

FILE

REPORT TO
THE CONGRESS OF THE UNITED STATES

COST ALLOCATION RESULTING IN
INCREASED FEDERAL CONTRIBUTION
TO THE STATE OF CALIFORNIA FOR FLOOD CONTROL
OROVILLE PROJECT, FEATHER RIVER, CALIFORNIA
CORPS OF ENGINEERS (CIVIL FUNCTIONS)

DEPARTMENT OF THE ARMY



BY
THE COMPTROLLER GENERAL
OF THE UNITED STATES

APRIL 1964

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COMPTROLLER GENERAL OF THE UNITED STATES
WASHINGTON, D.C. 20548

APR 29 1964

B-146863

To the Speaker of the House of Representatives
and the President pro tempore of the Senate

Our review of the computation of the Federal contribution to the State of California for flood control, Oroville project, showed that the omission by the Corps of Engineers of recreation as a primary project purpose in the allocation of joint costs resulted in an increase in the Federal contribution of about \$9,000,000. In addition, the use of a compromise rate of interest higher than the Federal rate of interest on long-term borrowings in the mathematical allocation procedures increased the Federal contribution by about \$4,650,000.

We believe that the Corps of Engineers should have included recreation as a project purpose in the allocation of joint costs of the Oroville project and that the Federal rate of interest should have been used in the computations. The Chief of Engineers has informed us that he believes it was appropriate to omit recreation as a project purpose in view of the then existing Corps policies, and it was indicated that the special situation and circumstances justified the use of the compromise rate of interest.

An amount of approximately \$66,000,000 was agreed to as the Federal contribution for flood-control accomplishments of the Oroville project in a contract dated March 8, 1962, between the Corps of Engineers, for the Federal Government, and the State of California. However, the contract includes a provision that payment of the Federal contribution would be subject to appropriation of funds by the Congress. The Public Works Appropriation Act, 1964, approved an interim contribution to the State of California for estimated flood-control costs incurred in fiscal year 1963. The legislative history indicates that the amount was based in part on an interest rate not in excess of the going rate of interest on long-term borrowings of the Federal Government, pending further consideration of the matter during the hearings for appropriations for fiscal year 1965.

B-146863

The comments by the Director of California's Department of Water Resources, which were generally contrary to our views, have been considered in the preparation of this report.

Copies of this report are being sent to the President of the United States, the Secretary of Defense, the Secretary of the Army, and the Chief of Engineers.

A handwritten signature in cursive script, appearing to read "W. J. Douglas".

Comptroller General
of the United States

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REPORT ON
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INTRODUCTION

The General Accounting Office has reviewed the cost allocation prepared by the Corps of Engineers (Civil Functions), Department of the Army, used to establish the Federal contribution to the State of California for the flood-control accomplishments of the Oroville project, Feather River, California. This review was made pursuant to the Budget and Accounting Act, 1921 (31 U.S.C. 53), and the Accounting and Auditing Act of 1950 (31 U.S.C. 67). The scope of the audit work performed is described on page 47 of this report.

The Oroville project is a principal unit of the Feather River Project authorized by the State of California (State of California water code, sections 11260 and 12934). This Feather River Project is a part of the State Water Plan established by the State of California, Department of Water Resources, for development and economic utilization of the water resources of the State. A general obligation bond issue, to provide funds for the Feather River Project, in the amount of \$1,750,000,000 was authorized during the 1959 session of the State of California Legislature and approved by the State electorate in the 1960 general election. The cost of the Oroville project is estimated to be \$456,630,000; the Federal

contribution for flood control accomplishments is estimated to be \$66,000,000. On January 10, 1962, the President of the United States approved the economic justification of the proposed contribution recommended by the Secretary of the Army, and on March 8, 1962, the Corps of Engineers, on behalf of the Federal Government, entered into a contract with the State of California wherein the Federal Government agreed, subject to appropriation by the Congress, to pay 22 percent of the actual construction cost of the Oroville Dam and Reservoir exclusive of the power facilities, not to exceed \$85,000,000.

The Oroville project is located on the Feather River, a tributary of the Sacramento River, in Butte County, California, about 4 miles east of the town of Oroville. The principal physical components of the project are the dam, the reservoir, and the power plant. The dam when completed will be 730 feet high--the highest dam in the United States. The Oroville Reservoir will be operated by the State of California for the stated purposes of flood control, irrigation, municipal and industrial water supply, and power generation. The operation of the project will be entirely under the direction of the State of California, except that flood control operations are to be carried out in accordance with rules and regulations prescribed by the Secretary of the Army.

The principal officials of the Department of Defense responsible for the administration of activities discussed in this report are listed in appendix on page 51.

SUMMARY OF FINDINGS

Pursuant to section 204 of the Flood Control Act of 1958 (72 Stat. 315), the Chief of Engineers has determined for the Secretary of the Army that the Federal contribution for the flood control accomplishments of the Oroville project should be \$66,000,000. The omission of recreation as a project purpose in the allocation of joint costs and the use of a compromise rate of interest higher than the Federal rate on long-term borrowings increase the contribution by the Federal Government to the State of California by about \$9,000,000 and \$4,650,000, respectively.

Detailed discussions of these matters are included in later sections of the report and are summarized below.

OMISSION OF RECREATION AS A PROJECT PURPOSE INCREASED THE ALLOCATION OF PROJECT COSTS TO FLOOD CONTROL

The omission of recreation as a project purpose in the allocation of the joint costs of the Oroville project increased the Federal contribution for flood control by about \$9,000,000. The Corps' practice concerning proposed federally constructed projects at the time of the approval of the Oroville allocation by the Chief of Engineers was to recommend to the Congress the inclusion of recreation as a project purpose where recreation was a significant purpose of the project, as at Oroville. The State of California had recognized recreation benefits as being significant and had planned recreation facilities at the Oroville project. The construction of flood-control works having general benefits is recognized as a Federal responsibility and the factors for economic justification of the project are not changed whether it is federally constructed or State constructed with Federal participation for the flood control accomplishments. For these reasons, we believe that the Corps should have included recreation as a project purpose in computing

the allocation of the amount for flood control at the Oroville project and in determining the contribution by the Federal Government toward the construction cost of the dam and reservoir.

(See pp. 6 thru 27.)

USE OF INTEREST RATE HIGHER THAN
FEDERAL RATE ON LONG-TERM BORROWINGS INCREASED
THE ALLOCATION OF PROJECT COSTS TO FLOOD CONTROL

The use by the Corps of Engineers of a composite rate of interest between the lower Federal interest rate and the higher State of California estimated borrowing rate in computing the allocation to the flood-control purpose, and hence the Federal contribution for flood control, resulted in an increase of about \$4,650,000 in the allocation to flood control. The Federal interest rate had been used by the Corps of Engineers for purposes of computing the Federal contributions for flood-control features in a previous similarly constructed State project; hence the policy of using the Federal interest rate for succeeding partnership projects had been established by the Corps. The Chief of Engineers used a composite interest rate for the Oroville project computation which was higher than the Federal interest rate as a special consideration of the situation and circumstances then existing. In our opinion the various reasons accepted by the Chief of Engineers did not justify the use of the compromise interest rate and the consequent increased Federal contribution to the State of California for flood control at the Oroville project. (See pages 28 thru 46.)

The payment of the Federal contribution for estimated Oroville project costs is subject, by the terms of the contract between the State of California and the Corps of Engineers, to appropriations by the Congress. For fiscal years 1963 and 1964, the House and Senate Committees on Appropriations approved amounts as progress

payments to the State of California for estimated flood-control costs already incurred. The legislative history indicates that the amounts were based in part on an interest rate lower than that provided by the contract. In approving the appropriation for fiscal year 1964, the Senate Committee on Appropriations requested that the Corps of Engineers supply additional information on the interest matter for further consideration during the hearings for the 1965 appropriation. (See pages 43 thru 46.)

DISCUSSION OF FINDINGS

OMISSION OF RECREATION AS A PROJECT PURPOSE INCREASED THE ALLOCATION OF PROJECT COSTS TO FLOOD CONTROL

The omission of recreation as a project purpose in the allocation of the joint costs of the Oroville project increased the Federal contribution for flood control by about \$9,000,000.

The Corps practice concerning proposed federally constructed projects at the time of the approval of the Oroville allocation by the Chief of Engineers was to recommend to the Congress the inclusion of recreation as a project purpose where recreation was a significant purpose of the project, as at Oroville. The State of California had recognized recreation benefits as being significant and had planned recreation facilities at the Oroville project area.

For these reasons we believe that the Corps should have included recreation as a project purpose in computing the allocation of the amount for flood control at the Oroville project and in determining the contribution by the Federal Government toward the construction cost of the dam and reservoir.

In consonance with the policy that the construction of flood-control works having general benefits is a Federal responsibility, the Congress, by section 204 of the Flood Control Act of 1958, authorized a contribution toward the construction costs of the Oroville project. This section provides that the amount of contribution shall be determined by the Secretary of the Army in cooperation with the State of California, subject to a finding by the Secretary of the Army, approved by the President, of economic justification for allocation of the amount of flood control. The Chief of Engineers, acting on behalf of the Secretary of the Army, made a determination as to the portion of the Oroville project costs attributable to flood control by allocating project costs to the

following purposes (1) irrigation, (2) power, (3) flood control, and (4) municipal and industrial water supply. The Chief of Engineers recommended to the Secretary of the Army on October 2, 1961, that the Federal Government participate in the construction costs of the Oroville Dam and Reservoir, exclusive of the power facilities, in an amount equal to 22 percent of actual construction costs --an estimated Federal expenditure of \$66,300,000. The Chief of Engineers stated that, of this amount, \$66,000,000 would be contributed to the State of California and \$300,000 would be used by the Federal Government for engineering and administration of funds. The Chief's report to the Secretary was based on work performed by the Corps' Sacramento District Office and was completed in January 1961.

The separable costs-remaining benefits method was used by the Corps in allocating costs to the project purposes. In essence, this technique provides for an allocation of total project costs to the recognized purposes of the project in proportion to the benefits to be derived from the project, with the measurement of the benefits limited by the costs of available alternative single-purpose projects which could provide the same benefits. This method was also used by the State of California in making cost allocations on other State projects. The Corps of Engineers, in making the cost allocation, did not include recreation as a project purpose. Had recreation been included, based on the State of California's estimate of an ultimate annual 11,000,000 visitor-days, at a rate of 50 cents a day, an ultimate annual computed benefit of \$5,500,000 would have resulted. In the absence of an engineering study, we estimate that the Federal contribution for flood control would be reduced about \$9,000,000 under the separable costs-remaining benefits method of allocation if joint costs had

been allocated to recreation as well as to the other project purposes.

Allocation of costs to recreation was omitted even though the Corps was following the practice, at the time the Oroville cost allocation report was prepared, of recommending in survey reports to the Congress the allocation of joint costs to recreation where recreation was a significant factor; and the State of California had planned recreation as a purpose of the Oroville project and had allocated costs to recreation on several other units of the Feather River project, which have considerably fewer projected man-days of recreational use.

Corps policy on recreation

The Corps issued Engineering Manual 1120-2-115, dated August 24, 1959, which stated its basic policy concerning recreation as follows:

"3. Basic policy: The growing importance of recreation warrants its consideration as a purpose of Federal projects for water resources development. The Federal government has a basic responsibility in developing water resources projects to protect existing recreational resources, to preserve and make available the basic recreational resource created by such projects, and to enhance this recreational potential in appropriate cases.

* * * * *

"5. Plan Formulation:

* * * * *

"a. Recreation will be considered a purpose of all projects except those not expected to produce a significant increase in recreation. ***"

Corps officials informed us that the Corps had no written policy concerning recreation as a project purpose prior to August 24, 1959. We note, however, that Engineering Manual 1160-2-101, dated January 1, 1958, recognized that costs of specific recreation

facilities may be allocated directly to recreation and stated that joint costs of a project would not be allocated to recreation unless the project, as authorized, included recreation as a project purpose. This instruction shows that the Corps recognized recreation as a project purpose and that costs could have been allocated for that purpose even before the Corps initiated studies at the district level in August 1958 on cost allocation aspects of the Oroville project.

Prior Corps projects having recreation as a recognized purpose

We reviewed the records of certain projects initiated prior to August 1959 (when the Corps had no written policy) and noted that district engineers had included recreation as a project purpose in preauthorization reports prepared and issued on the following Federal projects:

	<u>Date of District Engineer's report</u>
Kaskaskia River (Illinois) Shelbyville Dam and Reservoir, and Carlyle Dam and Reservoir	November 1955
Laurel River (Kentucky) Laurel Dam and Reservoir	June 15, 1959
Fresno River Basin (California) Hidden Dam and Reservoir	July 1, 1959

In connection with these projects, the following comments were made concerning recreation.

Shelbyville Dam and Reservoir and Carlyle Dam and Reservoir--
The St. Louis District Engineer pointed out in his report that "It is conservatively estimated that there would be approximately 850,000 person-days attendance annually at the Shelbyville and Carlyle Reservoirs. Average annual benefits for recreation in the 2 reservoirs have been estimated at \$439,000." (See p. 44 H. Doc. 232, 85th Cong., 1st sess.)

Laurel Dam and Reservoir--The Nashville District Engineer in his report recommended "*** against further consideration of flood control on the Laurel River in the upstream agricultural area at this time, but that the Federal Government undertake construction of the Laurel Dam for flood control, power, and recreation at approximately river mile 2.3." The report shows that the estimated annual recreation benefits would amount to \$246,600, based on 189,000 visitor-days. (See H. Doc. 413, 86th Cong., 2d sess.)

Hidden Dam and Reservoir--The Sacramento District Engineer stated that "*** it is estimated that the total recreation attendance at Hidden Reservoir will increase progressively over the 50-year economic life of the project, having an equivalent value of 140,000 visitor-days per year." Also, he stated that "The average annual recreation benefits (including benefits from sport fishing and hunting) are accordingly estimated to be \$70,000." (See S. Doc. 37, 87th Cong., 1st sess.)

The total number of visitor-days and the total amount of annual benefits from these projects for recreation were estimated as follows:

<u>Dam and reservoir</u>	<u>Number of visitor-days</u>	<u>Amount of annual benefit</u>	<u>Benefit rate per day</u>
Shelbyville and Carlyle	850,000	\$439,000	\$.516
Laurel	189,000	246,000	1.30
Hidden	<u>140,000</u>	<u>70,000</u>	.50
	<u>1,179,000</u>	<u>\$755,000</u>	

The Chief of Engineers, by approving these projects with recreation as a project purpose, indicated that the Corps considered the number of visitor-days and amount of annual benefits significant in these projects. Of greater significance was the State of

California's estimate of an ultimate 11,000,000 visitor-days annually at the Oroville Dam and Reservoir, but the Corps did not include recreation as a purpose in its cost allocation. By using the lowest daily benefit rate (50 cents), as shown above, we calculate that the Oroville Dam and Reservoir could receive an ultimate annual benefit of \$5,500,000.

For the Oroville project, there was no preauthorization report to the Congress by the Corps and the applicable law neither required nor prohibited the inclusion of recreation as a project purpose in making the cost allocation to determine the amount of Federal contribution toward the construction cost of the project. Under the circumstances, the inclusion of recreation as a project purpose in the allocation of costs of the Oroville project would have been consistent with the preauthorization practices followed by the Corps on proposed federally constructed projects where recreation was a significant purpose.

State of California policy and plans
pertaining to recreation

The omission of recreation as a purpose in the Oroville project is inconsistent with the policy and planning of the State of California expressed in the following documents:

1. The California State water code.
2. The 1960 Progress Report on Recreation Planning for the State Water Facilities, State of California Department of Water Resources.
3. Statements by Mr. DeWitt Nelson, Director, California Department of Natural Resources and Chairman, California Public Outdoor Recreation Plan Study Committee, in hearings held at Sacramento, California, by the Senate Select Committee on National Water Resources, Eighty-sixth Congress, first Session.
4. The California Water Plan.
5. Davis-Dolwig Act of September, 1961 (State of California).

The California State water code includes the following pertinent sections concerning recreation in project development:

"12581. In studying water development projects, full consideration shall be given to all beneficial uses of the State's water resources, including irrigation, *** and recreational facilities, ***. "(Underscoring supplied.)

"12582. Fish and Wildlife values, both economic and recreational, shall be given consideration in any flood control or water conservation program ***."

"233. No plans or proposal for authorization of a project for construction or operation by the State shall be submitted to the Legislature by the Department of Water Resources unless the plans or proposal includes (1) the comments and recommendations, if any, of the Department of Fish and Game and (2) provision for any water or facilities necessary for public recreation and the preservation and enhancement of fish and wildlife resources

that the Department of Water Resources determines to be justifiable in terms of statewide interest, and feasible, as a nonreimbursable cost of the project."

The 1960 Progress Report on Recreation Planning for the State Water Facilities, State of California Department of Water Resources, includes the following items:

"*** Recreation planning at Oroville Reservoir is progressing simultaneously with all other project planning.

"Recreation plans have been made for each of nine separate recreation areas. Land sufficient for adequate development at each site has been mapped and acquisition recommended. These range in size from a few acres to more than a square mile, and each has outstanding recreation potential. ***

"When developed to capacity, it is estimated that the recreation facilities of the combined nine Oroville Reservoir recreation areas will accommodate more than 11 million visitor-days of use annually.

"*** Recreation development and enhancement of fish and wildlife would be recognized as beneficial uses of water and as primary purposes for which projects might be constructed and operated. Such development and enhancement would be included in project benefit computation and cost allocation." (Underscoring supplied.)

This State policy is consistent with the recommendations of the California Department of Water Resources, in a report dated February 1957, that five reservoirs be constructed in the Upper Feather River Basin, including three for recreation only and two mainly for recreation and irrigation.

On October 15, 1959, Mr. DeWitt Nelson made the following statements during hearings held at Sacramento, California, by the Select Committee on National Water Resources, United States Senate.

"I now present a few recommendations for your consideration in regard to recreation:

"(a) Practically every water development involving dam and reservoir construction creates recreation opportunities. Two important things should be done concurrently during the engineering and land acquisition stages: (1) Complete public recreation planning and (2) purchase of those lands which are essential for public recreation development. (Underscoring supplied.)

"These two elements should be required whether the projects are Federal, State or locally financed. *** (Underscoring supplied.)

"You may well ask, what is California doing about these problems?

"California is aggressively tackling the entire field of public outdoor recreation. The State has under the division of beaches and parks at this time 153 State beach and park units. (1) For the 5-year period, 1956-61, the legislature has appropriated \$110 million for beach, park, and recreational area acquisition, development, and operation. It is reasonable to expect that a strong program will be continued in the future. (2) The State department of water resources has a recreation planning section for conducting advance planning on all water development proposals under their jurisdiction. *** (4) Legislation has been enacted recognizing recreation and fish and wildlife needs in all State water development projects. *** (6) It must be recognized that local levels of government--cities, counties, and districts including utility districts, and power companies are aggressively active in providing and helping to provide recreation facilities and opportunities within their jurisdictional areas." (Underscoring supplied.)

The above statement of the Director, Department of Natural Resources, shows that the State of California intends to develop fully all outdoor areas that have good potential in recreation.

The Director, Department of Water Resources, State of California, by letter dated May 6, 1957, transmitted Bulletin No. 3, entitled "The California Water Plan," to the Governor of California and members of the California Legislature. This bulletin

presents a master plan to guide and coordinate the activities of all California agencies in the planning, construction, and operation of works required for the control, development, protection, conservation, distribution, and utilization of California's water resources for the benefit of all areas of the State and for all beneficial purposes. The plan contains the following statements pertaining to recreation:

"The need for more and better opportunities for wholesome outdoor recreation in California is rapidly expanding, due to the impact of a growing population, increased awareness by the people of the joys and benefits of such activity, and increased time and opportunity available to them for such pursuits. ***

"Enhancement of fish and wildlife resources and development of recreational potential will provide important economic assets to many areas in California, particularly in the mountains and foothills. Provisions of facilities and opportunities for such use by the public therefore becomes an important objective in further water development." (Underscoring supplied.)

"Because of the limited remaining surface storage capacity susceptible of development and the many purposes and uses to which the developed water must be put, it is highly important and urgently necessary that the available storage capacity be used wisely and for maximum benefit. This can be accomplished only by achieving the optimum development at each site selected for construction, which necessitates provision for the full development of the water production capabilities of the watershed and, in many instances, operation of the reservoir to meet the needs of several purposes, such as *** recreation; ***" (Underscoring supplied.)

"Outdoor recreation and fish and wildlife conservation are essential considerations in planning for water resource development. ***"

The plan contains a summary of future development possibilities for dams and reservoirs in the Sacramento Division of the

California Aqueduct System. Of the 16 dams and reservoir projects summarized, recreation is included as a project purpose in 11 of the projects, one of which is the Oroville Dam and Reservoir.

The Davis-Dolwig Act of September 1961 (sections 11900-11925, California water code) authorized the inclusion of recreation as a project purpose where the Department of Water Resources finds it necessary or desirable and expresses a declaration of intent to provide the money for the repayment of costs allocated to recreation. Although no such allocation had been made at the time of our review, we were informed by State of California officials that reallocations could be made in the future to include recreation as a project purpose of the Oroville project.

The record indicates that as early as May 1957 the State of California planned to develop recreation at the Oroville project. On February 11, 1957, the Federal Power Commission issued a license to the Department of Water Resources of the State of California for the Feather River project. In issuing the license, the Commission stated:

"The Department of Fish and Game of the State of California recommended that any license issued make provision for fish protective devices and flow releases and development of the recreational potential of the Oroville Reservoir ***."

The Commission stated further:

"The project is best adapted to a comprehensive plan for improving and developing a waterway or waterways for the use or benefit of interstate or foreign commerce, for the improvement and utilization of water-power development, and for other beneficial public uses, including recreational purposes."

In addition, although Corps officials informed us that recreation benefits were considered incidental, the matter of recreation received considerable attention when the cost allocation principles were first discussed. The allocation of cost on Oroville was initiated and advanced by the "Joint Committee on Oroville Cost-Allocation Studies" consisting of field representatives of the Corps, the Bureau of Reclamation (Federal), the Federal Power Commission, and the State of California Department of Water Resources. This committee, which met several times between August 1958 and October 1959, discussed and agreed, insofar as was practical, on assumptions, criteria, and matters including reservoir operations and benefit evaluations.

During the first meeting of the joint committee on August 7, 1958, it was agreed that the State would investigate the authority for allocation of costs to recreation and purposes other than conservation, power, and flood control and report the findings back to the committee. Also, as a result of this first joint committee meeting, the regional director of the Bureau of Reclamation (Federal) informed the Sacramento District Engineer as follows:

"The Bureau representatives observed that in theory if benefits from other functions occur and can be measured, an appropriate share of the reservoir cost should be allocated thereto, regardless of the reimbursability of such functions."

The minutes of the second meeting of the joint committee held on September 4, 1958, contain the following comments by representatives of the Corps of Engineers.

"The Bureau representatives agreed to withdraw their comment *** upon advice of the State that legislative authority for the project is limited to flood-control, irrigation water, municipal and industrial water, and power.

* * * * *

"On the basis of information furnished by State personnel, the committee agreed that allocation would be limited to flood control, water conservation, and power."

We could find nothing in the State's enabling legislation to prohibit the allocation of costs to recreation, and the Chief, Planning and Reports Branch, Sacramento District of the Corps, advised us that he did not know the specific section of the law to which the State representatives referred. The fact that the State authorizing legislation does not specifically designate recreation benefits as a project feature would not of itself preclude allocation by the Corps of appropriate costs to this purpose.

As a contrast, the Upper Feather River Basin project, which is also a part of the Feather River project and was authorized by the same State act which authorized the Oroville Dam and Reservoir, includes recreation as a primary project purpose. Moreover, on October 15, 1959, the Director, California Department of Natural Resources, stated that "Legislation has been enacted recognizing recreation and fish and wildlife needs in all State water development projects."

In determining the amount of the flood-control allocation, all significant purposes of the project should have been considered by the Corps. The eventual annual recreation benefit value, which we have estimated at \$5,500,000, is based on the State of California's estimate of an eventual 11 million visitor-days a year, at a value of 50 cents a visitor-day. On this basis the average annual benefits would be one half of \$5,500,000, or \$2,750,000, assuming an even increase of project use from the start of project operations to the ultimate development. This annual benefit value of

recreation appears significant by itself and also in comparison with the average annual benefit values placed by the Corps on the other purposes, as follows:

<u>Project purposes</u>	<u>Average annual benefit value</u>
Flood control	\$ 3,640,000
Irrigation	5,211,000
Municipal and industrial water supply	3,440,000
Power	<u>19,266,000</u>
Total	<u>\$31,557,000</u>

The Sacramento District Engineer of the Corps in his Review Report on Cost Allocation for Flood Control, Oroville project, Feather River, California, dated February 15, 1960, stated that recreation, health, welfare, and enhancement to fisheries had not been evaluated because:

1. They were not considered to be primary project purposes.
2. Some of these benefits were of an intangible nature.
3. Additional expenditures would be necessary to realize these benefits.

In our opinion these reasons do not justify the exclusion of recreation as a project purpose for computing the Federal share of the costs, as explained in the following paragraphs.

Recreation is not considered a primary project purpose

The computed average recreational benefit value of \$2,750,000 a year at Oroville is approximately 75 percent of the amount estimated for flood-control benefits. By comparison, for the Hidden Dam and Reservoir project, where the Corps approved recreation as a project purpose (see p. 10), the estimated value of recreation benefits was only 11 percent of the amount estimated for flood-control

benefits. Estimates based on one half of the eventual 11,000,000 visitor-days per year, or an average of 5,500,000 visitor-days per year at Oroville, represent more than 36 times the estimated visitor-days--140,000--at Hidden Dam and Reservoir. Accordingly, it seems to us that the very substantial recreational benefits anticipated for the Oroville Dam and Reservoir justify the inclusion of recreation as a primary project purpose.

Some of these benefits are of an intangible nature

Recreational benefits can be and have been expressed in tangible monetary terms by using a dollar value for a visitor-day. The Sacramento District Engineer used 50 cents a visitor-day as a basis for determining the value of recreational benefits at Hidden Dam and Reservoir. In connection with other projects, the National Park Service has suggested the use of \$1.60 a visitor-day and the United States Fish and Wildlife Service has suggested the use of \$5.80 an angler-day. The Chief of Engineers, in a letter dated January 10, 1961, recommended a range of values for general recreation from 50 cents to \$1.50 a day. In addition, as discussed in later sections of this report, State officials used a rate of \$2 a visitor-day for the Upper Feather River projects.

Additional expenditures would be necessary to realize the benefits

Additional expenditures have been planned by the State Department of Water Resources. The 1960 Progress Report on Recreation Planning for the State Water Facilities (quoted herein on p. 13 showed that recreation planning at Oroville Reservoir was progressing and that nine separate land sites for recreation had been mapped and acquisition recommended.

The need for additional expenditures to realize any particular benefit should not disqualify that benefit as a primary project purpose. Additional expenditures for power, irrigation, flood control, and municipal and industrial water supply are included as separable costs in the cost allocation computation made by the Sacramento District Engineer in his report on Oroville.

State officials stated that, because of the added expenditures necessary to realize the benefits, the separable cost of recreation might be high enough to nullify any change in the present cost allocation. To resolve this possibility, we requested State of officials to furnish us with estimates of the amounts of future expenditures that would be made for recreation. Although these figures were admittedly approximations, they indicated that an average of about \$750,000 a year may be spent for recreation development over the 50-year life of the project. The separable annual costs for recreation would have to aggregate \$2,750,000, the amount of average annual benefits which we have used in our computation, before they would nullify the full amount of the potential reduction in the joint costs allocated to flood control and the other project purposes recognized in the present cost allocation.

Moreover, the value which we assigned for annual visitor-day benefits of Oroville is, in our opinion, very conservative. We selected the lowest rate for visitor-day value recommended by the Federal agencies contacted and this rate is much lower than the \$2 a visitor-day used by State of California officials in determining benefits for projects in the Upper Feather River Basin. Appendix A to Bulletin No. 59 of the State of California, Department of Water Resources, dated February 1957, entitled "Evaluation of

Recreation Benefit from Five Proposed Reservoirs in the Upper Feather River Basin," stated in pertinent part:

"Measurement of the dollar value of a day's recreation

"A figure of \$2.00 per visitor-day has been selected to represent the average recreational benefit from use of facilities at the proposed reservoir sites. This figure is used with full knowledge of the difficulty of finding an acceptable monetary measure of recreational enjoyment. It is, however, considered to be conservative measure of recreational value for purposes of benefit cost analysis of the projects, and is in line with benefit figures currently used by federal agencies.

"The figure has been arrived at after extensive review of the literature of recreation benefit analysis, and a series of conferences with representatives of most public and private agencies having a direct interest in the measurement of recreation benefits. ***"

Comments by the Chief of Engineers

The Chief of Engineers, by letter dated March 25, 1963, stated his position as to the merits of including recreation as a project purpose. The more significant comments follow, together with our evaluation thereof.

"At the time of preparation of the Oroville report, the policy of the Corps of Engineers with regard to authorized Federal reservoir projects was that only the specific costs of recreation should be charged to that function and that joint costs should not be allocated to recreation unless the project, as authorized by Congress, included recreation as a project purpose.

* * * * *

"The Oroville Project was considered to be in an authorized status under the provisions of Section 204 of the 1958 Flood Control Act. However, that authorization provided only for a Federal contribution for flood control. Accordingly, recreation was not recognized as a project purpose insofar as the cost allocation was concerned. Therefore, the same cost allocation procedures

were followed as in the case of the Corps' authorized projects where recreation was not authorized by Congress as a primary project purpose.

"Engineering Manual 1120-2-115 referred to in your draft report was issued in August 1959 to permit consideration of the recreational potential of reservoir projects and to provide a basis for authorization by Congress of recreation as a primary project purpose. The manual did not, and was not intended, to indicate any change in policy regarding the allocation of joint costs to recreation for projects authorized without recreation as a stated primary purpose."

Evaluation and conclusion

Essentially, the Chief of Engineers is contending that the manual instructions issued in August 1959 applied only to recognizing recreation as a project purpose in reports on proposed Federal projects submitted to the Congress for authorization.

For the non-Federal Oroville project, no preauthorization survey and report to the Congress was prepared by the Corps of Engineers before enactment of the Flood Control Act of 1958 which authorized the Federal contribution. The determination by the Corps of Engineers of the amount of the contribution, after the manual was issued in August 1959, was the counterpart of the usual preauthorization study and report for proposed Federal projects; and it is our view that the manual instructions in effect at the time should have been followed. Section 204 of the Flood Control Act of 1958 did not provide whether recreation should or should not be a project purpose and, under the circumstances, we believe that the Corps of Engineers should have included recreation as a project purpose.

For Federal projects, the Congress generally authorizes flood-control projects in accordance with survey reports made by the Corps. Although the survey is in most cases based on a congressional committee resolution or an act of the Congress, the Corps exercises latitude in assuring that the survey includes a comprehensive study of the optimum use of the water resources involved. Engineering Manual 1120-2-101, Survey Investigations and Reports, states:

"It is the responsibility of the Corps of Engineers when making investigations of water resources at Congressional request, to study as completely as necessary for sound conclusions all aspects of local and general needs, and the fullest practicable use of water resources and project sites. ***"

The report on the Fresno River project, California, which includes the Hidden Reservoir, is an example of how the survey procedure functions. The Secretary of the Army, on June 23, 1961, transmitted a survey report to the Chairman, Committee on Public Works, United States Senate. This report, prepared by the Sacramento District of the Corps, recommended, among other items, an allocation to recreation. The report was printed as Senate Document 37, Eighty-seventh Congress, first session. The Flood Control Act of 1962 (Public Law 87-874, approved October 23, 1962) states under section 203:

"The Hidden Reservoir, Fresno River, California, is hereby authorized substantially in accordance with the recommendations of the Chief of Engineers in Senate Document Number 37, Eighty-seventh Congress, at an estimated cost of \$14,338,000."

Since section 204 of the Flood Control Act of 1958, in essence, required an allocation to flood control, and, since no survey had been made previously by the Corps on an allocation for Oroville, we believe that the Corps not only had the authority, but also had the responsibility to develop an allocation which was representative of the facts and circumstances in the specific case.

The Chief of Engineers further informed us that:

"*** The inclusion of recreation in the Oroville Project would involve consideration of a possible Federal interest in such development since, under present policies set forth in Senate Document 97, recreation has become a recognized Federal responsibility in Federal projects of this scope. ***"

Section 204 of the Flood Control Act of 1958 specifically provides that the Federal contribution was "*** in recognition of the flood-control accomplishments of the multiple-purpose Oroville Dam and Reservoir." The Senate Committee on Public Works, Eighty-fifth

Congress, second session, in reporting out Senate bill 3910, the bill which subsequently became the Flood Control Act of 1958 (S. Rept. 1710, pp. 130-131), stated in this connection that section 204 "would authorize Federal participation to the extent of flood-control benefits only, in the proposed multiple-purpose Oroville Dam and Reservoir to be constructed on the Feather River by the State of California," and that "the committee has been careful to include *** safeguards which will protect the interest of the United States." The principal safeguards shown deal with flood-control benefits and include a statement that "the committee has amended the bill to provide that the finding by the Secretary of the Army of economic justification for the flood-control allocation shall also be approved by the President." Similar statements are made by the House Committee on Public Works, Eighty-fifth Congress, second session (H. Rept. 1894, pp. 131-132) in considering House bill 12955, the companion to Senate bill 3910.

In summary, under controlling Federal law, the Secretary of the Army was required to determine the economic justification for allocation of the project costs to flood control purposes; the law neither requires nor prohibits the inclusion of recreation as a project purpose. In harmony with prevailing Corps instructions and policies concerning Federal projects, we believe that full consideration could have been and should have been given to the economic value of the substantial recreational features of the Oroville project. The failure to allocate a portion of the joint project construction costs to recreation purposes has resulted in allocation of higher construction costs to the remaining project purposes, including flood control, and a larger contribution by the

Federal Government. We therefore believe that the Corps should have recognized the recreation aspects of the project and included an allocation to recreation in determining the amount of the Federal contribution for flood-control accomplishments.

USE OF INTEREST RATE HIGHER THAN
FEDERAL RATE ON LONG-TERM BORROWINGS INCREASED
THE ALLOCATION OF PROJECT COSTS TO FLOOD CONTROL

The use of the Corps of Engineers of a composite interest rate higher than the Federal rate on long-term borrowings in computing the allocation to the flood-control purpose, and hence the Federal contribution to flood control, resulted in an increase of about \$4,650,000 in the allocation to flood control. By using in the allocation process a composite rate of interest between the lower Federal interest rate¹ and the higher State of California estimated borrowing rate, the allocation to the flood-control purpose, and hence the Corps-determined Federal contribution, was about \$4,650,000 larger than it otherwise would have been had the Federal rate been used in the allocations. In effect, the Federal Government would be making a contribution for flood-control accomplishments about \$4,650,000 greater than the involved flood-control costs would be if the project had been built and financed entirely with Federal funds.

Prior to deciding on the Oroville contribution, the Corps had used the Federal interest rate in developing an allocation on the one comparable non-Federal water development project--the Markham Ferry project, Oklahoma--on which the Federal Government made a substantial contribution for the flood-control features. While the Oroville contribution was still under consideration, the Corps established a policy that the allocation of costs to the flood-control purpose in a non-Federal project should be no greater than

¹The "Federal interest rate" is established by the United States Treasury as being the average rate paid on its long-term borrowings and is used in the allocation of funds for projects wholly constructed by the Federal Government.

the amount that would be allocated to the flood-control purpose if the project were built by the Federal Government.

At one stage of consideration, a public notice was issued by the Division Engineer recommending a Federal contribution toward Oroville project costs based on the Federal interest rate. It was in response to the public notice that the State of California objected to the uniform application of the Federal interest rate as being unrealistic and suggested the use of dual Federal and non-Federal interest rates as being realistic and equitable in the allocation of project costs to project purposes. Upon considering the views of the California officials and the advice of the Board of Engineers for Rivers and Harbors, the Chief of Engineers decided to use a composite interest rate for the Oroville allocation which was higher than the Federal interest rate as a special consideration of the situation and circumstances then existing.

In our opinion the various reasons accepted by the Chief of Engineers do not justify the use of the compromise interest rate and the consequent increase in the proposed Federal contribution to the State of California of about \$4,650,000 over the amount that would have been allocated to the flood-control purpose had the Oroville project been built by the Federal Government.

Negotiations on the interest rate

During committee meetings in 1958 of the Joint Committee on Oroville Cost-Allocation Studies, in the early stages of negotiation between State and Corps representatives, favorable consideration was given to using a State borrowing rate in formulating the State's share of the project and a Federal Government borrowing rate in formulating the Federal Government's share. Sacramento District officials of the Corps informed us that the separate interest rates in the allocation were acceptable to them because, in

the absence of established criteria, the applicable portion of the then existing Engineering Manual 1160-2-101, dated January 1, 1958, pertaining to non-Federal contributions to federally constructed projects, was used as a guide. Paragraph 1-12 of this manual section provides in part that, in computing annual interest charges, a rate applicable to the non-Federal participant would be used to compute such charges on the investment allocated to non-Federal interests.

In February 1960, the Sacramento District Office transmitted its report on the allocation study concerning Oroville to the Division Engineer, South Pacific Division. This study which recommended a Federal contribution of about \$75,000,000 for flood control, was forwarded to the Chief of Engineers. Upon review by the Office of the Chief of Engineers, the report was returned to the Division officials with the recommendation that the cost allocation be computed as though the Federal Government were to construct the Oroville project. The Assistant Chief of Engineers for Civil Works pointed out to the Division Engineer that the Oroville report would be the first of its kind to be submitted for approval of the President. He pointed out also that, by using the two interest rates, the separable costs of flood control would be different from separable costs of other purposes, and an unbalanced allocation might result.

In a conference at the Office of the Chief of Engineers in November 1960, officials of the District Office, the Division Office, and the Office of the Chief of Engineers agreed that the Federal interest rate would be used to compute the Federal contribution at Oroville because:

1. The concept was adopted that the Federal contribution should not be greater than that which would be made if the project were Federally constructed.

2. A precedent had been established by the Markham Ferry project, Oklahoma, a similarly constructed State project, toward which the Federal contribution had been consummated based on a single Federal interest rate.

The officials agreed also that decisions made concerning Oroville would set a precedent for other pending partnership projects.

The allocation of cost to project purposes was recomputed, and in January 1961 a report was prepared by the Sacramento District Office which restated the Federal contribution for flood control at \$61,650,000. The allocation and the amount were approved by the Office of the Chief of Engineers.

On March 7, 1961, the Director of Water Resources, State of California, objected to the all-Federal interest rate of 2-5/8 percent used in the revised allocation, stating that inadequate consideration had been given to the agreement of the Joint Committee on Oroville Cost-Allocation Studies, that the allocation did not give proper recognition to the actual financing costs incurred by the non-Federal project participants, and that higher costs would be allocated to non-Federal participants and borne by users of the other project services.

The entire matter was then referred to the Board of Engineers for Rivers and Harbors, which functions as an independent review group for the Chief of Engineers concerning the economic and financial adequacy of reports on water resources development projects submitted to the Congress. On August 8, 1961, the Board recommended to the Chief of Engineers that a composite interest rate of 3-1/2 percent be used in making the allocation at Oroville. This composite rate was a weighted average of the Federal interest rate of 2-5/8 percent and a State borrowing rate estimated at 3-5/8 percent. The use of the composite rate resulted in a recommended Federal contribution of \$66,300,000, an increase of \$4,650,000 over

the amount recommended by the Corps District and Division Engineers based on use of the Federal interest rate in the allocation. The Board indicated in its report to the Chief of Engineers that it had adopted the composite rate in order to compromise the differing concepts of the Sacramento District Engineer and the State of California as to whether the long-term historical interest rate or the current interest rate was the more realistic for evaluating water resources projects having a long period of potential usefulness.

The Chief of Engineers accepted the recommendations of the Board of Engineers for Rivers and Harbors and submitted the report to the Secretary of the Army on October 2, 1961, recommending a Federal contribution of \$66,000,000 toward the first cost of flood control at Oroville and \$300,000 for Federal technical and administrative costs.

However, on November 7, 1961, the Director of Civil Works, writing for the Chief of Engineers, informed the Board of Engineers for Rivers and Harbors that "*** the action taken on Oroville should not be regarded as a precedent but as a special consideration of the situation and circumstances then existing." In earlier consideration of the Oroville project, it has been concluded that, as a matter of Corps' basic policy, the allocation to flood control in a non-Federal project should not be greater than the amount that would be allocated to flood control under standard procedures that would be applied if the project were built by the Federal Government. It was stated that all future reports on partnership projects should use the approved Federal interest rate in computing costs for project formulation and cost allocation, and several specific projects were cited as under development and likely to be considered in the near future.

Reasons for special consideration at the Oroville project

Corps officials informed us that the Oroville project was given special consideration for the following reasons:

1. The State of California had been financing the Oroville project and had expended about \$50,000,000 at the time the cost allocations were being made. The problem or question arose as to how soon the Federal Government would or could make an advance contribution to the State to relieve some of its financial burden.
2. The State wanted the Federal Government to pay interest on the portion of the contribution which the Federal Government had not yet advanced to the State.
3. The State had proceeded in good faith on the basis of the tentative agreement (within the Joint Committee) and had anticipated that Federal payments would be made concurrently with the State's progress.
4. This was one of the first projects wherein the Federal Government would contribute to a State project for the cost of flood control and no specific guidelines or criteria had been established by the Corps.
5. A strong plea was made by the State to obtain a contribution from the Federal Government and to use a 3-5/8 percent interest rate for the State's portion of the project, and a 2-5/8 percent interest rate for the Federal Government's portion.

Our discussion of the five reasons follows:

Delayed payment by the Federal Government created a financial burden for the State of California

The first three reasons listed above suggest that the Federal Government was obligated in some way to contribute the higher amount for flood control because the State of California had started construction of Oroville before Federal funds were appropriated for the project.

The State started construction at the site in 1957, and the initiation of the studies by the Corps on the cost allocation did not commence at the District level until August 1958. By August 1958, the State had expended approximately \$14,000,000 on the project, based on its own figures. The Flood Control Act of 1958, approved July 3, 1958, which authorized a contribution for the Oroville project, stated that, unless construction of Oroville was undertaken within 4 years from the date of the act, the authority for the contribution would expire. This provision of the act did not control the decision by the State as to when construction should begin because construction was already in progress when the act became law.

Furthermore, representatives of both the State and the Corps recognized that all of their plans were tentative and that no firm commitments on the amount to be contributed by the Federal Government were possible until the Congress approved by appropriating the funds therefor. The contract entered into with the State on March 8, 1962, provides in this connection that:

"It is understood and agreed that payment by the Government is subject to the appropriation of funds by the Congress, and completion of the project on the part of the State is subject to such action as may be required by law ***."

The importance to the State of California of starting construction, independently of the time when Federal funds would be made available, is evidenced in the following colloquy during the Hearings before the Subcommittee on Public Works Appropriations of the House Committee on Appropriations, Eighty-sixth Congress, second Session, February 18, 1960, page 320:

"Mr. Pillion. Then they will sell it for irrigation, will they not?"

"General MacDonnell. Irrigation, municipal and industrial water; yes, sir.

"Mr. Pillion. So, essentially, it is a project that is conceived by the State of California to repay itself.

"General MacDonnell. It is intended to; yes.

"Mr. Pillion. Evidently they have concluded that this project will repay itself without any Federal aid because they have already commenced construction and have invested \$45 million in it and they will invest another \$25 or \$26 million this year, making a total of some \$70 million this year, and that is without any contribution on the part of the Federal Government, so that evidently they believe they have a paying proposition right now. Is that true?

"General MacDonnell. I think they feel that if they do not undertake construction at this time the water situation in southern California would be beyond recall."

The contract specifically provides that payment by the Government shall become due and payable as construction of the project progresses, but that interest will not be paid by the Government on delayed payments. Apparently the parties to the negotiations foresaw delays in obtaining appropriations for the project and agreed that interest costs occasioned by these delays should be borne by the State.

No specific guidelines or criteria
had been established by the Corps

On December 31, 1952, Bureau of the Budget Circular No. A-47 was issued to set forth the standards and procedures to be used by the Executive Office of the President in reviewing proposed water resources project reports and budget estimates submitted to initiate construction of such projects. The circular dealt with cost

allocation principles and other aspects of project evaluation, but responsibility for development and implementation of specific practices and procedures thereunder remained with the individual agencies interested in the development of water and related land resources programs.

Subsequently, various memorandums on cost allocation procedures were issued by the Office of the Chief of Engineers to Division and District Engineers. One of these memorandums, dated September 14, 1954, dealt specifically with joint Federal and non-Federal projects, but did not discuss interest rates directly, except to comment that consideration as to interest rate may constitute special Federal assistance and for this reason require special analysis. Generally, it appears that the instructions envisioned a Federal project with non-Federal participation.

Prior to 1955 one non-Federal project involving a Federal contribution for flood control was constructed in Oklahoma. The Markham Ferry project was originally authorized as a Federal undertaking under section 3 of the Flood Control Act of 1941 (55 Stat. 645). However, the Grand River Dam Authority, an agency of the State of Oklahoma, subsequently assumed responsibility for construction of the project and received a Federal contribution of about \$6,500,000 for flood control. The project provides for flood protection, power, and recreation. A Federal interest rate of 2-1/2 percent was used in developing the Markham Ferry allocation.

On January 1, 1958, Engineering Manual 1160-2-101 was issued. This manual deals with Federal projects and makes reference to cost sharing on Federal projects where there is non-Federal participation. The manual does not deal with non-Federal projects to which contributions are made by the Federal Government, but it was used

by the District Engineer as a guide in developing the allocations first considered for Oroville. This manual includes a provision which states that, when computing annual interest charges, a rate applicable to the non-Federal participant will be used to compute the charges on the investment allocated to non-Federal interests.

During their deliberations concerning the appropriate interest rate to be used in the allocation formula for the Oroville project, Corps officials made frequent reference to the similarly constructed Markham Ferry project for which the cost allocations had been based on the use of the Federal interest rate. It constituted the precedent within the limited experience of the Corps in dealing with projects of this type.

The strong plea by State officials

A Corps decision to use the Federal interest rate had been made as early as November 1960, whereas the decision of the Board of Engineers for Rivers and Harbors was issued on August 8, 1961. The prior determination by the Corps to use the Federal interest rate was based upon (1) precedent established by the Markham Ferry project, (2) the principle that allocations to flood control on a non-Federal project should not be greater than the amount would be if the project were built by the Federal Government, and (3) recognition that use of different rates of interest for the Federal and non-Federal investments or use of a non-Federal rate for the entire investment would result in a different basis for computing the Federal contributions to the various non-Federal projects depending on the non-Federal interest rate applicable in each case.

In urging the use of dual interest rates and computation of the higher Federal contribution for flood control, State officials maintained that use of the Federal interest rate would violate a

fundamental concept of cost allocation that allocations are an equitable assignment of actual joint costs to various functions.

However, Corps personnel apparently differed with the State officials on this matter, as there was discussion on the inequities that arise in measuring shares of project costs in various States where different interest rates may apply, and the effect of dual rates on the share of cost allocated to various purposes. This latter factor was discussed in a memorandum from the Sacramento District to the Office of the Chief of Engineers, in response to a request for comments on the interest factor in the planning of civil works, as follows:

"The use of different interest rates for different project functions in cost allocation studies introduces many practical problems. *** For instance, if the allocation is made on the basis of present worth rather than annual costs the amounts allocated to the various project functions are not necessarily the same in both cases. In addition, there is the question of equity. If the interest rate is substantially higher for one function than for another, the function with the higher interest rates ends up with a substantially lower allocation of first cost than if the interest rate were equal for all functions. The propriety of this result is to be questioned seriously. This problem is very important to the Sacramento District at the present time because of the several pending allocations involving partnership projects. It appears that if two partners were to build a project jointly and each was financially able to pay cash for his proper share, that the question of interest rate would essentially drop out of the cost allocation. For these and other reasons, it is suggested that even though two interest rates are used in the economic analysis of the project, consideration be given to using only one interest rate in the mechanics of the cost allocation. Such rate should probably be the Federal rate."

Decision by the Chief of Engineers

The Board of Engineers for Rivers and Harbors reviewed the position taken by the State of California in support of a dual rate and that of the Sacramento District Engineer in support of the Federal rate. In concluding that the cost allocation should be based on a composite rate, the Board in its decision issued on August 8, 1961, expressed the following views.

"15. The Board notes that the difference in interest rates accounts for the wide variation in results in respect to allocation of costs among purposes. It believes that to a significant extent this difference is due to the 2-5/8 percent interest rate being representative of historical borrowing, whereas the 3-5/8 percent rate is applicable to current conditions. Use of the first in Federal financing and the other in State financing is believed attributable primarily to differing concepts as to whether the long-term historical rate or the current rate is the more realistic for evaluating water resources projects with a long period of potential usefulness. Although construction funds will be currently obligated, the possibility of refinancing at intervals is an element to be considered; thus the actual interest rate to be borne by either the State or the Federal Government over the 50-year project life is conjectural. To give weight to the Federal and State concepts in proportion to the relative amount of funds to be involved for this particular project, approximately 14 percent Federal and 86 percent State, the Board computes the allocation to purposes using a single composite interest rate of 3.5 percent (14% of 2-5/8% plus 86% of 3-5/8%)."

The Chief of Engineers concurred with the Board's recommendation and on October 2, 1961, reported to the Secretary of the Army that the Federal contribution to the Oroville project should be \$66,300,000 on the basis of the composite interest rate of 3.5 percent. However, on November 7, 1961, the Director of Civil Works wrote the Board as follows:

"6. Our concern with these future potentialities as well as the more immediate projects has led in recent weeks to an intensive reexamination of policies, particularly with regard to the use of interest rates, which might be acceptable both on theoretical and practical grounds as a basis for uniform and consistent approach in handling such cases. ***

"7. To insure sound project formulation, it is necessary that all elements being considered received comparable treatment. This is accomplished by using the single Federal interest rate in estimating costs, including those for alternative projects, and in discounting or extending costs and benefits. ***

* * * * *

"9. Application of the composite interest rate procedure used by the Board results in a different rate for each project. Its effect, as compared to the single interest rate procedure was to increase the Federal contribution for Oroville, and decrease the contribution for the Mokelumne (Camanche Reservoir). Preliminary examination of other projects cited in paragraph 5 indicate that similar variations in results may also be expected if the composite method is continued to be used.

"10. It is essential that the Corps of Engineers establish a uniform and consistent policy in considering partnership projects involving Federal contributions for flood control. In consideration of the foregoing, I am of the opinion that the single Federal interest rate, presently established at 2-5/8 percent, be used in allocating costs for the Mokelumne and future projects. On this basis, the action taken on Oroville should not be regarded as a precedent but as a special consideration of the situation and circumstances then existing. The Mokelumne report and all future reports should use the approved Federal interest rate (currently 2-5/8%) in computing costs for project formulation and cost allocation."

We believe it to be significant that the Federal rate will be used by the Corps of Engineers in cost allocations prepared for future

projects where the Federal Government will contribute to a non-Federal project. This position is being taken even though problems arising because of conflicting interest rates of the Federal Government and the States will presumably be equally applicable to future projects of a similar nature.

Comments by the Chief of Engineers

In his letter of March 25, 1963, the Chief of Engineers commented on the interest rates used in the Oroville allocation. The more significant portions of the Chief's letter follow, together with our evaluation thereon.

"With respect to the interest rate problem, it should be noted that, at the time the cost allocation report for the Oroville Project was prepared, it was the policy of the Corps of Engineers to give recognition to the financing costs of non-Federal interests participating in the development of projects authorized, constructed, and operated by the Federal Government. ***

* * * * *

"Our policies with respect to the problem of the proper interest rate (or rates) to be used in cost allocation were in the process of evolving, not only with respect to non-Federal projects involving a Federal contribution for flood control but also for projects to be authorized, constructed, and operated by the Federal Government. ***The following language from multiple-letter ENGCW-PO of 30 October 1962 recognizes that this problem had not yet been finally resolved by the Federal water resources development agencies.

'On an interim basis, pending the adoption by inter-agency action of permanent standards and procedures for cost allocation, the cost of alternative projects used as a limit on benefits (Line 2 of cost allocation) and separable costs (Line 4 of cost allocation) will be computed on the same basis as project costs with respect to interest rate, taxes, insurance, and other cost factors. (Underlining supplied.)'

* * * * *

"In consideration of the history and evolvment of the Oroville cost allocation studies made in cooperation with the State of California, and after careful review of all prior actions, including the State's views set forth in its letters reproduced in House Document No. 434, 87th Congress, 2d session, the Chief of Engineers concurred in the recommendation of the Board of Engineers for Rivers and Harbors that a composite interest rate of 3-1/2 percent would be most equitable under the circumstances. ***

* * * * *

"*** It is true that in 1952 a single Federal interest rate was used in allocating costs to flood control in the Markham Ferry project, but it is equally true that quite a different procedure was used even earlier for the Tuolumne River Basin projects (Cherry Valley and New Don Pedro Reservoirs). These early so-called 'partnership' cases can by no means be considered to represent established policy. ***"

We could find no record that the Tuolumne projects were considered in making the decision on interest rates. The method of determining the Federal contribution for these projects was agreed to in 1949, prior to general agreement by Federal agencies in the field of water resources development on the economic principles for computing benefits and cost allocations. The points agreed upon were set forth in a report titled "Proposed Practices for Economic Analysis of River Basin Projects," prepared by a subcommittee of the Federal Inter-Agency River Basin Committee, in May 1950. In the report it was shown that, prior to the 1950 agreement, Federal agencies were using interest rates ranging from 2 to 5 percent in developing benefits and costs. It was as a result of interagency study that a uniform Federal interest rate was developed. The uniform rate so established was subsequently used in making the Markham Ferry project allocations.

Evaluation and conclusion

We are of the opinion that a special consideration of the situation and circumstances then existing did not justify the use of the compromise interest rate, because:

1. The concept agreed to in the conference at the Office of the Chief of Engineers in November 1960--that the Federal contribution should not be greater than that which would be made if the project were federally constructed--appears to be fundamentally sound.
2. The experience of the Corps with projects of the partnership type was limited, but, at the time of consideration of the Oroville project, the allocations for the similarly constructed Markham Ferry project were based on the Federal interest rate.
3. A basic policy for using the Federal interest rate was adopted by the Corps for succeeding partnership projects.

In consonance with the policy that the construction of flood control works having general benefits is a Federal responsibility, the Federal contribution in a nonfederally financed and constructed project should not exceed the cost which the Federal Government would incur if it constructed the project itself. The precedent of the Markham Ferry project and the basic policy established for succeeding partnership projects should have been applied to the Oroville project.

Congressional concern about the interest rate used to determine the Federal contribution toward Oroville project costs

The Corps of Engineers-State of California contract dated March 8, 1962, specifying the terms of Federal payment toward construction costs of the Oroville project, included the following provision.

"*** payment by the Government is subject to the appropriation of funds by Congress ***."

Accordingly, an appropriation of \$15 million for fiscal year 1963 was requested of the Congress for payment to the State of California as the Federal contribution toward Oroville project costs estimated to be incurred through fiscal year 1962.

In hearings, the Subcommittee on Public Works Appropriations, House Committee on Appropriations, discussed and questioned the use of the compromise rate of 3-1/2 percent rather than the Federal rate of 2-5/8 percent. House Report 2223, Eighty-seventh Congress, second session, included the following statement on page 38 under the caption "Reductions Recommended."

"Oroville Reservoir, California.- The Committee has reduced the budget estimate of \$15,000,000 by \$1,000,000, providing an appropriation of \$14,000,000 as the Federal contribution to this California State project for the fiscal year 1963. The amount provided represents the Federal contribution for flood control storage in the project calculated at an interest rate of 2-5/8 percent, the going Federal rate on long term investments. The budget proposal was to pay the cost of flood control storage with an interest rate of 3-1/2 percent which represented a compromise on the cost of money to the State and the Federal going rate of interest. It was testified that the policy is now established that the Federal Government will in the future use the going Federal interest rate on partnership projects. Actually there has been no previous exception to this policy. The Committee sees no reason why an exception to the usual practice should be made in this particular case. The \$1,000,000 reduction represents the proportionate amount which can be saved in this fiscal year if the going rate of interest is used in calculating the Federal contribution. The total savings over the construction period of the project will be approximately \$4.6 million to the Federal Treasury, which the Committee intends to assure." (Underscoring supplied.)

The above reduction of \$1,000,000 was preserved by the committee of conference, comprising members of both Houses of the

Congress appointed to resolve the disagreeing votes of the two Houses on the Senate amendments to House bill 12900.

A budget estimate of \$8 million for fiscal year 1964 was proposed as the Federal contribution toward Oroville project costs. House Report 902, Eighty-eighth Congress, first session, included the following statement on page 35 under the caption "Reductions and Other Actions."

"Oroville Reservoir, California.- A reduction of \$3,445,000 in the budget estimate of \$8,000,000 is recommended. The amount provided is \$4,555,000, and is estimated by the Corps of Engineers to be sufficient to cover earnings during fiscal year 1963 on construction of the flood control features, which are being reimbursed to the state by the Federal Government. It also includes interest on this phase of the construction costs at the rate of 2-7/8 percent, the going rate of interest on long-term borrowings by the Federal Government. This action is comparable to that taken by the Committee last year. As pointed out in the report at that time, the policy has now been established that the Federal Government will use only the going Federal rate of interest on partnership projects such as this one, wherein the flood control storage is being paid for by the Federal Government. On this particular project an original agreement between the Federal Government and the State was that the Government would pay for the flood control storage plus interest at the rate of 3-1/2 percent which represented a compromise on the cost of money to the State and the Federal going rate of interest. By reimbursing the State at the going rate of interest to the Federal Government, approximately \$4.6 million will be saved during the construction of the project. The Committee intends to assure that this saving is realized."

The Senate Committee on Appropriations approved the House allowance for the Oroville Reservoir, but included the following statement on page 26 of Senate Report 746, Eighty-eighth Congress, first session.

"Oroville Reservoir, Calif.- In approving the House allowance for the Oroville Reservoir, the committee has taken no position relative to the proper interest rate the State should be paid in this case.

"During the hearings next year, the committee will expect the corps to present the basis for the existing contract with the State of California providing for an interest payment of 3-1/2 percent for the flood-control features of the project.

"Pending action by the committee next year, the corps should not reimburse the State of California for interest payments in excess of the actual rate paid by the State, or the going rate of interest on the long-term borrowings of the Federal Government, whichever is less. In addition, the committee desires that the corps refrain from entering into any further contracts involving interest payments by the Federal Government in excess of the going rate of interest on its long-term borrowings."

SCOPE OF REVIEW

Our review of the cost allocation for the Federal contribution to the State of California for flood-control accomplishments of the Oroville project, Feather River, California, as determined by the Corps, included the following procedures.

1. We examined the basic laws and related agreements which authorized a Federal contribution to the project.
2. We ascertained applicable policies and procedures followed by the Corps and the State of California and examined into their effect upon the amount of the Federal contribution.
3. We examined the cost allocation reports and related correspondence and other available records.

Our review was made at the Office of the Chief of Engineers in Washington, D.C., and at the district office of the Corps of Engineers in Sacramento, California. Various aspects of our findings were discussed with officials of the State of California Department of Water Resources.

APPENDIX

PRINCIPAL OFFICIALS OF THE DEPARTMENT OF DEFENSE
RESPONSIBLE FOR
ADMINISTRATION OF ACTIVITIES
DISCUSSED IN THIS REPORT

	<u>Term of office</u>	
	<u>From</u>	<u>To</u>
SECRETARY OF DEFENSE:		
Neil H. McElroy	Oct. 1957	Dec. 1959
Thomas S. Gates, Jr.	Dec. 1959	Jan. 1961
Robert S. McNamara	Jan. 1961	Present
DEPUTY SECRETARY OF DEFENSE:		
Donald A. Quarles	May 1957	June 1959
Thomas S. Gates, Jr.	June 1959	Dec. 1959
James H. Douglas	Dec. 1959	Jan. 1961
Roswell L. Gilpatric	Jan. 1961	Jan. 1964
Cyrus R. Vance	Jan. 1964	Present
SECRETARY OF THE ARMY:		
Wilber M. Brucker	July 1955	Jan. 1961
Elvis J. Stahr, Jr.	Jan. 1961	June 1962
Cyrus R. Vance	July 1962	Jan. 1964
Stephen Ailes	Jan. 1964	Present
CHIEF OF ENGINEERS:		
Lt. General E. C. Itschner	Oct. 1956	May 1961
Lt. General W. K. Wilson, Jr.	May 1961	Present
DIVISION ENGINEER, SOUTH PACIFIC DIVISION:		
Brig. General William F. Cassidy	June 1955	July 1958
Brig. General Robert G. MacDonnell	July 1958	Aug. 1961
Brig. General Arthur H. Frye, Jr.	Sept. 1961	Present
DISTRICT ENGINEER, SACRAMENTO DISTRICT:		
Colonel A. E. McCollem	July 1956	July 1959
Colonel Howard A. Morris	July 1959	June 1960
Colonel Herbert N. Turner	June 1960	July 1963
Colonel Robert E. Mathe	Aug. 1963	Present