\$950,000,000
Future non-Federal reimbursement	602,000,000
Estimated Federal cost (ultimate)	949,398,000
Estimated non-Federal cost	37,330,000
Reimbursement: Recreation facilities	602,000
Other	36,728,000
Total estimated project cost	986,728,000
Allocations to June 30, 1975	305,513,000
Conference allowance for fiscal year 1976	11,000,000
Allocation for fiscal year 1976	20,453,000
Conference allowance for 1976 transition quarter	6,600,000
Allocation for 1976 transition quarter	6,600,000
Allocations to date	332,566,000

Physical data

Channels and canals (miles)	72
Levees:	
Average height (feet)	20-35
Length (miles)	1,517.2
(Exclusive of 670.7 miles of Main Stem levees funded under other MR&T features.)	
Floodwalls:	
Average height (feet)	14-23
Length (miles)	14.8
Levee berms (miles)	776.8
Levee roads (miles)	1,552.4
Pumping plants	5

STATUS: JAN. 1, 1976

	Percent complete	Completion schedule
Lands and damages	32	March 1978.
Relocations	8	September 1988.
Channels and canals	3	December 1983.
Levees and floodwalls	33	March 1989.
Pumping plants	17	September 1983.
Recreation facilities	0	June 1977.
Entire project	32	March 1989.

Project: Old River, Louisiana.

Location: The project is located in the lower portion of the Red River backwater area between the Red and Mississippi Rivers and above the Pointe Coupee north levee in Louisiana.

Authorization: Flood Control Acts of 1928, 1941, 1954, and 1958.

Benefit-cost ratio: 10.6 to 1.

Description: The project will prevent the Mississippi River from changing its course to that of the Old and Atchafalaya Rivers. Should

this have occurred, the cities of Baton Rouge and New Orleans and many lesser-size communities would have been without sufficient quantities of fresh water to supply their domestic needs during low-water periods. The vast industrial complex located from above Baton Rouge to near the river's mouth would have been without fresh water which is vital to its operation. The Mississippi River as far upstream as Baton Rouge would have become brackish. The plan for controlling floods below Old River would have required redesigning and reconstructing. Cities, towns, railroads, highways, waterways, industry, agriculture and utilities in the Atchafalaya Basin would have been subject to partial or complete destruction or serious disruption. The investment of the United States in flood control and navigation works would have been threatened and a large amount of it lost. The effect would have been felt probably as far upstream as Vicksburg on the Mississippi River and Boyce on the Red River as a result of swifter currents and increased meandering. The cost of these losses, not including the dislocation and disruption of industry and agriculture, is estimated to be several billion dollars plus an additional annual maintenance cost of \$22,000,000.

The Old River project is one of the components which comprise the plan of improvement for the control of floods of the Mississippi River and its tributaries. The contribution of each element to the overall plan is inseparably related to that made by others. Therefore, their benefits are inseparable and a composite benefit to cost ratio for the Main Stem components is necessary. The components are: Mississippi River Levees, Channel Improvement, South Bank Arkansas and South Bank Red River Levies, the Atchafalaya Basin, Old River and a few miscellaneous items. The benefit-cost ratio was derived by measuring the total benefits credited to these Main Stem components against their total cost.

Summarized financial data

Estimated Federal cost (Corps of Engineers).....	\$81, 200, 000
Estimated Federal cost (Bureau of Public Roads).....	867, 000
Estimated non-Federal costs.....	542, 000
Cash contribution.....	542, 000
Total estimated cost.....	82, 609, 000

Allocations to June 30, 1975.....	67, 701, 000
Conference allowance for fiscal year 1976.....	3, 000, 000
Allocation for fiscal year 1976.....	2, 100, 000
Conference allowance for 1976 transition quarter.....	500, 000
Allocation for 1976 transition quarter.....	500, 000
Allocations to date.....	70, 301, 000

STATUS: JAN. 1, 1976

	Percent complete	Completion schedule
Lands and damages.....	100	
Locks (including bridge over lock).....	100	
Channels and canals.....	82	September 1980.
Levees and floodwalls.....	89	December 1980.
Protection levees.....	100	
Old river closure.....	100	
Future construction to prevent marine accidents.....	0	December 1980.
Flood control and diversion structures.....	97	December 1980.
Bank stabilization.....	46	September 1980.
Buildings, grounds, and utilities.....	100	
Entire project.....	84	December 1980.

Project: Reelfoot Lake-Lake No. 9, Kentucky and Tennessee.

Location: The project is located in the Reelfoot Lake Basin in Lake and Obion Counties, Tennessee and Fulton County, Kentucky.

Authorization: Authorized 1970 under Section 201 of the Flood Control Act of 1965.

Benefit-cost ratio: 1.2 to 1.

Description: The area, a highly developed agricultural area, suffers each year from damaging floods with durations from three to fifteen days. The floods are caused by headwater overflows due largely to an inadequate outlet. Crop production losses, damage to houses, buildings, roads and other improvements occur each year. Should the maximum flood of record, that of 1927, recur under present conditions, damages estimated at \$430,000 (1975 prices) would be experienced.

The completed project will provide partial protection to an area of approximately 8,200 acres by providing channels which will contain a 10-year frequency flood and reduce the height and duration of greater floods.

Summarized financial data

Estimated Federal cost.....	\$9, 260, 000
Estimated non-Federal cost.....	762, 000
Cash contribution.....	0
Other cost.....	762, 000
Total estimated project cost.....	10, 022, 000

Allocations to June 30, 1975.....	2, 165, 000
Conference allowance for fiscal year 1976.....	415, 000
Allocation for fiscal year 1976.....	725, 000
Conference allowance for 1976 transition quarter.....	690, 000
Allocation for 1976 transition quarter.....	390, 000
Allocations to date.....	3, 280, 000

Physical data

Channels (miles).....	18.3
Pumping plants.....	1
Floodgate.....	1

STATUS: JAN. 1, 1976

	Percent complete	Completion schedule
Channels.....	0	September 1979.
Pumping plants.....	0	September 1978.
Floodgate.....	97	September 1979.
Entire project.....	29	September 1979.

Project: St. Francis Basin, Arkansas and Missouri.

Location: The project is located in the St. Francis Basin in southeastern Missouri and northeastern Arkansas, and extends from the hills southwest of Cape Girardeau, Missouri, near Wappapello, Missouri, to the confluence of the St. Francis and Mississippi Rivers about 10 miles above Helena, Arkansas.

Authorization: Flood Control Acts of 1928, 1936, 1938, 1941, 1944, 1946, 1950, 1958, 1965, and 1968 and Water Resources Development Act of 1974.

Benefit-cost ratio: 2.6 to 1.

Description: The project is a single-purpose flood control project and is a unit in the Comprehensive Plan for Flood Control, Missis-

Mississippi River and Tributaries. Protection against headwater floods of the St. Francis and Little Rivers will be afforded to an area of approximately 1,436,855 acres of agricultural lands and including numerous small towns, several major railroads, highways, and utilities, located in Missouri and Arkansas. The construction of adequate outlets for the many drainage improvements undertaken by local interests will provide relief from overflow on approximately 196,700 acres in the Little River Basin, 29,000 acres in the Elk Chute Basin, and 35,000 acres in the Big Slough Area. In addition, relief from flooding by backwaters of the Mississippi River will be afforded to approximately 532,000 acres in the Lower St. Francis Basin below the latitude of St. Francis Lake by the construction of the Madison to Marianna Cutoff and related work including the pumping plant. Flooding has occurred every year with few exceptions, and the flood of record occurred in 1937 causing numerous breaks in the locally constructed substandard levees with resultant damages of over \$2,000,000. It is estimated that the recurrence of the 1937 flood, under present conditions of development in the floodplain, would cause damages of over \$27,000,000 if the flood occurred during the crop growing season. Continuing construction of this project is needed to prevent recurring flood losses. The project is credited with the benefits it will produce in flood damages prevented, increased utilization of land, and fish and wildlife.

Summarized financial data

Estimated Federal cost.....	\$258,000,000
Estimated non-Federal cost.....	1,627,000
Cash contributions.....	280,000
Other cost.....	1,347,000
Total estimated project cost.....	259,627,000
Allocation to June 30, 1975.....	128,575,000
Conference allowance for fiscal year 1976.....	19,650,000
Allocations for fiscal year 1976.....	22,900,000
Conference allowance for 1976 transition quarter.....	3,650,000
Allocations for 1976 transition quarter.....	3,650,000
Allocation to date.....	155,125,000

STATUS: JAN. 1, 1976

	Percent complete	Completion schedule
Big Slough and Mayo Ditch.....	100	
Little River drainage.....	49	June 1986.
Wappapello Lake.....	84	
Recreation facilities.....	32	Not scheduled.
Other features.....	100	
St. Francis River and tributaries:		
Lands.....	57	September 1984.
Relocations.....	36	March 1987.
Channels.....	41	March 1988.
Levees.....	73	December 1985.
Pumping plants.....	63	December 1985.
Flood control and diversion structures.....	82	December 1978.
Marked Tree syphon.....	100	
Entire project.....	53	March 1989.

Project: Teche-Vermilion Basins, Louisiana (Additional Surface Water Supply).

Location: The project is located in south central Louisiana adjacent to and west of the Atchafalaya River. It is contained within the six

parishes of St. Landry, St. Martin, Lafayette, Vermilion, Iberia, and St. Mary.

Authorization: Food Control Act of 1966.

Benefit-cost ratio: 1.4 to 1.

Description: Low water flows in Bayou Teche, Vermilion River, and the west Atchafalaya Basin levee borrow pit drainage system are inadequate for the irrigation, fish and wildlife, municipal and industrial needs of the area at this time. Although the Louisiana Stream Control Commission and many industries have instituted corrective measures to reduce pollution, Bayou Teche and the west Atchafalaya Basin levee borrow pit become severely polluted and stagnant during low flow conditions. The low flow in Vermilion River and heavy withdrawals for irrigation result in severe salt water intrusion of the river and the aquifer which outcrops in the riverbed near the Gulf Intra-coastal Waterway.

Summarized financial data

Estimated Federal cost.....	\$17,300,000
Estimated non-Federal cost.....	2,600,000
Cash contribution.....	660,000
Other.....	1,940,000
Total estimated project cost.....	19,900,000
Allocations to June 30, 1975.....	1,109,000
Conference allowance for fiscal year 1976.....	900,000
Allocation for fiscal year 1976.....	900,000
Conference allowance for 1976 transition quarter.....	500,000
Allocation for 1976 transition quarter.....	500,000
Allocations to date.....	2,509,000

Physical data

Pumping plant:

5 pumps; 1,300 cubic feet per second capacity;

Intake elevation of 3.0 feet Mean Sea Level; discharge water surface elevation of 24.6 feet Mean Sea Level.

Conveyance Channel: 205 feet wide; 6.3 miles long; 80 feet deep.

State Canal Siphon: Inverted siphon, 12 feet by 13 feet; 411.0 feet long.

Conveyance Channel Control Structure: Two 10-foot by 10-foot culverts with gates; 387 feet long.

Courtableau Borrow Pit Control Structure: Gated corrugated metal pipe culvert, 54 inches in diameter; 164 feet long.

Bayou Fusilier Weir: 86 feet wide at elevation 14.0 feet Mean Sea Level; slotted opening 9 feet wide at elevation 10.4 feet Mean Sea Level.

Loreauville Canal Navigable Control Structure: Sector Gates; 56 feet wide; 14.3 feet deep.

Conveyance Channel Levees: 6.3 miles long; 10 foot crown; Elevation 26.0 feet Mean Sea Level to elevation 23.6 feet Mean Sea Level.

STATUS: JAN. 1, 1976

	Percent complete	Completion schedule
Not started.....		December 1982.

Project: Tensas Basin, Arkansas and Louisiana.

Location: The Tensas Basin is located in the alluvial valley of Arkansas and Louisiana between the Mississippi River on the east and an escarpment on the west and extends southward from the Arkansas River to the Red River in the vicinity of Markesville, Louisiana.

Authorization: Flood Control Acts of 1941, 1944, 1946, 1950, 1958, 1962, 1965, and 1968.

Benefit-cost ratio: 3.7 to 1.

Description: The Tensas Basin project is comprised of two separable units; namely, the Boeuf and Tensas Rivers, which includes the Lake Chicot Pumping Plant, and the Red River Backwater Area, which includes the Tensas-Cocodrie Pumping Plant.

Boeuf and Tensas Rivers: The land in the Boeuf and Tensas River Basin possesses a high potential for agricultural production but this potential is restricted by the frequency and duration of overflow and by poor drainage which, for long periods, causes the ground to remain in a condition unsuitable for cultivation. The project will eliminate most of these hindrances to full economic development by providing adequate channels for the streams and major outlets for effective local drainage systems. A total of 922,000 acres (including Lake Chicot) will be substantially benefited by the project.

Summarized financial data

Estimated total appropriation requirements	-----	\$231,400,000
Future non-Federal reimbursement	-----	673,000

Estimated Federal cost (ultimate)	-----	230,727,000
Estimated non-Federal cost	-----	1,117,000
Reimbursement: Rec. facilities	-----	673,000
Cash contribution	-----	0
Other	-----	444,000
Total estimated project cost	-----	231,844,000
Allocations to June 30, 1975	-----	60,589,000
Conference allowance for fiscal year 1976	-----	4,750,000
Allocation for fiscal year 1976	-----	5,309,000
Conference allowance for 1976 transition quarter	-----	4,650,000
Allocation for 1976 transition quarter	-----	4,290,000
Allocation to date	-----	70,188,000

STATUS: JAN. 1, 1976

	Percent complete	Completion schedule
Boeuf and Tensas Rivers, etc.	28	March 1996.
All work except Chicot pumping plant	38	March 1996.
Lands and damages	40	March 1995.
Relocations	38	March 1996.
Channels and canals	33	March 1996.
Lake Chicot pumping plant	6	December 1982.
Lands and damages	7	December 1979.
Dams	0	April 1982.
Roads, railroads and bridges	0	December 1976.
Channels and canals	0	April 1982.
Pumping plants	0	December 1982.
Recreation facilities	0	May 1982.
Red River backwater area	22	March 1992.
All work except Tensas-Cocodrie pumping plant	27	March 1992.
Lands and damages	16	March 1991.
Relocations	20	September 1991.
Channels and canals	44	March 1992.
Levees and floodwalls	23	March 1992.
Recreation facilities	0	September 1987.
Tensas-Cocodrie pumping plant	6	September 1980.
Lands and damages	0	September 1978.
Relocations	0	September 1979.
Fish and wildlife	0	June 1978.
Channels and canals	0	September 1980.
Pumping plant	0	September 1980.
Entire project	25	March 1996.

Project: West Kentucky Tributaries, Kentucky.

Location: Obion Creek, which is about 59 miles long, rises in the south central part of Graves County, Kentucky, flows generally north-westward across the northeast corner of Hickman County into Southern Carlisle County; thence, southwestward through Hickman County and enters the Mississippi River about 922 miles above the Head of Passes, immediately upstream from the town of Hickman in Fulton County, Kentucky.

Authorization: Flood Control Acts of 1965 and 1970.

Benefit-cost ratio: 1.7 to 1.

Description: The improvement of Obion Creek will provide urban and rural flood protection from headwater floods to about 29,520 acres of lands and improvements, of which 600 acres are urban, having a total estimated value of \$9,695,000. The improved channels will contain a flood having a one-in-three-year frequency of occurrence and will reduce stages during floods of greater magnitude. Under existing conditions, damaging floods occur almost annually. Should the maximum flood of record, that of 1937, recur under present conditions, damages estimated at \$638,000 would be experienced.

Summarized financial data

Estimated Federal cost	-----	\$5,900,000
Estimated non-Federal cost	-----	1,016,000
Cash contributions	-----	0
Other costs	-----	1,016,000
Total estimated project cost	-----	6,916,000
Allocations to June 30, 1975	-----	445,000
Conference allowance for fiscal year 1976	-----	35,000
Allocation for fiscal year 1976	-----	35,000
Conference allowance for 1976 transition quarter	-----	200,000
Allocation for 1976 transition quarter	-----	200,000
Allocations to date	-----	680,000

Physical data

Relocations:	
Railroads (\$1,190,000)	----- 2 bridges.
Utilities (\$600,000)	----- 4 gas pipelines 8 electric lines.
Channels and canals	----- 37 miles.

STATUS: JAN. 1, 1976

	Percent complete	Completion schedule
Relocations	0	March 1982.
Channels	0	September 1982.
Entire project	8	September 1982.

Project: West Tennessee Tributaries, Tennessee.

Location: The project is located along the Obion and Forked Deer Rivers and their forks in west Tennessee, in Weakley, Madison, Gibson, Obion, Dyer, Crockett, Lauderdale and Haywood Counties, Tennessee.

Authorization: Flood Control Acts of 1948 and 1966 and the Water Resources Development Act of 1974.

Benefit-cost ratio: 2.7 to 1.

Description: The project is a flood control and drainage project and is a unit of the Comprehensive Plan for Flood Control, Mississippi River and Tributaries. The floods of record in 1935 and 1937 overflowed 455,000 acres of cleared and wooded area. This entire area will receive benefit from project construction due to accelerated flood runoff thus reducing duration of overflow periods; however, benefits will accrue upon completion of each item of construction. Project construction will also eliminate overflow during the crop season on about 229,500 (131,400 cleared and 98,100 wooded) of the total acres. The population of the drainage basin is estimated at 310,000 (1970 census) of which about 75 percent is rural. Urban centers in the basin include Jackson, Dyersburg, Union City, Humboldt, Trenton, Milan, all in Tennessee, and Fulton, Kentucky. Farming, including truck farming, stock raising and dairying, is the principal occupation throughout the basin. Construction of the project will tend to stabilize the area's predominantly agricultural economy. The project is credited with redevelopment benefits and with benefits from flood damages prevented and a higher land use made possible by reducing flooding.

Summarized financial data

Estimated Federal cost.....	\$43,400,000
Estimated non-Federal cost.....	2,150,000
Cash contributions.....	0
Other costs.....	2,150,000
Total estimated project cost.....	45,550,000
Allocations to June 30, 1975.....	10,401,000
Conference allowance for fiscal year 1976.....	2,470,000
Allocation for fiscal year 1976.....	2,270,000
Conference allowance for 1976 transition quarter.....	1,220,000
Allocation for 1976 transition quarter.....	1,030,000
Allocations to date.....	13,701,000

Physical data

Lands and damages.....acres.....	32,000
Relocations:	
Roads: (14 bridges).....	\$2,458,000
Railroads: (8 bridges).....	2,891,000
Pipelines: (9).....	1,751,000
Channels:	<i>Miles</i>
Obion River.....	54
Forked Deer River.....	5
Obion River Forks.....	65
Forked Deer River Forks.....	101
Total.....	225

	Percent complete	Completion schedule
Lands and damages.....		1 September 1982.
Relocation.....	44	September 1982.
Channels.....	20	December 1984.
Entire project.....	25	December 1984.

Project: Yazoo Basin, Mississippi.

Location: The project is located in Mississippi and extends generally from Memphis, Tennessee, southward to Vicksburg, Mississippi, and from the escarpment at Greenwood, westward to the Mississippi River.

Authorization: Flood Control Acts of 1936, 1937, 1938, 1941, 1944, 1946, 1950, 1962, and 1965 and Water Resources Development Act of 1974.

Benefit-cost ratio: 3.8 to 1.

Description: The Yazoo Headwater feature will protect 1,209,000 acres against overflow, substantially benefit 303,000 acres and protect Greenwood, Belzoni, Yazoo City and numerous smaller communities. Channel improvement work on the Big Sunflower River and its tributaries will protect 195,000 acres against the design flood and an additional 395,000 acres will be benefited because of improved drainage conditions. Also, approximately 368,000 acres in the Yazoo Backwater Area will be protected against all but the larger floods and substantial benefits will accrue to an additional 224,000 acres from improved drainage. Improvements by local interests have kept pace with the degree of protection afforded, large sums having been spent on clearing lands, constructing lateral drainage systems and converting farming practices to more modern methods. Had there been no protection in 1958, the floods of April-June and September would have caused damages amounting to \$21,598,000. Should these floods recur under present conditions but with the flood control works assumed complete, damages amounting to \$67,067,000 would be prevented. In addition, the four Yazoo Basin lakes are being used extensively for recreation. A continual expansion of facilities is required to meet public demand for recreational opportunities. Visitor-day attendance increased from 2,857,000 in calendar year 1958 to 6,315,000 in 1975.

Summarized financial data

Estimated Federal cost.....	\$634,000,000
Estimated non-Federal cost.....	830,000
Cash contributions.....	389,000
Other costs.....	441,000
Total estimated project cost.....	634,830,000

Allocations to June 30 1975.....	198,418,000
Conference allowance for fiscal year 1976.....	14,790,000
Allocation for fiscal year 1976.....	13,140,000
Conference allowance for 1976 transition quarter.....	5,130,000
Allocation for 1976 transition quarter.....	5,130,000
Allocation to date.....	216,688,000

	Percent complete	Completion schedule
Yazoo City	100	
Belzoni	100	
Will M. Whittington auxiliary channel	97	September 1982.
Features for primary use	100	
Fish and wildlife facilities	0	September 1982.
Yazoo Basin lakes	78	December 1984.
Features for primary use	100	
Lands and damages	16	December 1976.
Sardis Lake	5	October 1976.
Arkabutla Lake	11	October 1976.
Enid Lake	6	December 1976.
Grenada Lake	23	October 1976.
Recreation facilities	36	December 1984.
Sardis Lake	34	September 1984.
Arkabutla Lake	42	September 1984.
Enid Lake	40	December 1984.
Grenada Lake	29	September 1984.
Greenwood	91	June 1982.
Lands and damages	93	June 1982.
Relocations	97	June 1976.
Channels and canals	83	June 1982.
Levees and floodwalls	100	
Pumping plants	100	
Upper auxiliary channel	1	December 1989.
Lands and damages	1	December 1989.
Relocations	0	June 1989.
Channels and canals	0	December 1989.
Levees and floodwalls	0	December 1989.
Main stem	22	March 1985.
Lands and damages	20	July 1984.
Relocations	32	January 1985.
Channels and canals	91	March 1985.
Levees and floodwalls	13	March 1985.
Tributaries	32	March 1990.
All work except Ascalmore-Tippo and Opossum Bayous	36	March 1990.
Lands and damages	45	June 1988.
Relocations	27	December 1987.
Channels and canals	37	June 1989.
Levees and floodwalls	24	March 1990.
Pumping plant (McKinney Bayou)	100	
Bank stabilization	83	June 1976.
Ascalmore-Tippo and Opossum Bayous	10	September 1983.
Lands and damages	9	March 1981.
Relocations	0	September 1983.
Fish and wildlife facilities	0	December 1980.
Channels and canals	16	September 1983.
Levees and floodwalls	0	September 1983.
Big Sunflower River, etc., including Steele Bayou	43	March 1985.
Lands and damages	43	March 1984.
Relocations	30	March 1984.
Fish and wildlife facilities	0	June 1982.
Channels and canals	46	March 1985.
Big Sunflower River	100	
Deer Creek	100	
Quiver River	100	
Bogue Phalia	100	
Little Sunflower River	100	
Hushpuckena River	100	
Tributaries	100	
Gin and Muddy Bayous	100	
Steele Bayou area	13	March 1985.
Yazoo backwater	31	September 1986.
All work except Muddy Bayou control structure	31	September 1986.
Lands and damages	27	September 1984.
Relocations	49	June 1985.
Fish and wildlife facilities	0	September 1982.
Channels and canals	65	September 1986.
Levees and floodwalls	28	September 1986.
Muddy Bayou control structure	47	March 1977.
Floodway control and diversion structures	47	March 1977.
Streambank erosion control evaluation and demonstration	3	September 1982.
Entire Yazoo Basin project	31	March 1990.

Project: Bushley Bayou, Louisiana (Continuation of Planning).
Location and description: The Bushley Bayou Area is located in east-central Louisiana about 35 miles northeast of Alexandria. It has a drainage area of about 210 square miles of which about 95 square miles are in the backwater area of the Mississippi and Red Rivers. The area is bounded on the east by the Ouachita River and on the south by the Little and Old Rivers. The proposed work includes modification of the Mississippi River and Tributaries Project to provide for works in the Bushley Bayou area. These works include 32.2 miles of levees, a 1,500 cubic-foot-per-second pumping plant combined with a gravity floodgate structure of 600 square feet of opening; a 36-inch floodgate; 7.4 miles of new channel; and fish and wildlife mitigation features consisting of a fixed weir, three water management control structures; a 50 cubic-foot-per-second pumping plant, and acquisition of 3,000 acres of woodlands.

Authorization: Water Resources Development Act of 1974 (Section 1).

Benefit-cost ratio: 1.2 to 1.

Description: Backwater from the Mississippi and Red Rivers and high peak runoff from small hill tributaries cause flooding of nearly 61,000 acres of cropland and woodland. Major damages occur to rural residences, farm improvements, crops, roads and public utilities. Duration of flooding varies from 7 to 225 days annually and averages 70 days. Construction of the proposed improvements would provide backwater flood protection for about 57,300 acres and would eliminate 88 percent of the total flood damages due to backwater flooding in the area providing substantial social and economic benefits.

Summarized financial data

Estimated Federal cost	\$21,600,000
Estimated non-Federal cost	0
Total estimated project cost	21,600,000
Preconstruction planning estimate	1,500,000
Phase I estimated cost	300,000
Allocations to June 30, 1975	200,000
Conference allowance for fiscal year 1976	150,000
Allocation for fiscal year 1976	150,000
Conference allowance for 1976 transition quarter	150,000
Allocation for 1976 transition quarter	150,000

Project: Greenville Harbor, Mississippi (Continuation of Planning).

Location and description: Greenville, Mississippi is about 145 miles south of Memphis, Tennessee and 84 miles north of Vicksburg, Mississippi. The harbor is about 2½ miles downstream from Greenville on the east bank of Lake Ferguson and is about two miles from the Mississippi River navigation channel. The plan of improvement provides for widening the channel into Greenville Harbor from 250 to 500 feet, dredging an inner harbor channel 500 by 13,300 feet into the undeveloped lands adjacent to the existing port area, and dredging a channel 300 by 1,500 feet into the LaGrange Crevasse Area. All channels would have a minimum depth of 12 feet at the lowest Missis-

Mississippi River stage on record. The material from the harbor improvements would be deposited on adjacent lands to provide 310 acres of raised landfill to elevation 148 feet, mean sea level, one foot above the Mississippi River Project Flood, and 80 acres of raised landfill to elevation 136 feet, mean sea level, one foot above the 25-year frequency Mississippi River flood.

Authorization: Water Resource Development Act of 1974 (Section 1).

Benefit-cost ratio: 3.2 to 1.

Summarized financial data

Estimated Federal cost	\$19,900,000
Estimated non-Federal cost	3,700,000
Cash contributions	0
Other	3,700,000
Total estimated project cost	23,600,000

Preconstruction planning estimate	1,400,000
Phase I, estimate cost	200,000
Allocations to June 30, 1975	200,000
Conference allowance for fiscal year 1976	200,000
Allocation for fiscal year 1976	200,000
Conference allowance for 1976 transition quarter	100,000
Allocation for 1976 transition quarter	100,000
Planning allocation for fiscal year 1977	400,000
Balance to complete preconstruction planning after fiscal year 1977	500,000

Project: Mississippi River, East Bank, Vicksburg-Yazoo Area, Mississippi (Continuation of Planning).

Location: The Vicksburg-Yazoo Area is located in Warren County, north of the City of Vicksburg, Mississippi. It is bounded on the east by U.S. Highway 61, on the north by the Yazoo River and on the west and south by the Yazoo River Diversion Canal. There are approximately 16,000 acres in this area of the flood plain. The plan of improvement provides for construction of 11.8 miles of levee to protect about 10,100 acres against the Mississippi River Project Flood, a 200 cubic-foot-per-second pumping plant, two 9-foot by 9-foot floodgates and concrete culverts, and 16.1 miles of channel improvements.

Authorization: Water Resources Development Act of 1974 (Section 1).

Benefit-cost ratio: 1.3 to 1.

Summarized financial data

Estimated Federal cost	\$15,800,000
Estimated non-Federal cost	1,500,000
Cash contribution	0
Other	1,500,000
Total estimated project cost	18,800,000

Preconstruction planning estimate	725,000
Phase I, estimated cost	150,000
Allocations to June 30, 1975	50,000
Conference allowance for fiscal year 1976	100,000
Allocation for fiscal year 1976	100,000
Conference allowance for 1976 transition quarter	50,000
Allocation for 1976 transition quarter	50,000
Planning allocation for fiscal year 1977	140,000
Balance to complete preconstruction planning after fiscal year 1977	885,000

Description: A serious flood problem exists in the Vicksburg-Yazoo Area. The area is frequently flooded by backwaters of the Mississippi River causing damages to agricultural crops, public and farm roads, churches, and to some of the 350 permanent homes. These frequent floods also adversely affect the physical well-being of the 1,400 permanent residents of the area. Business firms and industries that are located in the flood plain are also subject to flooding by the major floods. The average annual damage from flooding under existing conditions is about \$179,000. In the Vicksburg area, the supply of industrial lands is nearly exhausted, and the residential and commercial lands near the center of economic activity are already developed. There is a need for level, flood-free land for industrial, commercial, and residential development. Construction of the protective works would prevent 97 percent of the flood damages and make feasible the conversion of lands to higher land uses.

Project: Mississippi River, East Bank, Natchez Area, Mississippi (Continuation of Planning).

Location: The project area is located south of Natchez, Mississippi, in Adams County, and is bounded on the west by the Mississippi River; on the east by the hill line; on the north by St. Catherine Creek; and on the south by the impingement of the hill line on the Mississippi River at Ellis Cliff. There are 23,000 acres subject to flooding in this area. The plan of improvement for the Natchez Area provides for 12.4 miles of levee to protect against the Mississippi River Project Design Flood; three 8-foot by 8-foot floodgates and concrete culverts to evacuate interior runoff from the area; about 12 miles of channel improvements to collect the interior runoff and transport it through the floodgates to the Mississippi River; a conservation weir; and a 300 cubic-foot-per-second pumping plant to evacuate the interior runoff when the floodgates are blocked by high stages in the Mississippi River.

Authorization: Water Resources Development Act of 1974 (Section 1).

Benefit-cost ratio: 0.86 to 1. (See "benefit-to-cost ratio" paragraph.)

Summarized financial data

Estimated Federal cost	\$23,600,000
Estimated non-Federal cost	1,600,000
Cash contribution	0
Other	1,600,000
Total estimated project cost	25,200,000

Preconstruction planning estimate	875,000
Phase I, estimated cost	150,000
Allocations to June 30, 1975	50,000
Conference allowance for fiscal year 1976	100,000
Allocation for fiscal year 1976	100,000
Conference allowance for 1976 transition quarter	50,000
Allocation for 1976 transition quarter	50,000
Planning allocation for fiscal year 1977	200,000
Balance to complete preconstruction planning after fiscal year 1977	475,000

Description: Under existing conditions, the Natchez Area is subject to frequent flooding by the Mississippi River. An analysis of historical

flood series (1940-1968) indicates that flooding conditions have occurred approximately three times per year. Tributaries and streams traversing the flood plain also cause some flooding, but these floods are usually of short duration and affect isolated areas. However, in some cases, tributary flooding coincides with high Mississippi River stages causing substantial damages to agricultural crops, fences, drainage ditches, public and farm roads, bridges and endangering both human and animal life. Most of the lands suitable for industrial, commercial, and residential use within a reasonable distance of Natchez are costly because of the extensive site preparations required and the difficulty of providing utilities and road and rail facilities to serve commerce and industry. Construction of the proposed improvements will provide Mississippi River Project Design Flood protection for approximately 16,400 acres of land and would essentially eliminate all flood damages. It will also make available lands for industrial, commercial and residential uses. Based on the experience of the Natchez-Adams County industrial area, it is estimated that the Natchez Area project could add the following to the local economy: capital investments of \$98,000,000; 2,400 new jobs; and an annual payroll of \$15,000,000.

Project: Harris Fork Creek, Kentucky and Tennessee (subject to Congressional authorization).

Summarized financial data

Estimated Federal cost.....	\$3,091,500
Estimated non-Federal cost.....	1,516,500
Cash contribution.....	0
Other.....	1,516,500
<hr/>	<hr/>
Total estimated project cost.....	4,608,000
<hr/>	<hr/>
Allocations to date.....	0
Balance to complete.....	3,091,500
Preconstruction planning estimate.....	200,000
Amount that could be used in fiscal year 1977.....	200,000

Authorization: Not yet authorized.

Location and Description: The project is located in Fulton County, Kentucky and Obion County, Tennessee, and is in the urban areas of Fulton, Kentucky and South Fulton, Tennessee and the downstream rural area. The plan provides for the construction of about 1 mile of concrete channels in the urban areas and about 9.5 miles of downstream earthen channel enlargement.

Proposed Operations for FY 1977: The amount of \$200,000 would be used to initiate and complete preconstruction planning.

Justification: This project is urgently needed to provide flood protection for the urban areas of Fulton and South Fulton and the downstream agricultural area. Damaging floods have occurred in 1944, 1945, 1957, 1964, 1970, 1973, 1974 and 1975. The flood of March 12, 1975 resulted in damages of over \$1.5 million to the urban areas. More than 1,000 people were evacuated from their homes due to the flood waters. An additional flood occurred on July 20, 1975 causing extensive damages in South Fulton. The project is clearly economically justified on the basis of damage prevented to existing development and is engineeringly feasible. The benefit-to-cost ratio is 1.6 to 1. The average annual benefits for the project are estimated as follows:

Flood control.....	\$407,800
Area redevelopment.....	43,800
<hr/>	<hr/>
Total.....	451,600

MISSOURI RIVER BASIN

The Missouri River Basin drains an area of 519,090 square miles, of which 509,375 square miles are in the United States and 9,715 square miles are in Canada. The basin includes all of Nebraska, most of South Dakota, large portions of North Dakota, Montana, and Wyoming, about half of Kansas and Missouri, and smaller parts of Colorado, Iowa and Minnesota. From its source in southwestern Montana, it flows for a distance of 2,460 miles to enter the Mississippi River above St. Louis, Missouri.

A general comprehensive plan for flood control and other purposes in the Missouri River Basin was approved by the Flood Control Act of 1938 which also authorized \$9 million for initiation and partial accomplishment of the plan. The Flood Control Act of 1944 expanded the general comprehensive plan for the Missouri River Basin to include the coordinated plan of the Corps of Engineers and the Bureau of Reclamation and authorized the appropriation of \$200 million for each agency. Additional projects and monetary authorizations have been included in subsequent acts, bringing the total monetary authorization to date to \$1,782,094,000.

Projects for which additional authorization is planned to be used:

Garrison Dam-Lake, Sakakawea, ND	Missouri River, Garrison to Oahe, ND
Harry S. Truman Dam & Reservoir, MO	Perry Lake Area (Road Improvement), KS
Hillsdale Lake, KS	Stockton Lake, MO
Lawrence, KS	Melvorn & Pomona Lakes (Road Impr), KS
Missouri River Levee System, IA, NE, KS, & MO	Tuttle Creek Lake (Road Impr), KS

Recreation at completed projects:

Big Bend Dam-Lake Sharpe, SD	Melvorn Lake, KS
Fort Randall Dam-Lake Francis Case, SD	Milford Lake, KS
Garrison Dam-Lake Sakakawea, ND	Oahe Dam-Lake Oahe, ND & SD
Gavins Point Dam-Lewis & Clark Lake, NE & SD	Perry Lake, KS
	Pomme De Terre Lake, MO
	Pomona Lake, KS
	Stockton Lake, MO

Following is a detailed description of the individual projects for which additional monetary authorization is provided.

Project: Garrison Dam—Lake Sakakawea, North Dakota.

Location: Mile 1389.9 Missouri River; in Mercer and McLean Counties, North Dakota; about 66 miles northwest of Bismarck, North Dakota.

Authorization: 1944 Flood Control Act.

Benefit-cost ratio: 2.2 to 1.

Summarized financial data

Estimated appropriation requirement.....	\$295,700,000
Future non-Federal reimbursement.....	211,100,000
Estimated Federal cost (ultimate).....	84,600,000
Estimated non-Federal cost:.....	211,100,000
Reimbursement:	
Power.....	151,300,000
Irrigation.....	59,800,000
Total estimated project cost.....	295,700,000
Allocation to June 30 1975.....	292,165,000
Conference allowance for fiscal year 1976.....	100,000
Allocation for fiscal year 1976.....	115,000
Conference allowance for 1976 transition quarter.....	50,000
Allocation for 1976 transition quarter.....	50,000
Allocations to date.....	292,330,000

STATUS: JAN. 1, 1976

	Percent complete	Completion schedule
Acquisition of reservoir lands.....	96	September 1979.
Construction features.....	100	
Entire project.....	99	September 1979.

Description: The project is being operated as a unit in the comprehensive plan for flood control, navigation, power, and other purposes in the Missouri River Basin. The comprehensive plan provides protection for Sioux City and Council Bluffs, Iowa; Omaha, Nebraska; and the Kansas Cities, Kansas and Missouri; as well as other urban and rural areas in the valley below the dams from severe floods such as those of 1844, 1881, 1903, 1909, 1915, 1935, 1942, 1943, 1945, 1947, 1950, 1951, and the record-breaking flood of 1952, and from smaller floods originating upstream and occurring practically every year. Flood damages along the main stem of the Missouri River between the dam site and the mouth, from 1942 through 1953, inclusive, were in excess of \$550,000,000. The plan provides flood protection to 1,875,000 acres of land subject to flooding between Fort Randall Dam and the mouth of the river. Lake Sakakawea has the largest storage capacity of the multiple-purpose reservoirs on the Missouri River. The capacity is sufficient to effect substantial reduction in flood discharges from the 123,900 square miles of drainage area between Fort Peck Dam and Garrison Dam. The project produces a large amount of hydroelectric power, and navigation on the inland waterways below Sioux City benefits from the release of its stored water. Irrigation water from the reservoir will be available for future distribution system serving irrigators primarily in eastern North Dakota.

Project: Harry S. Truman Dam and Reservoir, Missouri.

Location: The damsite is located on the Osage River about 1½ miles northwest of Warsaw, Benton County, Missouri. The reservoir will extend upstream into Bates, Henry, Hickory, St. Clair, and Vernon Counties, Missouri.

Authorization: 1954 and 1962 Flood Control Acts.

Benefit-cost ratio: 1.3 to 1.

Summarized Financial Data

Estimated total appropriation requirements.....	\$413,000,000
Future non-Federal reimbursement.....	88,858,000
Estimated Federal cost (ultimate).....	324,142,000
Estimated non-Federal cost.....	88,858,000
Reimbursement:	
Power.....	88,858,000
Other.....	0
Total estimated project cost.....	413,000,000
Allocations to June 30, 1975.....	181,289,000
Conference Allowance for fiscal year 1976.....	45,500,000
Allocations for fiscal year 1976.....	46,000,000
Conference allowance for 1976 transition quarter.....	14,450,000
Allocation for 1976 transition quarter.....	14,000,000
Allocations to date.....	241,289,000

	Percent complete	Completion schedule
Land acquisition.....	62	December 1979.
Relocations.....	43	Do.
Dam and powerplant.....	57	June 1980.
Dam closure.....		August 1977.
Recreation facilities.....		December 1980.
Power on line:		
1st unit.....		March 1979.
Last unit.....		August 1979.
Entire project.....	51	December 1980.

Description: The Harry S. Truman Dam and Reservoir is the largest unit of the nine-lake system in the Osage Basin. It will control the runoff from more than 5 million acres of uncontrolled drainage area downstream from the other eight authorized lakes. The July 1951 flood alone caused estimated damages of \$17,363,000 below the damsite on the lower Osage and Missouri Rivers. The floods of 1958, 1961, 1962, 1967, 1969, 1970, 1973, 1974, and 1975 caused total estimated damages of about \$62,065,000 in the same areas. Recurrence of these floods at 1975 prices would cause aggregate damages estimated at \$123,000,000.

The Harry S. Truman Dam and Reservoir is the most important unit for control of floods in these damage areas. In addition, the large multipurpose pool will be used to generate hydroelectric power and will have a dependable capacity of 160,000 kilowatts under the most critical hydrologic period of record. The average annual energy production will be 282,000,000 kilowatt hours. In addition, power releases from Harry S. Truman Dam and Reservoir will increase the capability of an existing power project immediately downstream from this project. The large pool will also provide great recreational potential and provide substantial fish and wildlife benefits.

Project: Hillsdale Lake, Kans.

Location: The project is located approximately 12 miles above the mouth of Big Bull Creek, a tributary of the Marais des Cygnes River and about 15 miles southwest of the Kansas City metropolitan area in Miami County, Kans.

Authorization: 1954 Flood Control Act.

Benefit-cost ratio: 1.2 to 1.

Summarized financial data

Estimated total appropriation requirement.....	\$52,500,000
Future non-Federal reimbursement.....	17,708,000
Estimated Federal cost (ultimate).....	34,792,000
Estimated non-Federal cost.....	17,708,000
Reimbursement:	
Water supply.....	17,708,000
Total estimated project cost.....	52,500,000
Allocations to June 30, 1975.....	4,454,000
Conference allowance for fiscal year 1976.....	3,000,000
Allocation for fiscal year 1976.....	2,900,000
Conference allowance for 1976 transition quarter.....	1,900,000
Allocation for 1976 transition quarter.....	1,900,000
Allocations to date.....	9,254,000

STATUS: JAN. 1, 1976

	Percent complete	Completion schedule
Land acquisition.....	22	September 1979.
Relocations.....		December 1979.
Dam (closure August 1979).....		June 1981.
Access roads.....		September 1981.
Recreation.....		December 1980.
Administrative facilities.....	71	June 1978.
Entire project.....	10	September 1981.

Description: The Hillsdale project would control runoff from 144 square miles of land in the Big Bull Creek basin in Kansas. The project would provide protection to 7,000 rural acres and the city of Paola (1970 population 4,622) along Big Bull Creek. Operating in conjunction with other lakes in the system, Hillsdale Lake would contribute to protecting 44,000 rural acres in Kansas and 62,000 rural acres in Missouri above the headwaters of Harry S Truman Dam and Reservoir. It would also supplement protection to 30,300 rural acres along the lower Osage River and 160,000 rural acres along the lower Missouri River, and share in system benefits to lands along the Mississippi River.

The maximum flood of record in 1951 caused an estimated \$15,035,000 damage below the project on Big Bull Creek and the Osage and Missouri Rivers. A recurrence of this flood at 1975 prices and conditions would cause damages of nearly \$35 million in the same area. A more recent flood on Big Bull Creek occurred in October 1973 and caused \$550,000 in damages which would have been prevented by the Hillsdale Lake project.

The 68,000 acre-feet of multipurpose storage would provide a dependable yield of 20.7 million gallons (63.5 acre-feet) per day for water supply and 8.4 million gallons (25.8 acre-feet) per day for water quality control, and create a lake surface of 4,580 acres for recreation. The Kansas Water Resources Board signed a contract, approved by the Secretary of the Army on April 9, 1974, for the entire 53,000 acre-feet of water supply storage. Geological conditions are such that aquifers are inadequate to supply even individual farmsteads during dry seasons. The area's suburban location near Kansas City assures population growth and a continued increase in demand for domestic water

supply. Edgerton, Gardner, and Water District No. 2 have had to restrict water use because of shortages several times in the past decade. Because of depleted water supply, Edgerton is currently buying water on an emergency basis from Olathe, Kansas.

Project: Lawrence, Kans.

Location: The project is located along both banks of the Kansas River about 50 miles above its mouth at Lawrence, Douglas County, Kans.

Authorization: 1954 Flood Control Act.

Benefit-cost ratio: 1.07 to 1.

Summarized financial data

Estimated Federal cost.....	\$11,600,000
Estimated non-Federal cost.....	2,410,000
Cash contributions.....	0
Other costs.....	2,410,000
Total estimated project cost.....	14,010,000

Allocations to June 30, 1975.....	4,815,000
Conference allowance for fiscal year 1976.....	1,100,000
Allocation for fiscal year 1976.....	750,000
Conference allowance for 1976 transition quarter.....	574,000
Allocation for 1976 transition quarter.....	574,000
Allocations to date.....	6,139,000

Status: (Jan. 1, 1976)	Percent complete	Completion schedule
Kansas River, levees and channel improvement, left bank, upstream segment, North Lawrence.....	100	March 1971.
Kansas River, levees and channel improvement, left bank, downstream segment, North Lawrence.....	100	February 1972.
Kansas River, levees, channel improvement and bridge alteration, South Lawrence..	0	September 1981.
Mud Creek levees, channel improvement and bridge alterations.....	0	June 1978.
Entire project.....	42	September 1981.

PHYSICAL DATA

Levees: Average height—11.4'; Length (New)—18.2 miles; (Raising)—1.1 miles.

Channel Modification: 6.1 miles.

Description: Lawrence, Kansas, the county seat for Douglas County, is rapidly expanding as an industrial area. The area to be protected north of the river contains about 8,000 acres of residential, industrial and agricultural area. The areas to be protected south of the river contain the Santa Fe Railroad yards and the municipal sewage treatment plant. The July 1951 flood caused damages of \$3,382,000 in the project area, of which about 60 percent was loss to business properties. There were 2,500 persons evacuated from the area prior to and during the flood. The area contains over 500 dwellings, about 60 industrial and retail business establishments, and important railroad, highway and utility facilities. A recurrence of the 1951 flood under 1975 conditions and prices would cause estimated damages of about \$14,400,000. The proposed improvements in conjunction with upstream lakes would protect the area from a flood of the magnitude of the 1951 flood. The average annual benefits, all flood control, are currently estimated at \$518,000.

Project: Missouri River Levee System, Iowa, Nebraska, Kansas and Missouri (Active Units).

Location: Along both sides of the Missouri River, Omaha, Nebraska, to the Mouth.

Authorization: 1941 and 1944 Flood Control Acts.

Benefit-cost ratio: 2.4 to 1.

Summarized financial data

Estimated Federal cost.....	\$173,000,000
Estimated Non-Federal cost.....	18,300,000
Cash contribution.....	
Other costs.....	18,300,000
Estimated project cost.....	191,300,000
Allocations to June 30, 1975.....	54,776,000
Conference allowance for fiscal year 1976.....	500,000
Allocation for fiscal year 1976.....	500,000
Conference allowance for 1976 transition quarter.....	600,000
Allocation for 1976 transition quarter.....	600,000
Allocations to date.....	55,876,000

Physical data

Levees:	
Average height (feet).....	14.1
Length (miles).....	527
Area protected (acres).....	427,000

Status: (Jan. 1, 1976)	Percent complete	Completion schedule
L627-624, R613, L601, L594, R580, L575, R573, R562, L561-550, R548, L536, R520, R513-512, R500, Kimsey-Holly Creek, L497, L488, R482, L476, R471-460, L455, L448-443, R440, L408, L400, and R351.	100	
Bellevue-Papillion Creek levees (R616).....	0	September 1979.
Mosquito-Keg Creek levees (formerly McCartney district) (L614-611).....	0	September 1980.
Riverside levee and drainage district and Quindaro Band levee district (L385).....	0	December 1985.
Orrick drainage and levee district (L345-330).....	1	September 1984.
Ray-Lafayette drainage district and Henrietta-Crooked River drainage and levee district (L325-319).....	0	December 1985.
Brunswick-Dalton drainage district (L246).....	0	September 1980.
North County levee district (L15).....	0	Indefinite.
Entire active program.....	35	December 1985.

Description: The active units of the authorized Missouri River Levee System, in conjunction with existing and authorized upstream reservoirs, will provide protection against destructive floods of a magnitude equal to those of past record for 427,000 acres of agricultural lands, highways, railroads, and utility lines, as well as many small communities in the Missouri River flood plain from Omaha, Nebraska, to the mouth. It is estimated that flood damages in the rural areas and small communities along the main stem of the Missouri River, which would have been prevented by the levee units in the active program, between Omaha and the mouth, have amounted to about \$490,000,000 during the period 1943 through 1975. During this period, 65 floods have been experienced along the lower reaches of the Missouri River. The average annual benefits for all completed and active units between Sioux City and the mouth, based on 1975 prices and conditions, are estimated at \$14,696,000 (all flood control).

Project: Missouri River, Garrison Dam to Lake Oahe, North Dakota.

Location: Missouri River, Garrison Dam to Lake Oahe, North Dakota.

Authorization: 1963 and 1968 Flood Control Acts.

Benefit-to-cost ratio: Not applicable.

Summarized financial data

Estimated Federal cost.....	\$9,200,000
Estimated non-Federal cost.....	285,000
Cash contribution.....	
Other cost.....	285,000
Total estimated project cost.....	9,465,000
Allocations to June 30, 1974.....	7,285,000
Conference allowance fiscal year 1976.....	200,000
Allocation fiscal year 1976.....	200,000
Conference allowance 1976 transition quarter.....	50,000
Allocation 1976 transition quarter.....	50,000
Allocation to date.....	7,535,000

Status (Jan. 1, 1976)	Percent complete	Completion schedule
Stanton powerplant.....	100	
Fort Clark area.....	100	
Painted Woods area.....	100	
Lake Mandan area.....	100	
Square Butte area.....	100	
Bismarck-Mandan area.....	100	
Dry Point area.....	100	
Extended protection authorized areas.....	27	September 1979.
Entire project.....	79	Do.

Physical data: Dike and revetment structures at critical locations of bank erosion.

Justification: Bank protection improvements are necessary to prevent destructive bank erosion which is concentrated at several locations along the Missouri River between Garrison Dam and Lake Oahe. In earlier years, loss of land due to erosion was offset by replacement of land due to accretion. However, replacement of accretion land in the reach between Garrison and Oahe has been largely eliminated due to retention of silt in upstream reservoirs. The erosion is currently active and severe in several areas in this reach, and the authorized project will stabilize the banks and prevent further loss of lands in some of these areas. Average annual benefits for this project are not available; however, the capital value of improvements that would be protected by the project amount to more than \$80,000,000.

Project: Perry Lake Area (Road Improvements), Kansas.

Location: The proposed road improvements are in three segments at different locations in Jefferson County, Kansas, around the Perry Lake area.

Authorization: River Basin Monetary Authorization Act of 1971, P.L. 92-222.

Benefit-Cost Ratio: N/A.

Summarized financial data

Estimated Federal cost.....	\$4,920,000
Estimated non-Federal cost.....	
Total estimated project cost.....	4,920,000
Allocations to June 30, 1975.....	496,000
Conference allowance for fiscal year 1976.....	200,000
Allocation for fiscal year 1976.....	150,000
Conference allowance for 1976 transition quarter.....	400,000
Allocation for 1976 transition quarter.....	400,000
Allocations to date.....	1,046,000
Appropriation requested for fiscal year 1977.....	700,000
Balance to complete after fiscal year 1977.....	3,174,000

STATUS: JAN. 1, 1976

	Percent complete	Completion schedule
Relocations.....	0	September 1979.

PHYSICAL DATA

Lands and damages: Acres, 317. Type, Predominantly agriculture.
Relocations: Roads, 16.1 miles of road improvement (\$4,445,000).

Justification: Heavy traffic on gravel surface county roads to public use areas at Perry Lake has created a dust problem and poses a safety hazard. Hazardous curves will be rebuilt to provide better visibility. Blacktop surface will eliminate the dust cloud that impairs driving vision, creates air pollution and covers surrounding foliage destroying the natural beauty. This road improvement was directed by Public Law 92-222.

Project: Stockton Lake, Missouri.

Location: The damsite is located on the Sac River about 49.5 miles above its confluence with the Osage River, and about 2 miles east of Stockton, Cedar County, Missouri. The lake will extend upstream into Dade and Polk Counties.

Authorization: 1954 Flood Control Act.

Benefit-cost ratio: 1.6 to 1.

Summarized financial data

Estimated Total Appropriation Requirement.....	\$75,830,000
Future non-Federal reimbursement.....	17,357,000
Estimated Federal cost (ultimate).....	58,473,000
Estimated non-Federal cost.....	17,357,000
Reimbursement: Power.....	17,357,000
Other.....	0
Total estimated project cost.....	75,830,000
Allocations to June 30, 1975.....	74,630,000
Conference allowance for fiscal year 1976.....	
Allocation for fiscal year 1976.....	
Conference allowance for 1976 transition quarter.....	
Allocation for 1976 transition quarter.....	
Allocations to date.....	74,630,000

STATUS: JAN. 1, 1976

	Percent complete	Completion schedule
Acquisition of downstream flowage easement and construction of channel cutoff.....		March 1978.
Power on line.....		March 1973.
Entire project.....	98	March 1978.

PHYSICAL DATA

Dam: Type, Rock shell with impervious core. Height, 128 feet (average). Length, 5,100 feet.

Reservoir capacity: Flood control, 774,000 acre-feet. Multipurpose, 875,000 acre-feet. Sedimentation, 25,000 acre-feet. Full pool, 1,674,000 acre-feet.

Lands and damages: Acres, 67,754. Type, predominantly agricultural. Improvements, typical farm units.

Power installation: Initial and ultimate: 45,200 Kw. Head: 85 feet (average).

Spillway: Type, Gated overfall. Capacity, 174,000 c.f.s.

Relocations: Roads, 39 miles (\$12,662,000). Cemeteries, utilities and structures, (\$1,238,000).

Description: The Stockton Lake is the second largest unit of the authorized Osage River basin system of nine lakes, which in turn is part of the comprehensive flood protection plan for the Missouri River basin. The project will control the runoff from 1,160 square miles and, operated in conjunction with other authorized lakes, will provide benefits to 49,800 acres of land along the Sac and Osage Rivers, and 160,000 acres of land along the Missouri River. The July 1951 flood alone caused estimated damages of \$18,920,000 along the Sac, Osage, and Missouri Rivers below the Stockton damsite and subsequent floods through 1975 have caused an estimated \$59,381,000 additional damages in the same areas. Recurrence of these floods at 1975 prices and conditions would cause aggregate damages estimated at about \$119,795,000. The Stockton Lake would reduce these aggregate damages about \$6,782,000. In addition, the large multipurpose pool, when operated in conjunction with Pomme de Terre Lake and Harry S. Truman Dam and Reservoir, will be used to generate hydroelectric power. The large pool will also provide a substantial recreational potential and provide substantial fish and wildlife benefits. The average annual benefits are currently estimated as follows:

Project: Melvern Lake and Pomona Lake, Kansas (Road Improvements).

Summarized financial data:

Estimated Federal cost.....	\$500,000
Estimated non-Federal cost.....	214,000
Cash contribution.....	
Other.....	214,000
Total estimated project cost.....	714,000
Allocations to date.....	
Balance to complete.....	500,000
Preconstruction planning estimate.....	90,000
Amount that could be used in fiscal year 1977.....	10,000

Authorization: Water Resources Development Act of 1974 (P.L. 93-251).

Location and Description: The proposed road improvements are located in Osage County, Kansas. The plan of improvements provides for construction of surface roads in the vicinity of Melvern Lake and Pomona Lake, Kansas.

Proposed Operations for fiscal year 1977: The amount of \$10,000 would be used to initiate preconstruction planning.

Justification: Heavy traffic on gravel surface county roads to public use areas at Melvern Lake and Pomona Lake, Kansas has created a dust pollution problem and posed a safety hazard. Improvements to roads used for access to these lakes will alleviate dust conditions and will encourage utilization of public use areas.

Project: Tuttle Creek Lake, Kansas (Road Improvements).
Summarized financial data:

Summarized financial data:	
Estimated Federal cost.....	\$500,000
Estimated non-Federal cost.....	214,000
Cash contribution.....	
Other.....	214,000
Total estimated project cost.....	714,000
Allocations to date.....	3,000
Balance to complete.....	497,000
Amount that could be used in fiscal year 1977.....	50,000

Authorization: Water Resources Development Act of 1974 (P.L. 93-251).

Location and description: The proposed road improvement is located in Pottawatomie County, Kansas in the vicinity of Tuttle Creek Lake. The plan of improvement provides for surfacing of approximately 5.78 miles of FAS 1208 road extending from the intersection with Kansas State Highway 13 in Section 5, Township 9 south, range 8 east, thence north and west to the intersection with county road in Section 14, Township 8 south, range 7 east.

Proposed Operations for fiscal year 1977: The amount of \$50,000 would be used to initiate construction.

Justification: A large volume of traffic using this road for access to public use areas has created a dust pollution problem and posed a safety hazard. Improvement to this road will alleviate dust conditions and will provide a safe access road to the Tuttle Creek Lake area.

NORTH BRANCH SUSQUEHANNA RIVER BASIN

The North Branch Susquehanna River Basin drains an area of 11,306 square miles of which 6,270 square miles are in south-central New York and 5,036 square miles are in northeastern Pennsylvania. It is approximately 150 miles long and has a width of approximately 170 miles. It is bounded by drainage basins of Lake Ontario and the Mohawk River on the north, the Delaware River on the east, the West Branch of the Susquehanna River on the south and the Genesee River on the west.

The plan authorized by the Flood Control Act of 1958 provides for construction of the Cowanesque Lake and Tioga-Hammond Lakes proj-

ects in Pennsylvania; local flood protection works at Elkland, Pennsylvania, and Nichols, New York; channel improvements (for flood control) at Cortland, New York; and for \$30 million to be appropriated for partial accomplishment of the project plan. This act was amended to provide additional monetary authorization to the present amount of \$133 million.

Projects for which additional authorization is planned to be used:
Cowanesque Lake, Pa.
Tioga-Hammond Lakes, Pa.

Following is a detailed description of the individual projects for which additional monetary authorization is provided:

Project: Cowanesque Lake, Pennsylvania.

Location: The project is located in Tioga County, Pennsylvania, on the Cowanesque River approximately 2.2 miles above its confluence with the Tioga River at Lawrenceville, Pennsylvania.

Authorization: 1958 Flood Control Act.

Benefit-cost ratio: 2.4 to 1.

<i>Summarized financial data</i>	
Estimated Federal cost.....	\$92,600,000
Estimated non-Federal cost.....	
Total estimated project cost.....	92,600,000
Allocation to June 30, 1975.....	14,103,700
Conference allowance for fiscal year 1976.....	12,400,000
Conference allowance for 1976 transition quarter.....	5,000,000
Allocation for fiscal year 1976.....	10,430,000
Allocation for 1976 transition quarter.....	5,000,000
Allocation to Sept. 30, 1976.....	29,533,700
Appropriation requested for fiscal year 1977.....	12,600,000
Balance to complete after Sept. 30, 1977.....	50,466,300

STATUS: JAN. 1, 1976

	Percent complete	Completion schedule
Lands and damages.....	44	September 1978.
Relocations.....	44	June 1980.
Dam and appurtenant works.....		June 1980.
Recreation.....		September 1979.
Entire project.....	22	June 1980.

PHYSICAL DATA

Lands and Damages

Acres: 2,313; type: Predominantly farmland and woodland; major improvements: dwellings and commercial improvements.

Dam

Type: Earth and rock fill. Height: 151 feet. Length: 3,100 feet.

Lake Capacity

Flood Control: 82,000 acre-feet. Conservation: 7,000 acre-feet.
Total: 89,000 acre-feet.

Relocations

Roads: 14.3 miles (\$25,005,000). Cemeteries: 4 cemeteries, 330 graves (\$230,000). Power and Tel. Lines: 4 companies, 16 miles (\$1,026,000), Gas Line: 3 companies, 5.3 miles (\$1,254,000).

Outlet Works

Type: Horseshoe tunnel with gate control. Capacity: 9,000 c.f.s.

Spillway

Type: 400-foot wide open-cut chute with concrete weir. Capacity: (Maximum pool) 224,000 c.f.s.

Description: Major floods have occurred in the Chemung River Basin in 1889, 1935, 1936, 1946, 1972, and 1975 with the duration of flooding being two to three days, depending on location. The largest flood in the Chemung River Basin, prior to June 1972, was the May 1946 flood which caused damages in excess of \$20,000,000 between the damsite and Sunbury, Pennsylvania. Under present conditions, a recurrence of this flood without the project would cause an estimated \$122,000,000 (October 1975 prices) in damages. The project would lower the stage of the flood by about 1.9 and 1.7 feet at Corning and Elmira, New York, respectively.

The June 1972 flood from tropical storm Agnes was the greatest flood of record on the Tioga and Chemung Rivers and along the Susquehanna River downstream from Athens, Pennsylvania. Had the Cowanesque Lake and Tioga-Hammond Lakes projects been constructed and operable during the June 1972 flood, the projects would have prevented damages estimated at \$360,000,000 downstream from the dams in Pennsylvania and New York and would have prevented overtopping of the local flood protection projects in Painted Post, Corning, and Elmira, New York, thus preventing an additional \$84,000,000 in damages. The combined effects of these projects would have reduced the 1972 flood stages enough to make the local protection projects effective at Corning and Elmira as well as greatly reduce the unprecedented damages at downstream localities.

The reservoir and planned recreational facilities will stimulate the economy and contribute to the long-range economic growth of the area.

The project is located in the Appalachian Region as defined by Section 403 of the Appalachian Regional Development Act of 1965 (PL 89-4).

Project: Tioga-Hammond Lakes, Pennsylvania.

Location: The Tioga Dam is located in Tioga County, Pennsylvania, on the Tioga River about 1.7 miles above its junction with Crooked Creek, and the companion Hammond Dam is located on Crooked Creek approximately 3.3 miles above its confluence with the Tioga River.

Authorization: 1958 Flood Control Act.

Benefit-cost ratio: 1.7 to 1.

Summarized financial data

Estimated Federal cost.....	\$157,700,000
Estimated non-Federal cost.....	
Total estimated project cost.....	157,700,000
Allocation to June 30 1975.....	57,692,800
Conference allowance for fiscal year 1976.....	34,250,000
Conference allowance for 1976 transition quarter.....	9,314,000
Allocation for fiscal year 1976.....	32,103,000
Allocation for 1976 transition quarter.....	9,314,000
Allocation to Sept. 30, 1976.....	99,109,800
Appropriation requested for fiscal year 1977.....	35,500,000
Balance to complete after Sept. 30, 1977.....	23,090,200

STATUS: JAN. 1, 1976

	Percent complete	Completion schedule
Lands and damages.....	89	June 1976.
Relocations.....	77	September 1977.
Dam and appurtenant works.....	38	May 1978.
Recreation.....		September 1979.
Mansfield protection.....		June 1978.
Entire project.....	49	September 1979.

PHYSICAL DATA

Relocations

Roads: 18.3 miles (\$24,340,000). Railroads: 9.1 miles (\$12,300,000). Telephone Lines: 16.3 miles (\$426,000). Power Lines: 27.5 miles (\$623,000). Gas Lines: 20.9 miles (\$2,243,000). Cemeteries (10): 870 graves (\$218,000).

Lands & Damages

Acres: 8,564. Type: Agricultural and woodland. Improvements: Typical farm units & residents.

Dams

Tioga: type, Earth Fill. Height, 140 feet. Length, 2,600 feet.

Hammond: type, Earth Fill. Height, 122 feet. Length, 5,950 feet.

Total Lake Capacity

Flood Control: 106,750 acre-feet. Conservation Pool: Permanent, 5,000 acre-feet. Summer, 13,250 acre-feet. Total, 125,000 acre-feet.

Spillway

Type, Chute type with uncontrolled concrete weir, 312 feet wide at crest.

Capacity, (Maximum pool) 215,500 c.f.s.

Outlet Works

Tioga Dam: Type (gate controlled) Oblong Conduit, 14.5 x 21 feet. Capacity (pool at spillway crest) 16,000 c.f.s.

Description: Major floods have occurred in the Chemung River Basin in 1889, 1935, 1936, 1946, 1972, and 1975 with the duration of flooding being two to three days, depending on location. The largest flood in the Chemung River Basin, prior to June 1972, was the May

1946 flood which caused estimated damages in excess of \$20,000,000 between the damsite and Sunbury, Pennsylvania. Under present conditions, a recurrence of this flood without the project would cause an estimated \$122,000,000 (October 1975 prices) in damages. The project would lower the stage of this flood by about 5.5 and 4.0 feet at Corning and Elmira, New York, respectively.

The June 1972 flood from tropical storm Agnes was the greatest flood of record on the Tioga and Chemung Rivers and along the Susquehanna River downstream from Athens, Pennsylvania. Had the Tioga-Hammond Lakes and Cowanesque Lake projects been constructed and operable during the June 1972 flood, the projects would have prevented damages estimated at \$360,000,000 downstream from the dams in Pennsylvania and New York and would have prevented overtopping of the local flood protection projects in Painted Post, Corning, and Elmira, New York, thus preventing an additional \$84,000,000 in damages.

The reservoir and planned recreational facilities will stimulate the economy and contribute to the long-range economic growth of the area.

The project is located in the Appalachian Region as defined by Section 403 of the Appalachian Regional Development Act of 1965 (PL 89-4.)

OHIO RIVER BASIN

The Ohio River is formed by the junction of the Allegheny and Monongahela Rivers at Pittsburgh, and flows in a general south-westerly direction to join the Mississippi River at Cairo, Ill. Its length is 981 miles, and its basin, comprising 204,000 square miles, lies between the Allegheny Mountains on the east and the Mississippi River Basin on the west. The basin is about 800 miles long along the north-east-southwest axis, and about 500 miles wide along its northwest-southwest axis. Lying in the basin are major portions of Ohio, Indiana, West Virginia, Kentucky, and Tennessee; large areas in Pennsylvania, Virginia, North Carolina, Alabama, and Illinois; and parts of New York, Maryland, Georgia, and Mississippi.

The Flood Control Acts of June 22, 1936, August 28, 1937, and June 28, 1938, approved a general comprehensive plan for flood control and other purposes in the Ohio River Basin, consisting of reservoirs, levees, floodwalls, and drainage structures for protection of cities and towns. Those acts were amended and supplemented by subsequent acts, which also included monetary authorizations for further prosecution of the comprehensive plan. The monetary authorization provided to date totals \$1,338.8 million.

Projects for which additional authorization is planned to be used:

Brookville Lake, Ind.
Burnsville Lake, W. Va.
Caesar Creek Lake, Ohio
Cave Run Lake, Ky.
East Fork Lake, Ohio
East Lynn Lake, W. Va.
Evansville, Ind.
Falmouth Lake, Ky.
Mason J. Niblack (Pumps), Ind.

Recreation at completed projects:

Barren River Lake, Ky.
Bluestone Lake, W. Va.
Dewey Lake, Ky.
Fishtrap Lake, Ky.
J. Percy Priest Dam & Res., Tenn.
John W. Flannagan Dam & Res., Va.
Kinzua Dam & Allegheny Res., Pa., & N.Y.
Nolin Lake, Ky.
Rough River Lake, Ky.
Shenango River Lake, Pa. & Ohio
Summersville Lake, W. Va.
Sutton Lake, W. Va.
West Fork Mill Creek Lake, Ohio
Wolf Creek, Lake Cumberland, Ky.
Youghiogheny River Lake, Pa. & Md.

Following is a detailed description of the individual projects for which additional monetary authorization is provided:

Project: Brookville Lake, Indiana.

Location: The dam site for Brookville Lake is located on the East Fork of the Whitewater River, approximately 2.4 miles north of Brookville in Franklin County, Indiana, and about 36 miles upstream from the Ohio River along the Miami, Whitewater and East Fork of Whitewater Rivers. The lake area lies in Union and Franklin Counties.

Authorization: 1938 Flood Control Act and 1958 Water Supply Act, as amended.

Benefit-cost ratio: 1.7 to 1.

Summarized financial data

Estimated Federal cost.....	\$37,900,000
Estimated non-Federal cost.....	8,355,000
Cash contribution:	
Water supply.....	8,355,000
Other costs.....	
Total estimated project cost.....	46,255,000
Allocations to June 30, 1975.....	32,640,000
Conference allowance for fiscal year 1976.....	2,635,000
Conference allowance for 1976 transition quarter.....	885,000
Allocation for fiscal year 1976.....	2,635,000
Allocation for 1976 transition quarter.....	885,000
Allocations to date.....	36,160,000
Appropriation requested for fiscal year 1977.....	1,740,000
Balance to complete after fiscal year 1977.....	

Status: (Jan. 1, 1976)	Percent complete	Completion schedule
Lands.....	99	March 1976.
Relocations.....	86	September 1976.
Reservoir.....	100	
Dam.....	98	June 1976.
Roads.....	100	
Levee.....	100	
Recreation facilities.....	60	September 1977.
Buildings, grounds and utilities.....	49	June 1976.
Permanent operating equipment.....	66	Do.
Entire project.....	88	September 1977.

PHYSICAL DATA

Dam: Type, Earth Fill. Height, 182 ft. Length, 3,004 ft.
Relocations: Roads: 23.3 miles (\$9,467,500). Cemeteries, Utilities, Structures (\$1,973,300).

Spillway: Type, Concrete lined, open cut through right abutment. Base Width, 75 ft.

Outlet Works: Type, Gate Controlled. Service Gates, 2—5.25 ft. x 12.0 ft. Emergency Gates, 2—5.25 ft. x 12.0 ft. Conduit, 12 ft. diameter.

Lands & Damages: Acres: 17,407; Type: Predominantly agricultural; Improvements: Typical farm and residential units.

Reservoir capacity:	Acre-feet
Total storage.....	359,600
Minimum operational pool.....	20,100
Conservation pool.....	35,500
Water supply pool.....	89,300
Seasonal pool (estimated average).....	39,100
Flood control:	
Summer.....	175,600
Winter.....	214,700

Description: The project, when completed, will control a drainage area of approximately 379 square miles and will reduce flood stages at agricultural lands below the dam and at the towns of Brookville, Cedar Grove and West Harrison in Indiana and Harrison in Ohio. The project will function as a unit of the general comprehensive plan for flood control and allied purposes in the Ohio River Basin and will contribute to a reduction of flood damages along the 490 miles of the Ohio River below the Miami River. The record flood of 1913 caused damages amounting to \$639,000 at that time. A recurrence of this flood under present conditions of development and price levels would cause damages estimated at \$14,786,000, of which \$6,070,000 would be prevented by this project, based on July 1975 values. The flood of January 1959 caused damages evaluated at \$1,800,000 at that time. A recurrence of this flood under present conditions of development would cause damages of about \$5,285,000, of which \$4,891,000 would be prevented by this project, based on October 1975 values. The project will also provide water supply storage for the State of Indiana under the provisions of the Water Supply Act of 1958 (Public Law 85-500) as amended by Public Law 87-88 and a seasonal pool will provide general and fish and wildlife recreation benefits. Average annual benefits for the project are estimated at \$5,048,000.

Project: Burnsville Lake, West Virginia.

Location: The project is located in Braxton County on the Little Kanawha River 124.2 miles above its confluence with the Ohio River and 1.7 miles above Burnsville, W. Va.

Authorization: 1938 Flood Control Act.

Benefit-cost ratio: 1.4 to 1.

Summarized financial data

Estimated Federal cost.....	\$43,000,000
Estimated non-Federal cost.....	
Total estimated project cost.....	43,000,000
Allocations to June 30, 1975.....	22,000,000
Conference allowance for fiscal year 1976.....	6,200,000
Conference allowance for 1976 transition quarter.....	2,500,000
Allocations for fiscal year 1976.....	6,120,000
Allocation for 1976 transition quarter.....	1,900,000
Allocations to date.....	30,020,000

Status: (Jan. 1, 1976)	Percent complete	Completion schedule
Lands and damages.....	84	March 1977.
Relocations.....	8	June 1978.
Reservoir.....	7	December 1978.
Dam.....	95	September 1976.
Roads.....	100	December 1975.
Recreation.....	1	December 1978.
Cultural resources pressure.....	1	September 1978.
Buildings, grounds and utilities.....	0	June 1978.
Permanent operating equipment.....	21	June 1977.
Entire project.....	59	December 1978.

PHYSICAL DATA

Dam: Type—Left embankment, earthfill; right embankment, rock fill with impervious core. Height, 90 feet. Length, 1,400 feet. Spillway: Type—Tainter crest gate uncontrolled, concrete gravity type near left abutment with outlet works composed of five 4 ft. x 4.5 ft. normal flow sluices and three 4 ft. x 4 ft. selective withdrawal intakes. Length—142 ft. including 2 each, 8 ft. wide piers. Peak Discharge—123,500 c.f.s. Gates—Three 42 ft. W. x 35 ft. H. tainter gates.

Reservoir Capacity: Total Storage—65,400 acre-feet. Operational and Incidental recreation, 4,100 acre-feet. Seasonal—Water Quality Control, 10,100 acre-feet. Summer—Flood Control, 51,200 acre-feet. Winter—Flood Control, 61,300 acre-feet.

Lands and Damages: Acres—14,070; Type—primarily woodland with about 30% cleared for cropland and pasture; Improvements—Rural residential and subsistence farm type.

Relocations: Roads—6.1 miles (\$6,510,000); Cemeteries, Utilities and Structures (\$1,245,000).

Description: The rugged topography prevalent in the headwaters of the Little Kanawha Basin causes a high rate of runoff. Frequent minor floods and periodic major floods inundate considerable areas in the basin, and contribute materially to Ohio River Floods. Flashy nature of the floods preclude adequate warning periods. Several floods during the period of record have caused severe damages in developed areas in the valley, and previous studies indicate the possibility of much greater floods of disastrous magnitude.

The flood of March 1967 was the flood of record at several points along the Little Kanawha River including Glenville, Grantsville and Palestine. Damages have been estimated at \$2,015,700 (July '67) in the reach from Burnsville to Ohio River backwater. The flood protection to be afforded downstream from the dam should greatly enhance the flood plain for industrial and small business development. Adequate labor market, transportation facilities, and proximity to heavily populated areas and fuel supplies all tend to add to the valley's potential for such development. Further details will accrue in the post-construction period from operation of the dam and recreation facilities.

The Burnsville project is a unit of the authorized three reservoir system of Burnsville, Leading Creek and West Fork (Leading Creek and West Fork were recently reclassified from active to inactive based on the loss of water quality control benefits and resultant economic infeasibility) for reduction of flood damages in the Little Kanawha Basin, and is also a unit of the Comprehensive Plan for Flood Control in the Ohio River Basin.

Project: Caesar Creek Lake, Ohio.

Location: The dam site for Caesar Creek Lake is located on Caesar Creek, approximately 3.0 miles above its confluence with the Little Miami River. The Little Miami River is tributary to the Ohio River. The site, in Warren County, is about 30 miles northeast of Cincinnati, Ohio. The lake area lies in Warren, Green and Clinton Counties, Ohio.

Authorization: Flood Control Act of 1938, Water Supply Act of 1958, as amended, and Federal Water Pollution Control Act Amendments of 1961.

Benefit-cost ratio: 2.1 to 1.

Summarized financial data

Estimated total appropriation requirement.....	\$54,400,000
Future non-Federal reimbursement.....	5,721,000
Estimated Federal cost (ultimate).....	48,679,000
Estimated non-Federal cost.....	5,721,000
Reimbursement:	
Water supply.....	5,721,000
Other.....	
Total estimated project cost.....	54,400,000
Allocations to June 30, 1975.....	23,423,000
Conference allowance for fiscal year 1976.....	11,800,000
Conference allowance for 1976 transition quarter.....	4,100,000
Allocation for fiscal year 1976.....	11,800,000
Allocation for 1976 transition quarter.....	4,100,000
Allocations to date.....	39,323,000

Status (Jan. 1, 1976)	Percent complete	Completion schedule
Lands.....	85	March 1977.
Relocations.....	4	December 1978.
Reservoir.....	7	September 1978.
Dam.....	96	September 1979.
Roads.....	97	June 1976.
Recreation facilities.....	0	September 1979.
Buildings, grounds and utilities.....	50	September 1978.
Permanent operating equipment.....	20	June 1976.
Entire project.....	49	September 1979.

PHYSICAL DATA

Dam: Type—Earth & rock fill; Height—165 ft.; Length—2,750 ft.
Spillway: Type—Open cut through left abutment; Base Width—500 ft.

Outlet works: Type—Gate controlled; Service Gates, 2—4 ft. x 12 ft.; Emergency Gates, 2—4 ft. x 12 ft.; Conduit—8 ft. x 12 ft. oblong.

Relocations: Roads—5.5 miles (\$11,157,600). Cemeteries and Utilities—(\$4,247,400).

Lands & Damages: Acres—11,843; Type: Predominantly agricultural; Improvements: Typical farm and residential units.

Reservoir capacity:	<i>Acres-feet</i>
Total storage.....	242,200
Minimum operation pool.....	13,300
Water supply, water quality control.....	80,400
Seasonal pool.....	8,300
Flood control:	
Summer.....	140,200
Winter.....	148,500

Description: Caesar Creek Lake will function as a unit of the general comprehensive plan for flood control and allied purposes in the Ohio River Basin and provide substantial reduction in flood damages along 50.4 miles of the Little Miami River, 518 miles of the Ohio River below the Little Miami River. In addition, the reservoir will control a drainage area of approximately 237 square miles which is about 98 percent of the drainage area of Caesar Creek. The overflow area of the Little Miami River below Caesar Creek comprises about 8,800 acres of rural lands and includes portions of the urban areas of Newtown, Milford, Loveland, South Lebanon and Morrow and ten small communities. Between these urban areas are scattered developments of mostly residential and small farm properties. (Developments in the urban areas include normal distribution of residences, businesses, services, utilities and transportation routes. Two industries in the overflow area are subject to inundation.) The flood of record on the Little Miami River occurred in 1913 and caused damages amounting to \$708,000 at the time of occurrence along the reach of river affected by the project. A recurrence of this flood under present conditions of development and values would cause damages estimated at \$16,389,000 of which \$3,893,000 would be prevented by the project based on October 1975 values. During the last five years, damaging floods occurred along the reach of the Little Miami River affected by the project in February–April 1975, April 1974, November–December 1973, March 1973, December 1972, February 1971. The project will provide for water-associated recreational opportunities, preservation and enhancement of the fish and wildlife resource, improvement in the quality of downstream flows, and water supply for municipal and industrial uses. Average annual benefits for the project are estimated at \$6,584,000.

Project: Cave Run Lake, Kentucky.

Location: The dam site for Cave Run Lake is located on Licking River, approximately 3 miles above Farmers in Bath County, Kentucky, and about 173 miles above the mouth of Licking River. The reservoir lies in Rowan, Bath, Morgan and Menifee Counties, Kentucky.

Authorization: 1936 and 1938 Flood Control Acts and the Federal Water Pollution Control Act Amendments of 1961.

Benefit-cost ratio: 1.5 to 1.

Summarized financial data

Estimated Federal cost (Corps of Engineers)-----	\$54,900,000
Estimated Federal cost (U.S. Forest Service)-----	6,219,000
Estimated non-Federal cost	
Cash contribution-----	
Other costs-----	
Total estimated project cost-----	61,119,000
Allocations to June 30 1975-----	47,480,000
Conference allowance for fiscal year 1976-----	4,400,000
Conference allowance for 1976 transition quarter-----	1,000,000
Allocation for fiscal year 1976-----	4,400,000
Allocation for 1976 transition quarter-----	1,000,000
Allocations to date-----	52,830,000

Status: (Jan. 1, 1976)	Percent complete	Completion schedule
Lands and damages-----	88	December 1976.
Relocations-----	94	Do.
Reservoir-----	99	March 1976.
Dam-----	97	December 1977.
Roads-----	83	June 1976.
Recreation facilities-----		December 1977.
Buildings, grounds and utilities-----	68	Do.
Permanent operating equipment-----	79	December 1976.
Entire project-----	89	December 1977.

PHYSICAL DATA

Dam: Type—Earth and Rock Fill; Height—148 ft.; Length—2,740 ft.

Relocations: Roads—42.6 miles (\$18,267,700). Cemeteries and Utility Lines (\$1,361,600).

Lands and Damages: Acres—31,500. Type—Predominantly agricultural; Improvements; Typical farm and residential units.

Spillway: Type—Open cut through left abutment. Width—650 ft.

Outlet Works: Type—Gate controlled; Service Gates—2—6.75 ft. x 15.0 ft.; Emergency Gates—2—6.75 ft. x 15.0 ft.; Conduit—15 ft. diameter.

Reservoir capacity:	Acre-feet
Total storage-----	614,100
Minimum operational pool-----	147,300
Water quality control-----	28,300
Seasonal pool-----	47,000
Flood control:	
Summer-----	391,500
Winter-----	438,500

Description: Cave Run Lake, when completed, will control a drainage area of approximately 826 square miles and will function as a unit of the approved general comprehensive plan for flood control and allied purposes in the Ohio River Basin. The project will be part of a

plan to provide flood protection for the Licking River Valley, and will contribute to reduction of flood damages along a 510 mile reach of the Ohio River below the mouth of the Licking River. The record flood of 1937 caused damages amounting to \$13,452,000 at that time, in the reaches of the Licking and Ohio Rivers (Licking River to Miami River) affected by this reservoir. A recurrence of this flood under present conditions of development and values would cause damages estimated at \$132,631,000 (1975 values) of which \$3,784,000 (1975 values) would be prevented by this project. The project will also provide storage for water quality control and a seasonal pool for general and fish and wildlife recreation opportunities. Average annual benefits are estimated at \$4,652,000.

Project: East Fork Lake, Ohio.

Location: The dam site for East Fork Lake is located on the East Fork of Little Miami River, approximately 6.0 miles upstream from Batavia in Clermont County, Ohio, and about 32.6 miles above the mouth of the Little Miami River. The lake area lies entirely in Clermont County.

Authorization: Flood Control Act of 1938, Water Supply Act of 1958, as amended and Federal Water Pollution Control Act Amendments of 1961.

Benefit-cost ratio: 2.4 to 1.

Summarized financial data

Estimated total appropriation requirement-----	\$42,400,000
Future Non-Federal Reimbursement-----	3,384,000
Estimated Federal cost (ultimate)-----	39,016,000
Estimated non-Federal cost-----	3,384,000
Reimbursement:	
Water Supply-----	3,384,000
Other-----	
Total estimated project cost-----	42,400,000
Allocations to June 30, 1975-----	25,407,000
Conference allowance for fiscal year 1976-----	7,000,000
Conference allowance for 1976 transition quarter-----	1,300,000
Allocation for fiscal year 1976-----	7,000,000
Allocation for 1976 transition quarter-----	1,300,000
Allocations to date-----	33,707,000

Status (Jan. 1, 1976)	Percent complete	Completion schedule
Lands-----	92	December 1976.
Relocations-----	2	March 1977.
Reservoir-----	40	Do.
Dam-----	93	Do.
Roads-----	32	Do.
Recreation facilities-----		September 1979.
Buildings, grounds and utilities-----	1	Do.
Permanent operating equipment-----	14	September 1978.
Entire project-----	69	September 1979.

Lands and damages: Acres—10,678; Type—Predominantly agricultural; Improvements—Typical farm and residential units.

Reservoir capacity:	Acre-feet
Total storage.....	294, 800
Minimum operational pool.....	19, 000
Water supply, water quality control.....	65, 200
Seasonal pool.....	8, 400
Flood control:	
Summer.....	202, 200
Winter.....	210, 600

Justification: East Fork Lake will function as a unit of the approved general comprehensive plan for flood control and allied purposes in the Ohio Basin and will contribute to a reduction of flood damages along 32.6 miles of the East Fork of Little Miami River, 7.2 miles of the Little Miami River, and the Ohio River below the Little Miami River. The overflow area of the East Fork of Little Miami River comprises about 4,000 acres of agricultural lands, of which about 70 percent is in cultivation and includes portions of the towns of Batavia and Perintown. Developments along the Little Miami River overflow area have a much greater density than along the East Fork and include portions of the five municipalities of Shademoor, Newtown, Plainville, Avoca Park and Terrace Park. The flood of record on the East Fork of Little Miami River occurred in 1945 and the flood of record on the Little Miami River occurred in 1913. A recurrence of these floods under present conditions of development, would cause damages estimated at \$875,000 and \$4,421,000, respectively, of which \$845,000 and \$877,000 would be prevented by the project, based on October 1975 values. Recent damaging floods occurred in February 1971, March 1973, November-December 1973, May-June 1974 and February-April 1975. The project would also provide for water-associated recreational opportunities, preservation and enhancement of the fish and wildlife resource, improvement in the quality of downstream flows, and water supply for municipal and industrial uses. Average annual benefits for the project are estimated at \$7,007,000.

Project: East Lynn Lake, West Virginia.

Location: The project is located in Wayne County, W. Va., on East Fork of Twelvepole Creek, 10 miles above the mouth of East Fork and 42 miles above the confluence of Twelvepole Creek and the Ohio River.

Authorization: 1938 Flood Control Act.

Benefit-cost ratio: 1.4 to 1.

<i>Summarized financial data</i>	
Estimated Federal cost.....	\$34, 400, 000
Estimated non-Federal cost.....	
Total estimated project cost.....	34, 400, 000
Allocations to June 30, 1975.....	26, 275, 000
Conference allowance for fiscal year 1976.....	4, 700, 000
Conference allowance for 1976 transition quarter.....	300, 000
Allocation for fiscal year 1976.....	4, 246, 000
Allocation for 1976 transition quarter.....	300, 000
Allocations to date.....	30, 821, 000
Appropriation requested for fiscal year 1977.....	1, 000, 000
Balance to complete after fiscal year 1977.....	2, 579, 000

Status (Jan. 1, 1976)	Percent complete	Completion schedule
Land and damages.....	51	December 1977.
Relocations.....	96	September 1976.
Reservoir.....	49	September 1979.
Dam (construction).....	100	
Roads.....	100	
Recreation.....	48	September 1979.
Buildings, grounds and utilities.....	100	
Permanent operating equipment.....	97	June 1976.
Entire project.....	77	September 1979.

PHYSICAL DATA

Dam: Type—Rockfill; Height—113 feet (streambed); Length—638 feet.

Spillway: Type—Uncontrolled saddle, left abutment 400 feet upstream from axis of dam; Length—230 feet; Design Discharge—47,000 c.f.s.

Reservoir capacity:	Acre-feet
Total storage.....	81, 500
Operational and incidental recreation.....	11, 705
Seasonal pool:	
Summer.....	5, 485
Winter.....	
Flood control:	
Summer.....	65, 310
Winter.....	70, 795

Outlet Works: Type—Reinforced concrete circular conduit; Length—625 feet; Diameter—13 feet; Gates—Three—5'8" x 10'.

Lands and Damages: Acres—24,985; Type—Primarily woodland with minor cropland and pasture; Improvements—Predominantly residential.

Relocations: Roads—13.3 miles (\$6,345,000); Cemeteries, Utilities and Structures (\$2,210,000).

Description: The Twelvepole Creek Basin is subject to destructive floods principally from severe summer-type storms but also from basin-wide winter rains and from Ohio River backwater on the lower reaches. The topography of the basin is conducive to rapid runoff and short duration of flooding. Operation of the reservoir for flood control will prevent most of the damages caused by headwater flooding and alleviate damages resulting from combined headwater and backwater floods. Recurring floods of damaging proportions occur periodically throughout the length of the stream. The flood of record (1939) inundated the Town of Wayne, W. Va., up to depths of 8 feet, and caused damage to residences, other buildings and highways along the stream. The flood of February-March 1962 was one foot lower at Wayne but at a higher level in upstream reaches and consequently, the most damaging of record. Estimated damages in the Twelvepole Basin alone were \$1,810,000 and studies indicate that \$1,600,000 of that amount would have been prevented with the reservoir in operation. Under present state of development damages from that flood would have been about \$5,750,000. In addition to flood control, a seasonal pool is being main-

tained for recreation and fish and wildlife. Average annual benefits for the project are estimated at \$2,128,700.

Project: Evansville, Indiana.

Location: Evansville is located in Vanderburgh County, Indiana, on the right bank of the Ohio River, 792.2 miles below Pittsburgh, Pennsylvania.

Authorization: 1937 Flood Control Act.

Benefit-to-cost ratio: 1.9 to 1.

Summarized financial data

Estimated Federal cost.....	\$36,700,000
Estimated non-Federal cost.....	6,218,000
Cash contribution.....	
Other costs.....	6,218,000
Total estimated project cost.....	42,918,000
Allocations to June 30, 1975.....	9,081,000
Conference allowance for fiscal year 1976.....	1,850,000
Conference allowance for 1976 transition quarter.....	1,350,000
Allocations for fiscal year 1976.....	1,850,000
Allocations for 1976 transition quarter.....	1,350,000
Allocation to date.....	12,281,000

STATUS: JAN. 1, 1976

	Percent complete	Completion schedule
Lands and damages.....	100	
Channels.....	100	
Levees and floodwalls:		
Knight Township section:		
Levees.....	100	
Seepage protection.....	0	Indefinite.
Howell section:		
Unit 1.....	100	
Unit 2.....	0	Do.
Pigeon Creek section:		
Unit 1.....	100	
Unit 2.....	23	September 1980.
Pumping plants:		
Knight Township section.....	100	
Howell section:		
Unit 1.....	100	
Unit 2.....	0	Indefinite.
Pigeon Creek section:		
Unit 1.....	100	
Unit 2.....	0	September 1981.

PHYSICAL DATA

The project is a system of earth levees, concrete floodwalls, pumping plants and related items for the protection of Evansville, Indiana (1970 population—137,997), from Ohio River floods 3 feet higher than the record flood of 1937. The project is divided into three sections, as follows:

Knight Township Section:

Earth levee (feet).....	39,700
Concrete wall (feet).....	140
Pumping plants.....	5

Howell Section (two units):

Earth levee (feet).....	19,500
Concrete wall (feet).....	3,900
Pumping plants.....	8

Pigeon Creek Section (two units):

Earth levee (feet).....	26,955
Concrete wall (feet).....	7,671
Pumping plants.....	10

Description: The project, when completed, will protect the City of Evansville, Indiana, against Ohio River floods. Severe floods occurred in 1913, 1937, 1945 and 1964. In the 1937 flood, the maximum of record, flood damages in Evansville were estimated at \$4,793,000. In 1945, flood damages in the city were estimated at \$1,108,000. The Knight Township Section, although only partially complete at the time of the 1945 flood, provided some degree of protection to the overflow area in the eastern (upstream) section of the city. In 1964, flood damages were estimated at \$977,300. The completed Knight Township and Howell Unit 1 Sections afforded partial protection to the city and prevented additional damages estimated at \$3,339,000.

In recent years, considerable expansion of industry and housing has taken place and flood damages for a recurrence of the 1937 flood would be much higher. The city is served by several railroads and highways and is an important communication route between north and south. The property to be protected by the project has a value in excess of \$1,499,800,000 (October 1975 values). Average annual benefits are estimated at \$3,101,000 all for flood control.

Project: Falmouth Lake, Kentucky.

Summarized financial data:

Estimated total appropriation requirements.....	\$99,000,000
Future non-Federal reimbursement.....	6,896,000
Estimated Federal cost (ultimate).....	92,104,000
Estimated non-Federal cost: Reimbursement: recreation including lands.....	6,896,000
Total estimated project cost.....	99,000,000
Allocations to date.....	737,000
Balance to complete.....	98,263,000
Amount that could be used in fiscal year 1977.....	200,000

Authorization: 1936 and 1938 Flood Control Acts.

Location and Description: The proposed site is located in north-central Kentucky on the Licking River about 60.6 miles upstream from its confluence with the Ohio River. This site, in Pendleton County, is about 9 miles about Falmouth, about 35 miles south of Cincinnati, Ohio and about 50 miles north of Lexington, Kentucky. The lake area lies in Pendleton, Bath, Bracken, Fleming, Harrison, Nicholas and Robertson Counties. The project would consist of an earth and rock-filled dam, an uncontrolled open-cut spillway, and a gate controlled outlet conduit. The reservoir would have a total storage capacity of 898,300 acre-feet for flood control and recreation.

Proposed Operations for FY 1977: The amount of \$200,000 would be used to resume preconstruction planning.

Justification: Falmouth Lake is one of two lakes authorized for construction in the Licking River Basin. The other, Cave Run Lake, is under construction, having been started in 1965. Falmouth Lake, when complete, will control a drainage area of 1,430 square miles and will function as a unit of the general comprehensive plan for flood control and allied purposes in the Ohio River Basin. It would provide a substantial reduction in flood damages along the 60.6 miles of the Licking River below the dam site and along the 510 miles of the Ohio River below the Licking River. It would also contribute to a reduction in flood damages on the Mississippi River. The Licking River Basin has been subjected to many damaging floods. The most serious of these floods occurred in 1937, 1939, 1948, 1950, 1961, and 1964. The March 1964 flood is the flood of record for the Licking River. This flood, combined with simultaneous Ohio River flood, caused damages in the estimated amount of \$30,353,000 in reaches of the Licking River and Ohio River principally affected by the proposed project. Damages caused by this flood to overflow areas of the Licking River below the dam are estimated at \$2,331,000. A recurrence of the March 1964 flood under current conditions of development and values would cause damages of about \$76,162,000 (1975 values), along the previously mentioned reaches of the Licking and Ohio Rivers, of which about \$19,300,000 (1975 values) would be prevented by the project. Annual flood losses in the overflow areas of the Licking River below the dam are estimated at about \$79,000. Other damaging floods during the last five years occurred in January and June 1974, April & December 1972, May 1971 and January and April 1970. The project will also provide for water associated recreational opportunities. The benefit-to-cost ratio is 2.3 to 1. Average annual benefits for the project are estimated at \$11,901,000.

	Amount
Breakdown of benefits:	
Flood control.....	\$6,805,000
Recreation:	
General.....	4,352,000
Fish and wildlife.....	414,000
Redevelopment.....	330,000

Total..... 11,901,000

Project: Mason J. Niblack Levee, Indiana (Pumping Facilities).

Location: Mason J. Niblack Levee is located in Knox and Sullivan Counties, Indiana, on the left bank of the Wabash River between river miles 134.8 and 151.8 above its confluence with the Ohio River.

Authorization: 1946 Flood Control Act, modified by the 1968 Flood Control Act.

Benefit-cost ratio: Not applicable.

Summarized financial data

Estimated Federal cost.....	\$2,840,000
Estimated non-Federal cost.....	0
Cash contribution.....	0
Other.....	0
Total estimated project cost.....	<u>2,840,000</u>

Allocations to June 30, 1975.....	\$891,000
Conference allowance for fiscal year 1976.....	1,273,000
Conference allowance for 1976 transition quarter.....	573,000
Allocation for fiscal year 1976.....	1,273,000
Allocation for 1976 transition quarter.....	573,000
Allocation to date.....	2,737,000

STATUS: JAN. 1, 1976

	Percent Complete	Completion schedule
Channels.....	0	December 1976.
Pumping plants.....	36	August 1976.
Entire project.....	39	December 1976.

Physical data

Pumping plants: Number—3.

Channel improvement: Length—1.6 miles.

Description: The Mason J. Niblack Levee, completed in April 1965 (Federal cost \$1,554,700; non-Federal cost \$109,200), consists of an earth levee about 17 miles long, with an average height of 14 feet, and necessary drainage appurtenances. The completed levee has a top elevation one foot above a flow equal to that expected to occur on an average of once every 14 years, assuming other authorized or existing levees in the area are effective, and provides protection for about 15,900 acres of valuable agricultural lands. Pumping facilities, when completed, will eliminate ponded interior drainage from the area protected by the levee. Five major ditches drain the protected area, discharging interior runoff through the levee drainage structures. During Wabash River floods, when the drainage gates are closed, ponding occurs along the ditches and overflows cropland with resultant damages. Local interests contend that the project, as now constructed, is not satisfactory without pumping facilities to remove ponded interior drainage. In December 1966, about 4,100 acres within the levee were subjected to overflow. Similar flooding from interior drainage occurred in February 1968 and again in May–June 1968. Local interests allege that damages caused by interior drainage flooding during 1967 were more than \$200,000 and could exceed \$500,000 in 1968. Affidavits to sustain a portion of this estimate were furnished to the District Engineer in May 1968, prior to recent floods. Flooding occurred again in January–February and December 1969, January–February and April 1970. February and March 1971, and May and June 1972, November–December 1972, January thru May 1973, and January thru May 1975.

Red River Waterway Project

The Red River Waterway Project is located in northwest Louisiana, southwest Arkansas, northeast Texas, and southern Oklahoma.

The River and Harbor Act of 1968 approved the plan for navigation and bank stabilization for the Red River and authorized the appropriation of \$50,000,000 for initiation and partial accomplishment of the plan. The plan consists of providing a stabilized navigation

channel 294 miles long, 9-feet deep, and 200-feet wide from the Mississippi River to Index, Arkansas. Also bank stabilization would be provided from Index, Arkansas, to Denison Dam, Texas. The monetary authorization provided to date totals \$59,000,000.

Projects for which additional authorization is planned to be used:

Mississippi River to Shreveport, La.

Shreveport to Daingerfield.

Shreveport to Vicinity of Index.

Following is a detailed description of the individual projects for which additional monetary authorization is provided.

Project: Red River Waterway—Mississippi River to Shreveport, Louisiana.

Location: The project is located in northwest Louisiana and will provide a navigation route from the Mississippi River at its juncture with Old River via Old and Red Rivers to Shreveport, Louisiana.

Authorization: River and Harbor Act of 1968.

Benefit-cost ratio: 1.06 to 1.

Summarized financial data

Estimated Federal cost Corps of Engineers.....	\$956,000,000
U.S. Coast Guard.....	990,000
Estimated non-Federal cost.....	18,500,000
Cash contribution.....	4,500,000
Other costs.....	14,000,000

Total estimated project cost..... 975,490,000

Allocations to June 30, 1975.....	18,373,000
Conference allowance for fiscal year 1976.....	25,000,000
Allocation for fiscal year 1976.....	22,500,000
Conference allowance for 1976 transition quarter.....	10,000,000
Allocation for 1976 transition quarter.....	9,900,000
Allocations to date.....	50,773,000

Status: (Jan. 1, 1976)	Percent complete	Completion schedule
Pool 1:		
Dams.....	0	June 1981.
Locks.....	0	Do.
Roads, railroads and bridges.....	0	September 1980.
Channels and canals.....	7	September 1984.
Levees and floodwalls.....	0	September 1981.
Recreation facilities.....	0	September 1982.
Buildings, grounds and utilities.....	0	September 1981.
Permanent operating equipment.....	0	Do.
Pool 2:		
Relocations.....	0	September 1983.
Dams.....	0	Do.
Locks.....	0	Do.
Roads, railroads and bridges.....	0	September 1982.
Channels and canals.....	1	September 1985.
Levees and floodwalls.....	0	September 1983.
Recreation facilities.....	0	September 1984.
Buildings, grounds and utilities.....	0	September 1983.
Permanent operating equipment.....	0	Do.
Pool 3:		
Dams.....	0	March 1985.
Locks.....	0	Do.
Roads, railroads and bridges.....	0	March 1984.
Channels and canals.....	1	September 1985..
Levees and floodwalls.....	0	Do.
Recreation facilities.....	0	Do.
Buildings, grounds and utilities.....	0	June 1985.
Permanent operating equipment.....	0	Do.

Status: (Jan. 1, 1976)	Percent complete	Completion schedule
Pool 4:		
Relocations.....	0	September 1985.
Dams.....	0	Do.
Locks.....	0	Do.
Roads, railroads and bridges.....	0	September 1984.
Channels and canals.....	0	September 1987.
Levees and floodwalls.....	0	September 1985.
Recreation facilities.....	0	December 1985.
Buildings, grounds and utilities.....	0	March 1985.
Permanent operating equipment.....	0	Do.
Pool 5:		
Relocations.....	0	December 1985.
Dams.....	0	Do.
Locks.....	0	Do.
Roads, railroads and bridges.....	0	December 1984.
Channels and canals.....	0	December 1987.
Levees and floodwalls.....	0	Do.
Recreation facilities.....	0	March 1986.
Buildings, grounds and utilities.....	0	Do.
Permanent operating equipment.....	0	Do.
Entire project:	2	December 1987.
Open to 9-foot navigation:		
Lock and dam No. 1.....		September 1981.
John H. Overton lock and dam.....		September 1983.
Lock and dam No. 3.....		March 1985
Lock and dam No. 4.....		September 1985.
Lock and dam No. 5.....		December 1985.

Physical data

Channels and canals: Channel 9 feet deep, 200 feet wide and 210 miles long from Old River to Shreveport, Louisiana.

Total length of bank protection—273 miles.

Locks: Number—5; Size—84 feet by 685 feet.

Dams: Number—5; Type—Tainter Gated.

Relocations:

Roads (Modify three bridges; replace one bridge), \$9,655,000.

Railroads (Replace four bridges), \$21,167,000.

Description: In its present state, the Red River is a very erratic stream, subject to wide fluctuations in stage and meandering because of the friable soils. For navigation to be a reality on Red River, a system of dependable pools and a properly aligned channel will be necessary. The pools will be provided by locks and dams; and the proper alignment will be provided by bank and channel stabilization works. These works also would preserve lands and improvements along the navigation route. With the present open river conditions and riverflow regulated by Denison Dam, the controlling depths for navigation from January to July are 6 feet from the mouth to Alexandria, Louisiana, and 5 feet to Shreveport, Louisiana. During the remainder of the year, controlling depths are generally about 9 feet from the mouth to Black River, about 4 feet from there to Alexandria and 1 to 2 feet in Shreveport.

Navigation from the Mississippi River to Shreveport will provide an artery for low-cost bulk transportation which in combination with the abundant natural resources will stimulate economic growth of the region. Estimated savings are based on an average annual movement of 7,334,000 tons. Commodities to be carried over the waterway include alcohol, clay, coal, iron in various forms, oil, fertilizers, molasses and other miscellaneous items. An average annual savings of \$26,498,000

will result from reduced transportation costs. The project is credited with benefits derived from transportation savings from use of the waterway, flood control, fish and wildlife, recreation, area redevelopment, and reduced maintenance on existing revetments, reduced sedimentation, irrigation, water quality control and reduced pumping costs.

Project: Red River Waterway, Shreveport, Louisiana to Daingerfield, Texas.

Summarized financial data

Estimated Federal cost (Corps of Engineers)-----	\$305,000,000
Estimated Federal cost (U.S. Coast Guard)-----	330,000
Estimated non-Federal cost-----	16,300,000
Cash contribution-----	3,400,000
Other costs-----	12,900,000
Total estimated project cost-----	321,630,000
Allocations to date (economic restudy only)-----	70,000
Balance to complete-----	304,930,000
Preconstruction planning estimate-----	4,200,000
Amount that could be utilized in fiscal year 1977-----	200,000

Authorization: River and Harbor Act of 1968.

Location and Description: The project is located in northwest Louisiana and northeast Texas and passes through Caddo Parish, Louisiana, and Harrison, Marion, Morris, and Upshur Counties, Texas. The project provides for a 9-foot deep by 200-foot wide navigation channel extending from Red River at Shreveport, Louisiana, through Twelvemile and Cypress Bayous to a turning basin in Lake O' the Pines near Daingerfield, Texas. Four locks with dimensions of 84 feet by 600 feet and adjacent dams (two existing) will provide the 80-foot lift. Facilities for recreation, and fish and wildlife development are included.

Proposed Operations. The amount of \$200,000 will be utilized to initiate preconstruction planning.

Justification: The project will provide an artery for low-cost bulk transportation which, in combination with the abundant natural resources, will stimulate the economic growth of the region. Recreational facilities at selected points and the locks will provide about 394,000 general recreation days annually. The pools will reduce water treatment requirements, reduce pumping heads, and provide irrigation water for 6,000 acres. The benefit to cost ratio is 1.2 to 1. Average annual benefits are broken down as follows:

Navigation-----	\$15,283,000
Recreation and fish and wildlife-----	792,000
Area redevelopment-----	3,063,000
Water quality control, reduced pumping costs and irrigation-----	59,000
Total-----	19,197,000

Project: Red River Waterway, Shreveport, Louisiana, to Vicinity of Index, Arkansas.

Summarized financial data

Estimated Federal cost-----	\$112,000,000
Estimated non-Federal cost-----	14,000,000
Cash contribution-----	1,700,000
Other-----	12,300,000
Total estimated project cost-----	128,00,000
Allocations to date-----	0
Balance to complete-----	112,000,000
Preconstruction planning-----	880,000
Amount that could be utilized in fiscal year 1977-----	100,000

Authorization: River and Harbor Act of 1968.

Location and Description: The project is located in northwest Louisiana, southwest Arkansas, and northeast Texas, along the Red River between Shreveport, Louisiana, and Index, Arkansas and provides for realining Red River by means of dredging, cutoffs and training works, and for stabilizing its banks by means of revetments and dikes. It passes through Caddo and Bossier Parishes in Louisiana; Bowie County, Texas; and Little River, Hempstead, Miller, and Lafayette Counties, Arkansas. Facilities for recreation and fish and wildlife development are included.

Proposed Operations: The amount of \$100,000 would be used to initiate preconstruction planning.

Justification: Approximately 1,115 acres of land lost each year will be retained, and crops and other improvements (such as levees, railroads, highways, bridges, pipelines, power lines, telephone lines, and buildings) will be protected. Average annual crop and non-crop damage prevented is estimated to be \$1,698,000 and \$1,051,000, respectively. Increased land utilization on about 72,000 acres of land will provide \$1,325,000 of benefits annually. The benefit to cost ratio is 1.18 to 1. Average annual benefits are broken down as follows:

Flood control-----	\$4,074,000
Fish and wildlife and recreation-----	2,240,000
Area redevelopment-----	385,000
Reduced maintenance-----	235,000
Total-----	6,934,000

SAN JOAQUIN RIVER BASIN

The San Joaquin River, the only exterior drainage channel for an area of about 32,000 square miles, has its source in the Sierra Nevada Range about 25 miles southeast of the Yosemite Valley, California.

The Flood Control Act approved December 22, 1944, adopted the plan of improvement for flood control and other purposes on the lower San Joaquin River and tributaries, including the Tuolumne and Stanislaus Rivers, and authorized the appropriation of \$8 million for partial accomplishment of the plan. This monetary authorization has been increased by later acts, bringing the total monetary authorization to date to \$192.5 million.

Projects for which additional authorization is planned to be used:
New Melones Lake, California.

Following is a detailed description of the individual projects for which additional monetary authorization is provided:

Project: New Melones Lake, California.

Location: The project is located on Stanislaus River about 35 miles northeast of the city of Modesto.

Authorization: 1944 and 1962 Flood Control Acts.

Benefit-cost ratio: 1.7 to 1.

Summarized financial data

Estimated total appropriation requirement-----	\$283, 000, 000
Future non-Federal reimbursement-----	184, 800, 000
Estimated Federal cost (ultimate)-----	98, 200, 000
Estimated non-Federal cost-----	184, 800, 000
Reimbursement:	
Irrigation-----	95, 900, 000
Power-----	88, 900, 000
Total estimated project cost-----	283, 000, 000
Allocations to June 30, 1975-----	98, 417, 000
Conference allowance for fiscal year 1976-----	43, 000, 000
Conference allowance for 1976 transition quarter-----	15, 000, 000
Allocation for fiscal year 1976-----	35, 165, 000
Allocation for 1976 transition quarter-----	14, 390, 000
Allocations to date-----	147, 972, 000

Status: (Jan. 1, 1976)	Percent complete	Completion schedule
Lands and damages-----	50	June 1979.
Relocations-----	51	December 1978.
Reservoirs-----	10	June 1979.
Dams-----	44	Do.
Fish and wildlife (not started)-----		June 1978.
Powerplant-----	3	June 1979.
Roads-----	56	Do.
Recreation facilities (not started)-----		Do.
Cultural resources preservation (not started)-----		Do.
Buildings, grounds and utilities-----	53	Do.
Permanent operating equipment-----	55	Do.
Closure-----		November 1978.
Power on line-----	41	January 1979.
Entire project-----		Do

PHYSICAL DATA

Dam: Type, earth and rockfill. Height, 625 feet. Length, 1,560 feet.

Spillway: Type, ungated, broad-crested weir. Crest length, 200 feet.

Capacity, 112,000 c.f.s.

Power: Number of units, 2. Installed capacity, 300,000 kw. Maximum head, 583 feet.

Lands and Damages: Acres, 27,804. Type, grazing, forest, wasteland and natural habitat along river. Improvements, rural dwellings and ranch buildings. (Estimated depreciated original cost of existing Melones Powerplant (P.G. & E. Co.) \$1,500,000).

Relocations: Roads, 4.4 miles (including 2 bridges, aggregate length about 3,400 feet) (State, county, and private) (\$25,072,000); miscellaneous utilities (\$493,000).

Lake Capacity: Irrigation, power, recreation, fish and wildlife, water quality, and flood control storage (including flood control reservation

of 450,000 acre-feet, 2,090,000 acre-feet. Inactive storage, 310,000 acre-feet. Gross storage, 2,400,000 acre-feet.

DESCRIPTION: The project is needed for full development and maximum utilization of the water resources of the Stanislaus River Basin, as well as for provision of an adequate degree of flood protection on the Stanislaus and lower San Joaquin Rivers. The project will provide a high degree of flood protection to about 35,000 acres of highly developed agricultural land in the flood plain of Stanislaus River; to suburban areas of Ripon, Oakdale, and Riverbank (combined population 15,270); to two main line railroads and U.S. Highway 99; and to several State and County roads. Flood damages along the Stanislaus River during the 1955 flood amounted to \$1,928,000 below the damsite. However, were such a flood to occur under current conditions of development and prices, damages amounting to \$5,021,000 in that area would result, all of which would be preventable by the project. Damages on the San Joaquin River below the mouth of Stanislaus River and in the Sacramento-San Joaquin Delta during the 1955 flood amounted to \$4,115,000. Under current conditions of development and prices, these damages would amount to about \$10,676,000, of which about \$5,080,000 would be prevented by operation of New Melones project. In conjunction with storage projects on Tuolumne River and authorized levees on Lower San Joaquin River, the project will provide flood protection to about 50,000 acres of agricultural land along San Joaquin River below the mouth of Stanislaus River, about 185,000 acres of intensively cultivated land in the Sacramento-San Joaquin Delta, suburban areas south of the city of Stockton, and numerous commercial and public installations. The flood of January 1969 caused damages on the Stanislaus River below the project estimated at about \$2,140,000. However, were such a flood to occur under current conditions of development and prices, damages amounting to \$3,552,000 in that area would result, all of which would be preventable by the project. Coordinated with other reservoirs of the Central Valley Project of the Bureau of Reclamation, the project will provide about 285,000 acre-feet of new water per year, on the average, for diversion to the local service areas and for export (of water surplus to local needs) to the southern San Joaquin Valley. In addition, the project will provide recreational opportunities and urgently needed hydroelectric power.

SANTA ANA RIVER BASIN

The Santa Ana River Basin contains an area of about 2,470 square miles and is the largest coastal basin in Southern California. The river rises in the San Bernardino Mountains and flows 100 miles southwest to the Pacific Ocean at a point near Newport Beach, about 30 miles southeast of Los Angeles. The drainage basin occupies parts of Orange, Riverside, and San Bernardino Counties.

The general plan for flood protection of the metropolitan area in Orange County, California was adopted by the Flood Control Act approved June 22, 1936, which authorized an appropriation of \$13,000,000 for partial accomplishment of the plan. The plan has been further amended and modified and additional monetary authorization provided by subsequent acts. The monetary authorization provided to date totals \$45,500,000.

Santa Ana River Basin

	thousands
Total estimated cost of projects in the plan.....	\$59,193
Present monetary authorization.....	45,500
Allocations through June 30, 1975.....	43,500
Remaining monetary authorization.....	2,000
Additional scheduled obligations through September 30, 1976.....	570
Remaining monetary authorization after September 30, 1976.....	1,430
Additional scheduled obligations through fiscal year 1977.....	2,377
Required increase in monetary authorization through fiscal year 1977, based on budget.....	947
Required increase in monetary authorization through fiscal year 1977 based on capability.....	1,456

Projects for which additional authorization is required:

[In thousands of dollars]

	Fiscal year—		Application of additional authorization based on fiscal year 1977	
	1977 budget	1977 capability	Budget	Capability
Recreation at completed projects:				
Brea Dam, Calif.....	120	120	120	120
Carbon Canyon Lake and Channel, Calif.....	150	150	150	150
Fullerton Dam, Calif.....	156	156	156	156
Prado Lake, Calif.....	2,107	2,460	677	1,030
Total.....	2,377	2,886	947	1,456
Total requested authorization.....			1,000	
Maximum potential authorization which may be required.....				2,000

SOUTH PLATTE RIVER BASIN

The South Platte River rises on the Continental Divide in central Colorado and flows northeasterly to its confluence with the North Platte River at North Platte, Nebraska. The drainage area of 24,030 square miles includes a section of the rugged eastern slope of the Rocky Mountains, with elevation exceeding 14,000 feet and extensive areas of the Great Plains.

The Flood Control Act of 1950 authorized a plan for flood control and related purposes in the South Platte River Basin in Colorado. The plan consists of Chatfield Lake and levee and channel improvements at three locations, including the city of Boulder. The act also authorized the appropriation of \$26,300,000 for partial accomplishment of the plan.

The plan was further modified by the Flood Control Act of 1968 to include construction of a dam and lake on Bear Creek, a tributary of the South Platte River. Subsequent acts bring the total monetary authorization to date to \$113,300,000.

Projects for which additional authorization is planned to be used:
 Bear Creek Lake, CO Chatfield Lake, CO

Following is a detailed description of the individual projects for which additional monetary authorization is provided.

Project: Bear Creek Lake, Colorado.

Location: The dam is located on Bear Creek in Jefferson County, Colorado about 8 miles above the confluence of Bear Creek with the South Platte River at Denver.

Authorization: 1968 Flood Control Act.

Benefit-cost ratio: 2.9 to 1.

Summarized financial data

Estimated total appropriation requirement.....	69,700,000
Future non-Federal reimbursement.....	\$410,000
Estimated Federal cost (ultimate).....	69,290,000
Estimated Non-Federal cost.....	650,000
Recreation cost sharing.....	410,000
Acquisition for water for recreation pool.....	240,000
Total estimated project cost.....	69,940,000
Allocations to June 30, 1975.....	18,583,000
Conference allowance for fiscal year 1976.....	14,800,000
Allocation for fiscal year 1976.....	16,300,000
Conference allowance for 1976 transition quarter.....	4,000,000
Allocation for 1976 transition quarter.....	4,000,000
Allocations to date.....	38,883,000

Status: Jan. 1, 1976	Percent complete	Completion schedule
Lands and damages.....	91	June 1976.
Relocations.....	68	June 1979.
Dam (closure July 1977).....	23	June 1980.
Roads and recreation facilities.....		Do.
Buildings, grounds and utilities.....		Do.
Permanent operating equipment.....		Do.
Entire project.....	40	Do.

PHYSICAL DATA

Dam: Type, rolled earthfill embankment. Height, 170 feet main embankment, 80 feet south embankment. Length, 5,120 feet main embankment, 1,930 feet south embankment.

Outlet works: Gated concrete conduit.

Spillway: Uncontrolled earth and rock cut.

Relocations: Road, 6.7 miles (\$5,320,000).

Utilities: Power and telephone lines, water supply canals and gas lines (\$2,130,000).

Reservoir capacity: Flood control, 26,290 acre-feet. Sediment reserve, 2,000 acre-feet. Total, 28,290 acre-feet.

Lands and damages: Acres, 2,740. Type, predominantly agricultural. Improvements, farm units and one trailer court.

Description: Bear Creek has experienced 22 floods in the past 96 years claiming 45 lives. In that portion of the Bear Creek flood plain which is situated in metropolitan Denver, the improvements subject to flood damages include over 2,000 homes, 28 commercial establishments, an elementary school, two high schools, 14 street and highway bridges, and nearly 15 miles of city streets and major highways. The project will serve as a complementary flood control improvement to the existing Cherry Creek reservoir project and the Chatfield reservoir project. Since Bear Creek is a major tributary of the South Platte River, the project, together with the Cherry Creek and Chatfield projects is essential to the security of the metropolitan Denver against major floods. The project will provide flood protection in three major metropolitan reaches; Reach 1—extending from the dam to the mouth of Bear Creek; Reach 2—on the South Platte River, extending from the mouth of Bear Creek to 84th Avenue; and Reach 3—on the South Platte River from 84th Avenue to Brighton, Colorado. The estimated

value of lands and improvements to be protected in these three reaches is \$950,000,000. The project's flood control function will provide protection to 31,630 acres of flood plain, of which 17,380 acres are currently urbanized and 14,250 are rural. The recreation pool will serve as the central basis of development of project lands to augment diversified recreation potentials to assist in meeting the current and future recreation requirements of the metropolitan region.

Project: Chatfield Lake, Colorado.

Location: The dam is located in Douglas and Jefferson Counties on the South Platte River, just below the mouth of Plum Creek, about eight miles upstream from Denver, Colorado. The downstream channel improvements will be located in Arapahoe and Jefferson Counties along the South Platte River from the damsite to near the Denver city limits.

Authorization: 1950 Flood Control Act Modified by Water Resources Development Act of 1974.

Benefit-cost ratio: 6.3 to 1.

Summarized financial data

Estimated Federal cost.....	\$86,400,000
Estimated non-Federal cost.....	5,350,000
Cash contribution—None.....	
Other (channel improvement only).....	2,450,000
Acquisition of water for recreation pool.....	2,900,000
Total estimated project cost.....	91,750,000
Allocations to June 30, 1975.....	73,959,000
Conference allowance for fiscal year 1976.....	2,100,000
Allocation for fiscal year 1976.....	2,385,000
Conference allowance for 1976 transition quarter.....	1,100,000
Allocation for 1976 transition quarter.....	1,100,000
Allocations to date.....	77,444,000

Status: (Jan. 1, 1976)	Percent complete	Completion schedule
Land acquisition.....	99	June 1977.
Relocations.....	99	September 1976.
Reservoir.....	88	June 1978.
Dam (closure Aug. 15, 1973).....	98	June 1977.
Channel.....	0	September 1979.
Recreation.....	47	June 1978.
Buildings and grounds.....	17	Do.
Permanent operating equipment.....	3	Do.
Entire project.....	88	September 1979.

PHYSICAL DATA

Dam: Type, Rolled earthfill embankment. Height, 148 feet (above streambed). Length, 12,500.

Relocations: Roads, 8.25 mi 4 lane (\$4,715,000). Railroads, 2.3 mi mainline (\$722,000). Water and Sewer Facility (\$8,144,000). Tele and Power Facility (\$1,694,000).

Channel improvement, 8 miles.

Outlet Works: Type, Gate Controlled concrete. Conduit size 11 x 16 feet oval.

Lands and damages: Acres, 6,934. Type, Predominantly agricultural with transition to commercial and residential development. Improvements, residential, farm units, commercial and industrial facilities.

Reservoir capacity: Flood control, 215,000 acre-feet. Sediment (recreation), 20,000 acre-feet. Total, 235,000 acre-feet.

Spillway: Type, ungated concrete chute. Bottom width, 500 feet. Length, 1,148 feet.

Description: The Chatfield project, operating in conjunction with existing and authorized projects, will provide a high degree of flood protection for Denver, Littleton, Englewood and other communities and the agricultural areas along the South Platte River below the dam site. The flood of 16 June 1965, the flood of record of modern times, caused damages in the Denver metropolitan area of about \$325,000,000 including damage to 2,033 homes, 6 apartment buildings, 612 business establishments, and 167 house trailers. Although 13 lives were lost in the South Platte Basin, the remarkable fact that no lives were lost in the Denver metropolitan area can only be credited to alert local governmental agencies that compelled prior evacuation from flood hazard areas identified on flood plain information reports published by the Corps of Engineers in 1963.

Had the Chatfield project been in operation at the time of the flood, practically all of the damages in the Denver metropolitan area would have been prevented and substantial damage reduction achieved in the stream reaches downstream from Denver.

UPPER MISSISSIPPI RIVER BASIN

Red Rock Dam—Lake Red Rock, IA.

LAKE LEVEL INCREASE

Description of Work: Construction of Red Rock Dam and Lake Red Rock was completed in 1969 and operation commenced in the spring of 1969 with a conservation pool elevation of 725 ft. m.s.l. In November 1972, the Rock Island District completed a study on the advisability of raising the permanent pool level of Lake Red Rock primarily for increased recreational use. The Study recommended that the pool level be raised to elevation 728 ft. m.s.l. on a year-round basis for a period of several years, then if no adverse effects are noted a raise to elevation 730 ft. m.s.l. be permitted. It further recommended clearing of all dead trees in the reservoir area up to elevation 760 ft. m.s.l. and that structural modifications to the dam be made which would permit placement of emergency bulkheads for the 14 service gates without a drawdown in pool level; thus eliminating delays due to drawdown and refilling. Total cost for these two items is approximately \$1,000,000.

Status: The Rock Island District Report completed in November 1972 was returned for revision in May 1973 to consider operational effects of Saylorville Reservoir immediately upstream of Red Rock. The revised report has not been completed because of ensuing difficulties at the Saylorville and Red Rock projects involving litigation at the latter following the floods of 1973 and 1974.

Recommended modifications to the Saylorville project have been transmitted to Congress. In addition, recent requests for higher release rates from Red Rock for cooling water for proposed power generation projects and other purposes have been received. The Rock Island District is now prepared to consider revisions of their November 1972

report in light of the above. Modifications to the Red Rock Reservoir will not be undertaken until completion of the water levels report and receipt of additional authorization as may be required.

COMMITTEE RECOMMENDATIONS

The Committee recommends the passage of H.R. 9398, as reported.

COMPLIANCE WITH CLAUSE 2(1) OF RULE XI OF THE RULES OF THE HOUSE OF REPRESENTATIVES

(1) With reference to Clause 2(1) (3) (A) of rule XI of the Rules of the House of Representatives, no separate hearings were held on the subject matter of this legislation by the Subcommittee on Investigations and Review. However, the Subcommittee on Water Resources held hearings on this subject matter which resulted in the reported bill.

(2) With respect to Clause 2(1) (3) (B) of rule XI of the Rules of the House of Representatives the bill, as reported, does not provide new budget authority or increased tax expenditures. Accordingly, a statement pursuant to section 308 (a) of the Congressional Budget Act is not required.

(3) With reference to Clause 2(1) (3) (C) of rule XI of the Rules of the House of Representatives, the Committee has not received a report prepared by the Congressional Budget Office under section 403 of the Congressional Budget Act.

(4) With reference to clause 2(1) (3) (D) of rule XI of the Rules of the House of Representatives, the committee has not received a report from the Committee on Government Operations pertaining to this subject matter.

(5) With reference to clause 2(1) (4) of rule XI of the Rules of the House of Representatives, the following information is provided:

The effect of carrying out H.R. 12545, as reported, should be minimal with respect to prices and cost. The funds authorized to be appropriated will be utilized for the continuation of projects already under way and will provide needed jobs in the construction field.

COST OF LEGISLATION

In accordance with Rule XIII(7) of the Rules of the House of Representatives, the following information is furnished by the Committee on the cost of the United States in carrying out H.R. 12545, as reported, in Fiscal Year 1976 and in each of the five succeeding fiscal years authorized by the bill.

Fiscal year 1976.....	None.
July 1, 1976-September 30, 1976.....	None.
Fiscal year 1977.....	\$602, 000, 000
Fiscal years 1978, 1979, 1980, 1981.....	None.

VOTE

The Committee ordered the bill reported by voice vote.



RIVER BASIN MONETARY AUTHORIZATIONS

MAY 13, 1976.—Ordered to be printed

Mr. GRAVEL, from the Committee on Public Works,
submitted the following

REPORT

[To accompany S. 3432]

The Committee on Public Works, reports an original bill (S. 3432) authorizing an increase in the monetary authorization for two comprehensive river basin plans previously approved by Congress and recommends that the bill do pass.

PURPOSE

This Act provides increased monetary authorizations for the prosecution of certain river basin plans for flood control, navigation, and related purposes under the jurisdiction of the Secretary of the Army and the Chief of Engineers. The appropriations intended to be covered by the increased monetary authorizations are those necessary for the anticipated funding requirements through September 30, 1976.

GENERAL STATEMENT

The practice of approving basin and project plans subject to a monetary limitation began with the 1936 and 1938 Flood Control Acts. These Acts limited authority to appropriate and expend funds within specified projects to levels below the total estimated costs of the authorized basin developments. Thus Congress could review and control the rate of accomplishment of the basin plans and major projects within them.

In these river basin plans, Congress approved an entire plan for development of a river basin in the interests of flood control and related purposes, but limited funding to anticipated needs for a specified period of years, thus allowing accomplishment of only part of the plan.

If such legislation is not forthcoming when needed, construction of projects in the basin plan cannot proceed, even though funds have been included in appropriation acts for this purpose.

On February 13, 1976, the Administration submitted proposed legislation to the Congress requesting increased monetary authorizations for 13 river basins for anticipated obligations for fiscal years 1977 and 1978. The majority of these river basins will be acted on by the Committee later this year. Emergency situations, however, have developed in two river basins.

During Water Resources Subcommittee hearings on April 6, 1976, the Corps of Engineers testified that present authorizations would carry the 13 basins through until later this year. On this basis, the Committee decided to withhold action on the matter until it could develop a comprehensive Omnibus Water Resources bill later this year.

On May 6, 1976, the following letter and enclosed information were received, relating to emergency conditions in the North Branch Susquehanna and the South Platte river basins.

DEPARTMENT OF THE ARMY,
OFFICE OF THE CHIEF OF ENGINEERS,
Washington, D.C., May 6, 1976.

HON. MIKE GRAVEL,
Chairman, Subcommittee on Water Resources, Committee on Public Works, U.S. Senate, Washington, D.C.

DEAR SENATOR GRAVEL: In my testimony before the Water Resources Subcommittee on 6 April 1976, I presented estimates of the dates when lack of adequate basin monetary authorizations would force curtailment of work on Civil Works projects. Based on our then-anticipated construction schedules, I estimated that current authorizations would be exhausted on the two most critical basins in August, but that no disruption of project schedules would occur if increased monetary authorizations were enacted by the end of May. Now that we are further advanced in the construction season, I am able to present more refined estimates for the two critical basins: North Branch Susquehanna River, and South Platte River.

As displayed in Inclosure 1, lack of adequate monetary authorization for the North Branch Susquehanna River, will necessitate (1) delay of a bid opening scheduled for 27 May 1976 for construction of the dam and appurtenances at the Cowanesque Lake, Pennsylvania, project and (2) issuance of exhaustion-of-funds notices on 1 August 1976 to three contractors on the Tioga-Hammond Lakes, Pennsylvania, project.

As displayed in Inclosure 2, lack of adequate monetary authorization for the South Platte River will necessitate (1) delay of one contract award from May until August 1976 and issuance of an exhaustion-of-funds notice on 10 July 1976 to one contractor on the Bear Creek Lake, Colorado, project and (2) delay from May to August 1976 of award of a contract for road construction at the Chatfield Lake, Colorado, project.

You should know that once the contractors to whom we would issue exhaustion-of-funds notices have been formally notified of that

fact, they will have the option of suspending their on-going construction activities. Suspension of construction activities could occur by early August on the Bear Creek Lake, Colorado, project and by early September on the Tioga-Hammond Lakes, Pennsylvania, project.

If the Committee would like any additional information or explanation on this matter, I would be pleased to provide it.

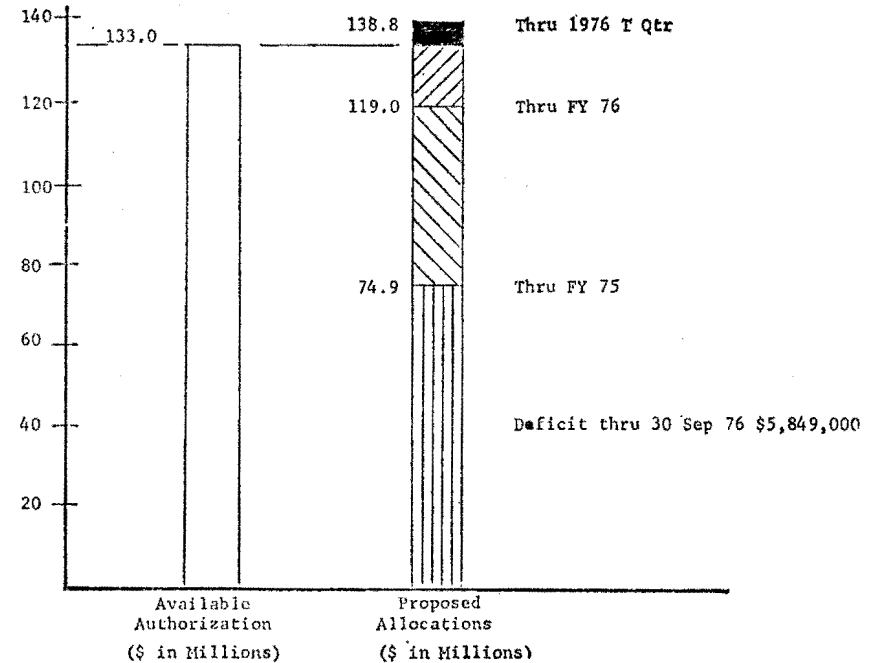
I am sending an identical letter to the Honorable Jennings Randolph, Chairman, Committee on Public Works, United States Senate.

Sincerely yours,

ERNEST GRAVES,
Major General, USA,
Director of Civil Works.

INCLOSURE 1
NORTH BRANCH SUSQUEHANNA

NORTH BRANCH SUSQUEHANNA



COWANESQUE LAKE, PA.
[In thousands of dollars; fiscal years]

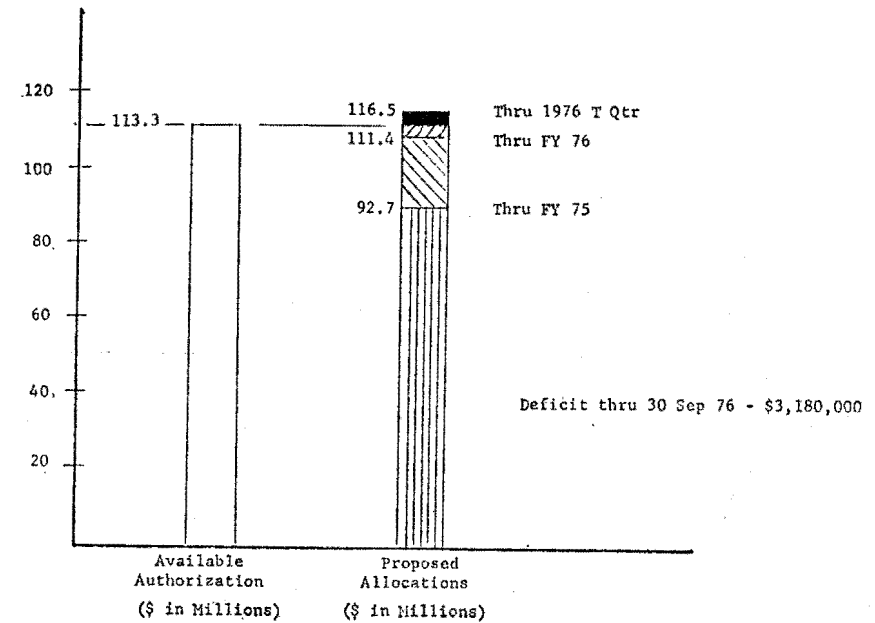
Item	Estimated 1976 and 1976T earnings	Contingency action	Estimated 1976 and 1976T earnings within available authority	Reduction
A. Continuing items:				
Real estate	3,150		3,150	
Roads, unit I (LR58052)	15		15	
Utilities (5 contracts)	218		218	
Road relocation unit, II (A2)	7,296		7,296	
E. & D.	1,204		1,204	
S. & A.	549		549	
B. New items:				
Cemeteries	100		100	
Permanent operating equipment	5		5	
Dam and appurtenances (B4)	2,760	Bid opening scheduled May 27, 1976; delay risks loss of construction season and consequent delay in project completion by 1 yr.	0	2,760
Total	15,297		12,537	2,760

TIOGA-HAMMOND LAKES, PA.
[In thousands of dollars; fiscal years]

Item	Estimated 1976 and 1976T earnings	Contingency action	Estimated 1976 and 1976T earnings within available authority	Reduction
A. Continuing items:				
Real estate	2,219		2,219	
Relocate U.S. 15	3,750		3,750	
Relocate LR58044 (Mansfield I)	2,119		2,119	
RR relocate (PC III and PC facilities)	4,936		4,936	
Utilities (3-telephones, gas, electric)	2,002		2,002	
Permanent operation equipment	40		40	
Relocate PA287 and PC RR unit II (B3)	3,366		3,366	
Dam embankments (C2)	12,407	Issue exhaustion of funds Aug. 1, 1976.	11,307	1,100
Dam structures (D3)	15,275	do	14,296	979
E. & D.	1,173		1,173	
S. & A.	992		992	
B. New items:				
Mansfield Protective Works, unit II (E2)	1,300		1,300	
Mansfield, unit III (F5)	0		0	
Reservoir clearing	0		0	
Reservoir monumentation	0		0	
Repair slide, route 15	3,095	Issue exhaustion of funds Aug. 1, 1976.	2,085	1,010
Total	52,674		49,585	3,089

INCLOSURE 2
SOUTH PLATTE RIVER

SOUTH PLATTE RIVER



BEAR CREEK LAKE, CO.
[In thousands of dollars; fiscal years]

Item	Estimated 1976 and 1976T earnings	Contingency action	Estimated 1976 and 1976T earnings within available authority	Reduction
A. Continuing items:				
Lands and damages	3,200	Delay purchase 1 major tract	2,900	300
Colorado highways	2,075		2,075	
2 Utility contracts	305		305	
2 Canal contracts	44		44	
Earthwork stage II, canal, clear.	11,520	Issue exhaustion of funds July 10, 1976.	9,970	1,550
Surveys, instr, seismic and misc. O. & M.	174		174	
Engineering and design	424		424	
Supervision and administration	515		515	
Outlet works	1,800		1,800	
Temporary pumping irrigation district	100		100	
B. New work:				
Harriman-Warrior Canal	816	Delay contract from May 1976 to August 1976.	285	531
Warrior Canal relocation				
Total	20,973		18,592	2,381

¹ Further delay would require another year of pumping for irrigation.

CHATFIELD LAKE, COLO.

[In thousands of dollars; fiscal years]

Item	Estimated 1976 and 1976T earnings	Contingency action	Estimated 1976 and 1976T earnings within available authority	Reduction
A. Continuing items:				
Lands and damages	89	-----	89	-----
Colorado highways and county roads	8	-----	8	-----
Railroads	1	-----	1	-----
Utilities	44	-----	44	-----
Earthwork stage III	334	-----	334	-----
Vegetable management and tree plant	164	-----	164	-----
Ditch, power supply, instrument, seismic	242	-----	242	-----
Spillway	57	-----	57	-----
Miscellaneous dam work	54	-----	54	-----
Recreation facilities underway	1,047	-----	1,047	-----
P-O-E	3	-----	3	-----
E. & D.	171	-----	171	-----
S. & A.	134	-----	134	-----
B. New items:				
Access roads, emb. roads and recreation roads	700	Delay from May 1976 to August 1976 ¹	200	500
Stage V, recreation	300	Delay from July 1976 to October 1976	0	300
Total	3,348	-----	2,548	800

¹ Further delay would require another year of pumping for irrigation. Award would permit impoundment January 1977.

COMMITTEE VIEWS

In view of the fact that further delay in monetary authorizations for the North Branch Susquehanna and the South Platte basins will result in curtailment of contracts and ongoing work, the Committee on Public Works recommends increases for those basins as follows:

Basin	Act of Congress	Additional monetary authorizations required through transition quarter
North Branch, Susquehanna River Basin	July 3, 1958	5,800,000
South Platte River Basin	May 17, 1950	3,200,000
Total	-----	9,000,000

COST OF LEGISLATION

Section 252(a) of the Legislative Reorganization Act of 1970 (Public Law 91-510) requires publication in this report of the Committee's estimate of the costs of reported legislation, together with estimates prepared by any Federal agency. Based on information from the Corps of Engineers, \$9 million will be required to carry out the provisions of this Act.

Section 403 of the Congressional Budget and Impoundment Control Act requires each bill to contain a statement of the cost of such bill prepared by the Congressional Budget Office. Because of time factors involved in meeting the May 15 deadline for reporting authorizing legislation for fiscal year 1977, this report does not contain the cost estimate.

ROLLCALL VOTES

Section 133 of the Legislative Reorganization Act of 1970 and the rules of the Committee on Public Works require that any rollcall votes be announced in this report. During the Committee's consideration of this measure no rollcall votes were taken. The measure was ordered reported by a voice vote of the Committee.

HEARINGS

The Subcommittee on Water Resources held hearings on the Administration's proposed legislation on April 6, 1976.

CHANGES IN EXISTING LAW

In compliance with subsection 4 of rule XXIX of the Standing Rules of the Senate, it is reported that this bill effects no change in existing law.

○

Ninety-fourth Congress of the United States of America

AT THE SECOND SESSION

Begun and held at the City of Washington on Monday, the nineteenth day of January, one thousand nine hundred and seventy-six

An Act

Authorizing additional appropriations for prosecution of projects in certain comprehensive river basin plans for flood control, navigation, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That (a) in addition to previous authorizations, there is hereby authorized to be appropriated for the prosecution of the comprehensive plan of development of each river basin under the jurisdiction of the Secretary of the Army referred to in the first column below, which was basically authorized by the Act referred to by date of enactment in the second column below, an amount not to exceed that shown opposite such river basin in the third column below:

Basin	Act of Congress	Amount
Alabama-Coosa River Basin.....	Mar. 2, 1945	\$6,000,000
Arkansas River Basin.....	June 28, 1938	6,000,000
Brazos River Basin.....	Sept. 3, 1954	19,000,000
Columbia River Basin.....	June 28, 1944	39,000,000
Mississippi River and tributaries.....	May 15, 1928	220,000,000
Missouri River Basin.....	June 28, 1938	85,000,000
North Branch, Susquehanna River Basin.....	July 3, 1953	72,000,000
Ohio River Basin.....	June 22, 1936	23,000,000
Red River Waterway project.....	Aug. 13, 1968	60,000,000
San Joaquin River Basin.....	Dec. 22, 1944	46,000,000
Santa Ana River Basin.....	June 22, 1936	2,000,000
South Platte River Basin.....	May 17, 1950	22,000,000
Upper Mississippi River Basin.....	June 28, 1938	2,000,000

(b) The total amount authorized to be appropriated by this Act shall not exceed \$602,000,000.

Speaker of the House of Representatives.

*Vice President of the United States and
President of the Senate.*