State of California

THE RESOURCES AGENCY

Department of Water Resources

BULLETIN No. 132-66

THE CALIFORNIA STATE WATER PROJECT IN 1966

JUNE 1966

HUGO FISHER
Administrator
The Resources Agency

EDMUND G. BROWN
Governor
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WILLIAM E. WARNE
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FOREWORD

This is the fourth in a series of annual reports by the Department of Water Resources on the California State Water Project for the information of the State Legislature, the California Water Resources Development Finance Committee, project water and power users, project investors, and the public.

The Bulletin No. 132 series is a continuing annual progress report on a dynamic and growing project, and documents the project's expanding history. It systematically updates the project's long range cost and financial projections. It provides a central reference for current project data. It forms a portion of the substantiating material which, by provision of the 30 contracts executed with local agencies for a project water supply, must accompany the annual statements of water charges issued by the State.

The State Water Project constitutes the initial facilities of the State Water Resources Development System which will be constructed by California, in accordance with plan, for the water needs of the swelling population of the Nation's No. 1 State. The State Water Project is being constructed to meet the expansion of California's water needs until approximately 1990. Its purpose is to supplement and complement those facilities being constructed by the Federal Government and local agencies or municipalities.

Planning to satisfy the growth of California's water needs after 1990 must be initiated now, since experience has shown that a lead time of 25 years is needed to plan, to obtain authorization and financing, and to design and construct a major water project. The orderly planning for growth beyond that satisfied by the present State Water Project will be recorded in the Department's Bulletin No. 160 series of reports, "Implementation of the California Water Plan". The initial report of this series, Bulletin No. 160-66, was released in March 1966.

The Department is constructing the State Water Project with funds primarily provided by the California Water Resources Development Bond Act (Burns-Porter Act), ratified by Californians in the General Election of November 8, 1960, which authorized the issuance of $1,750,000,000 general obligation bonds.

Since ratification of the Burns-Porter Act, we have come to the halfway point in a decade of tremendous construction on the facilities of the State Water Project. Construction is proceeding on schedule and according to plan.

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ABSTRACT

This bulletin reports progress on design, construction, operation, financing, and management activities of the California State Water Project since about April 1, 1965.

After 15 years of unprecedented study on high head pumping systems in both the United States and Europe, the decision was made to use a single-lift system, with four-stage pumps, to lift water 2,000 feet over the Tehachapi Mountains to Southern California.

The main line of the South Bay Aqueduct was completed, and first deliveries of water to the terminus in Santa Clara County made in June 1965. The contract has been let for construction of Del Valle Dam and reservoir, which will provide regulatory storage for the South Bay Aqueduct.

One-half of the Oroville Dam embankment has been placed. Two major settlements were made concerning the purchase of major utilities to be inundated by Oroville reservoir. The State purchased the Pacific Gas and Electric Company's Big Bend Powerplant for $25,000,000. The State also reached agreement with Georgia Pacific Corporation and purchased its 18-mile-long Feather River Railway for $1,322,605.

Plans for construction of a nuclear powerplant in cooperation with the Federal Government were changed when the Department was informed of inability to solve fuel element problems inherent in the design of a seed-blanket reactor. The Department has since embarked on a program directed toward construction of a state-owned thermo-nuclear powerplant of pressurized or boiling water reactor type, such as is now commercially available.

Only 8,600 acre-feet of the minimum project yield of 4,230,000 acre-feet remain uncommitted. Contract negotiations are under way which will cover the remaining amount. The repayment of 99 percent of the costs of the Project allocated to water supply has thus been assured.

The enactment of AB 12 of the 1966 First Extraordinary Session is noted. The new law will make an additional $5,000,000 of tidelands oil and gas revenues available annually, for costs of the Project associated with the nonreimbursable purposes of recreation and fish and wildlife enhancement.

Comprehensive estimates of project costs are updated and the financial program reanalyzed. Available funds are adequate to cover estimated construction costs, and estimated revenues and receipts are more than sufficient to repay all project costs.

CHAPTER I. THE CALIFORNIA STATE WATER PROJECT IN 1966

The California State Water Project in 1966 has swept past the fifth anniversary of ratification of the Burns-Porter Act and entered the second half of a tremendous decade of construction. Work is proceeding on schedule to meet the primary objectives established for the Project early in 1961 -- the delivery of project water to Kern County in 1968, to Los Angeles County in 1971, and to Riverside County in 1972.

The past five years have marked completion of several project facilities. Two of the five dams and reservoirs in the Upper Feather Area, now in operation, will be joined by the third during 1966. The main line of the South Bay Aqueduct is also in operation, delivering water to Alameda and Santa Clara Counties.

Significant milestones measuring construction progress for other project facilities were reached during the past year. The placing of embankment for Oroville Dam passed the half-way mark in February 1966; final construction of canal sections is either under contract or completed on 208 miles of the 444-mile main line of the California Aqueduct; and, of the 320 contracts estimated as necessary to complete currently scheduled work, over 60 percent have been completed or are under way.

The completed State Water Project will constitute a coordinately operated system of conservation-transportation facilities. It will also include drainage facilities in the San Joaquin Valley and will provide $130,000,000 for loans and grants on projects constructed by local agencies. The conservation facilities will develop a firm annual water supply, primarily from surplus flows of the Sacramento-San Joaquin Delta. The transportation facilities will convey the conserved supply from the Delta to areas of water need.

The largest single water resource development in the United States, the State Water Project still is not the final answer to California's water problems. The conservation-transportation system has been sized to satisfy, until 1990, water demands which cannot be met by projects constructed by local and federal agencies. Project capacities are expected to be fully used on a continuing basis after 1990, but water demands will continue to expand even after that date.

The State Water Project has been founded on a conceptual and financial framework permitting orderly expansions and extensions of the Project. This framework is predicated upon the Delta Pooling Concept which guarantees that "areas of origin", where surplus flows originate, will not be deprived of their supply.

The Delta Pooling Concept recognizes the Sacramento-San Joaquin Delta as the central point through which all surplus flows originating in the great Central Valley must drain, and as the focal point for the export and distribution of surplus waters to water-deficient areas in the southerly portions of the State. It also provides a physical basis for coordinating the operation of the State Water Project with the federal Central Valley Project.

Under the Delta Pooling Concept, as surplus flows are gradually diminished by future developments within the areas of origin, additional conservation facilities would be constructed in Northern California to augment the depleted project supply. This utility-type concept provides a single rate, for water used above or exported from the Delta, to be charged in recovering costs of all conservation facilities necessary to develop project supply. This rate would apply not only to water supply contractors of the State Water Project, but also to future contractors served by subsequent expansions of the Project. The effect of this principle is to average the lower costs of initial conservation features with the higher costs of later conservation facilities. This eliminates the traditional water rights concept that "first in time is first in right" and places both present and future contractors on an equivalent footing.

The Delta Pooling Concept would be ineffective if funds for financing the construction costs of additional storage facilities were not available when needed.

The Burns-Porter Act, which establishes the primary source for financing construction of the State Water Project, also provides a future capability for financing construction of additional conservation facilities. The Act authorizes $1.75 billion of Water Bond issues for the construction of initial project facilities and appropriates money in the California Water Fund for the purposes of the Act. As and when California Water Fund moneys are expended for the construction of the initial project facilities, the amount of unissued Water Bonds available for construction of these facilities is reduced in the amount of such expenditures. A corresponding amount of Water Bonds is reserved for additional conservation facilities.

Expenditure of California Water Fund moneys has created a current reservation of approximately $150 million of Water Bonds for the construction of additional conservation facilities. This amount will be augmented throughout most of the construction period of the initial project facilities by the expenditure of accruals to the California Water Fund at the rate of $11 million annually.

The Act also provides that annual project revenues in excess of the amount required for project operating costs, Water Bond service, and repayment of the amount expended from the California Water Fund shall be available for construction of future project facilities. Such revenues (designated as "fourth priority" revenues) are not expected to be significant until after the year 2000 under the rate structure incorporated in the Project's water supply contracts.

While a conceptual and financial framework has been established for the orderly expansion and extension of the State Water Project, the identity, size, sequence, and timing of future construction of additional facilities remains to be formulated.

The date of 1990 -- terminus of today's definite plans for the State Water Project -- is only 25 years away. Experience has shown that 25 years is a short time in terms of planning, designing, and constructing major water developments. Therefore, the Department is currently formulating a staged plan of development for satisfying California's future water demands through about the year 2020.

The first in a series of progress reports on establishing this staged plan was recently released by the Department.1/ The following abstracts are from the conclusions developed therein:

> "Projections of growth of the State indicate that between 1960 and 2020 the population will increase by nearly four times to more than 54 million persons, urban land use will roughly triple to nearly six million acres, irrigated lands will increase by more than 25 percent to almost 11 million acres, and undeveloped irrigable lands will be reduced by nearly 50 percent to a little more than eight million acres.

1/ Department of Water Resources Bulletin No. 160-66, "Implementation of the California Water Plan", dated March 1966.

"Between 1960 and 2020, net requirements . . . are expected to increase more than 60 percent to 38 million acre-feet.

"Between 1960 and 2020, water developed and used locally . . . will increase to a total of about 17 million acre-feet . . . . Imported water (water moved from one hydrologic area to another) must be increased three times above present levels to 21 million acre-feet.

"Completion of the presently authorized conveyance features of the Central Valley Project-State Water Project system will leave a remaining net water requirement of over 6.5 million acre-feet by the year 2020 to be supplied either by expansion of these projects or by other water resources developments . . . . Between 1990 and 2000, additional conveyance facilities not yet identified will be required to serve the San Joaquin Basin, Central Coastal, South Coastal, and Colorado Desert areas.

"The conservation facilities of the State Water Project-Central Valley Project system, which are under construction or authorized (excluding the authorized Upper Eel River Development of the State Water Project), should develop sufficient water supplies to meet the projected net water requirements to be served by these projects until the late 1980's. Water supply needs of the State Water Project and Central Valley Project between the late 1980's and 2000, can be met from water conservation projects in the upper Eel, Trinity, Mad and Van Duzen River Basins . . . . There are alternative means of meeting the needs for new water supplies after about the year 2000. These include reservoirs on the lower Eel and Klamath Rivers, desalination and a regional water plan. Additional surface reservoirs and ground water development in the Sacramento and Delta-Central Sierra areas may also contribute toward satisfying the system yield between the late 1980's and 2020. The schedule for construction of multiple-purpose reservoirs may be determined by the need for flood control and water quality control, rather than for water conservation purposes alone."

The Department looks to the North Coastal area as the next major source of water for the Project, and for future extensions of the Project. A seven-year, reconnaissance-level investigation of the area was concluded in 1964. The Upper Eel River Development was authorized by the Department as an additional conservation facility of the State Water Project as a result of this investigation. Advance planning studies of the Upper Eel River Development have been initiated with the objectives of determining the conveyance route from the Eel River to the Sacramento River Basin and the nominal capacities of individual features.

In another field of investigation, the Department recognizes the advancing technology of desalination and considers desalted water to be an alternative source of supply for certain locales. The Cobey-Porter Saline Water Conversion Law, enacted during the 1965 Regular Session of the Legislature, augmented the Department's basic authority to engage in saline water conversion activities; to conduct a program of investigation, study and evaluation in the field of desalination; and to finance, construct, and operate desalters and market the desalted water produced.

California is also lending its support in yet another area which might, in time, become a cooperative effort of the water-shy western states. The Western State Water Council (of which California is a charter member) was created in 1965 through resolution of the Western Governors' Conference in June of that year. The Council's role is to accomplish effective cooperation among the western states in planning for programs leading to integrated development of their water resources. Increasing demands on the water resources of California require that a planned interstate, as well as intrastate, program approach be made to produce the most desireable, and the least costly, water for future generations.

As appropriately summarized in a recent series of timely articles prepared by the Director for publication in California newspapers:

> "The tools are at hand. The new Cobey-Porter Saline Water Conversion Law provides a new weapon for the attack. The next stage beyond 1990 is apt to include desalters at strategic points on the system.
>
> "The State Water Project is extensible. It should be used as the skeleton on which to flesh out the expanded program that will be needed.

"California has a water bank in the productive and unused streams of the North Coastal counties. We certainly can meet our growth needs, if we plan to do so.

"A west-wide regional water plan is needed and California will lend its assistance in developing it. It is quite possible that the next stage of the State Water Project will be conjoined with and integrated into a western regional water project.

"The water challenge of the 1990 question has been laid down before this generation. The next generation will judge how well we meet it."

CHAPTER II. HISTORY OF THE STATE WATER PROJECT

Previous bulletins of this series have noted those significant actions and historical events which have affected the course of the State Water Project prior to about April 1, 1965. The documents noted therein collectively constitute the historical archives of the Project.

This chapter continues to document the Project's expanding history from April 1965 to April 1966. The overall status of the Project in 1966 is covered in other chapters of this report.

General Project History

This section discusses those legislative and administrative actions affecting the Project as a whole. Actions affecting individual facilities are discussed in a subsequent section.

Actions by the Congress

Significant legislation enacted during the First Session of the Eighty-ninth Congress pertains to federal policy in areas affecting the project purposes of water quality control, recreation, and fish and wildlife enhancement.

Recreation and Fish and Wildlife Enhancement. The "Federal Water Projects Recreation Act"2/ creates a uniform policy for federal water development projects with regard to the purposes of recreation and fish and wildlife enhancement. Formerly, this type of development occurred on an individual project basis and federal participation varied from none at all to one of full responsibility.

Nonfederal agencies will be required, thereunder, to bear all the costs of operation, maintenance, and replacement (and not less than one-half of the separable capital costs) of a federal project allocated to the purposes of recreation and fish and wildlife enhancement. If nonfederal agencies do not agree to participate to this extent,

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2/ Public Law 89-72, 89th Congress, 1st Session.

the Federal Government will only provide minimum recreation facilities to protect public health and safety at the particular project.

The Act may indirectly affect State Water Project costs in such future joint undertakings with the Federal Government as the Peripheral Canal and the Upper Eel River Development.

Water Quality Control. The "Water Quality Control Act of 1965"3/ amends the Federal Water Pollution Control Act and establishes a national policy for the prevention, control and abatement of water pollution. The legislation authorizes the Federal Government to promulgate water quality standards for interstate waters, which would appear to involve most of the major streams in California, including the Sacramento-San Joaquin Delta.

As in the case of the Federal Water Projects Recreation Act, it is not possible to clearly estimate the impact the Water Quality Control Act of 1965 will have upon the State Water Project. It appears possible that the Federal Government could fund those costs of project facilities allocated to the purpose of water quality control, insofar as interstate streams are affected, such as the costs of augmenting salinity control releases in the specific case of the Delta Facilities.

Actions by the State Legislature

Several actions of the Legislature during the 1965 Regular Session concerned the State Water Project as a whole, dealing primarily with general construction aspects, the purposes of recreation, fish and wildlife enhancement, and water supply, and power management activities.

Construction of State Water Projects. A series of bills was enacted generally concerning the construction of state water projects.

Senate Bill 581[4]/ requires the Department of Water Resources to pay for the value of improvements located on

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3/ Public Law 89-234, 89th Congress, 1st Session.
4/ Calif. Stats. of 1965, Chapter 1570.

national forest or national park lands when the owner's right of occupancy is terminated because of State Water Project construction. Compensation shall be based either on the value of the improvements in place, as the value existed prior to revocation of the federal permit, or on replacement cost, less depreciation, whichever is less. The bill excludes payment for improvements located on rights-of-way across national forest or national park lands. The immediate affect of this bill will be to authorize payment for substantial residential-type improvements located on forest service lands in Elizabeth Lake Canyon, the site of the Castaic Dam and reservoir.

Senate Bill 1326[5/] authorizes the Department of Water Resources to include in its lease, easement, and right-of-way documents, a provision indemnifying the grantor for any damage caused by the Department while occupying the grantor's property. On the basis of opinions issued by the Attorney General, the Department did not previously have this authority. Landowners are often more than willing to allow the Department, without fee, to conduct ground water, geologic, and other tests on their property. They desire, however, to be protected from any damage resulting from the conduct of such tests. Senate Bill 1326 provides this protection and will facilitate the acquisition of property rights necessary to carry out the Department's programs.

Senate Bill 276[6/] amends Section 11010.5 of the Government Code to permit state agencies to terminate, amend, or modify a competitively bid contract as authorized by the contract, as well as where authorized by law. The bill also provides that compensation for amendments and modifications shall be determined as provided in the contract, and that compensation in the event of termination shall be determined as provided in the contract or applicable statutory provision. Previously, Section 11010.5 was interpreted to prevent the termination or modification of state contracts let under the State Contract Act, State Purchasing Act, or other competitive bidding statutes, except as expressly authorized by statute. This deprived the state agency of the normal common law methods of contract adjustment which are available to federal and local agencies engaged in similar work. Senate Bill 276 provides consistency within state law and between state and federal law. It will place state

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5/ Calif. Stats. of 1965, Chapter 1305.
6/ Calif. Stats. of 1965, Chapter 1562.

contracting agencies on a more equal basis with federal and local agencies in dealing with the contracting industry, and will permit more realistic contracts administration.

Senate Bill 361[7] authorizes limited reimbursement to property owners for moving expenses arising from acquisition of real property for public purposes by the Department of Water Resources, the Department of Parks and Recreation and the Department of Public Works. The payment for moving expenses is limited to a maximum of $200 in case of an individual or family, and to a maximum of $3,000 in case of a business concern, farm or nonprofit organization. The bill authorizes the Department of Public Works, for property acquired by it, and the State Board of Control, for property acquired by other state agencies (including the Department), to establish rules and regulations governing the payment of moving expenses.

Two resolutions were adopted which direct the Department, together with the Departments of Public Works and General Services, to review their procedures and to report to the 1967 Legislature: House Resolution No. 282, pertaining to the quality of design; and House Resolution No. 283, pertaining to consultation, cooperation, and joint planning with other public agencies in advance of project construction.

Recreation and Fish and Wildlife Enhancement. Assembly Bill No. 1147 was described in last year's bulletin[8] as originally introduced during the 1965 Regular Session. The Bill would have provided a continuing annual appropriation of $5 million from tideland oil and gas revenues to reimburse expenditures from project funds for recreation and fish and wildlife enhancement. An amendment was added on June 13, 1965, to provide, also, for the use of tideland oil and gas revenues to finance the Davis-Grunsky Act program, when the $130 million made available by the Burns-Porter Act for this purpose had become exhausted. After having been passed by the Legislature, Assembly Bill No. 1147 was pocket-vetoed by Governor Brown by reason of the amendment.

7/ Calif. Stats. of 1965, Chapter 1650.
8/ Department of Water Resources Bulletin No. 132-65, "The California State Water Project in 1965", page 18.

Assembly Bill No. 12[9/] of the 1966 First Extraordinary Session of the Legislature essentially corresponds with the original form of Assembly Bill No. 1147. Assembly Bill No. 12 was signed into law[10/] by Governor Brown on April 22, 1966.

Governor Edmund G. Brown signs Assembly Bill No. 12, flanked by Assemblyman Carley V. Porter, left, co-author of the Bill, and Department of Water Resources Director William E. Warne.

9/ Assembly Bill No. 12, introduced February 10, 1966 by Assemblymen Porter, Ashcraft, Assemblywoman Davis, Assemblymen Chappie, Belotti, Dannemeyer, Garrigus, Henson, Harvey Johnson, Ray E. Johnson, Lanterman, Monagan, Quimby, Russell, and Williamson (Coauthor: Senator Cobey).

10/ Calif. Stats. of 1966, Chapter 27.

The new law sets aside annually $5,000,000 of tideland oil and gas revenues for the multiple-purpose costs of state water projects which are allocated to recreation and to fish and wildlife enhancement and also for costs of land acquired with project funds specifically for recreation at such projects. The Department is required to report on such costs annually to the Legislature. To the extent the Legislature, by subsequent acts, approves such allocations and costs, the money set aside will be released to the Department for expenditure on the State Water Project.

Another bill[11] introduced during the 1966 First Extraordinary Session would provide the necessary legislative approval to make available to the Department: (1) $1,366,281 for the costs of specific recreation lands, expended from project funds, through June 30, 1965; and (2) $5,708,619 for the allocation of the multiple-purpose costs of Frenchman and Antelope Dams and Lakes to the purposes of recreation and fish and wildlife enhancement. The bases for the above amounts are contained in the Department's Bulletin No. 153-66, which is described in a subsequent section under "Actions by the Department".

Nonreimbursable costs and the allocation of costs of the State Water Project will be the subject of a study by the Assembly Interim Committee on Water, pursuant to House Resolution No. 633 of the 1965 Regular Session. A report will be made to the 1967 Legislature.

Two bills were enacted during the 1965 Regular Session relating to recreation and fish and wildlife enhancement aspects of the State Water Project; Assembly Bill No. 1515[12] and Senate Bill No. 246[13].

Assembly Bill No. 1515 authorizes the Department to exchange property it has acquired for property owned by the United States for the purpose of furthering recreation in any of the Department's projects, even though the property received from the United States is not adjacent to any state water project.

The objective of Assembly Bill No. 1515 is to facilitate the administration of recreation areas associated with the State Water Project. It is generally more

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11/ Assembly Bill No. 183, introduced May 2, 1966, by Assemblymen Porter and Ashcraft.
12/ Calif. Stats. of 1965, Chapter 1050.
13/ Calif. Stats of 1965, Chapter 1136.

advantageous to have a recreation area administered by a single public agency. Such an agency would include the United States Forest Service. Federal law does not authorize the Forest Service to administer recreational features on lands not belonging to the United States. Many of the recreation areas associated with the State Water Project will include both federal and state lands. It is therefore desirable that the Department be authorized to transfer to the Federal Government state lands lying within recreation areas to be administered by the Forest Service.

Senate Bill No. 246 provides a procedure for the purpose of preserving and protecting archeological, paleontological and historical features or sites on state lands. It provides that, prior to commencement of construction of major public works projects on state lands, the agency involved submit to the State Department of Parks and Recreation sufficient information to indicate the nature and location of the project and excavations to be undertaken. The Department of Parks and Recreation may then conduct a site survey on the lands in question to determine the presence of any historical, archeological or paleontological sites or features and make recommendations for recording or preserving the same. The agency undertaking the project may either perform the operations for preserving or recording the sites or features found by the Department of Parks and Recreation, or contract with Parks and Recreation to perform the necessary work of preservation or recordation.

Water Quality Control. Assembly Bill No. 2380[14/] authorizes the State Water Quality Control Board to make a comprehensive study to determine what can best be done to correct and prevent damage to the waters of the San Francisco Bay and Sacramento-San Joaquin Delta areas, caused by drainage and waste water discharges or by other activities that may contribute to water contamination and pollution. Reports are to be submitted to the Legislature at the 1966, 1967, and 1969 sessions. An appropriation of $170,000 was made for the study.

Assembly Bill No. 2380 neither pertains to, nor affects the construction of project facilities, such as the San Joaquin Master Drain. However, water quality standards, which may be adopted as a result of the authorized study, may affect the future operation of project facilities.

14/ Calif. Stats. of 1965, Chapter 1351.

Water Supply. Two bills were enacted during the 1965 Regular Session concerning water supply aspects of the State Water Project; Assembly Bill No. 2504[15] and Senate Bill No. 838.[16]

Assembly Bill No. 2504 transfers to the State Water Rights Board the duties of the California Water Commission in connection with the Department's applications for water, and authorizes the Board to consolidate several requests into one hearing.

Requests for the assignment or releases of priority of a state application were previously considered, first, by the California Water Commission. Approved requests were then submitted to the State Water Rights Board in order to obtain a permit pursuant to the assigned application. This caused a considerable duplication of effort since the Board dealt with many of the same questions considered by the Commission. This was time consuming and expensive for both the applicants and the State.

Senate Bill No. 838 amends the section of the Metropolitan Water District Act relating to the issuance of bonds. The major amendment is to allow bond proceeds to be used to make capital cost payments to the State pursuant to The Metropolitan Water District of Southern California's contract for a water supply from the State Water Project.

There had been substantial doubt whether bonds issued by the District could be utilized for financing the purchase of excess capacity in the California Aqueduct and for advances to the State, under its water supply contract, for the construction of delivery facilities and measuring devices. Senate Bill No. 838 provides authority for the District to issue bonds for these and other purposes covered by its contract with the State, and will facilitate the issuance of bonds for its distribution facilities for project water.

Power Management. Two resolutions were adopted during the 1965 Regular Session requesting studies concerning pumping energy for the State Water Project.

House Resolution No. 628 requests the Department to determine the best source of energy in cooperation with water supply contractors, power suppliers, and others; to

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15/ Calif. Stats. of 1965, Chapter 989.
16/ Calif. Stats. of 1965, Chapter 445.

keep the Legislature informed on major developments; and to report to the Legislature at least 90 days before committing the State to a permanent energy source for the Tehachapi Pumping Plant. The Director of Water Resources transmitted a report[17] to the Legislature in response to House Resolution No. 628.

Senate Resolution No. 138 requests the Department, with the advice of the Division of Mines and Geology, to determine if geothermal energy can be used for generating power to raise water of the State Water Project over the Tehachapi Mountains, and to make a report to the Legislature on the subject. A date was not specified for the report and funds were not provided.

Actions by the Department

The Department took actions regarding the project purposes of recreation, fish and wildlife enhancement, and water supply, and concerning power management activities.

Recreation and Fish and Wildlife Enhancement. In February 1966, the Department transmitted to the Legislature the second of a continuing series of annual bulletins[18] dealing with the costs of the State Water Project allocated among project purposes. This year's report presents the Department's allocations for project facilities which are completed, currently under construction, or scheduled to be under construction during fiscal year 1966-67. The report develops a figure of $7,074,900 as the requested 1966-67 appropriation for reimbursement of moneys expended from funds, other than those provided under the Davis-Dolwig Act, for recreational lands purchased through June 30, 1965, and for the capital costs of completed multiple-purpose facilities allocated to recreation and fish and wildlife enhancement. The Governor's Budget actually contains $5 million for the recommended 1966-67 appropriation, in anticipation of legislation subsequently enacted in the form of Assembly Bill No. 12 during the 1966 Extraordinary Session.

17/ Department of Water Resources Report, "Energy Sources for the State Water Project and Other Power Matters", dated December 1965.

18/ Department of Water Resources Bulletin No. 153-66, "Allocations of Costs Among Purposes of the California State Water Project", dated January 1966.

Water Supply. As of April 1, 1965, long-term water supply contracts had been executed committing 4,206,400 acre-feet of the minimum project yield of 4,230,000 acre-feet. Requests totaling more than 124,000 acre-feet were subsequently received from agencies, including several of the Project's water supply contractors, for all or a part of the 23,600 acre-feet then remaining uncommitted.

The Director of Water Resources approved the following disposition of the remaining 23,600 acre-feet of the minimum project yield on November 4, 1965:19/

Agency	Amount, in acre-feet annually
Upper Santa Clara Valley Water Agency[a/]	15,000
Big Bear Municipal Water District[b/]	4,600
Kings County[b/]	4,000
Total	23,600

a/ Water supply contractor.
b/ Potential water supply contractor.

The maximum annual entitlement of the water supply contract with the Upper Santa Clara Valley Water Agency was increased on January 24, 1966, to include an additional 15,000 acre-feet. Negotiations are under way with the other two agencies listed above, for water supply contracts covering the amounts shown.

The Department released a two-volume compilation20/ of all contracts executed with agencies for a water supply from the State Water Project, and all amendments thereto, as of May 1, 1965. Additional volumes will be prepared covering contracts and amendments executed subsequent to that date.

19/ Department of Water Resources Memorandum by Messrs. Wesley E. Steiner and John R. Teerink to Messrs. Alfred R. Golze' and William E. Warne, dated October 27, 1965.
20/ Department of Water Resources Bulletin No. 141, "The California State Water Project, Water Supply Contracts", dated November 1965 (Volumes I and II).

Chapter VI of this bulletin presents a summary of the water supply contract negotiation and administration activities to date.

Power Management. Power Management activities for the State Water Project principally involve the disposition of Oroville-Thermalito power and the acquisition of supplemental power supplies for project pumping requirements. Progress in these activities is reported by the Department in a series of quarterly bulletins.21/ The current status of each activity is described in Chapter VIII of this bulletin under the section heading entitled "Project Electric Power Production and Supply". Significant events occurring during the year ending on April 1, 1966, are noted in the following paragraphs.

Last year's bulletin referred to the technical problem encountered in the design of the long-life fuel elements for the large seed-blanket reactor, then contemplated as a low-cost energy source for the State Water Project.22/

Dr. Glenn T. Seaborg, Chairman of the Atomic Energy Commission, notified the State in December 196523/ that the Commission had decided not to contract for construction of the proposed reactor. Vice-Admiral H. G. Rickover had concluded the fuel element problem made it unlikely that satisfactory development of a reactor core, meeting the performance objectives of a nine-year life at low cost, could be achieved within the original framework of the reactor concept, fuel element material, and design.

The Department's plans for a nuclear powerplant are being reoriented toward building a plant of the standard pressurized or boiling water type such as is now commercially available.

21/ Department of Water Resources Bulletin, "Electric Power in the State Water Project", a quarterly series commencing April 1964.

22/ Department of Water Resources Bulletin No. 132-65, "The California State Water Project in 1965", dated June 1965, page 16.

23/ Letters to Governor Edmund G. Brown and to Mr. William E. Warne from Dr. Glenn T. Seaborg, dated December 24, 1965.

The Fluor Corporation, Ltd., retained by the Department in 1963 to investigate alternative sources of energy for project pumping, and to recommend the most economical and reliable source, or sources, completed a supplemental study and submitted an additional report[24/] thereon in January 1966. The basic comprehensive study was summarized by Fluor in its final report of September 1964, "Energy Source Study for the California State Water Project". In the supplemental study, Fluor reevaluated the cases of its September 1964 report for a state-owned nuclear powerplant commencing operation in 1971 (Case 1) and in 1982 (Case 3), and also made a reanalysis of the case for purchase of power from the California Power Pool Companies[25/] (Case 2) on the basis of the revised offer made by the Suppliers[26/] in their proposal of March 2, 1965.

The report confirms and reemphasizes that the least expensive power for pumping would involve a state-owned nuclear powerplant and a minimum onpeak mode of aqueduct operation. Contributing to the favorable economics of this plan is the conclusion of the study that power, surplus to the immediate project needs, could be sold to utilities within a range of rates which, in Fluor's best judgment, were conservative and reflected costs of capacity and energy from alternative sources available to prospective purchasers. The study also points to the probability that maximum economy would be achieved with the earlier construction of the nuclear powerplant, as noted in Case 1 of the basic report.

History of Individual Facilities

Significant actions and events pertaining to individual facilities of the State Water Project, during the general period April 1, 1965, to April 1, 1966, are described in this section.

24/ The Fluor Corporation, Ltd., Los Angeles, California, "Supplemental Economic Review to Energy Source Study", dated January 1966.

25/ The Pacific Gas and Electric Company, The Southern Edison Company, and the San Diego Gas and Electric Company.

26/ Includes the California Power Pool Companies and the City of Los Angeles Department of Water and Power. The Suppliers' Proposal of March 2, 1965, was described on page 101 of Bulletin No. 132-65, "The California State Water Project in 1965", dated June 1965.

Upper Feather Area

Conflicts in land use at Grizzly Valley Dam and Lake Davis were resolved by Assembly Bill No. 668.[27] The boundaries of Fish and Game District IV were changed so that the Smith Peak Game Refuge is now outside the Department's recreation area.

The Department released the final edition of the advance planning report[28] on Grizzly Valley Dam and Lake Davis in May 1965.

Oroville Area

Negotiations were successfully concluded concerning the disposition of two major utilities located within the area to be inundated by Oroville reservoir. The resultant agreements, together with other events concerning the construction of facilities of the Oroville Area, are described herein.

Acquisition of Big Bend Powerplant. Negotiations initiated in 1964 for acquisition of the Pacific Gas and Electric Company's Big Bend Powerplant were completed by signed agreements between the Department and the Company on December 2, 1965. The State agreed to pay $25 million for the powerplant, 5,770 acres of adjoining land, and a 230 to 110 kilovolt connection. The transaction[29] was submitted to the Public Utilities Commission and approved on January 18, 1966. Formal changeover took place on January 28, 1966.

The Pacific Gas and Electric Company will operate the plant for the State until inundation in the fall of 1967. During this time the State will sell the generated energy to the Company at a rate of 2.95 mills per kilowatt-hour. The hydroelectric generation of the plant has been replaced, within the Company's system, by thermal-electric generating capacity located in the Delta area.

27/ Calif. Stats. of 1965, Chapter 141.
28/ Department of Water Resources Bulletin No. 128, "Lake Davis", dated May 1965.
29/ Application No. 48140 to the California Public Utilities Commission by the Pacific Gas and Electric Company and the Department of Water Resources "For an Order Authorizing the Former to Sell to the Latter Certain Electric Utility Property", December 22, 1965.

Agreement with the Georgia-Pacific Corporation. A long dispute between the State and the Georgia-Pacific Corporation was settled concerning the disposition of the latter's wholly owned subsidiary, the 18-mile-long Feather River Railway. An agreement30/ was signed on November 30, 1965, by officials of the Department and the Corporation which terminated all legal proceedings between the parties. The Corporation agreed to accept $1,322,605 for the railway, which will be inundated for one-third of its length by Oroville reservoir. The Corporation had originally demanded that the State replace and relocate the railroad, which would have cost between $8,500,000 and $9,000,000.

The Corporation also agreed to cease operation of its railway by October 1, 1966; to continue operation of its Feather Falls mill for at least five years or repay to the State a prorated sum, not in excess of $100,000 for failure to do so; to give up all but $20,000 of its claim of $272,717 for flood damages in 1964; and, to convey to the State, for an additional $177,396, more than 500 acres of the Corporation's land in the reservoir site including its reversionary interest in Bidwell Bar State Park.

Dredger Tailings Litigation. On March 22, 1966, the Supreme Court of California denied the petition of the Natomas Company to review State of California, et al v. Natomas Company, 239 ACA 608, a condemnation case involving dredger tailing lands which supply the fill material for most of the Oroville Dam embankment. This confirmed the determination of both the trial court and the District Court of Appeals that the Department is authorized to acquire lands in fee title for fish and wildlife and recreation purposes incidental to construction and operation of a reservoir project, even though such lands may be located downstream from the dam and reservoir.

Dedication of Bidwell Bar Bridge. Middle Fork Bridge, renamed the Bidwell Bar Bridge31/ on January 12, 1966,

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30/ Department of Water Resources Agreement No. 854828, "By and Between Feather River Railway Company, Georgia-Pacific Corporation, and the State of California, acting By and Through its Department of Water Resources", signed November 30, 1965.

31/ Department of Water Resources Project Nomenclature Order No. 7, dated January 12, 1966.

was officially dedicated during a ceremony held at the site on September 25, 1965. It is the highest highway suspension bridge in the United States.

Construction Accident. On October 7, 1965, at about 9:00 p.m., four construction workers were killed in a head-on collision between two trains of the highly automated system utilized by the contractor to transport embankment material from the borrow area to the Oroville Dam site. The wreck occurred inside a tunnel on the old alignment of the relocated Western Pacific Railroad.

South Bay Aqueduct

The completion of construction of the main line of the South Bay Aqueduct and the commencement of water deliveries to Santa Clara County were celebrated with dedication ceremonies at the Santa Clara terminal facilities on July 1, 1965.

Delta Facilities

The Director of Water Resources, on March 16, 1966, officially designated[32/] the Peripheral Canal as the State Water Project facility to transfer water across the Sacramento-San Joaquin Delta.

The Department and the Bureau of Reclamation have been negotiating a memorandum of understanding for federal-state implementation of the Peripheral Canal. In an attempt to hasten agreement as to the general terms and extent of state and federal participation in the Canal as a joint-use facility, Governor Brown wrote to Secretary of the Interior Stewart L. Udall in December 1965.[33/] His letter outlined reasons for state operation of the facility, and stressed the State's capability and willingness to integrate the Canal operation into its planned automated control system for the State Water Project.

32/ Department of Water Resources, Project Order No. 12, dated March 16, 1966.

33/ Letter, from Edmund G. Brown, Governor of California, to The Honorable Stewart L. Udall, Secretary of the Interior, U. S. Department of the Interior, Washington, 25, D. C., December 21, 1965, cc. The Honorable William E. Warne.

Secretary Udall replied[34/] to Governor Brown's letter, pointing out that differences between the state and federal agencies still centered on the question of which agency would actually operate the facility.

The Department, on February 10, 1966, began immediate studies to establish the alignment and required right-of-way take lines for the Peripheral Canal. A joint Department-Bureau Interagency Work Group was established to assure that the work done by the Department will be acceptable to the Bureau, in the event the latter acts as the design and construction agency.

A series of five joint hearings was held during early 1966, by the Department and the Bureau, in the cities of Tracy, Lodi, Sacramento, Thornton, and Stockton to obtain local reaction to the proposed canal alignment. The Department is studying several route modifications as a result of these hearings.

The Department estimates that the total cost of the alignment studies prior to the commencement of final design will be approximately $1.6 million. Selection of the final alignment must be made by July 1967, in order to coordinate the acquisition of rights-of-way for the Westside Freeway with the Division of Highways, as well as to meet the required completion date for the Canal.

Operation studies indicate that the Peripheral Canal must be in operation by 1974 in order to maintain suitable water quality within the California Aqueduct. These operation studies and underlying criteria were discussed with engineering representatives of the Project's water supply contractors on March 4, and March 16, 1966.

California Aqueduct

A large majority of actions taken by authorities in the past year, on behalf of the State Water Project, have been those which pertain to, or concern, the 444-mile-long California Aqueduct.

34/ Letter from Stewart L. Udall, Secretary of the Interior, to Honorable Edmund G. Brown, Governor of California, Sacramento, California, February 5, 1966.

One of the actions taken by the Legislature, and pertaining specifically to the Aqueduct, was the adoption of Assembly Concurrent Resolution No. 51.35/ This resolution requested the Department to erect a historical marker, memorializing John F. Kennedy, at the San Luis Dam site where the late President participated in ground-breaking ceremonies in 1962.

Department actions, described in the following sections, pertained to the resizing and renaming of some Aqueduct features, the new effects on cost allocations of the Aqueduct, new agreements with water contractors and the advertising for bids on new construction contracts.

Addition of Clifton Court Forebay. Clifton Court Forebay, included as a feature of the Peripheral Canal in an investigative report,36/ was officially designated in March 1966 as a feature of the California Aqueduct.37/

One of the major reasons for the change in designation was the need for a forebay at the Delta Pumping Plant of the California Aqueduct. The Pumping Plant has been designed to allow a substantial portion of the water to be pumped with offpeak power, thus assuring delivery of water to the contractors at the least possible cost.

The Forebay will also serve as an interim intake to the Aqueduct, prior to operational status of the Peripheral Canal, in lieu of improving the capacity of Italian Slough. Construction of the Forebay will also provide the opportunity for increased recreation development in the San Francisco Bay area.

In conjunction with The Resources Agency's development of a recreation master plan for the Delta, the East Bay Regional Park District has expressed its desire to design, construct, and operate recreation facilities at Clifton Court Forebay, provided the State will acquire necessary rights-of-way, and design the project to be compatible with the recreation use.38/ Acting Administrator William F. Grader, of The Resources Agency, requested that both the

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35/ Calif. Stats. of 1965, Resolution Chapter 121.
36/ Interagency Delta Committee Report, "Plan of Development, Sacramento-San Joaquin Delta", January 1965.
37/ Department of Water Resources Project Order No. 13, March 21, 1966.
38/ Letters from Mr. William Penn Mott, Jr., General Manager, East Bay Regional Park District, to Mr. Hugo Fisher, Administrator, The Resources Agency, September 13, 1965, and to Mr. Fred Jones, Director, Department of Parks and Recreation, January 31, 1966.

Departments of Water Resources and Parks and Recreation cooperate and give full consideration to the concepts outlined by the Park District.39/

Allocations Among Project Purposes. Actions were taken which will affect the allocations of costs of the California Aqueduct among project purposes.

The inclusion of Clifton Court Forebay will affect the overall allocations of California Aqueduct costs among project purposes.

Assembly Concurrent Resolution No. 5440/ requests the Department to implement the recommendations in Department of Water Resources Bulletin No. 154 ("Potential Recreation Areas Along the California Aqueduct", January 1965) by acquiring recreational sites along the California Aqueduct in the San Joaquin Valley, and also requests the Department of Parks and Recreation to begin development of these areas. The resolution expresses the legislative intent, pursuant to the Davis-Dolwig Act, to appropriate funds to reimburse expenditures of both Departments for such purposes.

The Bureau of Reclamation has agreed41/ to bear about 47 percent of the costs of Los Banos Creek Detention Dam and reservoir in the San Luis division as a preliminary allocation for flood control benefits to the downstream area. The allocation percentage will be reexamined after the final construction costs of the Dam and reservoir are known. The remaining costs of the Dam and reservoir, which are properly allocable to flood protection of the Aqueduct and to recreation and fish and wildlife enhancement, will be jointly shared in accordance with the 45:55 federal-state ratio. The Department was informed42/ that the Bureau was initiating the necessary studies, and will make appropriate nonreimbursable

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39/ Resources Agency Memorandum by Mr. William F. Grader, Acting Administrator, to Directors Warne and Jones, "Recreation Facilities at Italian Slough", September 22, 1965.

40/ Calif. Stats. of 1965, Resolution Chapter 109.

41/ Letter to Mr. William E. Warne, Director, Department of Water Resources, from Mr. C. H. Kadie, Assistant Regional Director, Region 2, Bureau of Reclamation, November 17, 1965.

42/ Letter to Mr. William E. Warne, Director, Department of Water Resources, by Mr. R. J. Pafford, Jr., Regional Director, Region 2, Bureau of Reclamation, March 9, 1966.

allocations of federal funds, in other cases where area flood control benefits result from construction in the San Luis division.

Tehachapi Lift. Fifteen years of study were climaxed on August 18, 1965, with a decision by the Department's Chief Engineer to proceed with final design of a single-lift scheme for the Tehachapi Pump Lift. This decision, together with its supporting research program, is described in Chapter III.

A comprehensive bulletin[43/] on design of the Tehachapi Crossing and Pump Lift was published recently, documenting the research work accomplished by the Department's consultants, the firm of Daniel, Mann, Johnson, and Mendenhall, and the Bechtel Corporation, consultant retained by The Metropolitan Water District of Southern California. The bulletin summarizes the Department's study of the Tehachapi Crossing as a whole, and contains reports of consulting boards, consultants, and the Chief Engineer.

Revised Aqueduct Nomenclature. For purposes of working drawings and plans, the portion of the California Aqueduct previously known as the "East Branch" was separated into two divisions and renamed in November 1965.[44/] The newly designated "Mojave" division includes the portions of the Aqueduct from the junction of the West Branch to, and including, Cedar Springs reservoir. The "Santa Ana" division includes the San Bernardino Tunnel and the downstream portions of the Aqueduct through Perris reservoir.

Sizing of Features. The design capacities of the California Aqueduct have been established upstream of the West Branch junction. The capacities of reaches and reservoirs downstream from that point have not been set, as yet. However, a preliminary report[45/] has been distributed,

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43/ Department of Water Resources Bulletin No. 164, "Tehachapi Crossing Design Studies", Volume I through IV, May 1965, and Volume V, August 1965.

44/ Department of Water Resources Memorandum by John R. Teerink to Alfred R. Golze', November 23, 1965, approved November 28, 1965.

45/ Department of Water Resources, "Design Capacities of the California Aqueduct - Junction, West Branch to: (1) Perris Reservoir, and (2) Castaic Reservoir", (Preliminary Edition), December 1965.

setting forth the basis for proposed design capacities in this area.

In July 1965, the Department's Division of Safety of Dams, pursuant to Division 3 of the Water Code, recommended[46/] that Cedar Springs Dam be limited to a height which would create a reservoir with maximum storage of only about 75,000 acre-feet, as compared with the 200,000 acre-feet capacity contemplated in last year's bulletin. The Department conducted intensive geological explorations which indicated the presence of several fault zones in the immediate site area. A consultant was retained, who concluded that these faults may be active. The Division of Safety of Dams conducted an independent study, retained its own consultant, and arrived at essentially the same conclusion. The Department is currently studying alternative ways of providing substitute regulation storage, required pursuant to water supply contract commitments, over and above the reduced capacity of the reservoir.

The Department executed a contract amendment[47/] with The Metropolitan Water District of Southern California, in November 1965, whereby the District will advance to the State the funds necessary for preliminary exploratory work, surveys, geologic studies, alternative designs, and any and all other work required to enable the District to arrive at a decision as to the capacity of Perris reservoir best suited for the District's needs (but not to exceed 500,000 acre-feet). The District's decision in this matter is required within 90 days after notification by the Department as to the optimum size of the reservoir determined by the State. Notice is expected to be given in the latter part of May 1966. The District also agreed to advance, to the State, funds necessary to acquire rights-of-way permitting a reservoir capacity of 500,000 acre-feet, and any additional costs occasioned thereby.

46/ Department of Water Resources Memorandum by Robert B. Jansen to Mr. H. G. Dewey, Jr., "Proposed Cedar Springs Dam", July 16, 1965.

47/ Amendment No. 4, November 19, 1965, to the "Contract Between the State of California Department of Water Resources and The Metropolitan Water District of Southern California for a Water Supply", originally executed November 4, 1960.

West Branch Power Developments. In October 1965, the Director of Water Resources signed a memorandum of intent[48] with representatives of the City of Los Angeles Department of Water and Power for the City to construct and operate a 1,200,000 kilowatt Castaic Powerplant as a peaking power facility. Project water would be released from Pyramid reservoir during peak power demand periods and would flow through an enlarged Angeles Tunnel.[49] The water would then drop about 1,000 feet through the city-constructed powerplant at Castaic reservoir. A form of contract has been prepared, and negotiations are continuing.

A Department plan to operate the portion of the West Branch from Quail Lake to, and including, Pyramid Powerplant on a limited onpeak basis was approved in February 1966.[50] Heretofore, the operation of this portion of the West Branch had been contemplated to match the planned operation of Oso Pumping Plant. Under the recently approved plan, the capacity of Quail Lake will be enlarged, the conveyance capacity between the Lake and the Powerplant increased, and affected canal sections designed to accommodate significant water surface fluctuations.

Initial Construction of the Coastal Branch. Bids were opened February 2, 1966, for the construction of the first 15-mile portion of the Coastal Branch, from the main line of the California Aqueduct to the Devil's Den Pumping Plant. Bids were also opened January 26, 1966, for furnishing and installing pumps at the Las Perillas and Badger Hill Pumping Plants.

Certain objections[51] to the work covered by these two contracts were raised by water supply contractors in the

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48/ "Basis of Understanding for Cooperative Power Development Between the Pyramid and Castaic Reservoirs on the West Branch of the California Aqueduct", signed by representatives of the Department of Water Resources for the State of California and the Department of Water and Power for the City of Los Angeles, October 4, 1965.

49/ Department of Water Resources, Project Nomenclature Order No. 6, October 27, 1965.

50/ Department of Water Resources, "A Position Paper re: Onpeak Operation of the Pyramid Powerplant", approved February 23, 1966.

51/ Letters to Mr. William E. Warne by Mr. Daniel G. Grant, Chairman of the Santa Barbara County Board of Supervisors, February 3, 1966, and by Mr. Fred C. Kimball, Chairman of the San Luis Obispo County Board of Supervisors, February 16, 1966.

Central Coastal area. After consultation, the Department decided on the following course of action and notified the contracting agencies:52/

1. The contract for construction of the canal portion of the Coastal Aqueduct would be awarded.

2. The pumps that were scheduled for initial installation at the Las Perillas and Badger Hill Pumping Plants would be installed in two stages. The pump bids that had been received would be rejected and the contract readvertised.

3. The discharge lines from the Badger Hill Pumping Plant would be installed in two stages. However, both of the discharge lines from the Las Perillas Pumping Plant would be installed at the same time, due to problems associated with staged construction.

The contract discussed in (2) above was readvertised March 18, 1966, and opened April 20, 1966.

Local Projects

The Davis-Grunsky Act authorizes state financial assistance by grants, loans, or both, to public agencies for local water projects. State loans are authorized to agencies for the construction of needed local projects and for the preparation of feasibility reports on such projects. State grants are authorized for construction costs allocated to the enhancement of fish and wildlife, to recreation, and to initial water supply and sanitary facilities. Actions of the Legislature and the Department both affect implementation of these local projects.

52/ Letters to Mr. Fred C. Kimball, March 22, 1966, and to Mr. Daniel G. Grant, April 1, 1966, by Mr. James J. Doody, District Director, Southern District of the Department of Water Resources.

Legislative Action

During the 1965 Regular Session of the Legislature, the following 10 bills[53/] were enacted, authorizing an additional $43,348,200 in Davis-Grunsky grants:

1. Senate Bill No. 22 authorizes a $3,285,000 Davis-Grunsky Act recreation grant to the San Luis Obispo County Flood Control and Water Conservation District for its proposed Lopez Dam and Reservoir Project.

2. Senate Bill No. 54 authorizes a $6,500,000 recreation and fish and wildlife enhancement grant to the Merced Irrigation District for its proposed new Exchequer and McSwain Dams and Reservoirs on the Merced River.

3. Senate Bill No. 94 authorizes a $1,950,000 grant to the Sonoma County Flood Control and Water Conservation District for the Santa Rosa Creek Dam and Reservoir Project.

4. Senate Bill No. 152 authorizes a grant to the Turlock and Modesto Irrigation Districts of $7,000,000 for the New Don Pedro Dam and Reservoir on the Tuolumne River.

5. Assembly Bill No. 251 authorizes an additional grant to the Siskiyou County Flood Control and Water Conservation District, or the Mount Shasta Recreation and Park District of $2,000,000 for the Box Canyon Dam and Reservoir Project. The 1963 Legislature had authorized $2,800,000 for this project.

6. Senate Bill No. 439 authorizes an additional grant of $363,200 to the South Sutter Water District for the Camp Far West Dam and Reservoir Project in Placer and Yuba Counties. The 1963 Legislature had authorized $960,000 for this project.

7. Senate Bill No. 837 authorizes a grant to the Calaveras County Water District of $16,000,000 for fish and wildlife enhancement and recreational functions of its proposed project.

53/ Calif. Stats. of 1965, Chapters 338, 143, 1399, 282, 478, 775, 1412, 778, 1428, and 1432, respectively.

8. Senate Bill No. 842 authorizes a grant to the Mariposa County Water Agency of $2,000,000 for recreation and enhancement of fish and wildlife functions of its Agua Fria Project.

9. Senate Bill No. 1152 increases the authorized grant to the Nevada Irrigation District from $3,500,000 to $4,750,000 for recreational functions in connection with the construction of four proposed dams and reservoirs.

10. Senate Bill No. 1337 authorizes a grant of $3,000,000 for recreation and fish and wildlife enhancement to the City of Salinas and the County of Monterey for the Alisal-Gabilan Watershed Project in Monterey County.

Department Action

Prior to April 1, 1966, the Department had approved a total of $25,485,000 in grant and loan applications under the Davis-Grunsky Program. The following six projects, approved in the past year, account for $12,791,000 of the total:

1. A $380,000 loan to Centerville Community Services District for construction of a municipal distribution system to serve the community of Centerville in Shasta County.

2. A $62,000 loan to Applegate-Clipper Gap County Water District for construction of a domestic distribution system to serve the district in Placer County.

3. A total of $3,348,400 in recreation and initial water supply and sanitary facility grants to Placer County Water Agency for its Middle Fork American River Project in Placer County.

4. A total of $3,944,800 in recreation and initial water supply and sanitary facility grants to San Luis Obispo County Flood Control and Water Conservation District for its Lopez Project in San Luis Obispo County.

5. A total of $4,693,000 in recreation and initial water supply and sanitary facility grants to Nevada Irrigation District for its Yuba-Bear Project in Nevada, Placer, and Sierra Counties.

6. A supplemental recreation grant of $363,200 to South Sutter Water District for its Camp Far West Project. This grant was authorized by the Legislature in 1965, and was in addition to the grants reported on page 59 of Bulletin No. 132-65.

CHAPTER III. RESEARCH AND DEVELOPMENT ACTIVITIES FOR THE STATE WATER PROJECT

This chapter describes the more significant research and development programs directly involved with the State Water Project.

For this year's report, one example has been selected to illustrate research activities in each of the following areas:

1. Design - the determination of the most reliable and economic pump lift system for the Tehachapi crossing.

2. Construction - the development of preconsolidation techniques to be applied where the California Aqueduct will traverse areas susceptible to land subsidence.

3. Operation - the development of an automated monitor and control system for the complex conservation and distribution network.

Future annual reports of this series will highlight other unique developments, until all of the more significant research programs for the Project have been covered.

Tehachapi Pump Lift

Since 1951, when the Legislature authorized construction of a "conduit to transport water from the Sacramento-San Joaquin Delta to the San Joaquin Valley and to Southern California" (now known as the California Aqueduct), Department engineers have been studying various specific alignments for transporting water into Southern California.

The key reach in these alignments has been the crossing of the Tehachapi Mountains, the major physical barrier between Northern and Southern California.

These rugged mountains rise nearly a mile higher than the water elevation in the Sacramento-San Joaquin Delta, and are in an area of high seismic activity. Tunneling conditions vary widely because of extensive major faults, such as Pastoria, Garlock, Gorman, and San Andreas.

A 1955 State Engineer's report[54/] described three possible routes for transporting water over the Tehachapi Mountains and into Southern California: (1) the "High Line Route", with a pumping plant at Pastoria Creek, at the base of the northern Tehachapi Mountains (about 25 miles south of Bakersfield), where water would be lifted from about the 1,500-foot elevation to a relatively short series of tunnels at a 3,357-foot elevation; (2) the "Long Tunnel Route", also with a pumping plant at Pastoria Creek, but lifting water only to the 1,870-foot elevation and through a combination of tunnels of considerably greater aggregate length; and, (3) the "Coastal Line", which would avoid the mountains entirely, by following an extension of what is now known as the Coastal Branch of the California Aqueduct. These routes would not provide equivalent service to the same service areas.

Later studies were made by the Department on the alignment of the California Aqueduct and the elevation of the Aqueduct's hydraulic gradient.[55/] The selected Aqueduct alignment was one that would traverse the southwest periphery of the San Joaquin Valley floor and cross the Tehachapi Mountains in the vicinity of Pastoria Creek Canyon, about five miles east of Interstate 5 (U.S. 99). The Department, with the concurrence of The Metropolitan Water District of Southern California,[56/] established the hydraulic gradient at 3,165 feet above sea level. With the Aqueduct at a 1,200-foot elevation at the foot of the mountains, the pumping lift for the Tehachapi Pumping Plant became fixed at approximately 2,000 feet.

Other design particulars were progressively developed.

54/ Department of Public Works, Division of Water Resources Report, "Program for Financing and Constructing the Feather River Project as the Initial Unit of the California Water Plan", dated February 1955.

55/ Department of Water Resources Bulletin No. 78, "Investigation of Alternative Aqueduct Systems to Serve Southern California", dated December 1959.

56/ "Memorandum of Understanding Regarding Elevation and Alignment of Tehachapi Crossing, State Water Facilities", dated February 8, 1963; signed by Robert A. Skinner, General Manager and Chief Engineer, The Metropolitan Water District of Southern California; and Alfred R. Golze', Chief Engineer, Department of Water Resources.

The decision to use electric-drive pumps at the Tehachapi Pumping Plant, in lieu of steam-driven pumps, was made by the Chief Engineer on the basis of recommendations[57/] by a Department consulting firm. The final design capacity of the Tehachapi Pumping Plant later was established at 4,100 cubic feet per second.[58/]

The remaining major items to be established before actual design of the Tehachapi Pumping Plant could proceed further were the types of pumps and the number of pump lifts to be used to raise the water the required total of about 2,000 feet.

Research Program

The Department employed two consulting boards,[59/] to advise staff engineers: one was concerned with engineering and geological problems; the other with earthquake forces. The consulting firm of Daniel, Mann, Johnson and Mendenhall of Los Angeles (hereinafter referred to as DMJM) was placed under contract[60/] to make pump model studies, working with the firm of Motor-Columbus, Baden, Switzerland. The Metropolitan Water District of Southern California conducted parallel studies, employing its own consulting firm (The Bechtel Corporation of Los Angeles), which favored a two-lift scheme. The reference papers and supporting documents, together with the technical studies by Metropolitan, have been assembled and bound in the Department's five-volume Bulletin No. 164, "Tehachapi Crossing Design Studies".

57/ Department of Water Resources, "Engineering Evaluation of Electric Motor and Steam Turbine Drive for Tehachapi Pumping Plant", prepared by the Fluor Corporation, Ltd., dated March 1964.

58/ Department of Water Resources, "Design Capacities of the California Aqueduct-Kettleman City to: 1. Junction, East and West Branch, 2. Devil's Den Pumping Plant", (Final Edition), dated April 1965.

59/ The Tehachapi Crossing Consulting Board (John R. Hardin, R. C. Hornberger, Thomas M. Leps, Elmer C. Marliave, Robert Sailer, John Parmakian, Louis G. Puls) and The Consulting Board for Earthquake Analysis (Dr. Hugo Benioff, Dr. George Housner, Dr. Clarence Allen, Dr. H. Bolton Seed, N. D. Whitman, Jr., Dr. James L. Sherard).

60/ State of California, Department of Water Resources, Tehachapi Pumping Plant, Research and Development Program, Contract No. 352872 with Daniel, Mann, Johnson and Mendenhall, Los Angeles, California.

The Department's careful decision, and its supporting research program, is briefly described in the following sections.

Alternative Pump Lift Systems Investigated. As studies of the Tehachapi Crossing progressed, it became apparent that there were two possible alignments for the pump lift over the Tehachapi Mountains, one up a natural ravine at Pastoria Creek Canyon and the other up a rocky ridge called the Ridge Route, about a mile east of Pastoria Creek Canyon.

A great deal of geological field exploration study was made in the area. The Department drilled numerous holes and excavated large test pits. The entire geological situation in the Pastoria Creek Canyon and along the Ridge alignment was evaluated. Selection of a multi-lift system would require small dams for forebay purposes and large pumping plants to be constructed on the steep hillsides of the Tehachapis.

A complete engineering analysis was conducted on three possible lift systems for each of these two alignments: a single-lift of 2,000 feet; a two-lift of 1,000 feet each; and, a three-lift of about 670 feet each.

Thorough study eliminated the three-lift system. Construction of the number of forebay dams and pumping plants near earthquake fault zones at higher mountain elevations, (which that system would have required) was not considered desirable from an engineering and geological point of view.

The Department then concentrated studies on the two remaining systems using six alternative schemes for lifting water up the mountains. Two were schemes for a single-lift system and four were schemes for two-lift possibilities. One of the single-lift schemes included surface penstocks; the other, underground penstocks that would be placed in inclined tunnels constructed up the Ridge route of the mountainside. The four two-lift schemes each required a forebay reservoir at some point approximately halfway up the mountainside. Three of the two-lift schemes would have required a reservoir in the general area of Pastoria Creek and the fourth, a reservoir adjacent to the Ridge alignment.

Pump Model Testing. The contract between the Department and DMJM, in association with the Swiss firm of Motor-Colombus, was for a research and model testing program for

high head pumping plants. This program was to determine and analyze the feasibility, reliability, and efficiency factors for each lift system.

Major emphasis was placed on a model analysis of a single-stage pump to serve in a three-lift system, a two-stage pump to serve in a two-lift system, and a four-stage pump to serve in a single-lift system. The two-stage and four-stage pump models were built and tested by European firms (Voith of Heidenhem, Germany, and Sulzer Brothers of Wintherthur, Switzerland) having long experience in high head pump design and manufacture. A single-stage pump model was built and tested in the Los Angeles plant of the Byron Jackson Company. (A centrifugal, single-stage pump consists of an impeller, or rotor with an intake at the center, so arranged that when rotated it will discharge water by centrifugal force into a casing which surrounds the impeller. A multi-stage pump is one which has two or more impellers in a single casing, one impeller discharging into the next, and so on.)

These pumps models were the largest ever made, using about one-in-five ratio of model to prototype size. While the models were being built and prepared for laboratory testing, DMJM researched the literature of the pump industry and checked the statistical performance of all pumps throughout the world of a size comparable to those under study.

Results of the studies indicated that construction of any of the desired pumps was feasible. The highest individual pump efficiency was the two-stage pump for a two-lift system, according to DMJM findings. However, the four-stage pump showed only a small difference in efficiency, not great enough to support a system decision on pump efficiency alone. The difference disappears when considering the efficiency of the overall system, from the bottom to the top of the total lift.

Application of Results

The economics of the different pump lift schemes were examined and reviewed by Department engineers and members of both the Tehachapi Crossing Consulting Board and the Consulting Board of Earthquake Analysis, groups of nationally eminent engineers, geologists and seismologists.

Early in April 1965, the Consulting Board of Earthquake Analysis, after considering the advantages and faults of the Pastoria Creek route and the Ridge route, advised the

Chief Engineer[61]/ that it favored the Ridge route -- which has good rock for the entire 2,000-foot rise.

The Tehachapi Crossing Consulting Board met early in May 1965 to consider the reports of the Department staff, the Earthquake Board, and a separate report prepared by the Bechtel Corporation of Los Angeles,[62]/ which had been employed by The Metropolitan Water District of Southern California to make an independent analysis and appraisal of the crossing.

At the conclusion of its deliberations, the Tehachapi Crossing Consulting Board advised the Chief Engineer[63]/ that it favored the single-lift pumping system of the Tehachapis along the Ridge route with four-stage pumps and underground penstocks. The Board based its decision on a conservative approach to the civil engineering problems, stating that it would be unsound to build an intermediate plant halfway up the Tehachapis because it would be subject to severe seismic damage in the event of movement along the San Andreas Fault, or one of the related faults in the area.

The Board also concurred that there is only a small difference in operating efficiency between the different pumps available; that there is no question of the capability of the pump manufacturing industry to provide the high head four-stage pumps required for the single-lift; that the single-lift scheme would be less costly, by $7 million; and that the single-lift plan had other benefits, such as a simplified control system, reducing the probability of human error in operations and the number of employees required for operation and maintenance activities.

The Department's Chief Engineer, after full examination of the epic study on the Tehachapi Pump Lift System, approved the implementation of a single-lift pumping concept using four-stage, single-flow pumps. This decision permits design to proceed on schedule to meet the project objective of providing initial water deliveries to Southern California in 1971.

61/ Letter report from the Consulting Board for Earthquake Analysis to Department of Water Resources Chief Engineer Alfred R. Golze', April 8, 1965.

62/ "Report on Ridge Location Pump Systems, Single-Lift and Two-Lift for the Tehachapi Crossing of the California State Water Project for The Metropolitan Water District of Southern California", The Bechtel Corporation, July 1965.

63/ Letter report from the Tehachapi Crossing Consulting Board to Department of Water Resources Chief Engineer Alfred R. Golze', May 8, 1965.

According to the Chief Engineer, in advising the Director of his decision on August 18, 1965:

> "It is the objective of the Department to provide the most dependable pump lift system at the Tehachapi. The best interest of the water users and the Department demand it. It is clear that the most dependable system is that which has the greatest reliability and is the safest. The single-lift (four-stage pump) system is demonstrated by the factual data in the referenced support material to exceed the two-lift in both reliability and safety. It is also the cheapest, approximately $7,000,000 less than the two-lift system".64/

Preconsolidation

Land subsidence is familiar to California engineers and geologists and to the residents of the western San Joaquin Valley. There are two prevalent types of subsidence -- "shallow" and "deep" -- so named to indicate generally the soil stratum undergoing consolidation, causing subsidence of the overlying land.

Shallow Subsidence

The California Aqueduct, hugging the western periphery of the San Joaquin Valley floor on its way to Southern California, cuts across the alluvial fans and mudflows debouching from the eastern slopes of the Coast Range. The soils contained in these areas of fans and flows tend to consolidate when saturated with water for prolonged periods -- a condition producing shallow subsidence.

While some research on these areas has been carried on by engineers, geologists and technicians of the California Division of Highways, the Bureau of Reclamation, and others, the Department has provided the leadership and performed the major part of the required field and laboratory studies.

64/ Department of Water Resources Memorandum, Alfred R. Golze' to William E. Warne, "Tehachapi Pump Lift System", August 18, 1965.

Areas susceptible to shallow subsidence contain fine-grain, loose-packed soils, occurring in concentrations rather than in uniform distribution throughout the entire soil mass. Rainfall in the areas is typically low, three or four inches a year, most of it coming from infrequent storms during the winter months. Quick drying of the mud-flows, followed by an extensive drying period, produces a porous soil mass cemented together by clay particles. Such soil is stable under natural conditions but, when saturated, crumbles and settles. The ground water table throughout most of this area is more than 200 feet below the ground surface.

Differential settlement of the ground, brought about when water is applied to the land, has created many problems in the area.

The irrigation of fields has required costly re-leveling of those fields. Roadways and irrigation canals are often damaged to the point of becoming inoperative. Oil and gas pipelines throughout the area require continual maintenance and are patrolled by airplane to locate any damage quickly.

Unless properly treated prior to construction, shallow subsidence could make the California Aqueduct inoperative. Untreated, the settlement would cause the completed Aqueduct to experience breaches in embankments, excessive water losses, damage to adjacent properties, destruction of canal linings and structures, and changes in hydraulic characteristics of the facility.

Deep Subsidence

Deep subsidence also occurs over large areas in the San Joaquin Valley. It could adversely alter canal gradients so as to reduce conveyance capacities. Studies made by the Department of alternate alignments indicated that it was not practical to bypass all deep subsidence areas in constructing the Aqueduct. The Aqueduct, therefore, will cross two areas of known deep subsidence in the San Joaquin Valley. The first lies along the western edge of the Valley, in Fresno County, in a narrow band, 16 miles wide and 90 miles long. The second lies at the southern end of the Valley and covers approximately 475 square miles.

The disturbance of the subsurface equilibrium in the western San Joaquin Valley, resulting from man's activities, is largely responsible for the deep subsidence problem.

Ground water for irrigation purposes is being extracted faster than it can be replenished. This has resulted in a constant lowering of the water table, which increases the effective overburden load on the underlying soils. The increased loading consolidates these soils and results in the subsidence of the land surface. Another contribution to this condition is the commercial removal of subsurface deposits of gas and oil.

The importing of surface water via the California Aqueduct, and control of the ground water supply, should bring about the cessation of the overdrafting of ground water basins and the resulting deep subsidence.

Research Program

The Department realized early in the planning phase for the Aqueduct that the net result of construction without pretreatment, in areas susceptible to shallow subsidence, would be excessive operation and maintenance costs and intermittent disruption of project water deliveries. It was also determined, in contrast, that little could be done in regard to preconstruction corrective measures for deep subsidence.

The Department commenced a two-phase research program in 1958 to delineate the extent of shallow subsidence through which the Aqueduct would pass and to develop preconsolidation techniques to combat the adverse effects of such subsidence.

Small Test Plot Phase. The Department began a small test plot phase of the research program in October 1958.

To delimit areas susceptible to shallow subsidence, a soil sampling and testing program was begun at locations spaced approximately every five miles along the general alignment of the Aqueduct, from south of Los Banos to south of Wheeler Ridge, covering a distance of more than 200 miles. Forty-nine small subsidence test plots for prolonged water application were installed at these locations.

A typical alignment test plot consisted of an open section of eight-foot diameter corrugated metal pipe embedded in the soil. Five holes of varying depth were drilled inside the pipe and packed with gravel to increase the infiltration of the applied water into the soil. Each of the test plots was referenced with a system of surface and subsurface bench marks.

Water was supplied by tank truck daily for continuous ponding at most of the test plots. Equipment breakdown occasionally disrupted water service; therefore, neoprene tanks were set up adjacent to a few of the test plots in order to provide a more nearly continuous water supply.

Subsidence or swelling was observed a few hours after initial water application. Cracking usually did not become evident until after the test plot had been in operation for a number of days. The first cracks to appear usually were located a few feet from the edge of the tank and were generally circumferential. As subsidence progressed, these cracks would gradually widen to a few inches and then the soil block adjacent to the tank would drop. This resulted in the typical concentric stair-stepped cavity as subsidence progressed.

Results of the delineation study along the Aqueduct alignment indicated several areas of shallow subsidence, with magnitudes ranging from less than one foot to approximately eleven feet. The larger magnitudes of shallow subsidence occurred in the vicinity of Mendota Test Site and in the area south of the Buena Vista Pumping Plant.

Prototype Canal Sections. The second phase of the research program was conducted at the 240-acre Mendota Test Site, some 70 miles west of Fresno, about one-half mile east of the California Aqueduct alignment.

The general objectives of this phase were to develop effective design and preconstruction techniques and specifically to determine: (1) an economical consolidation method; (2) an estimate of the time required for consolidation; and, (3) the effectiveness of consolidation techniques through construction of a prototype canal section.

Consolidation by application of water, at the surface or through infiltration wells, was considered the most economical as to time and cost.

Four large test plots were operated at the test site in the development of an economical consolidation method. The plots utilized different methods -- a simple pond, a ditch, and infiltration wells. Three of the plots were placed along a line so that a prototype canal section could be subsequently constructed through them.

The prototype canal was constructed in a trapezoidal shape, 1,400 feet long and 26 feet deep, with an average

compacted embankment height of 12 feet. One-half of the canal was lined with a four-inch thick unreinforced concrete lining and the other half with a heavy compacted earth lining. A 14-foot overlap of concrete lining and heavy compacted earth lining was included in the design to reduce the effects of one lining on the other during the initial ponding period.

After 90 days of operation, the areas that were preconsolidated prior to construction of the prototype canal were in excellent condition, in both the concrete and earth-lined sections.

The concrete lining and adjacent embankments were badly cracked in the areas that had not been preconsolidated. After 130 days of operation, the earth-lined section showed signs of distress in the noncompacted area and, shortly thereafter, collapsed.

Application of Results

The research program has proven preconsolidation to be a prudent practice before actual construction of the California Aqueduct begins. The program has shown that preconsolidation, by ponding and saturation, would permit construction of an aqueduct which will be relatively free of settlement in areas of shallow subsidence.

Twenty of the 78 miles of the Aqueduct alignment, determined by the program to require preconsolidation, lie in the San Luis division, being constructed by the Bureau of Reclamation. Three miles lie along the route of the Coastal Branch; the remainder is in the South San Joaquin division.

Preconsolidation has been completed for the Coastal Branch and is expected to be completed in 1967 for the South San Joaquin division.

Approximately 100,000 acre-feet of water will be applied through ponds equipped with infiltration wells. The ponds vary in width from 150 to 250 feet. The average pond is 500 feet long. Water will be supplied to these ponds for an average of six months, with a drying period of one year before actual construction of the Aqueduct begins.

Aqueduct Automated Monitoring and Control System

Push-button control of the Project's 691 miles of aqueducts will begin field-testing in late 1966, using the 42-mile completed main line of the South Bay Aqueduct as a pilot model for the entire Project.

The automated system, in a research and development status since 1961, would control the velocity and volume of water throughout the Project's aqueducts -- accomplishing in moments what would ordinarily take "ditch riders" days to do.

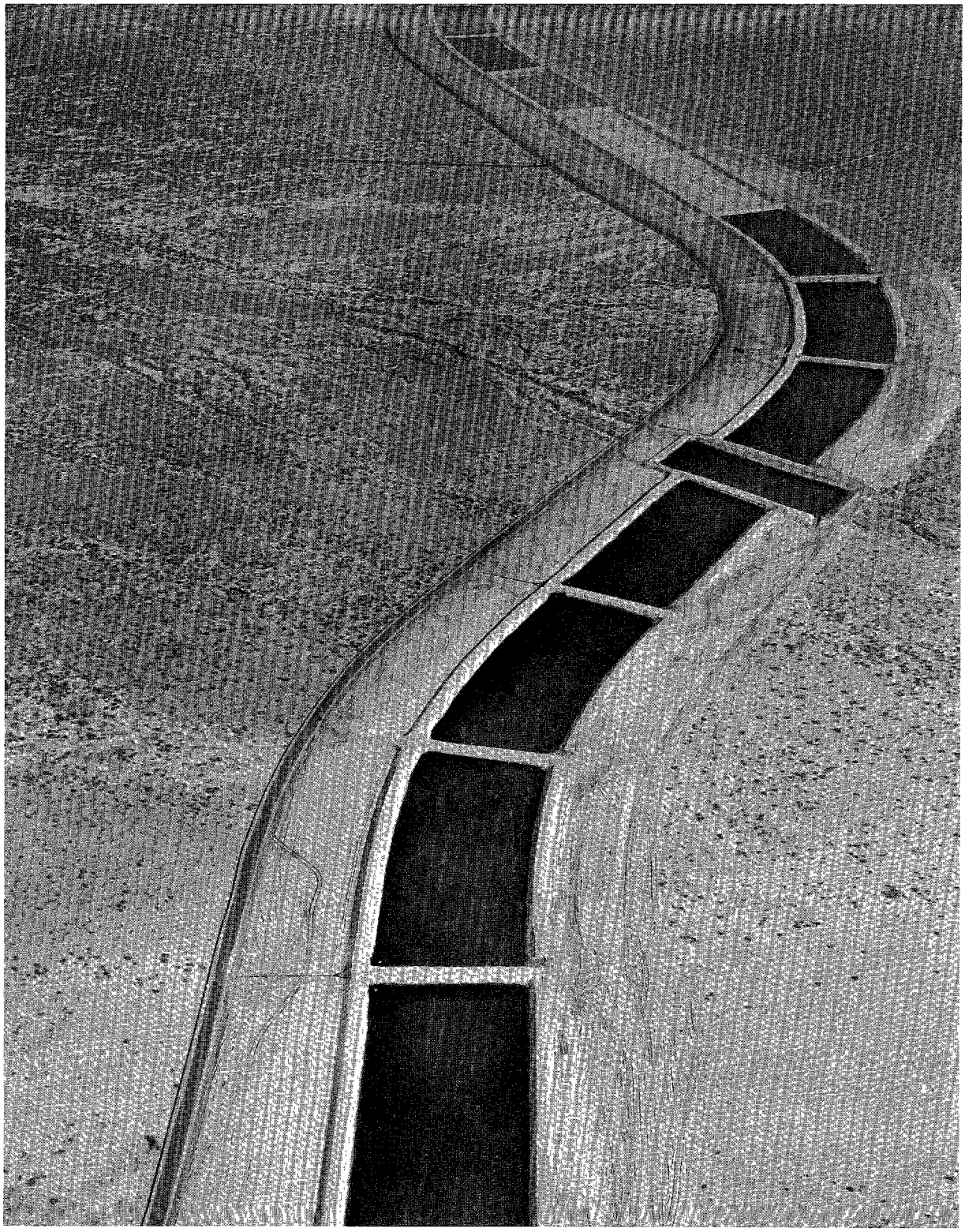
The need for automated operation initially was dictated by special operational requirements and the unique physical characteristics of the State Water Project. The 444-mile main line of the California Aqueduct creates a particular problem in customer service, since it would take a single particle of water about 10 days to travel that distance.

The Aqueduct crosses several major earthquake faults, and generally traverses seismically active areas which might necessitate rapid shutdown. Over half the water transported through the Aqueduct is for municipal and industrial purposes which require operation throughout the year with a minimum of outages and delivery of high quality water. The only facility provided for regulating the water enroute through the Aqueduct is the San Luis reservoir. Canals and other open-channel sections constitute about 90 percent of the length of the main line of the California Aqueduct. There are no wasteways for spilling excess flows, such as are found on the older, large canal systems.

The above factors combine to establish a requirement for a very high degree of control over water movement. The highest degree of control over moving water is obtained when water is confined in a pipe system, such as in the plumbing of a home.

Important characteristics of a pipe system are that the water can be turned on or off rapidly, and the flow can be varied. Relating this type of operation to the State Water Project would require that the water flowing in the open channels of the California Aqueduct be started or stopped and also varied from low flow to maximum flow in a short period of time -- in the case of the Aqueduct, in about one hour. Research studies, made by the Department and its consultants, have shown that this requirement can be met under the "Controlled Volume" method 65/ of aqueduct operation. This method requires simultaneous, or nearly simultaneous, operation of pumping plants and check structures. Remote control of the Aqueduct pumping plants and check structures, using computers from a control center, or several control centers, has been deemed the best possible way of managing such an operation.

65/ See pages 92 and 93, Bulletin No. 132-65



Preconsolidation ponds along California Aqueduct alignment in the South San Joaquin division in Fresno County. Note infiltration wells in dry pond areas at top of the picture.

Research Program

Investigation of an automated control system to operate the State Water Project was authorized in April 1961 and, by 1962, a Department report66/ had recommended a four-phase development plan on the control system for the entire Project:

I. Automation Pilot Model

II. Preliminary System Design and Performance Specifications

III. Final System Design and Procurement Specifications

IV. Equipment Procurement and System Implementation

Phase I of the program applies only to the South Bay Aqueduct, as a test model in the preliminary research and development phase. The other three phases will cover the design and construction of a control system for the entire State Water Project.

The California Aqueduct features are being designed for automated operation which could range from remote control of canal checks and pumping plants to remote computer control of all aqueduct facilities.

In order to develop data from which to formulate a control system plan for the entire project, the Automation Pilot Model will provide:

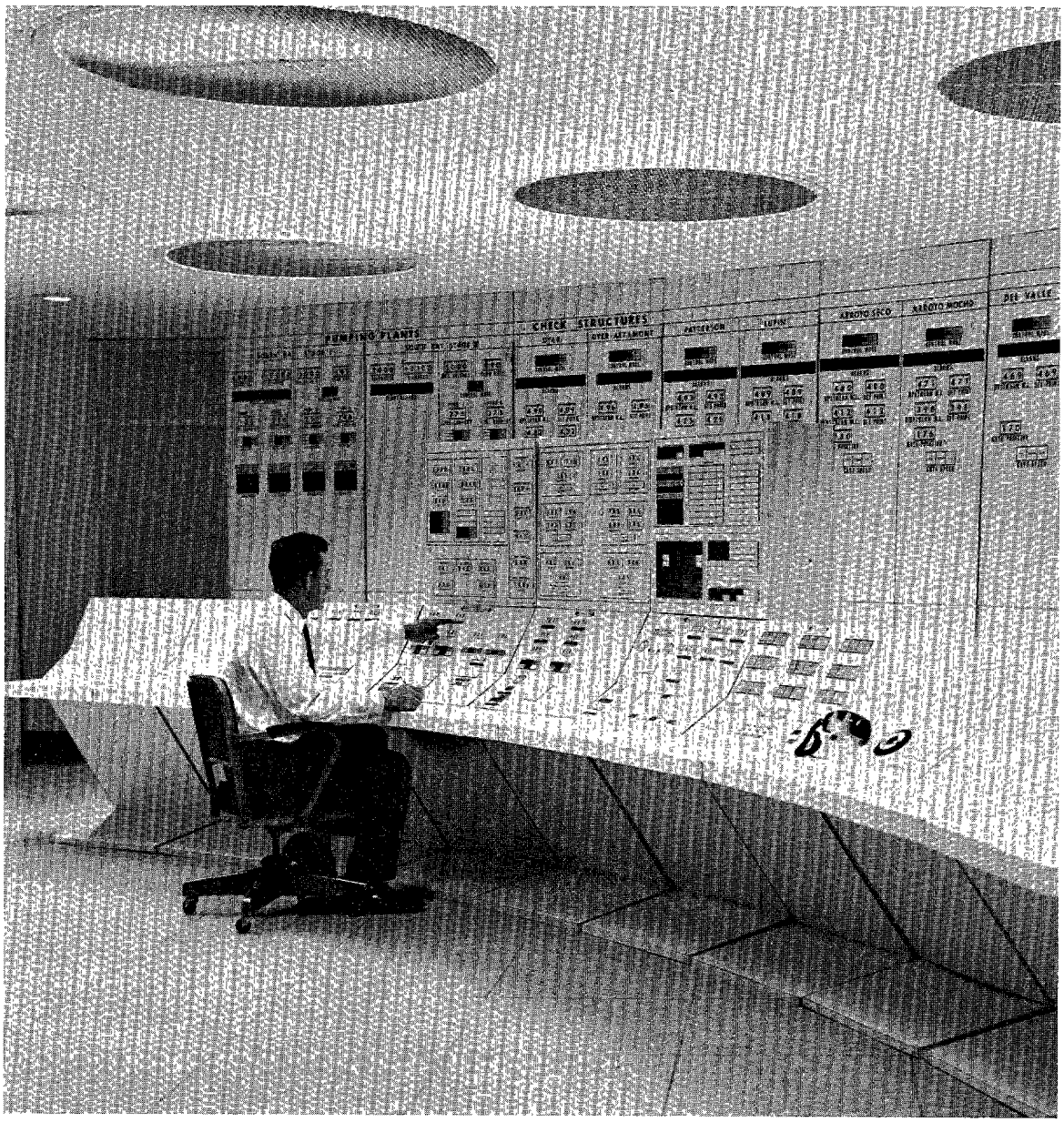
1. Random access to any facility at any time, involving selection at operator's discretion rather than sequential selection through all facilities.

2. No limit to operation of control computer.

3. Capacity capable of transferring commands and information at precision speed compatible with operational requirements.

66/ Department of Water Resources Automation Steering Committee, "Control System for State Water Facilities", July 1962.

4. Digital equipment for (a) control system model for facilities from South Bay Pumping Plant through Vallecitos turnout (b) control center in Sacramento and (c) control center in South Bay Pumping Plant.



Mock-up model of the consoles and displays in the Sacramento Control Center at the Resources Building for initial automated monitoring and control of the South Bay Aqueduct.

The South Bay model, which will be in full operation from April 1967 to April 1969, will meet water delivery schedules along the South Bay Aqueduct (as well as research and development flows) through the equipment installed on 21 features of the Aqueduct.

Two control centers will be installed; one located in the South Bay Pumping Plant, the other in Sacramento. Both the Sacramento and the South Bay Control Centers will have the capability to control remotely each of the 21 features of the South Bay Aqueduct. The Sacramento Control Center will have a computer installation with on-line computer control capability.

Two independent systems of communication will be used in the model system, and each gate will have a standby generator to supply adequate power. Research has shown two separate communications systems are essential for protection against outages.

A contract, awarded by the Department on December 8, 1965, to Aerojet-General Corporation of El Monte, California, will cover installation of the Automation Pilot Model. Other contracts will link this control system to a computer at the Department's headquarters building in Sacramento.

Application of Results

When the automated control system for the entire State Water Project is completed, four operators on the 16th floor of the Resources Building in Sacramento will be able to monitor computer consoles automatically providing, with regard to the operation of project facilities:

1. Improved sensing control
2. Greater reliability
3. Analysis of recordings
4. Multiple use of data
5. Coordination
6. Adjustment of water delivery

Computers will eventually exercise remote control over the Project's 24 pumping plants, consuming 13 billion kilowatt-hours of energy per year; nine powerplants, with an annual output of 6,233 million kilowatt-hours of energy; the control of releases from 19 dams and reservoirs; and, the remote operation of check gates and turnouts along 481 miles of aqueduct canal.

CHAPTER IV. CONSTRUCTION OF THE STATE WATER PROJECT

The center of gravity in State Water Project construction activities has moved steadily southward in the past 12 months, toward the eventual termini at Castaic and Perris reservoirs in Southern California. Coordinated efforts in design, rights-of-way acquisition, and relocation activities have resulted in contract awards for construction now under way from Grizzly Valley Dam in the north to Castaic Dam in the south.

Design

During 1965, the Department completed plans and specifications for 48 construction and procurement contracts subsequently awarded for the Project. Work was well advanced on 39 additional contracts, scheduled for advertising in 1966. The Bureau of Reclamation completed plans and specifications for 16 additional construction and procurement contracts, subsequently awarded in 1965, for work on the joint-use facilities in the San Luis division.

Plans and specifications were issued during the past year for several major contracts in the Oroville Area, including those for the Oroville Dam Spillway, Thermalito Forebay and Afterbay, and Oroville reservoir clearing. A major design effort was completed late in 1965 with the advertising for bids on the construction of Del Valle Dam, a feature of the South Bay Aqueduct. Along the California Aqueduct, major design work has been completed in the North San Joaquin division, with the exception of Clifton Court Forebay, which was recently added to the Aqueduct, as noted in Chapter II. The Department's major design effort is currently centered on facilities located from Kettleman City south.

Rights-of-Way and Relocations

Expenditures for real property for the State Water Project during 1965 totaled $10.4 million, about 19 percent of the estimated total cost of real estate for the entire Project. Expenditures for land through the year 1965 amounted to $24.2 million, constituting approximately 44 percent of the total required.

The totals mentioned above exclude major acquisitions of the Pacific Gas and Electric Company's Big Bend

Powerplant, and the Georgia-Pacific Corporation's Feather River Railway, together with associated lands. These transactions involved a total of about $26.5 million, as noted in Chapter II.

During 1965, title was acquired to 412 parcels, or tracts of land, involving 19,445 acres. Acquisitions for the Project through the end of 1965 totaled 1,412 parcels. About 29 percent of the 4,455 parcels estimated to be required for those project facilities with established construction schedules have been acquired, as shown in the following tabulation:

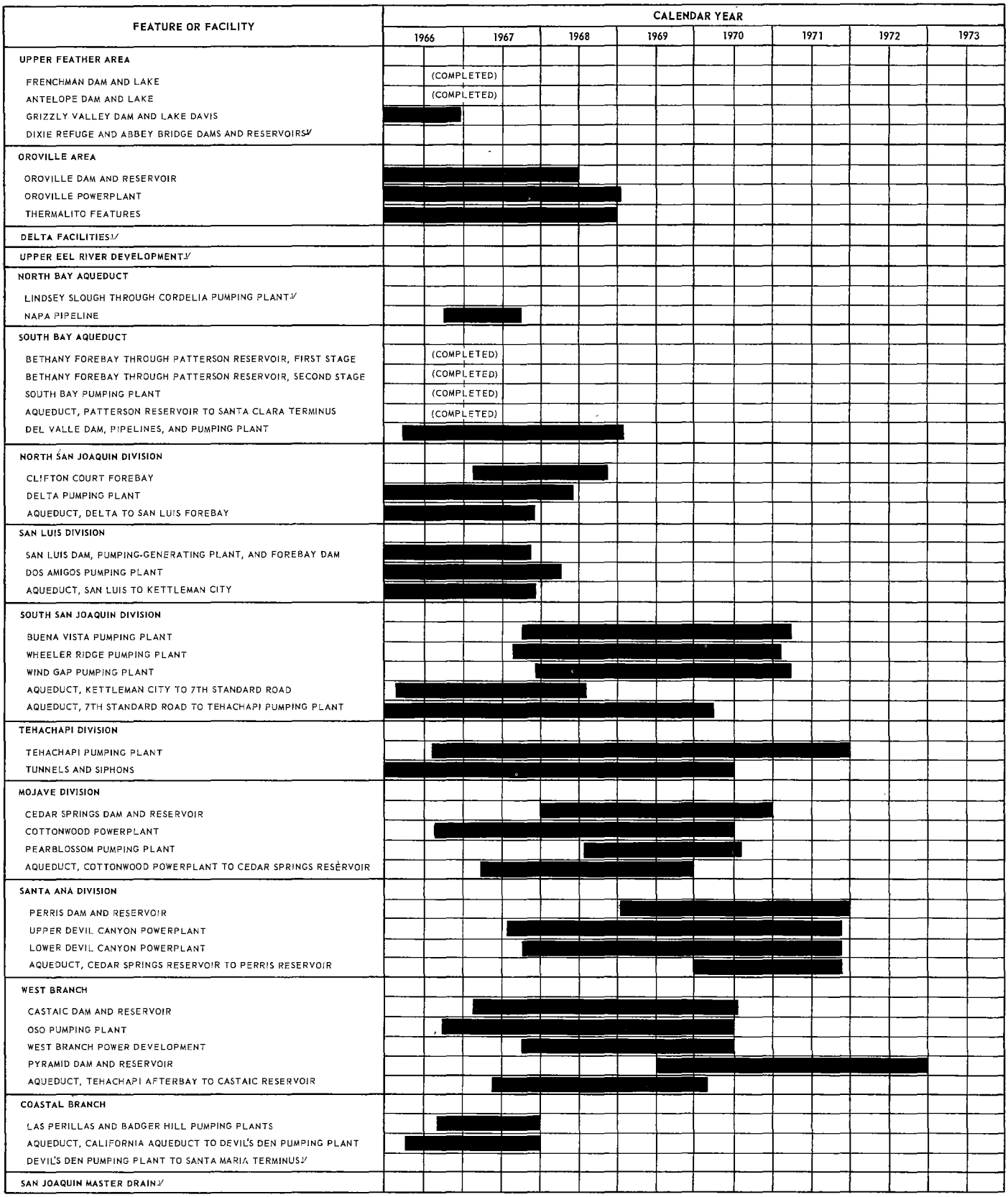
Project Facilities Definitely Scheduled	Estimated Parcels Required	Parcels Acquired in 1965	Parcels Acquired through 1965
Upper Feather Area	25	1	14
Oroville Area	896	94	548
North Bay Aqueduct	177	0	0
South Bay Aqueduct	194	20	82
California Aqueduct			
North San Joaquin division	167	58	108
San Luis division	24	8	15
South San Joaquin division	607	175	278
Tehachapi division	13	0	0
West Branch	275	20	34
Coastal Branch	368	0	0
Mojave and Santa Ana divisions	1,709	36	333
TOTALS, Scheduled Facilities	4,455	412	1,412

During 1965, 351 condemnation actions were initiated through the California Water Commission and filed in appropriate Superior Courts. As a result of these actions, 686 parcels were made available during the year, through orders for possession, in order to meet construction deadlines. One hundred and sixteen agreements, in the amount of $18,169,000, were executed during 1965 for relocation of oil, gas and water pipelines, electric transmission and distribution lines, communication lines, major railroads, State highways, and county roads.

Construction

A generalized construction schedule for the State Water Project is shown, graphically, on Figure 1. Definite

STATE WATER PROJECT
GENERALIZED CONSTRUCTION SCHEDULE



1/ CONSTRUCTION SCHEDULE NOT YET ESTABLISHED

schedules have not been established for certain features of the Delta Facilities, the San Joaquin Master Drain, the Upper Eel River Development, Abbey Bridge and Dixie Refuge Units in the Upper Feather Area, the North Bay Aqueduct east of Cordelia Pumping Plant, and the Coastal Branch division downstream from Devil's Den Pumping Plant. Construction schedules for these features have been assumed for the cost analyses of this report.

Three hundred and twenty major contracts worth $1,660,000,000, are estimated to be required for construction of facilities with established schedules. This number includes the Bureau of Reclamation's current program for the joint-use facilities of the San Luis division. Table 1 presents a summary of all Department construction contracts and of the major Bureau of Reclamation construction contracts which were completed or under way as of April 1, 1966. As of that date, 93 contracts valued at $152,000,000 had been completed, and 112 contracts valued at $607,000,000 were in progress.

The tabulation below presents important measures of physical construction progress for the entire State Water Project through calendar years 1963, 1964, and 1965. These figures do not include quantities under contracts for relocations of facilities.

Total Through Calendar Year	Cubic Yards Excavation	Cubic Yards Embankment	Cubic Yards Concrete
1963	34,617,000	19,783,000	522,000
1964	81,084,000	65,452,000	906,000
1965	162,697,000	116,219,000	1,628,000

The construction activities of the State Water Project occur in certain areas which may contain artifacts or other evidences of early man which are of archaeological significance. A program administered by the Division of Beaches and Parks is in progress to locate and excavate sites of probable value, prior to disturbance by construction work or to inundation by reservoirs.

During 1965, surveys to locate sites for future excavation were conducted in the Oroville reservoir area (where 100 sites were identified), at San Luis reservoir, Castaic reservoir, and Little Panoche Creek detention reservoir. Test excavation was continued at a site along the southwest margin of the Buena Vista Lakebed. Discoveries at this site indicate a date for man's occupation in this area

of possibly greater than 7,000 years. Further survey and excavation work is scheduled for 1966, as a continuation of the program to complete archaeological exploration ahead of construction.

All following sections briefly describe the status of construction activities as of April 1, 1966, for features of the State Water Project having established construction schedules. The project features are generally portrayed on Plate I, and are concisely described in Appendix C.

Upper Feather Area

The Upper Feather division consists of Frenchman and Antelope Dams and Lakes, Grizzly Valley Dam and Lake Davis, and Abbey Bridge and Dixie Refuge Dams and reservoirs. All are located in Plumas County.

Frenchman Dam was completed in 1961; Antelope Dam, in 1964.

Grizzly Valley Dam, which forms Lake Davis, the largest of the five reservoirs contemplated in the Upper Feather Area, is currently under construction and is about 40 percent complete. The Dam is scheduled to be completed in 1966. During the 1965 construction season, the Division of Safety of Dams made 14 construction inspections of Grizzly Valley Dam and related work, pursuant to Division 3 of the Water Code.

Abbey Bridge and Dixie Refuge Dams and reservoirs have not been definitely scheduled for construction at this time. For purposes of the analyses of this report, it is assumed that the construction of these features will be completed in 1970 and 1971, respectively.

Oroville Area

The major project facilities of the Oroville Area, located in Butte County, include the third largest embankment dam in the world, the largest underground powerplant in the United States, and an off-stream system near the suburb of Thermalito which will regulate power releases and permit a pump-back operation to maximize on-peak power generation.

Construction of Oroville Dam, located four miles northeast of the City of Oroville, began in 1962, and is about 50 percent complete. When completed, in 1967, Oroville Dam will contain about 80,000,000 cubic yards of embankment.

The Dam embankment is presently being placed at a rate of nearly two million cubic yards a month, with 40,000,000 cubic yards, or one-half of the total volume required for the Dam, having been placed by February 1966. The mandatory elevation, for placing the embankment of 575 feet by April 1, 1966, was met on schedule. The current rate of embankment placement will insure meeting the next elevation target, 700 feet, by November 15, 1966. This elevation, though the Dam will be incomplete, would allow the safe passage of flood waters during the 1966-67 winter season, with closure of one of the two diversion tunnels.

The clearing of timber and underbrush from the Oroville reservoir site is about 55 percent complete. Select areas will not be cleared, in consideration of better opportunities for recreation and enhancement of fish habitats.

The construction of the Oroville spillway, located in a saddle on the right abutment of Oroville Dam, commenced in mid-1965 and is about 15 percent complete.

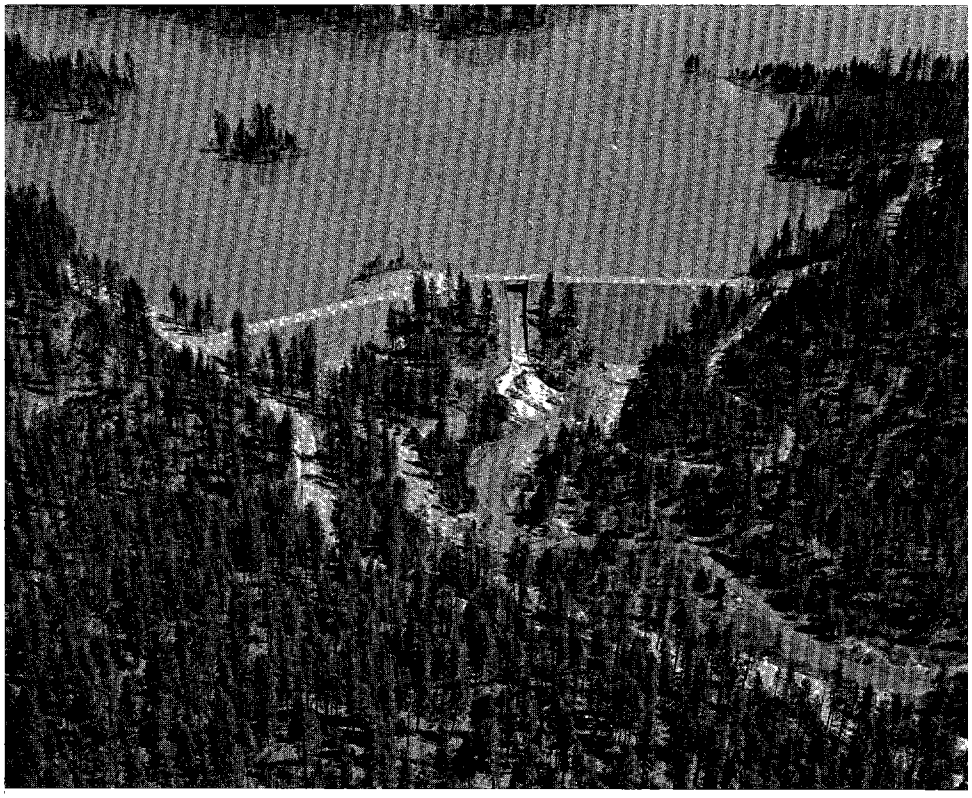
The underground Oroville Powerplant is designed for pumped storage operation and will have six generating units, three of which will be reversible. The last of the six generating units will be installed by the spring of 1969.

Construction of the powerplant is now 67 percent complete. About 90 percent of the total 267,000 cubic yards of required excavation is complete. The excavation is essentially complete for the large machine hall which will be 69 feet wide, 136 feet high, and 550 feet long. The major part of the remaining excavation is in the draft tubes, penstock branches, and penstock tunnels.

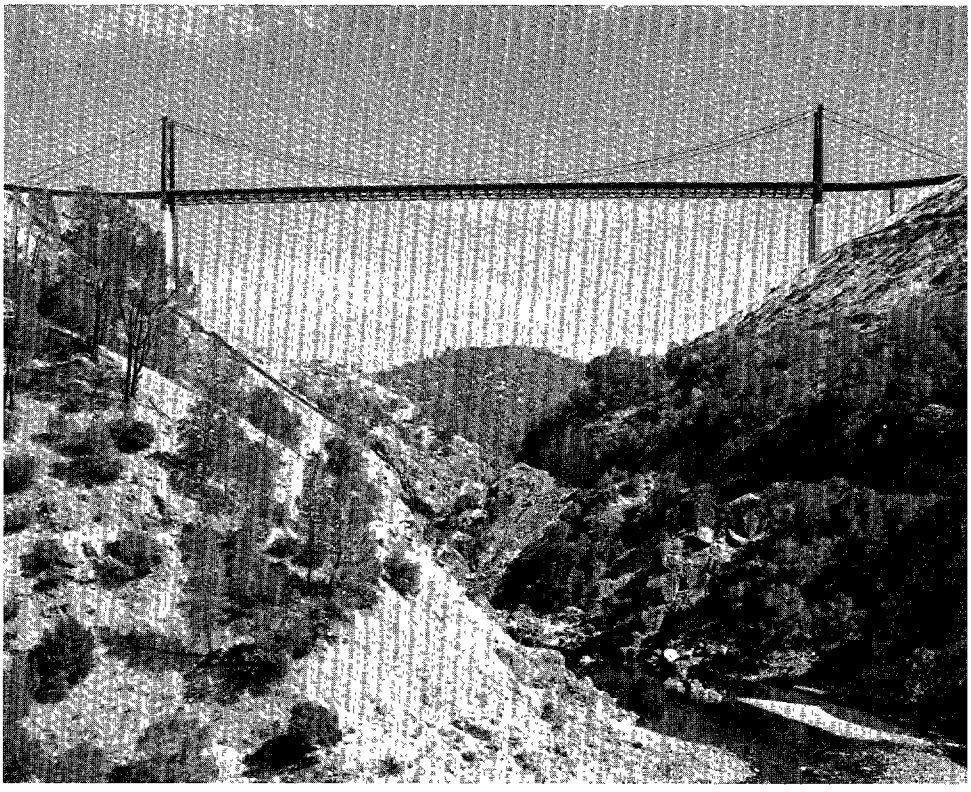
Work on the powerplant contract was stopped from October 5, 1965, to October 25, 1965, during a strike by the Boilermakers Union. The contractor did not resume excavation for the machine hall and draft tubes until November 15, 1965. Completion of the initial powerplant contract has been delayed by about nine months.

Construction of two auxiliary earthfill dams at low points on the periphery of Oroville reservoir is scheduled to commence late in 1966.

All of the Thermalito features are under construction. The Thermalito Diversion Dam, located immediately northeast of the City of Oroville on the Feather River, is nearing completion. The Thermalito Powerplant is about 35 percent complete. Construction of the Thermalito Forebay, Afterbay, and Power Canal was recently initiated under separate contracts.



ANTELOPE DAM AND LAKE
(Upper Feather Area)



THE BIDWELL BAR BRIDGE
(Oroville Area)

The Feather River Fish Hatchery, construction of which is scheduled to commence in 1966, will be located on the right bank of the Feather River. The primary purpose of the hatchery will be to maintain the existing salmon and steelhead runs by serving as a substitute for the spawning areas disturbed by project construction.

The Bidwell Bar Bridge over the Middle Fork of the Feather River, the nation's highest highway suspension bridge, was completed in 1965. The portion of the Oroville-Quincy Road relocation connecting the Forbestown Road with the bridge was also completed. The remainder of the Oroville-Quincy Road relocation has commenced, under the administration of Butte County, and is about 30 percent complete.

Contracts for the B. Abbott Goldberg Bridge[67/] over the South Fork of the Feather River, and the connecting Oroville-Feather Falls Road relocation, were awarded in the fall of 1965, and construction is under way.

Inspections of three dams under construction in the Oroville division were made by the Division of Safety of Dams, pursuant to Division 3 of the Water Code. During 1965, 20 inspections were made at Oroville Dam, nine at Thermalito Diversion Dam, and 17 at Thermalito Forebay Dam.

North Bay Aqueduct

The North Bay Aqueduct will include the works necessary to divert water from the Sacramento-San Joaquin Delta and convey it some 30 miles, across parts of Solano and Napa Counties, to a small terminal reservoir near the proposed water treatment plant of the City of Napa, located at the west end of Jameson Canyon in Napa Valley.

Deliveries of water from the North Bay Aqueduct to Napa County will commence in 1968 from an interim supply obtained from the Bureau of Reclamation's Solano Project, near Cordelia. The Department will begin construction in 1966 on an interim pumping plant and pipeline to convey Bureau water to the terminal reservoir in Napa County.

The Aqueduct east of Cordelia will be constructed to permit the diversion of project water from the Delta in

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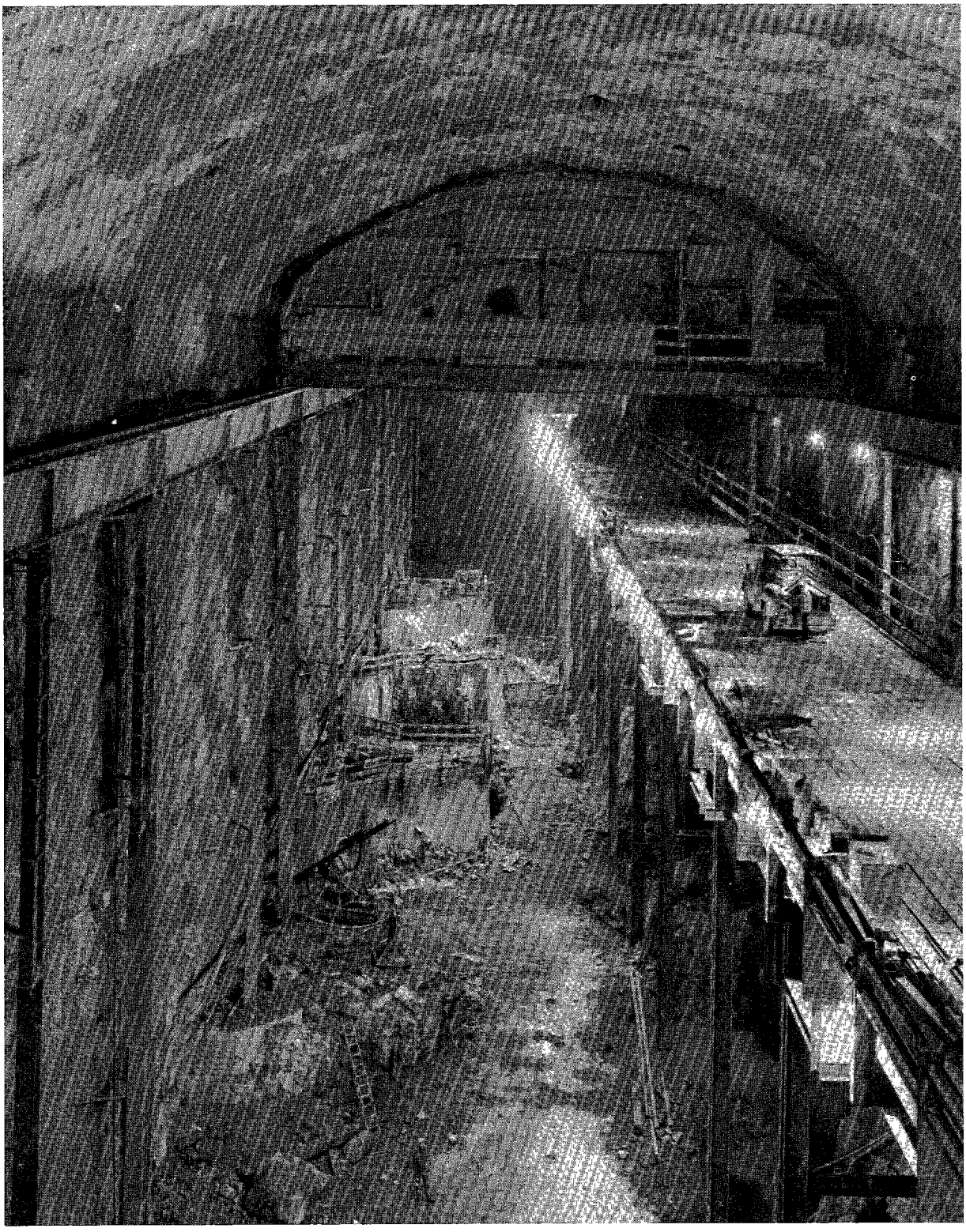
67/ Department of Water Resources Project Nomenclature Order No. 8, dated April 13, 1966.



Machine hall construction at Oroville Powerplant
(Oroville Area)

1980. However, this date may be advanced if mutually agreed upon by Solano and Napa Counties.

South Bay Aqueduct

The South Bay Aqueduct includes those facilities necessary to convey water from Bethany reservoir on the California Aqueduct, through Alameda and Santa Clara Counties, to the vicinity of Penitencia Creek on the east side of the Santa Clara Valley near San Jose.

The main line of the South Bay Aqueduct was completed in 1965. The Del Valle Dam construction contract was awarded early in 1966. The construction contract for Del Valle Pumping Plant, which will pump water either from the main line into Del Valle reservoir or vice versa, and the connecting two-mile Del Valle Pipeline, will be advertised in mid-1967. The relocation of the county road around Del Valle reservoir will be completed in 1966.

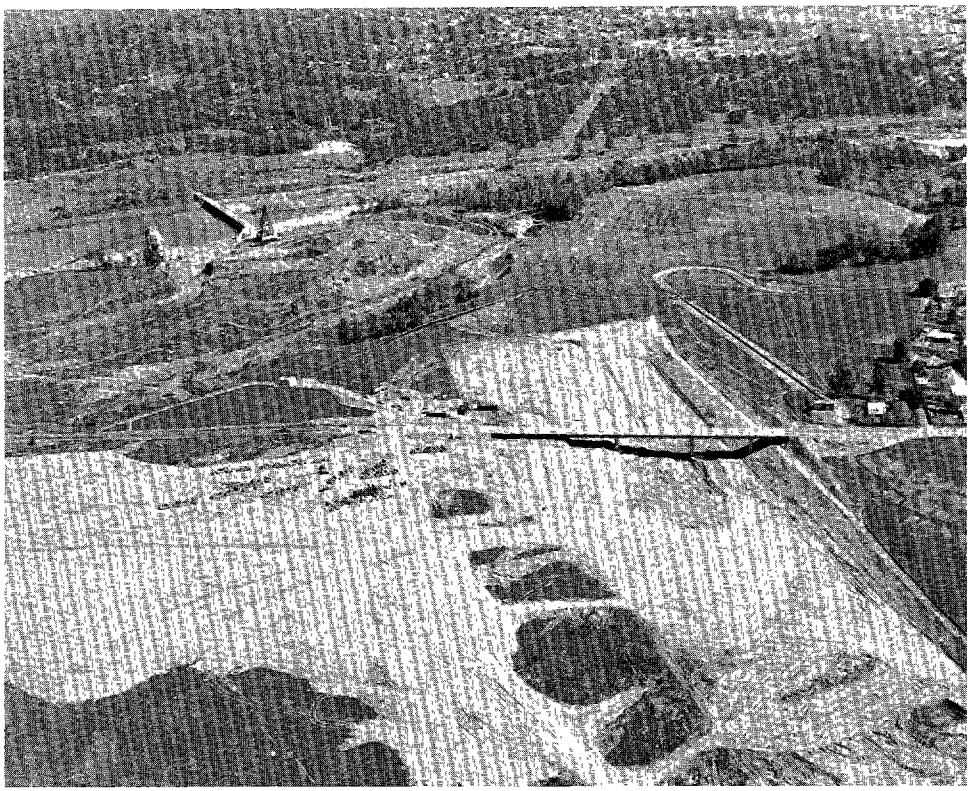
The first of several contracts for the South Bay Aqueduct Control System Model is under way. When the second contract is completed in 1967, the entire length of the Aqueduct can be monitored and computer-controlled from the Sacramento Control Center. The model will provide design information for the control system to be used on the California Aqueduct and also will give personnel experience in operating such a system.

California Aqueduct

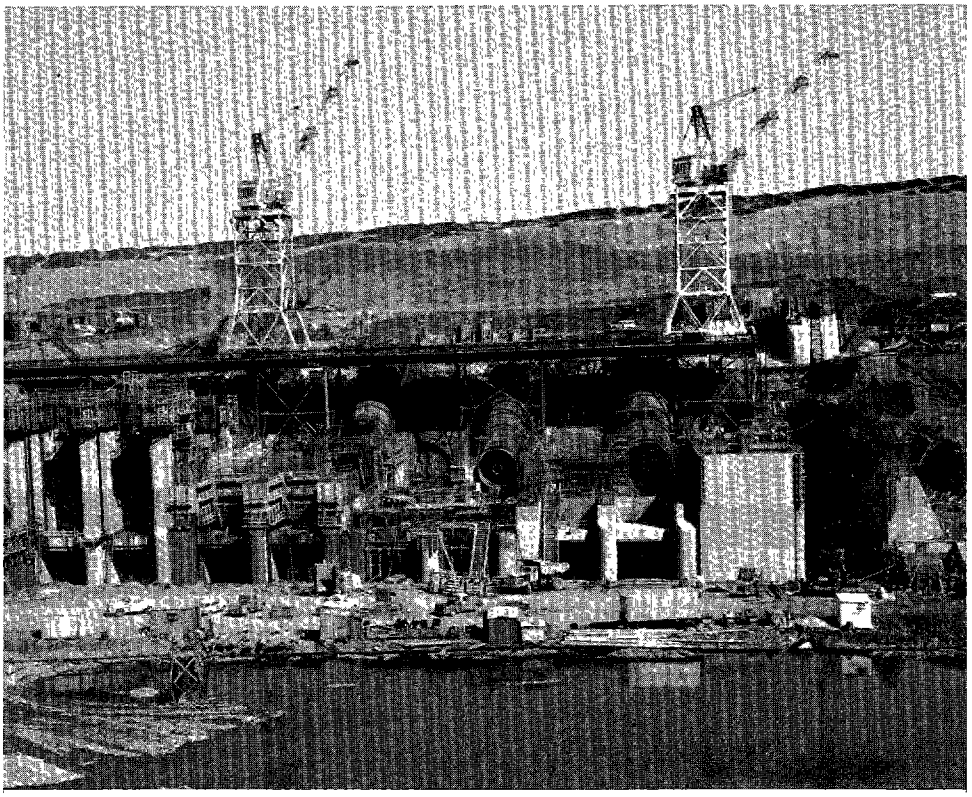
The construction activities on the California Aqueduct are summarized in the following sections by the North San Joaquin, San Luis, South San Joaquin, Tehachapi, Mojave, and Santa Ana divisions of the 444-mile "main line", and by the West and Coastal Branches.

The North San Joaquin Division extends 67 miles from the Sacramento-San Joaquin Delta to the San Luis Forebay and includes the Clifton Court Forebay, the Delta Pumping Plant. and Bethany reservoir.

The construction contract for Clifton Court Forebay will be advertised early in 1967. The initial stage of Bethany reservoir was completed in 1961 and will be extended laterally beginning in 1966. Dikes will be constructed south of the existing dam, and the reservoir created thereby connected to the existing Bethany reservoir by an interconnecting channel.



Thermalito Power Canal being excavated under Highway 40 Alternate bridge, which was previously constructed using natural ground to support formwork. (Oroville Area)



THERMALITO POWERPLANT
(Oroville Area)

The initial construction contract for the Delta Pumping Plant is now 80 percent complete. The first of 11 pump units will be operational by December 1966, and will pump project water to Bethany reservoir to supply the South Bay Aqueduct. The second unit will be operational by March 1967, with the next three units installed by January 1968, when the initial delivery of water down the California Aqueduct to Kern County is scheduled. Two more units will be installed later in 1968, and the final four units by 1975.

All 62 miles of concrete-lined canal in the North San Joaquin division are under construction. Four contracts are involved, and are from 20 to 70 percent complete. The Intake channel between Clifton Court Forebay and the Delta Pumping Plant is about 60 percent complete from the Forebay to Byron Road, and has already been completed from the road to the Pumping Plant. Work on Phase I of the Delta Operations and Maintenance Yard is complete, and Phase II is about 30 percent complete.

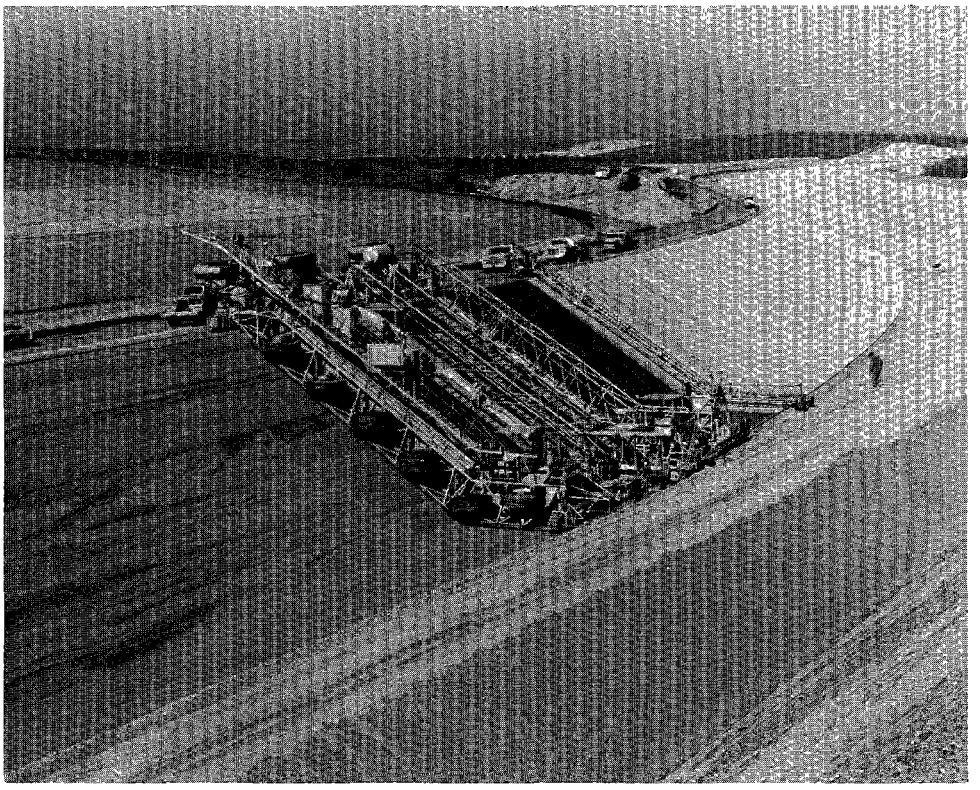
The San Luis Division contains the state-federal joint-use facilities which are being designed and constructed by the Bureau of Reclamation. Included in this division of the California Aqueduct are San Luis Forebay, Pumping-Generating Plant, Dam and reservoir; Los Banos Creek Dam and reservoir; Little Panoche Creek Detention Dam and reservoir; Dos Amigos Pumping Plant; and about 101 miles of canal.

The contract covering the construction of San Luis Dam, Pumping-Generating Plant, and Forebay Dam is 80 percent complete. San Luis Forebay is scheduled for completion in 1967.

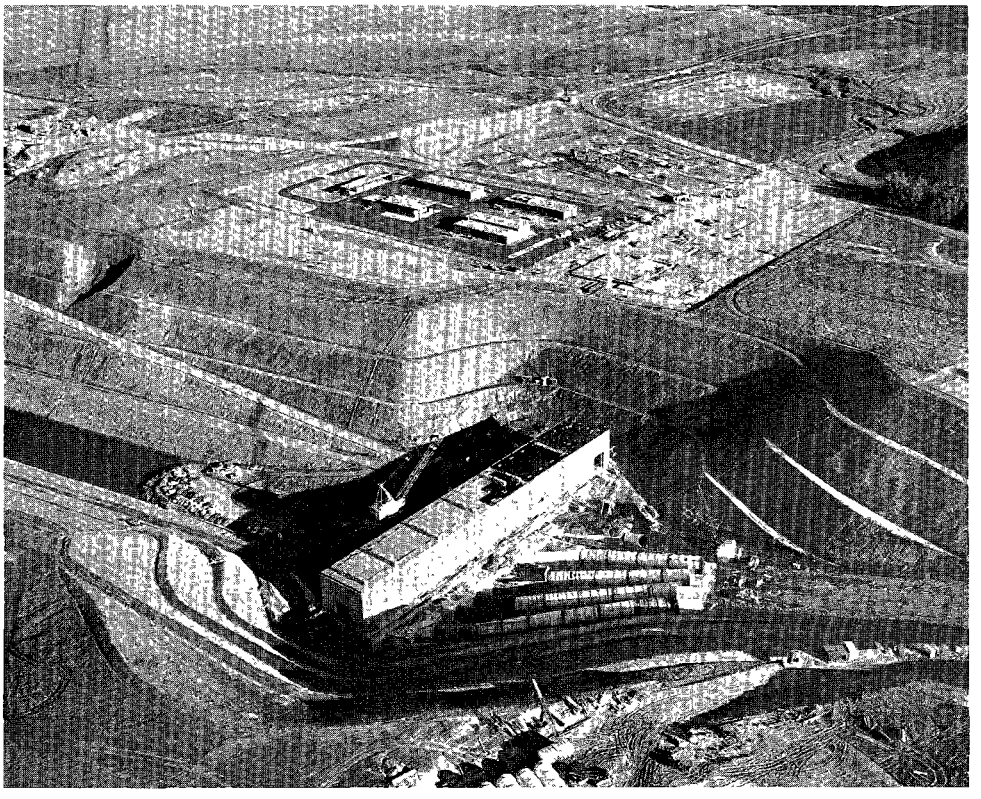
The San Luis Dam will require 77,000,000 cubic yards of embankment, 58,300,000 cubic yards of which were in place at the end of 1965.

The San Luis Pumping-Generating Plant structure is essentially complete. The first three of eight reversible units will be operable in the fall of 1966, and the remaining five units will be individually placed into service at 90-day intervals thereafter. The entire plant is to be completed by January 1968.

The 18 miles of concrete-lined canal between San Luis Forebay and Dos Amigos Pumping Plant are complete, and all other canal reaches are under construction.



CANAL SLIP-FORM PAVING TRAIN
(North San Joaquin Division)



DELTA PUMPING PLANT
(North San Joaquin Division)

The structure of Dos Amigos Pumping Plant is essentially complete. The first of six pump units is to be operational in the spring of 1967, and the final unit, early in 1968.

Flood detention reservoirs on Los Banos and Little Panoche Creeks will reduce peak flood flows that otherwise would endanger the Aqueduct. Los Banos Creek Detention Dam was completed in January 1966. Little Panoche Creek Detention Dam is about 50 percent complete.

The South San Joaquin Division extends from Kettleman City to the Tehachapi Pumping Plant. Features of the division include the Buena Vista, Wheeler Ridge, and Wind Gap Pumping Plants and about 120 miles of canal.

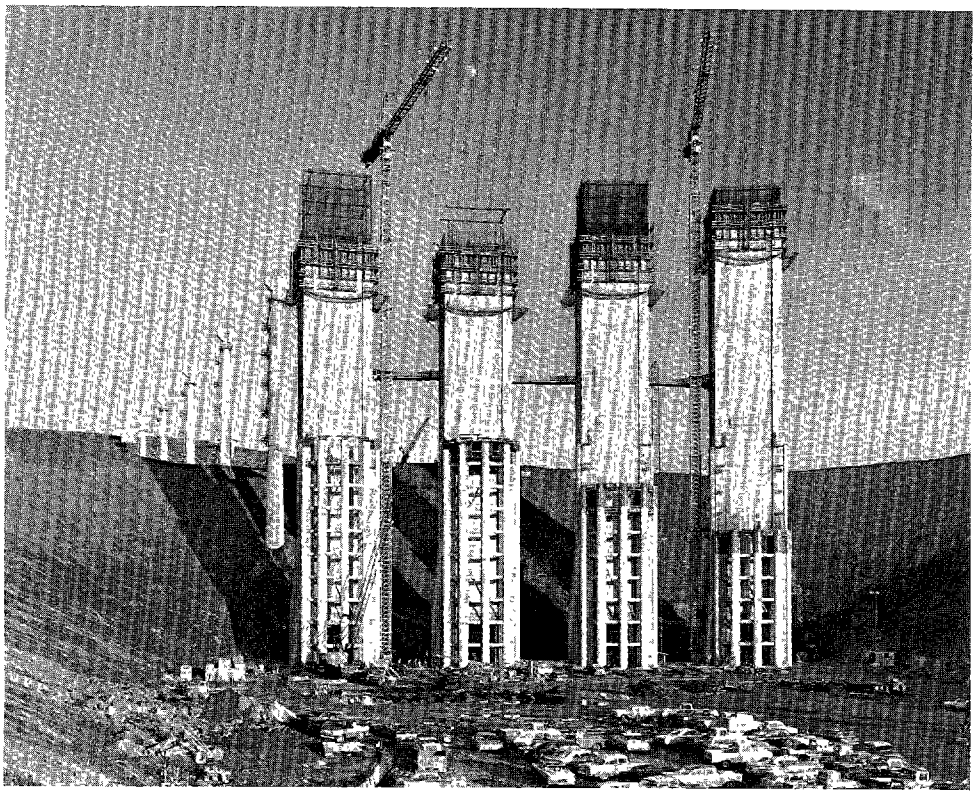
All major contracts covering the construction of preconsolidation ponds are completed in the South San Joaquin division. Department personnel operate and maintain the ponds during the six-month period that water is applied. Water for this purpose is being obtained from state-owned wells and from local agencies.

Contracts are under way for the first 45 miles of canal, from Kettleman City to Seventh Standard Road, and are scheduled to be completed by August 1968. The contract for the 12-mile reach from Kettleman City to Avenal Gap was awarded in January 1966. The contract for the canal from Avenal Gap to Seventh Standard Road is about 10 percent complete. Construction south of Seventh Standard Road is scheduled so that water deliveries to the southern portion of Kern County can be made in 1970.

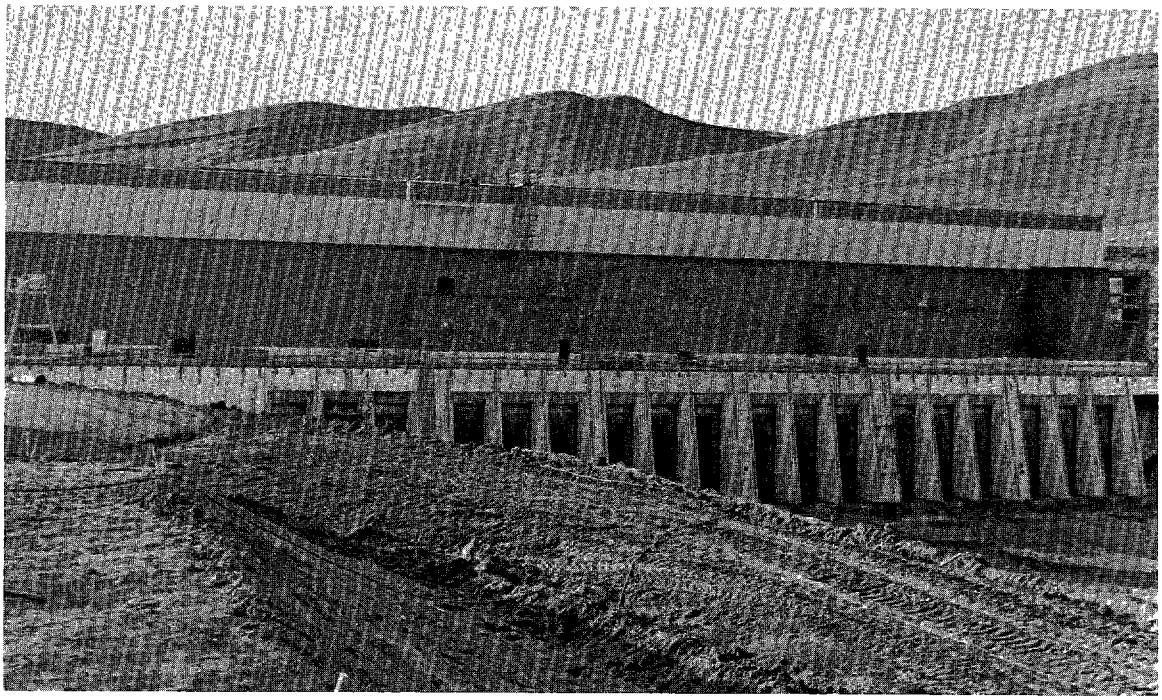
The construction of the Buena Vista Pumping Plant, with 10 pump units; the Wheeler Ridge Pumping Plant, with nine pump units; and the Wind Gap Pumping Plant, also with nine pump units, is scheduled to commence in the latter part of 1967. The construction of the intake channel for the Buena Vista Pumping Plant began in 1965, while those for the Wheeler Ridge and Wind Gap Pumping Plants will be started in 1966.

The Tehachapi Division extends about 12 miles through the Tehachapi Mountains and includes the Tehachapi Pumping Plant, a series of four tunnels, the Tehachapi Afterbay, and connecting pipelines.

The Tehachapi Pumping Plant will ultimately contain 14 pump units, the first of which will be operational



Construction work on intake structure, San Luis Reservoir. (San Luis Division)



DOS AMIGOS PUMPING PLANT
(San Luis Division)

in the latter part of 1970. A contract for excavation of the intake channel will be advertised in 1966, and a contract for the procurement of pumps will be advertised in 1967.

Construction of the Carley V. Porter Tunnel, the longest and most southerly of the Tehachapi tunnels, began in November 1965, and is scheduled for completion in 1969. Excavation of the tunnel's south portal was completed in 1965, under a separate contract. Construction will commence on Tunnels Nos. 1, 2, and 3 in 1966. Other features are scheduled so that initial water deliveries may be made to Southern California in 1971.

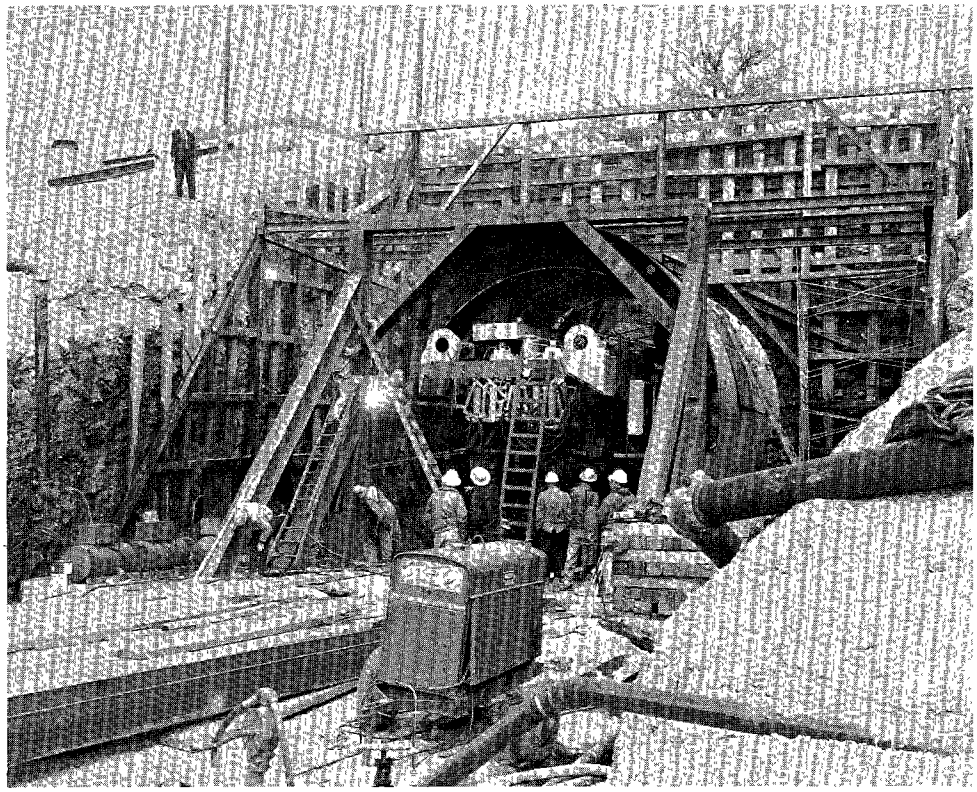
The Mojave Division extends from the Tehachapi Afterbay through Cedar Springs reservoir. Other features of the division include Cottonwood Powerplant, Pearblossom Pumping Plant, and about 106 miles of canal and pipeline.

Construction by the Department has been limited to one contract for an aqueduct embankment across Neenach Wash. This contract was completed in 1966. A second embankment at Anaverde Creek is scheduled for construction this year. The Division of Highways is administering a contract for aqueduct crossings of Antelope Valley Freeway and Barrel Springs Road, which is about 95 percent complete. Site development is scheduled to begin in 1966 for Cottonwood Powerplant and Pearblossom Pumping Plant. All features of the division are scheduled so that water deliveries may be made in 1972.

The Santa Ana Division extends about 33 miles from Cedar Springs reservoir through Perris reservoir. Power will be generated, en route, at Upper and Lower Devil Canyon Powerplants. Construction has not as yet commenced in this division, but is scheduled to permit initial deliveries from Perris reservoir in 1972.

The West Branch extends from the Tehachapi Afterbay to Castaic reservoir. Principal features of the Branch include Oso Pumping Plant, Quail Lake, Pyramid Powerplant, Pyramid Dam and reservoir, Castaic Powerplant, Castaic Dam and reservoir, and about 21 miles of pipeline, canal, and tunnel.

Excavation of the foundation exploration trench for Castaic Dam was completed in 1965. A contract for construction of the Castaic Dam diversion tunnel was awarded in March 1966. The tunnel, scheduled for completion by October 1967, will divert the flow of two creeks around the damsite



Erection of tunnel driving shield at south portal of the Carley V. Porter Tunnel.
(Tehachapi Division)

Canal excavation near Twisselman Road
(South San Joaquin Division)

during construction of the dam, which will begin in 1967. Contracts scheduled to commence in 1966 include Quail aqueduct embankment, Angeles Tunnel, and site developments at Oso Pumping Plant and Castaic Powerplant. Construction of the Pyramid Powerplant will commence in the early part of 1967.

The Coastal Branch extends about 100 miles from the main California Aqueduct, near Avenal Gap in the San Joaquin Valley, to a terminus at the Santa Maria River, forming a portion of the San Luis Obispo-Santa Barbara County line. Principal features include the Las Perillas, Badger Hill, Devil's Den, Sawtooth, and Polonio Pumping Plants; the San Luis Obispo Powerplant; about 20 miles of canal; and about 80 miles of pipeline. The easternmost segment of the Coastal Branch, from the main line of the California Aqueduct to the intake of Devil's Den Pumping Plant, has been designated the "Coastal Stub Aqueduct".

Construction of the Coastal Stub is scheduled to commence in 1966, to permit project water deliveries to agricultural areas in the vicinity of Devil's Den in 1968. Construction of the reaches downstream from the Coastal Stub is tentatively scheduled to commence in 1975, to permit project water deliveries to Central Coastal areas in 1980. However, these dates may be advanced, or deferred, depending upon the desires of water supply contractors in the Central Coastal area.

The Las Perillas and Badger Hill Pumping Plants will lift water from the main line of the California Aqueduct for delivery from the Coastal Stub. Construction will begin on these plants in 1966. A contract for preconsolidation ponds along about three miles of the alignment was completed in February 1966. The contract for construction of the 14 miles of canal included in the Coastal Stub also was awarded in February 1966.

CHAPTER V. WATER SUPPLY

This chapter contains a summary of developments from April 1, 1965, to April 1, 1966, regarding water rights for the State Water Project, and a brief discussion of basic water supply studies currently in progress.

Water Rights

Water rights activities during the past year included proceedings to obtain permits already under application before the State Water Rights Board and negotiations on agreements to acquire or define existing rights.

Applications for the State Water Project

Descriptions of water rights applications, covering project diversions from the Feather River at Oroville and from the Sacramento-San Joaquin Delta, and the Department's efforts to complete those applications, were presented in previous bulletins of this series. Notices for the eight applications involved were advertised by the State Water Rights Board on April 2, 1965. During the 60-day protest period which followed, the Board received a total of 110 protests, representing a considerably greater number of individual water users and/or water rights holders along the Feather River and in the Delta.

The State Water Rights Board will hold hearings on the Department's applications, pursuant to Division 2 of the Water Code. In preparation for the Board hearings, the Department has been collaborating with the Bureau of Reclamation in developing studies to demonstrate that the State Water Project can be operated without interfering with prior vested rights claimed by the protestants.

These joint studies cover the historical period 1924-1954 and chiefly concern the irrigation months of April through October. Examinations of streamflow records during that period already show an apparent sufficiency to satisfy local water rights during the months of November through March of each studied year, except for critically dry years. Comparisons between historic water supply and present water uses indicate that entitled rights in quantity would not have always been utilized. In such specific cases, an analysis was made to determine what reasonable amount of water was, or might have been, diverted.

Preliminary results of the joint studies indicate July and August (of the historic period) to be the most consistent months in which a substantial amount of unappropriated water was not available for appropriation in the Delta and at Oroville Dam. In addition, some years also showed the months of June and September without unappropriated water available for diversion. From these results, it is possible that the State Water Rights Board will consider special diversion terms for water appropriations in the Delta and Oroville areas during the months of June, July, August and September.

The portion of these studies pertaining to the Central Valley Basin has been limited to the major streams that materially affect conditions in the Delta. In future studies, additional streams would be included to prepare a more complete picture of the basin and to test and compare the effect of total system supplies and rights with interim results. No attempt has been made to evaluate the effects of any vested or inchoate water rights that may exist above the foothill gaging stations, except on the Feather River where water rights were considered up to Lake Almanor. Only those water rights situated below the gaging stations, or as described above, were used in the preliminary studies.

Completion of these studies is anticipated within the current year. Findings will be presented as evidence at the State Water Rights Board hearings on the Department's water rights applications.

Applications for water rights for Grizzly Valley Dam and Lake Davis are still pending before the State Water Rights Board.

Negotiation of Water Rights Agreements

Water rights negotiations are continuing with local water users downstream from Grizzly Valley Dam on Big Grizzly Creek. The Department has undertaken a measurement study to determine various diversions of water in the area by riparian owners.

As a result of the protests received on the eight applications covering project diversions at Oroville and from the Delta, the Department expanded its negotiation activities in completing agreements which would define the water rights of protestants, as well as the residual supply available to the Project.

The Pacific Gas and Electric Company, diverting Feather River flows through the Western Canal, and the Joint Water Districts Board, diverting through the Sutter-Butte Canal, have first priority appropriative rights to the flow of the Feather River below Oroville, and account for approximately 93 percent of the present water used for irrigation from the Feather River. These two agencies will be supplied directly from the Thermalito Afterbay under project operating conditions.

Meetings with representatives of the Pacific Gas and Electric Company are currently being conducted at about three-week intervals to negotiate a firm agreement.

Negotiations were initiated in April 1960 with the Joint Water Districts Board, but were recessed during the hearings before the State Water Rights Board on the Richvale Irrigation District's Middle Fork Project. Negotiations were resumed in 1964 and have been expanded during 1965 to include all water users and/or water rights holders along the Feather River below Oroville, of which there are about 52 in number.

The Department is continuing negotiations with the Bureau of Reclamation and the groups representing local interests in the Delta: the Sacramento River and Delta Water Association, representing the majority of the water users in Sacramento, Yolo, and Solano Counties; the San Joaquin Water Rights Committee, representing the water users of San Joaquin County; and the Negotiating Committee for Contra Costa County's Water Requirements, representing local interests in Contra Costa County.

Negotiations among the Department, the Bureau, and the first two of the above-named local groups have been very successful to date. In November 1965, a "Delta Water Quality Criteria" agreement68/ was signed with the representatives of these two local groups. The agreement set forth a minimum Delta water quality environment to be assured through joint project operation. The local interests have initiated drafting of legislation, to be presented in the next General Session of the State Legislature, which would authorize the formation of a Delta-wide district with which the Bureau and the State could contract.

68/ "Delta Water Quality Criteria" agreement between Sacramento River and Delta Water Association, San Joaquin Water Rights Committee, Department of Water Resources, and U. S. Bureau of Reclamation, dated November 19, 1965.

No significant progress has been made to date in joint negotiations with Contra Costa County.

Protests on Applications of Others

The application filed by the City of Napa on March 25, 1964, to appropriate water from the Delta, was noted in last year's bulletin. The Department protested the application on the basis that unappropriated waters are not available in such quantities, and at such times, so that a dependable supply could be obtained by the City.

In March 1966, the City entered into a contract with the Napa County Flood Control and Water Conservation District for a substitute supply from the North Bay Aqueduct and, in April, withdrew its water rights application.

The City of Napa electorate voted about 4 to 1, in April 1966, authorizing the issuance of $5,750,000 in general obligation bonds for construction of a water treatment plant and distribution facilities. This completed the physical and contractual arrangements necessary for the City of Napa to make use of North Bay Aqueduct water, except for execution of a contract among the County of Solano, the County of Napa, and the Department for an interim supply from the Bureau of Reclamation's Solano Project. Terms of this contract have been agreed upon by the three agencies.

Estimates of Future Water Supplies

Project water demands will be met by the initial project conservation facilities which release water conserved in Oroville reservoir and divert surplus waters from the Sacramento-San Joaquin Delta. Future urban and agricultural developments in the drainage area tributary to the Delta are expected to reduce these surplus flows gradually. The Department is projecting the extent of future upstream depletions, in order to plan and schedule the future construction of additional project conservation facilities.

This program is a part of the joint studies being undertaken by the Department and the Bureau of Reclamation to develop a mutually agreed-upon estimate of the effect of upstream development on Delta outflows. The basic water supply study will be used by both agencies for planning, water rights applications, and coordinated operation studies.

Although the current general approach is similar to that previously made (in that estimates of historical runoff are modified by projected changes in water utilization for projected future levels of development), several significant changes and refinements have been developed. These include: the division of the Delta tributary area into 38 subareas for purposes of analysis, compared to 18 subareas used previously; the accounting for the consumptive use of native vegetation on lands which undergo agricultural or urban development; and, a more realistic approach regarding the use of ground water and its effects on inflow to the Delta.

Preliminary indications from these studies are that depletions in the available supply, due to future upstream developments, will be no greater than previously estimated. The project staging analysis presented in the Department's Bulletin No. 160-66, "Implementation of The California Water Plan", is based upon future conditions as indicated by these preliminary studies.

Completion of the joint depletion studies is expected during the current calendar year, with results available for water supply and project yield analyses to be presented in Bulletin No. 132-67. Pending completion of these studies, this edition of Bulletin No. 132 uses the same water supply values as were presented in Bulletin No. 132-65.

CHAPTER VI. ENTITLEMENTS TO PROJECT WATER

This chapter briefly describes the status of the water contracting program as of April 1, 1966, and summarizes the annual entitlements to project water for each of the contracting agencies as of that date. These annual entitlements collectively form the basis for the analyses which are described in the following chapters and which lead to the updated financing program for the State Water Project.

The Water Contracting Program

The guidelines for the water contracting program for the State Water Project were established by the Contracting Principles[69/] adopted and announced by Governor Brown on January 20, 1960.

Initial Contracting Period

The program was initiated during the spring of 1960, with the commencement of negotiations with The Metropolitan Water District of Southern California. When the initial contracting period ended on December 31, 1963, long-term contracts had been executed with 30 local agencies throughout the State, committing 3,468,000 acre-feet of the original "minimum project yield" of 4,000,000 acre-feet annually. The "minimum project yield" is a contractual term which constitutes the limit of the total maximum annual entitlements for all contracting agencies.

Option Period

Each of the 30 contracting agencies had an option on a proportionate share of the 532,000 acre-feet of the minimum project yield remaining uncommitted as of December 31, 1963, if it could be demonstrated that the additional water could be put to beneficial use within a reasonable period of time. However, the June 1963 United States Supreme Court decision in the case of Arizona v. California redefined the rights to the waters of the Colorado River. The Department

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69/See Department of Water Resources Bulletin No. 132-63, "The California State Water Project in 1963", dated April 1963 (pages 149-155).

then prudently decided to propose an increase of the minimum project yield so as to provide an additional 500,000 acre-feet, annually, to The Metropolitan Water District of Southern California (including Metropolitan's 270,000 acre-foot pro rata share of the original project yield remaining uncommitted), to help compensate for a certain loss due to the court decision. The necessary actions were taken to gain approval to increase the annual minimum project yield by 230,000 acre-feet by September 30, 1964--the end of the option period.

Options were eventually exercised by 18 of the contracting agencies (other than Metropolitan) increasing their entitlements to project water by 462,800 acre-feet. This amount, together with the additional 500,000 acre-feet provided Metropolitan, left 29,300 acre-feet of the enlarged minimum project yield uncommitted.

Additional Contracts

During the initial contracting period ending December 31, 1963, and the option period ending September 30, 1964, the 30 contracting agencies had specific rights to increase their maximum annual entitlements to project water. The State is not prevented from executing additional contracts after September 30, 1964, however. One additional contract was executed in 1965. The Oak Flat Water District in western Stanislaus County became the thirty-first contracting agency, with a maximum annual entitlement of 5,700 acre-feet. This action reduced the uncommitted portion of the enlarged minimum project yield to 23,600 acre-feet as of April 1, 1965, as shown in last year's report.

Current Status

As of April 1, 1966, the number of contracting agencies had been reduced to 30, the portion of the minimum project yield remaining uncommitted had been reduced to 8,600 acre-feet, and the remaining amount had been assigned to two potential contracting agencies, pending completion of current negotiations.

One of the previous separate contracting agencies was absorbed when Amendment No. 3 to the water supply contract between the State and The Metropolitan Water District of Southern California was signed with the District and the City of West Covina in August 1965. This amendment terminated the City's separate water supply contract with the State and assigned its 11,500 acre-foot maximum annual entitlement and

repayment obligations to Metropolitan. The amendment provisions became effective November 29, 1965, when the Department was officially notified that the service area of the City had been annexed to, and was a part of, Metropolitan.

Amendment No. 3 to the water supply contract between the State and the Upper Santa Clara Valley Water Agency was executed on January 24, 1966. This action increased the Agency's maximum annual entitlement from 26,500 acre-feet to 41,500 acre-feet. Recent developments within the Agency's service area indicated that the projected growth of demands for project water had been significantly underestimated during the negotiation of the original contract, executed on April 30, 1963. Action on this contract thus reduced the uncommitted remainder of the minimum project yield from 23,600 acre-feet to 8,600 acre-feet.

Negotiations are now under way with two potential contracting agencies: the Big Bear Municipal Water District in San Bernardino County, for a maximum annual entitlement of 4,600 acre-feet; and Kings County, for a maximum annual entitlement of 4,000 acre-feet. Project water in both of these instances would be beneficially used for recreational purposes and would involve exchange arrangements with local water agencies to facilitate service from the California Aqueduct.

Water Contract Administration Activities

As of April 1, 1966, a total of 52 amendments had been signed, modifying the provisions of the originally executed water supply contracts. The most significant of these was the so-called "option amendment". This amendment provided for the enlargement of the annual minimum project yield to 4,230,000 acre-feet, the surcharge credit program, the surplus water program for agricultural and ground water replenishment purposes,70/ and increases in maximum annual entitlements for those agencies which had elected to exercise their option for additional water. Each of the original 30 contracting agencies has executed this amendment; the last, the Alameda County Water District, on September 23, 1965.

70/For an explanation of the "surcharge credit program" and the "surplus water program" for agricultural and ground water replenishment purposes, see Department of Water Resources Bulletin No. 132-64, "The California State Water Project in 1964", dated June 1964 (pages 19-23).

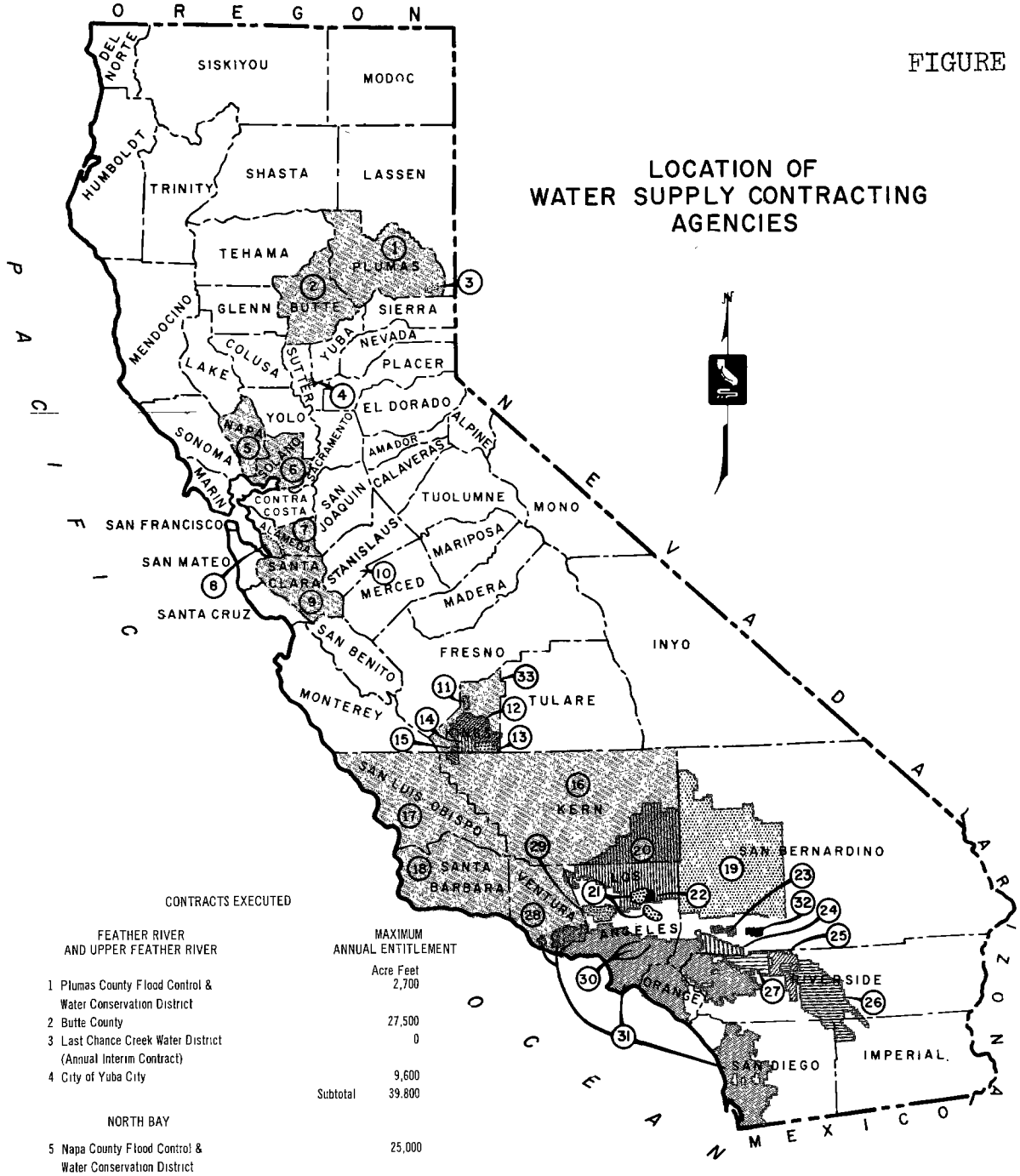
Descriptive data concerning the agencies which presently have contracts with the State for a water supply from the State Water Project, as well as the two agencies with which contracts are now being negotiated, are presented in Table 2. The general location of these 32 agencies, together with the actual or assigned maximum annual entitlement of each, is indicated on Figure 2. As shown thereon, these agencies are distributed throughout most of the State. The boundaries of the water service agencies to which project water will be supplied presently encompass over 24 percent of the State's land area, 61 percent of the State's assessed valuation, and 66 percent of the State's population.

Twenty-five reports[71/] of the Department's Bulletin No. 119 series have been completed and released to date. These reports document the factors leading to the contract, and substantiate the economic justification and financial feasibility of a project water supply for each respective agency.

71/Bulletin No. 119-	Entitled "Feasibility of Serving the (name of agency) from the State Water Project"	Dated
un-numbered	Antelope Valley-East Kern Water Agency	January 1962
1	Desert Water Agency	November 1962
2	San Gorgonio Pass Water Agency	February 1963
3	Coachella Valley County Water District	May 1963
4	Palmdale Irrigation District	May 1963
5	Solano County Flood Control and Water Conservation District	November 1964
6	San Gabriel Valley Municipal Water District	May 1964
7	San Luis Obispo County Flood Control and Water Conservation District	August 1964
8	Kern County Water Agency	September 1963
9	Napa County Flood Control and Water Conservation District	February 1965
10	Hacienda Water District	October 1964
11	Tulare Lake Basin Water Storage District	May 1965
12	Mojave Water Agency	December 1965
13	Devil's Den Water District	February 1965
14	Dudley Ridge Water District	August 1964
15	Oak Flat Water District	December 1965
16	Plumas County Flood Control and Water Conservation District	May 1965
17	Ventura County Flood Control District	July 1965
18	Upper Santa Clara Valley Water Agency	August 1964
19	Crestline-Lake Arrowhead Water Agency	February 1965
20	Littlerock Creek Irrigation District	December 1965
21	Santa Barbara County Flood Control and Water Conservation District	September 1963
22	City of Yuba City	September 1964
23	Butte County	April 1966
25	Empire West Side Irrigation District	February 1965

FIGURE 2

LOCATION OF WATER SUPPLY CONTRACTING AGENCIES



CONTRACTS EXECUTED

	MAXIMUM ANNUAL ENTITLEMENT
FEATHER RIVER AND UPPER FEATHER RIVER	Acre Feet
1 Plumas County Flood Control & Water Conservation District	2,700
2 Butte County	27,500
3 Last Chance Creek Water District (Annual Interim Contract)	0
4 City of Yuba City	9,600
Subtotal	39,800
NORTH BAY	
5 Napa County Flood Control & Water Conservation District	25,000
6 Solano County Flood Control & Water Conservation District	42,000
Subtotal	67,000
SOUTH BAY	
7 Alameda County Flood Control & Water Conservation District-Zone 7	46,000
8 Alameda County Water District	42,000
9 Santa Clara County Flood Control & Water District	100,000
Subtotal	188,000
SAN JOAQUIN VALLEY	
10 Oak Flat Water District	5,700
11 Empire West Side Irrigation District	3,000
12 Tulare Lake Basin Water Storage District	110,000
13 Hacienda Water District	8,500
14 Dudley Ridge Water District	57,700
15 Devils Den Water District	12,700
16 Kern County Water Agency	1,153,400
Subtotal	1,351,000
CENTRAL COASTAL	
17 San Luis Obispo County Flood Control & Water Conservation District	25,000
18 Santa Barbara County Flood Control & Water Conservation District	57,700
Subtotal	82,700

SOUTHERN CALIFORNIA	MAXIMUM ANNUAL ENTITLEMENT
	Acre Feet
19 Mojave Water Agency	50,800
20 Antelope Valley-East Kern Water Agency	138,400
21 Palmdale Irrigation District	17,300
22 Littlerock Creek Irrigation District	2,300
23 Crestline-Lake Arrowhead Water Agency	5,800
24 San Bernardino Valley Municipal Water District	98,000
25 Desert Water Agency	38,100
26 Coachella Valley County Water District	23,100
27 San Gorgonio Pass Water Agency	17,300
28 Ventura County Flood Control District	20,000
29 Upper Santa Clara Valley Water Agency	41,500
30 San Gabriel Valley Municipal Water District	28,800
31 The Metropolitan Water District of Southern California	2,011,500
Subtotal	2,492,900
Total	4,221,400
CONTRACTS UNDER NEGOTIATION	
32 Big Bear Municipal Water District	4,600
33 Kings County	4,000
Total	8,600
Grand Total	4,230,000

Distribution of Minimum Project Yield

The cost estimates and operation studies for the analyses described in this report had to be commenced during January 1965. Therefore, these analyses consider 4,221,400 acre-feet of the minimum project yield to be contracted, and the remaining 8,600 acre-feet, for which contracts are now being negotiated, to be "assigned". Table 3 presents a summary of the resulting distribution of the minimum project yield among major service areas of the project, and compares the distribution with those assumed for Bulletins Nos. 132-63, 132-64, and 132-65.

Annual Entitlements to Project Water

"Table A" of each water supply contract sets forth the agency's annual entitlements to project water for each year of the term of the contract. Years are identified in numerical sequence starting with the number 1, rather than by calendar years. Article 6(a) of each contract indicates the estimated year of initial project water deliveries, and further specifies that, if there is a change in this estimate, the State shall notify the agency. Pursuant to this provision, contractors served from the West Branch of the California Aqueduct have been notified that the estimated year of initial delivery has been revised to 1971, rather than 1972 as shown in their original contracts. Likewise, the Plumas County Flood Control and Water Conservation District has been notified that initial deliveries from Lake Davis are now estimated to commence in 1968, rather than 1967.

Table 4 shows the annual entitlements of each contractor for the term of its contract. The data therein is based on Table A of each contract and the estimated year of initial project water delivery as shown in Article 6(a), or as subsequently revised.

As shown in Table 4, there is considerable variation in the year in which contractors will receive initial deliveries of project water. Most will first receive project water during the period 1968 - 1972, but three contractors will receive it prior to this period and five contractors will receive it after 1972.

With one exception, the contracts provide for a development period. During this period, entitlements are increased each year until the maximum annual entitlement is

reached. Table 4 shows that most contractors will first receive their maximum annual entitlement in 1990. Exceptions for certain contractors are noted in the following tabulation:

Water supply contractor	Year in which maximum entitlement reached
Plumas County Flood Control and Water Conservation District	2016
Alameda County Flood Control and Water Conservation District, Zone 7	1997
Alameda County Water District	1994
Santa Clara County Flood Control and Water District	1994
Devil's Den Water District	1977
Empire West Side Irrigation District	1968
Antelope Valley-East Kern Water Agency	1991
San Bernardino Valley Municipal Water District	1991
The Metropolitan Water District of Southern California	1989

The agencies have been diligently involved, during the past year, in establishing internal programs to guarantee the timely acceptance and utilization of the annual entitlements specified in each respective contract. Considerable activities in the fields of finance, design, and construction must be completed prior to the time deliveries of project water can actually commence for most agencies. Included in these activities are the fixing of exact turnout locations, the planning, designing, and obtaining of rights-of-way, and the construction of agency facilities between project aqueducts and the ultimate users within an agency's service area. In most cases, multimillion dollar expenditures and several years' time may be required to finance and complete the required works for an agency or its users downstream from the project facilities.

CHAPTER VII. PROJECT WATER YIELD

The "minimum project yield" of 4,230,000 acre-feet per year, referred to in previous chapters, represents the aggregate of the maximum annual entitlements of agencies which have contracted for a water supply from the State Water Project under the "Standard Provisions for Water Supply Contract". The required gross yield of project conservation facilities must also provide water required for special water supply contracts; water consumed for project purposes other than water supply; and, water lost incidental to the normal operation of the project facilities. This gross yield is considered, herein, to be equivalent to the project demands on the Delta Pool, discussed subsequently in this chapter.

The yield capabilities of the conservation facilities of the State Water Project are determined by the relationships among project demands, available water supplies, and the operational characteristics and capabilities of the facilities.

The potential yield of the facilities will not be static, and will gradually decrease as the upstream depletions (described in Chapter V) continue to reduce the supply available at the Delta. The yield will be increased, periodically, as project conservation facilities are added to the State Water Resources Development System, so that the yield capability will always be greater than project demands. Therefore, the yield capability of such facilities will exceed the project demands by varying annual amounts. This excess yield capability, together with any available transportation capability in project aqueducts, will be utilized to supply additional water (surplus water) to users on an interim basis.

The operation studies and estimates of yield described in this chapter are preliminary evaluations for the purpose of estimating the costs of an additional project conservation facility required to augment water supplies at the Delta in meeting demands of the State Water Project. These cost estimates are described in Chapter X and are used for the financial analyses in Chapter XII.

Some of the data for, and the results of, these operation studies are summarized in Table 5. The left side of the tabulation presents the project water demands on the Delta Pool. The supplies to be made available for these demands are shown on the right side. This information is briefly discussed in the following sections.

Project Water Demands

The total annual water demands of the State Water Project, exclusive of surplus water which may be sold to agencies on an interim basis, are summarized in Table 5 and include:

1. The annual entitlements of water supply contractors which, for years of full project development, total the "minimum project yield".

2. The annual quantities which may be consumptively used as cooling water by a state-operated nuclear powerplant, if located along the California Aqueduct, under consideration as a project power source.

3. The annual quantities consumptively used for the project purposes of recreation and fish and wildlife enhancement.

4. The annual quantities needed during construction or required to bring water surfaces in project facilities to operational levels.

5. The annual quantities consumed, or otherwise lost, incidental to the normal operation of project facilities.

These demands are described in more detail in the following sections.

Annual Entitlements

The annual entitlements of contractors, set forth in the water supply contracts, have been described in Chapter VI. These annual quantities are summarized in Table 5 for major project service areas.

Nuclear Powerplant Cooling Water

Table 5 also contains an allowance for cooling water that would be required for a nuclear powerplant located at the Tehachapi Pumping Plant. It is estimated that water consumed in a condenser cooling system of the evaporative type for a pressurized or boiling water reactor plant, such as is now available, would amount to 35,000 acre-feet annually for a plant capacity of about 1,150,000

kilowatts. This is the assumed capacity of the nuclear power plant after installation of the second of two 575,000 kilowatt units. The first unit would require one-half that amount.

The Department is also considering other sites in Southern California, adjacent to the ocean. These investigations are described in Chapter VIII.

Water Requirements for Recreation and Fish and Wildlife Enhancement

Annual quantities of water to be consumed in specific recreation and fish and wildlife enhancement facilities under full project development have been estimated. A total usage of 45,500 acre-feet per year is considered in the analyses of this report for future developments to be located along the California Aqueduct south of Kettleman City. Of this value, 25,500 acre-feet would be for facilities in the South San Joaquin division and 20,000 acre-feet would be for those located in Southern California. The quantities of water used in connection with specific recreation and fish and wildlife enhancement facilities adjacent to project conservation reservoirs probably would be small and, therefore, are neglected herein.

Water Quantities Involved in Construction

Water is utilized during construction for (1) aqueduct preconsolidation; (2) testing of aqueduct sections and electrical-mechanical equipment; and, (3) bringing aqueduct and reservoir water surfaces to operational levels.

The Department is providing water for the preconsolidation of aqueduct foundations from nonproject sources, including ground water from state-owned wells, and the supplies of local water agencies and private corporations. The compensation arrangements in certain contracts include payment, in kind, by delivery of project water. Such replacement supplies will be derived from surplus water and are not included in Table 5.

Water utilized for testing purposes will not be consumed and will be available for bringing water surface elevations in downstream facilities to operational levels.

The estimated annual quantities of water required to create operational levels in facilities, which are included in the demands shown in Table 5, are summarized in the following tabulation. These include water for the

initial filling of the aqueducts, San Luis reservoir, and the terminal reservoirs located in Southern California. For Del Valle reservoir, water to fill dead storage space only is included.

(in acre-feet)

Calendar year	Aqueducts	Del Valle reservoir	San Luis reservoir	Southern California reservoirs[a]	Total
1967	300				300
1968	38,800		350,000		388,800
1969	6,600	10,000	750,000		766,600
1970	8,200			36,000	44,200
1971	5,500			100,500	106,000
1972				270,000	270,000
1973				238,800	238,800
1974				116,100	116,100
.					
.					
.					
1980	300				300
Totals	59,700	10,000	1,100,000	761,400	1,931,100

a/ Includes Castaic, Pyramid, Cedar Springs, and Perris reservoirs.

The operating costs associated with transportation of water for the above purposes will be included in the capital costs of the respective facilities.

Losses Incidental to Operation

Operational losses in the project conservation and transportation facilities located below the Delta will average about 260,330 acre-feet by the year 1990. Water losses in conservation facilities will consist primarily of evaporation from water surfaces, while losses in transportation facilities will consist of canal seepage and evaporation. Evaporation losses were estimated largely from evaporation records, and seepage losses were evaluated from operational experience of the Bureau of Reclamation and others.

The following tabulation summarizes the average annual losses included in Table 5 for the major facilities of the State Water Project located below the Delta.

Facility	Estimated annual operational losses, in acre-feet
Reservoirs:	
Del Valle	3,500
San Luis	34,000[a]
Pyramid	6,900
Castaic	16,100
Cedar Springs	8,600
Perris	9,800
Subtotal	78,900
Canals:	
North Bay Aqueduct	1,400
South Bay Aqueduct	1,230
California Aqueduct	178,800[a]
Subtotal	181,430
TOTALS	260,330

a/ Includes only assumed State's share of losses in the San Luis division.

Estimates of the total annual quantities of water to be conveyed through each pumping plant, corresponding to the quantities in Table 5, are contained in Appendix B.

Surplus Water

The aggregate yield capability of the initial and additional project conservation facilities will be greater than the annual project water demands by varying amounts, as pointed out at the beginning of this chapter.

The additional supply provided by surplus yield capability will be sold during the project development period (i.e. prior to about 1990) to the extent that the aqueduct capacity required to convey such surplus quantities is not needed for the delivery of firm annual entitlements. However, there are limitations to the full use of aqueduct capacities during these years because of the staged installation of

pumping units and because of the minimum onpeak mode of aqueduct operation. In the San Joaquin Valley, however, significant amounts of aqueduct and pumping capacity would be available during the winter months since the total capability of the system, for a given year, would be sufficient to convey the peak summer demands for agricultural water in each year. The magnitude of such surplus conveyance capacity is reduced along the aqueduct as agricultural deliveries are made within the San Joaquin Valley. Very little surplus capacity would be available in the aqueduct reaches south of the Tehachapi Pumping Plant since the Southern California entitlements are conveyed at essentially uniform annual flow.

The water supply contracts provide for the sale and delivery of surplus water under two separate programs.

The standard contract provisions, in Article 21, provide that water which is available in addition to that required to meet project entitlements may be sold at prices which will return to the State the largest net revenues practicable, and at the minimum, revenues equal to the variable operation, maintenance, power, and replacement costs incurred in delivery. No restrictions are placed upon the use of such water, nor upon the agencies which may contract to purchase such water. However, the delivery of surplus water shall not interfere with delivery of entitlements to project water, nor shall surplus water serve as a lower cost substitute for entitlements to project water. Contracts, pursuant to Article 21, shall be made for periods not to exceed one year.

The surplus water program added to the special provisions of the water supply contract with the Kern County Water Agency, and to all contracts executed thereafter, and by amendment to those contracts executed prior to that time, provides for a preferential sale of an additional supply for certain of the Project's water supply contractors. Although it maintains in effect the provisions of Article 21, this program specifies that surplus water shall be offered for sale for agricultural or ground water replenishment purposes of the project's water supply contractors before being offered for other uses and for other agencies. Furthermore, the procedure for distributing the available supply among contractors requesting water under this program is specified in some detail.

Surplus water available for sale at Dos Amigos Pumping Plant is to be divided among the three principal service areas on the following basis: Southern California, 29 percent; San Joaquin Valley, 69 percent; and Central Coastal area, 2 percent. The annual distribution to individual contractors within each major area is to be based upon the ratio of each contractor's quantity of entitlement water, put to agricultural or ground water replenishment use (during the preceding three years), to the amount so used during the same period by all contractors requesting surplus water. Water so allocated, which is not required or which cannot be delivered, will be offered to other contractors for agricultural or ground water replenishment use.

The delivery of surplus water under either program must be limited, so that it will not adversely affect the reliability or increase the cost of delivering annual entitlements. Thus, the sale of surplus water shall result in neither increased capital costs by reason of accelerated installation of project features, nor in increased operating costs because of a more expensive method of utilizing operable features. The scheduling of construction and operation must be based fundamentally upon the delivery of annual entitlements. Therefore, the projected demands of the State Water Project shown in Table 5 exclude estimates of surplus water deliveries.

Project Operation Studies

As indicated in Chapter V, current joint studies between the Department and the Bureau of Reclamation could result in substantial revision of the water supply used in the coordinated operation studies. Inasmuch as these studies are still under way, this edition of Bulletin No. 132 uses the same water supply, operation studies, and yield estimates which were presented in Bulletin No. 132-65.

The results of these operation studies, in the form of yields of the initial project conservation facilities, are depicted in Table 5. Column 9 indicates the portions of the demands on the Delta Pool that are susceptible to being supplied from the initial project conservation facilities. The values in that column show that, beginning in 1986, the yield of the initial facilities is inadequate to meet the demands. Therefore, in 1986 an additional project conservation facility would have to be operational in order to meet the growing demands for water from the Project and to overcome the gradual diminution of yield of initial project conservation facilities, due to depletions of water supplies

available at the Delta. In order to meet only the demands for water from the State Water Project, it would be necessary for this additional facility to have an annual yield capability of about 891,000 acre-feet, as shown for the year 2035 at the bottom of Column 10.

It was assumed for the cost and financial analyses in this bulletin that an additional project conservation facility would be built by the State to supply this 891,000 acre-feet. This was done to forecast the outcome of the financial program for the "closed" State Water Project with the financing presently available under the Burns-Porter and Central Valley Project Acts. This additional facility was assumed to be the Upper Eel River Development, which could be sized so as to yield approximately that quantity of water.

Future estimates regarding the timing and sizing of additional and supplemental conservation facilities will be based upon staging plans to meet statewide water demands and other information developed by the Department's Coordinated Statewide Planning Program. Information presented in the Department's Bulletin No. 160-66, "Implementation of The California Water Plan", indicates that the need for the first additional conservation facility, based upon water supply considerations alone, may not occur as early as the 1986 date shown herein. The studies for Bulletin No. 160-66 were based on a preliminary result of the joint water supply studies mentioned above.

Prior to the scheduled publication of the next edition of this Bulletin (No. 132-67), it is believed that sufficient refinements will have been achieved in these water supply and operation studies to reflect any necessary modifications in the scheduled timing of construction, and in the required size for the additional project conservation facility.

CHAPTER VIII. PLANS FOR PROJECT OPERATION AND MAINTENANCE

The implementation of large-scale operation and maintenance activities for the water and power facilities of the State Water Project are described in this chapter. Hydroelectric power production and marketing and source of power for project pumping also are discussed. This information is utilized in estimating operation and maintenance costs for Chapter X and project revenues for Chapter XI.

Activation of Operation and Maintenance

Frenchman and Antelope Dams and Lakes and the main line of the South Bay Aqueduct already are operational. Operation and maintenance activities for these facilities during calendar year 1965 are described in Chapter IX. Activation of operation and maintenance for the other facilities of the Project is still in the future. Operation is scheduled to start in December 1966 for the Delta and Dos Amigos Pumping Plants and in January 1967 for the San Luis Pumping-Generating Plant. The other plants along the California Aqueduct will be tested and operated, in order, until the total main line to terminal reservoirs in Southern California is operational in 1972. The closure of the second of the diversion tunnels which convey Feather River flows around the Oroville Dam embankment, is presently scheduled for October 1967. The dependable generation of Oroville-Thermalito power will commence in the spring of 1968, if average water conditions are experienced following tunnel closure.

One of the most significant actions taken during the previous year, in preparation for large-scale operations, was the employment of the firm of Burns and Roe, Inc.,72/ as consultant to the Department, to establish a system of operations and maintenance for the State Water Project.

72/ On October 28, 1965, the Department accepted a proposal of Burns and Roe, Inc., an engineering firm of Santa Monica, California, in association with North American Aviation, Inc., of Downey, California, and Price Waterhouse & Co., of Los Angeles, California, in competition with five others received by the Department, in response to invitations issued to 20 firms. A contract was executed on January 13, 1966. Work under the contract will be completed in mid-1968. Costs are estimated at $1,800,000.

Presently, the Department has about 60 employees engaged in project operation and maintenance activities. The strength of this staff must grow to almost 1,000 by 1972. The assistance to be provided by the consultants will permit the Department to employ and develop its operations and maintenance support personnel in an orderly manner, while using the consultant's personnel to handle the peak workload during the next two years in the following preoperational tasks confronting the Department:

1. Preparation of operation and maintenance manuals for project facilities.

2. Preparation and assistance in the implementation of the initial training program for field operation and maintenance personnel.

3. Development of systems for inventory management and property accounting for project facilities.

4. Development of standard operating procedures, including maintenance management plans, for individual facilities and for the Project as a whole.

5. Formulation of the breakdown maintenance plan and the testing and calibration requirements for project facilities.

6. Integration of operations research studies into analyses of project operation and maintenance.

7. Formulation of an overall management system for operation and maintenance of the State Water Project.

Operation and Maintenance Organization

An office report[73/] was prepared in November 1965, which describes, in detail, the organizational structure and the functional responsibilities of Department offices located

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73/Department of Water Resources, Office of the Assistant Chief Engineer, Area Management, "Report on Organization and Manpower Requirements for Operation and Maintenance of the State Water Project", November 1965.

in Sacramento, the districts, and newly developed zones, with respect to operation and maintenance activities for the State Water Project. The report sets forth the classifications and projected requirements of personnel during the buildup of both the field operation and maintenance forces and the engineering support personnel. Data contained therein is being used as the basis for establishing classifications, hiring schedules, budgeting, and training programs for operation and maintenance personnel.

The operation and maintenance organization comprises:

1. Basic field operating and maintenance groups, organized into six zones: Oroville, Delta Facilities, Delta, San Luis, South San Joaquin, and Fairmont.

2. The Project Operations Control Center in Sacramento.

3. Engineering support located in the Department's district offices.

4. Overall engineering support for the Project located in Sacramento.

Three of the six operation and maintenance zones have been established, as noted in last year's bulletin, and their areas of responsibility identified: Oroville, Delta, and San Luis. A Zone Chief, the key man in the future day-to-day operation of the Project, has been hired for each of these zones.74/

74/ William T. Kritikos, appointed Chief of the Delta Zone August 16, 1965, has spent 18 years with the East Bay Municipal Utility District as Superintendent of Mechanical and Electrical Maintenance, assistant Regional Engineer, and assistant Civil Engineer for that District.
Philip F. Johns, Chief of the Oroville Zone as of July 6, 1965, was employed from 1957 to 1963 by Uhl, Hall and Rich, engineers for the New York State Power Authority, on the construction of the Niagara and St. Lawrence Power Projects. Previous to that time, he had worked for the Bureau of Reclamation for 10 years in the operation and maintenance field.
Jack E. Arnold, named Chief of the San Luis Zone August 6, 1965, was chief operator on the St. Lawrence Power Project for the New York State Power Authority for more than three years. His background in powerhouse operation dates from 1947, when he was employed at the Kerckhoff Powerhouse on the San Joaquin River in Fresno County.

The Oroville Zone includes project facilities located in the Upper Feather River and Oroville Areas.

The Delta Zone includes the North San Joaquin division of the California Aqueduct, the South Bay Aqueduct and the North Bay Aqueduct.

The San Luis Zone includes all of the San Luis division of the California Aqueduct. In addition, this Zone's responsibility for remote operation of the California Aqueduct will extend to the Buena Vista Pumping Plant in the South San Joaquin division, and to all plants of the Coastal Branch.

Special Studies

The Department is presently making surveys of weed infestations in and near project facilities to determine the potential problem areas. Studies are also being conducted to determine the types of equipment available and suited to the Department's weed control needs.

Action is also being taken in the areas of the control system, electrical mechanical equipment testing, and project water quality management.

Control System. The various project facilities will be initially operated by remote control from zone control centers. Work on the control systems has started for three zones: Oroville, Delta, and San Luis. The remote system of control was explained in last year's bulletin. Project operation from these control centers will be scheduled, dispatched and coordinated from the Project Operations Control Center located in Sacramento.

The basic remote control system ultimately may be integrated into a project-wide, automated control system having central computer control capability.

The configuration of the basic remote control system and the extent to which central computer capability will be implemented are being investigated under a program which utilizes an Automation Pilot Model installed on the South Bay Aqueduct. Further details on the Automated Control System are contained in Chapter III of this bulletin.

Equipment Testing Program. A program of electrical and mechanical testing of project equipment is being established.

This includes not only the periodic testing associated with regular preventive maintenance, but also the detecting of impending failures and diagnosing of troubles. The need for a power standards laboratory for the Project is also being appraised. Such a laboratory would assure the accuracy of meter readings and, as a corollary to the test program, would insure that successive measurements and tests are comparable. The engineering consultant, Burns and Roe, Inc., will assist the Department in establishing this program.

Water Quality. Planning for the water quality phases of project operation is being conducted within the framework of an established program.75/ The first phase of a study which will forecast the probable quality of delivered project water is under way and will be completed in 1967.

An investigation to determine the biological monitoring requirements of the Project will be initiated this year. Dr. Clair Sawyer, specialist in biological-chemical aspects of operation and maintenance of large water projects, has been retained to assist in this study.

The Department has joined an existing three-agency program to develop methods for control of biological pests in canals and reservoirs that will not diminish the beneficial uses of water. This is a cooperative effort by the Bureau of Reclamation, the United States Department of Agriculture, the University of California, and the Department of Water Resources.

Project Electric Power Production and Supply

The State Water Project will generate 6,233,000,000 kilowatt-hours of energy, but will consume 13,074,000,000 kilowatts, during each year of full project operation. The total installed capacity of project powerplants will be about 1,500,000 kilowatts, while the aggregate demand of project pumping plants will be about 2,700,000 kilowatts, including capacity required for the Oroville-Thermalito pump-back operation.

75/ Department of Water Resources, "Program for the Development of an Operations Plan for Water Quality Control for the State Water Project", May 1965.

Hydroelectric Power Production

Power will be generated in the Oroville-Thermalito power facilities, in San Luis Pumping-Generating Plant, and in power recovery plants located at drops along the California Aqueduct.

The combined Oroville-Thermalito dependable capacity is estimated to be 710,000 kilowatts, or more, with average and minimum (dry-year) energy outputs estimated at 42 and 34 percent capacity factors, respectively. Operation studies indicate that the combined average energy generation, under water supply conditions experienced during the 61-year period of record (1902 through 1962), would have been about 2,846,000 kilowatt-hours annually and that both plants would have required an average of about 469,000,000 kilowatt-hours annually for the pumpback operation.

The installed capacities and average annual energy output during years of full project operation of the San Luis Pumping-Generating Plant and of the power recovery plants along the California Aqueduct are shown in the following tabulation:

Powerplants of the California Aqueduct	Installed generating capacity, in kilowatts	Annual energy generation, in millions of kilowatt-hours[b/]
San Luis	222,000[a/]	118
Cottonwood	14,000	113
Upper Devil Canyon	74,000	530
Lower Devil Canyon	49,000	351
Pyramid	158,000	943
Castaic	214,000	1,284
San Luis Obispo	6,000	48
Total	737,000	3,387

a/ Estimated State's share of San Luis Pumping-Generating Plant, based on capacity installed pursuant to the Bureau of Reclamation's specifications DS-5825 and DS-6040.
b/ For period when the California Aqueduct is operating at full capacity, commencing in the year 1991.

The estimated generation during each year prior to full operating conditions, for each of the powerplants of the California Aqueduct, together with the combined annual generation of Oroville-Thermalito, is shown in Table 6.

Disposition of Project Power

Negotiations are now under way for the sale of the entire output of the Oroville-Thermalito power facilities, under a long-term contract, following submittal of a tentative proposal by the California Power Pool Companies on October 11, 1965.

The tentative proposal marks the first time a basis has been developed for sale of the entire Oroville-Thermalito production. The proposed arrangement contemplates a tentative offer to guarantee an annual payment of $14,100,000 based on the firm availability of not less than 710,000 kilowatts of dependable peaking capacity, and on a net energy output, after pumpback, of 1,700,000,000 kilowatt-hours each year. Provision for an arrangement to "carry over" annual energy deficiencies to succeeding years is also proposed.

It appears that the Companies' tentative proposal is based on the same unit rates offered for 400,000 kilowatts by the Pacific Gas and Electric Company in its tentative proposal of April 26, 1965, described in last year's bulletin. These unit values are $13.65 per kilowatt-year for dependable capacity and 2.59 mills per kilowatt-hour for net energy generation.

The State solicited applications for Oroville-Thermalito power in December 1964, at rates of $17.16 per kilowatt-year and 3 mills per kilowatt-hour. Taking into account the advantages of hydroelectric generation over steam electric generation for peaking power, the rates derived from the Companies' tentative offer appear to be low.

It has been assumed for the analyses contained in this bulletin, that the entire 710,000 kilowatts of Oroville-Thermalito power will be sold to private utilities, generally in accordance with the tentative proposal of October 11, 1965, but using a higher value which reflects the inherent advantages of hydroelectric generation as acknowledged by most recognized authorities. The analyses herein consider the value of alternative steam electric capacity to be about 10 percent less than the value of an equivalent amount of hydroelectric capacity. The unit power values for Oroville-Thermalito generation have, in these analyses, been adjusted

to a load center near the San Francisco Bay area and reflect charges from a steam electric plant location to the load center, with allowances for transmission losses.

The possibilities of Oroville-Thermalito power sales to agencies other than the private utilities are also being studied by the Department. One possible sale is to the Bay Area Rapid Transit District (BART), which has indicated interest in purchasing up to 120,000 kilowatts of project power at about a 31 percent load factor.

The State's share of energy generated at the San Luis Pumping-Generating Plant, and at other powerplants along the California Aqueduct and its branches, is assumed to be used to offset the requirements of project pumping plants, to reduce the power and energy purchased from other sources.

Power Requirements for Project Pumping

The State Water Project has been designed to deliver contractors' maximum annual entitlements across the Tehachapis on a continuous flow basis. Therefore, excess aqueduct capacity will be available during the years of buildup in water demand. The availability of excess aqueduct capacity permits flexibility in the operation of project pumping plants, within limits established by hydraulic criteria for operation of the aqueduct. In the early years of operation, pumping may be done on either an essentially continuous basis at a relatively uniform rate, or the amount of continuous pumping may be reduced and pumping done at a higher rate during the times when the area power load is at a minimum; that is, during the offpeak hours which would approximate 50 percent of the time. The latter method is referred to as the minimum onpeak method of aqueduct operation.

The estimated annual power demands for the Delta Pumping Plant and the San Luis Pumping-Generating Plant are based on operation studies referred to in Chapter VII. Annual demands of other pumping plants were estimated on the basis of the buildup of water deliveries, operational losses, and other allowances also discussed in that chapter.

The estimated annual project energy requirements by individual pumping plants are shown in Table 7. These requirements include the pumping energy for the Oroville-Thermalito and San Luis Pumping-Generating Plant operations as well as for aqueduct pumping. The energy requirements

for San Luis pumping are the Department's current estimates of the State's share of the total energy required. The significant increases in power requirements in 1968 and 1971 reflect the start of water deliveries first to the San Joaquin Valley and then to Southern California in those years.

Sources of Power for Pumping

The project energy requirements shown on Table 7 are more than double the total energy generation shown in Table 6, and are assumed to be met, only in small part, by project generation. In the year 1968, prior to the time that Oroville-Thermalito power will be available on a dependable basis, part of the generation may be utilized to meet project pumping requirements.

Power from several additional sources will be utilized in various amounts and combinations at different times, depending upon costs, availability, and project pumping requirements. These sources include: the California electric utilities; firm Canadian Entitlement power; surplus energy from the Bonneville Power Administration; the Central Valley Project; and a nuclear powerplant to be constructed in the future.

Contracts covering the first three sources are under negotiation and are discussed in another section of this chapter.

Central Valley Project. The Department, as a preference agency, has obtained allocations of federal Central Valley Project power totaling 19,900 kilowatts, which is now being used for pumping water for the South Bay Aqueduct and for preconsolidation of the South San Joaquin division of the California Aqueduct alignment prior to construction. The federal power allocations are subject to withdrawal or termination for several reasons. Additional allocations have been requested, but no commitments of additional power have been obtained.

Central Valley Project power service to the State began in June 1962. By the end of December 1965, a total of 75,055,241 kilowatt-hours had been used at a total charge of $357,367 and an average cost of 4.76 mills per kilowatt-hour.

Pacific Gas and Electric Company distributes Central Valley Project power for both the South Bay Aqueduct pumping and for the temporary State preconsolidation water

pumping installations in the South San Joaquin division, approximately 30 miles south of Bakersfield. There are a total of 21 delivery points where power service has been so distributed. Arrangements are being made for service at about 100 additional points, such as at canal check structures and at points requiring cathodic protection.

State-owned Nuclear Powerplant. Studies of the Fluor Corporation, Ltd., of Los Angeles,76/ conclude that a plan involving a state-owned nuclear powerplant would provide the least expensive power for the Project, as pointed out in Chapter II.

The Department is now considering building a plant of the pressurized or boiling water reactor type, such as those now commercially available, or cooperating with one or more of the California utilities to construct such a plant.

A contract with the California electric utility companies would provide for the State's construction of its own thermal generating plant on five years' notice, if such construction is determined by the State to be economically advantageous. The Department will investigate other types of nuclear converters and powerplants, at once, in order to obtain power for the project at the lowest cost.

Site studies for a nuclear powerplant are currently under way at the following five alternative locations: Cayucos, in San Luis Obispo County; Oxnard, in Ventura County; Sycamore Canyon, in Ventura County; Corral Canyon, in Los Angeles County; and Tehachapi, in Kern County. Subsurface exploration has already been completed at the Tehachapi site and is beginning at the Cayucos site. These studies are expected to be completed in July 1966.

A schedule for construction of a nuclear powerplant has been developed, the first phase of which includes the negotiation of a contract with a utility for integration of the plant with the utility's system and for the sale to the utility of the surplus power generated by the plant. Subsequently, an architect-engineer will be retained, an application for a construction permit will be filed, and contracts will be entered into for design and construction of the plant.

76/ See page 18, footnote 24.

For purposes of estimating power costs for this bulletin, it has been assumed that a state-owned nuclear powerplant will be constructed at the Tehachapi site, consisting of two 575,000 kilowatt units. The first unit is assumed to be in operation about January 1974, with the second unit to be installed as required to meet project loads.

Power Contracts

Contracts for power supplies will assure the Department of an adequate and economical supply of all power needed for pumping water for the State Water Project.

Negotiations conducted by the Department during the past 12 months have resulted in agreement on almost all points of difference involving four major power contracts which will provide an assured power supply for project pumping.

The four contracts, which are being put in final form preparatory to signing, are (1) a Supply contract with four California utilities, the "Suppliers",77/ to furnish power for the project supplementary to other sources; (2) a contract with three California companies,78/ for transmission over the Extra High Voltage Pacific Northwest-Pacific Southwest Intertie to delivery points in California of Northwest power purchased by the State; (3) an agreement with the Cities of Seattle and Tacoma, Washington, and the Puget Sound Power and Light Company for assignment to the State of up to 300,000 kilowatts of firm Canadian Entitlement power; and, (4) a contract with the Bonneville Power Administration providing for the sale to the State of surplus energy and surplus peaking capacity, which may be available on the federal Columbia River power system from time to time.

Supply Contract. Under the proposed supply contract, the utilities will supply pumping energy at 3 mills per kilowatt-hour and onpeak capacity at $17.00 per kilowatt per year, these rates to be firm through 1982 and subject to adjustment thereafter, on five years' notice. The rates will apply to the amounts of capacity scheduled for, and the energy delivered to, project pumping and generating plants,

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77/ See page 18, footnotes 25 and 26.
78/ Pacific Gas and Electric Company, Southern California Edison Company, and San Diego Gas and Electric Company.

increased for specified transmission losses. The power purchased from the Suppliers will supplement the supply available to the Department from project power recovery plants, from the federal Central Valley Project, the Pacific Northwest, and other possible future sources such as a state-owned nuclear powerplant.

Delivery points for power purchased from the Suppliers as well as for other power available to the State, for which the Suppliers provide transmission service, are generally at the location of the project pumping plants and power recovery plants. The State will pay fixed annual charges, building up to about $1,200,000 per year in 1980, for the transmission service.

The State may terminate the contract (to construct a thermal powerplant, nuclear or other) upon giving advance notice to proceed. Both parties then have one year in which to negotiate an agreement for transmission, standby, operation and maintenance, sale of surplus output and integration with the Suppliers' systems. If agreement is not reached, and the Department notifies the Suppliers of its intention to proceed with construction, either of the parties could terminate the contract upon five years' notice if such notice is given within six months after the notice of intention to proceed.

The State agrees to operate project pumping plants and to pump at the San Luis Pumping-Generating Plant during offpeak periods, to the extent practicable.

The proposed contract will be for an indefinite term, and may be terminated by either party's giving five years' written notice to the other on or after March 31, 1978, unless terminated earlier as provided.

Intertie Contract. Under the proposed Pacific Northwest Intertie contract, the three companies will provide firm transmission capacity to the State, up to 300,000 kilowatts. The State will pay at the rate of $3.35 per kilowatt per year for service between the Oregon-California border and Table Mountain, Tesla or Los Banos Substations, and $1.65 per kilowatt per year between Tesla Substation and Midway Substation or Grapevine Supply Point.

The State may reduce its transmission service, on five years' notice, on or after April 1, 1978, to not less than 150,000 kilowatts, and may terminate such service on or after April 1, 1983.

The Companies will provide transmission service for Northwest dump energy to the extent excess transmission capacity is available at a rate of 1/2 mill per kilowatt-hour to Tesla, and 3/4 mill per kilowatt-hour to Grapevine Supply Point.

The Companies will purchase the State's Northwest firm power, or Canadian Entitlement power obtained by the State, in advance of its needs.

"Banking" provisions are included by which the Companies will take and pay for Canadian Entitlement power, in excess of the State's requirements in the early years, and sell amounts banked to the State during the period April 1, 1968, to March 31, 1983.

The proposed Intertie contract will continue until January 1, 2005, subject to the State's right to terminate.

Canadian Entitlement Power Contracts. The proposed assignments and agreements to be made separately between the State and the Cities of Seattle and Tacoma, Washington, and Puget Sound Power and Light Company are included in a series of agreements relating to disposition of firm power benefits to Canada resulting from cooperative development of the water resources of the Columbia River Basin.

Each of these Northwest entities will assign to the State a portion of its rights and obligations under its agreement for purchase of Canadian Entitlement power. The maximum assignment to the State will be 300,000 kilowatts of Canadian Entitlement power through March 31, 1978, and 150,000 kilowatts through March 31, 1983.

The cost at the Oregon-California border is estimated to be about $6.86 per kilowatt-year for capacity and 2.56 mills per kilowatt-hour for energy, exclusive of taxes, if any, levied by the States of Washington, Oregon, Idaho, or Montana, or their subdivisions. If such an obligation is imposed on the State, it may terminate its purchase of Canadian Entitlement power, on five years' notice.

Bonneville Power Administration Surplus Power Contract. The proposed power sales contract between the State and the Bonneville Power Administration provides for sale by the Administration to the State of surplus energy, surplus peaking capacity and provisional energy.

Surplus energy available for use outside the Pacific Northwest shall be offered, first, to the State and other public agencies in Arizona, California, and Nevada. Surplus energy is to be made available to the State at the Oregon-California border, on a nonfirm basis, for 2 mills per kilowatt-hour. Surplus peaking capacity, also to be made available at the Oregon-California border, will be charged at $9 per kilowatt per contract year, or $5 per kilowatt per contract season. Peaking energy delivered to the State may be required to be returned or, if return is not required, will be paid for by the State at 2 mills per kilowatt-hour. This contract will be effective for 20 years.

CHAPTER IX. PROJECT OPERATIONS AND MAINTENANCE

This chapter summarizes the actual operations and maintenance of the State Water Project for calendar year 1965.

Monthly reports on project operations and maintenance were initiated on January 1, 1965, and were published throughout the year. Daily operations are summarized in the monthly reports.

Project facilities in operation during 1965 were Frenchman and Antelope Dams and Lakes, in the Upper Feather River Area, and the main line of the South Bay Aqueduct.

Frenchman Dam and Lake

Frenchman Dam and Lake, with a maximum storage capacity of 55,417 acre-feet, is operated by the Department to supply irrigation water to the Last Chance Creek Water District and to enhance recreation opportunities in the vicinity of the Lake and along the downstream channel of Little Last Chance Creek.

The Department of Parks and Recreation has overall responsibility for the operation and maintenance of specific recreation features located adjacent to the Lake. This responsibility has been delegated to Plumas County. Actual operation of the recreation features is conducted by the United States Forest Service under an agreement with the County. Operation costs of the specific recreation features are paid from user fees, supplemented by reimbursements from Plumas County.

Frenchman Lake received an estimated 474,000 visitor-day use by fishermen, campers and other recreationists during the 1965 recreation season, May to November.

Water Operations

During 1965, the water surface was maintained above the minimum recreation pool established for the Lake at an elevation of 5,560 feet above sea level, 28 feet below the spillway crest, and containing 21,400 acre-feet. The 34,000 acre-feet of storage space, between the minimum recreation pool and the dam spillway, was operated to provide regulated irrigation and fishery releases.

An interim water delivery contract with the Last Chance Creek Water District, providing for water deliveries during 1965, was executed March 30, 1965. Under this contract, $14,000 was paid to the State by the District for regulation and delivery of 12,000 acre-feet of water, including the quantity necessary to satisfy the District's rights to the natural flows of Little Last Chance Creek, on a schedule furnished by the District. The interim contract is the third in a series executed with the District since March 1963.

Frenchman Lake contained 38,685 acre-feet of water in storage at the beginning of 1965. Inflow to the Lake totaled 44,302 acre-feet during the year. The Lake filled April 14, 1965, and water passed over the spillway until June 11, 1965, wasting an estimated 17,375 acre-feet. Regulated releases for the year totaled 13,633 acre-feet. Annual evaporation and seepage losses were estimated to be 4,971 acre-feet. Storage at the end of 1965 was 47,008 acre-feet.

Table 8 presents a summary of the monthly operation of Frenchman Lake for 1965.

No unusual water quality conditions were observed during the year.

General Maintenance

Maintenance activities conducted in 1965 included: (1) caulking of leaking contraction joints in the spillway lining; (2) repairing erosion of the energy dissipator by installing angle iron on the sill; (3) backfilling with quarry rock eroded areas around the ends of the training walls of the spillway; and, (4) installing reference points and bench marks for monitoring settlement of the dam embankment.

Frenchman Dam was inspected April 16, 1965, by the Department's Division of Safety of Dams, pursuant to Division 3 of the Water Code. The Dam was deemed to be in satisfactory condition and safe for continued use.

Antelope Dam and Lake

Antelope Lake, with a maximum storage capacity of 22,513 acre-feet, is operated by the Department to enhance recreational opportunities in the vicinity of the Lake and along the downstream channel of Indian Creek.

The Department executed a contract on March 12, 1965, with the Division of Beaches and Parks of the Department of Parks and Recreation, assigning possession and control of recreation lands at Antelope Lake to the Division, so that the area might be operated and maintained as part of the State Park System. Responsibility for the operation and maintenance activities of the area was later reassigned, by agreement, directly to the United States Forest Service.

Antelope Lake received an estimated 25,800 visitor-day use by fishermen, campers, and other recreationists during the 1965 recreation season, May to November. Construction of initial recreation features at the Lake was completed late in the fall of 1965 and these betterments were not available for use during most of the regular season.

Water Operations

Antelope Lake contained 17,137 acre-feet storage at the beginning of 1965. Inflow to the Lake totaled 61,825 acre-feet during the year. The Lake filled January 25, 1965, and water passed over the spillway through August, wasting an estimated 49,671 acre-feet. Regulated releases from the Lake to satisfy downstream water right entitlements and minimum stream flows for fish populations totaled 10,388 acre-feet. Annual evaporation and seepage losses were estimated to be 2,747 acre-feet. Storage at the end of 1965 was 16,156 acre-feet.

An agreement established in 1964 between the Pacific Gas and Electric Company and the Department, in recognition of rights for downstream projects owned and operated by the Company, was fulfilled with the release of 4,400 acre-feet during 1965.

Table 9 presents monthly operation data for Antelope Lake for 1965.

Water Quality

A very turbid stratum in the lower elevations of the Lake was observed in 1965. This suspension of colloidal silts was apparently caused by the erosion of soils in the upstream channels during periods of high inflow. The rather high percentage of oxygen-demanding organic matter in the suspended silts caused a temporary loss of dissolved oxygen. However, the oxygen deficiency noted in last year's report, apparently caused by the decomposition of organic material

submerged during the initial filling of the Lake, was considerably improved. No kills of fish were noted within the Lake in 1965.

A temporary siphon over the spillway of Antelope Dam was installed and used in 1965 to skim and discharge water of acceptable quality for downstream fishery and recreational use from the upper elevations of the Lake. The high turbidity in the lower elevations of the Lake, noted above, prevented the use of the permanent outlet works for these purposes. The siphon was removed in the fall of 1965.

General Maintenance

Evidence of localized seepage was noted during 1965 on the downstream face of the dam.

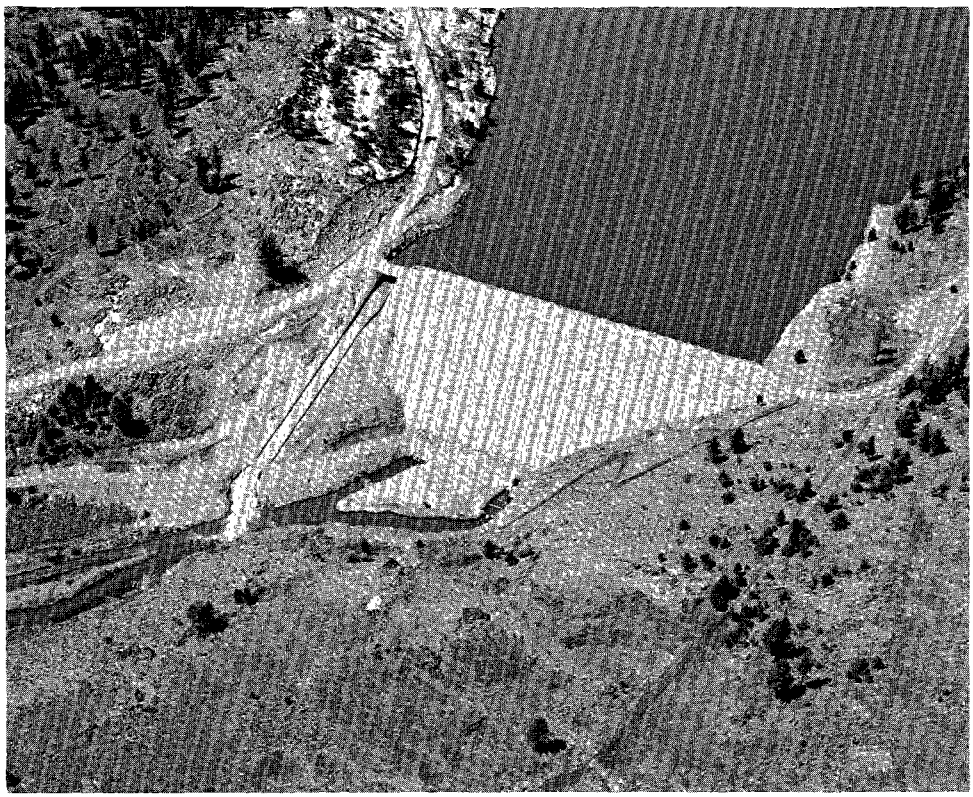
In August, 13 exploratory and internal drainage wells were drilled. Piezometers were installed in each well to measure, periodically, the depth to water. Reference points and bench marks were established to provide a means for checking the stability of the embankment.

Nine inspections and embankment investigations of Antelope Dam were conducted during 1965 by the Department's Division of Safety of Dams, pursuant to Division 3 of the Water Code: on January 12, July 7, August 27, August 30, September 3, September 5, September 6, September 24, and October 8.

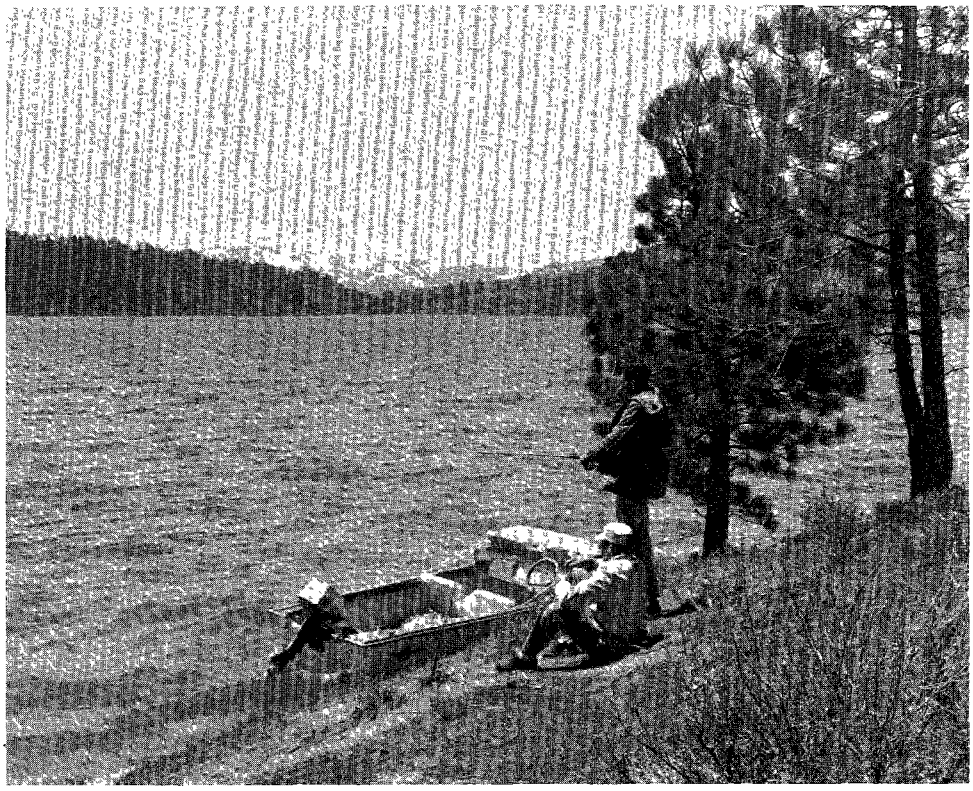
The exploratory drilling in 1965 disclosed that saturation within the embankment is about normal and the embankment is stable. Monitoring of the observation wells is continuing, to determine whether any remedial work is needed. The dam is judged safe for full use.

South Bay Aqueduct

The South Bay Aqueduct is operated by the Department to provide supplemental water supplies to agencies located in Alameda and Santa Clara Counties. Del Valle reservoir, a multiple-purpose feature of the Aqueduct to be completed in 1968, will be operated for flood control, recreation, local water conservation and regulation of Aqueduct deliveries.



Water spilling from Frenchman Lake.



Fishermen on the shore of Antelope Lake

Water Operations

The delivery of water through the Aqueduct was extended from Patterson Reservoir to the Santa Clara terminal facilities in June 1965. Initial water deliveries were made during the year at the Wente, Vallecitos and Santa Clara turnouts.

The water supply for the South Bay Aqueduct, during 1965, was purchased from the Bureau of Reclamation under terms of a contract executed in 1963. A total of 35,985 acre-feet of water, measured at the turnout from the Delta-Mendota Canal, was purchased during 1965.

Deliveries from the South Bay Aqueduct were made to the Alameda County Flood Control and Water Conservation District (Zone 7), Alameda County Water District, and Santa Clara County Flood Control and Water Conservation District in the amounts of 2,605, 16,407, and 15,014 acre-feet, respectively. Other deliveries include 93 acre-feet for use by the construction contractors and for the initial filling of completed sections of the Aqueduct.

Deliveries to the Alameda County Flood Control and Water Conservation District were made as follows: 82 acre-feet at Bethany reservoir; 555 acre-feet at Altamont turnout; 1,830 acre-feet at Patterson turnout; and 138 acre-feet at Wente turnout.

Deliveries to Alameda County Water District were made at Altamont turnout and Vallecitos turnout in the amounts of 15,280 and 1,127 acre-feet, respectively.

Deliveries to Santa Clara County Flood Control and Water District were measured at the meter upstream of the Santa Clara terminal facilities.

Power Operations

Power operations for the State Water Project during 1965 were limited to the South Bay and Interim Pumping Plants. Installation of two additional 45 cubic feet per second units during 1965 (Pumps Nos. 8 and 9) increased the total installed pumping capacity of the South Bay Pumping Plant to 195 cubic feet per second. The Department continued to purchase power from the Bureau of Reclamation at the Tracy Switchyard and to transmit it to the plants via the Pacific Gas and Electric Company System. Energy use during the year amounted to

28,177,340 kilowatt hours; the peak demand was 9,100 kilowatts; and, the power cost totaled $138,003.57, for an average rate of 4.90 mills per kilowatt hour.

Table 10 summarizes the monthly operations of the South Bay Aqueduct for 1965.

Water Quality

Surveillance of the quality of water in the South Bay Aqueduct during 1965 included: (1) continuous monitoring for mineral quality; (2) surveillance of growth and occurrency of biological pests; (3) temporary monitoring to determine the variations in turbidity and suspended solids; and (4) special monitoring during chemical treatments for aquatic weed control.

The electrical conductivity of the South Bay Aqueduct's water supply was continuously recorded at the South Bay Pumping Plant.

Water samples for mineral analysis were collected monthly at the South Bay Pumping Plant, at the Altamont turnout, near Patterson Reservoir, near the Del Valle Siphon, and near the Santa Clara terminal facilities.

Biweekly samples were collected at the following points to determine occurrence and growth of phytoplankton and zooplankton in the Aqueduct: the Interim Pumping Plant, the South Bay Pumping Plant, between the pumping plant and Patterson Reservoir, near Patterson Reservoir, and near the Del Valle Siphon.

Total nitrogen and phosphate content were estimated from water samples collected biweekly at the South Bay Pumping Plant and near Patterson Reservoir. Field tests were conducted on these samples for temperature, pH, dissolved oxygen, and electrical conductivity.

Asiatic clam densities, biovolume and biomass were sampled monthly at five stations in the Interim Intake canal and three stations in Bethany Forebay. Clam densities were monitored periodically at one station in the Livermore canal.

Weighted monthly average concentrations of total dissolved solids, total hardness, chlorides, and sulfates of water pumped at South Bay Pumping Plant are presented in Table 11. The table also includes values for boron and percent sodium derived from analyses of monthly random samples at the plant.

General Maintenance

Dragline operations to remove silt and clam deposits in the Interim Intake canal were conducted in May 1965 and in November 1965. Results showed deposits averaging over two feet in depth had reduced the channel conveyance capacity below that required for the delivery of water.

A short portion of the canal developed excessive seepage in November 1965. Emergency repairs were made under an agreement with a general contractor in the area. Repairs were effected by overexcavating about 300 feet of canal section and replacing it with compacted impervious material.

Three applications of copper sulfate were made to control aquatic weeds and algae in the South Bay Aqueduct. The first application was made at the turnout from the Delta-Mendota Canal on April 19, 1965. After the treated water reached the Interim Pumping Plant, pumping was stopped to retain the copper within the unlined canal reach. A second application was made on July 26, 1965. This time, the copper sulfate was introduced into the back-surge pool at the head of Dyer Canal. No deliveries were made from the canal until the treated water had become diluted to extremely low levels. A final application of copper sulfate was made on November 2, 1965, at the back-surge pool of Dyer Canal. Again, no deliveries were made from the canal until the treated water was diluted to an extremely low level. No measurable copper residual was found at the Santa Clara terminal facilities after these treatments. Algae and broad-leafed aquatic weeds present in the aqueduct were killed. Narrow-leaf aquatic weeds were not affected.

Plant Maintenance

Bulletin No. 132-64 reported, on page 153, that a review by a Department board of investigation on major mechanical and electrical difficulties reported at the South Bay Pumping Plant had necessitated extensive repairs of Pumps Nos. 1 and 2. The matter was taken up with the manufacturer and, as a result of the ensuing negotiations, the manufacturer agreed to do the following:

1. Remove the motors and pumps.

2. Completely check the motors and do any corrective work necessary to place them in a new condition.

3. Redesign and rebuild the pump columns to prevent deflection in operation (runout).

4. Replace bent, cracked, or worn shafting.

5. Do any necessary work on the bowls and impellers to put the pumps in new condition.

6. Reinstall and test the units in the South Bay Pumping Plant.

All parts for rehabilitating Pump No. 1 were delivered to the Department in June 1965. Removal of the pump unit for repairs was deferred until the aqueduct was shut down for the winter season, commencing December 11, 1965. The pump unit had been operating satisfactorily, with only normal maintenance, since the overhaul which immediately followed the shaft failure in 1963.

Reinstallation of Pump No. 2 was completed June 24, 1965. An excessive runout was noted during tests following reinstallation, but was reduced to acceptable limits by adjusting the shaft coupling. Another excessive runout was noticed in early September. Considerable deflection of the base plate upon start-up was noted in August, and a dial indicator registered excessive deflection. (A lesser deflection was found on Pump No. 1, but was still of significant magnitude).

During the winter shutdown of the Aqueduct, the manufacturer removed both Pumps Nos. 1 and 2 for repair. All work covered by the aforementioned agreement was completed. Stiffener beams were placed on the base plate to reduce deflection to allowable limits. The pump units were reinstalled in the plant, the motors placed on their bases, and the pump units tested.

Early in July 1965, the lower guide bearing froze on recently installed Pump No. 8. This caused uplift of the rotating parts, but resulted in only slight damage to the motor thrust bearing plate which was easily repaired. The pump was moved to the manufacturer's plant where a new guide bearing was installed. Considerable wear was noted on the wearing rings, and it was decided to replace the bronze wearing rings with new rings of stainless steel at a cost of $2,180.

Pumps Nos. 8 and 9 operated satisfactorily until early September, when excessive deflection of the base plate was noted. The greatest deflection naturally occurred with the discharge valve closed, and many measurements were taken to determine the bulging effect caused by the hydrostatic pressure on the lower side of the base plate. This situation has been corrected by the manufacturer.

To date, the other installed pump units of the South Bay Pumping Plant (Pumps Nos. 3 and 4) have operated very satisfactorily and have required only normal maintenance.

The pump units of the Interim Pumping Plant have operated well, with only routine maintenance. However, during acceptance tests in October 1965, excessive vibration was noted in the motor of Pump No. 3. The manufacturer has been advised and is studying the problem.

The troubles experienced on the pump units of the South Bay Pumping Plant, other than Pumps Nos. 1 and 2, have been about normal for this type of installation. A great deal was learned from the difficulties experienced on Pumps Nos. 1 and 2, and tighter specifications have been issued for subsequent purchases. Manufacturers are required to furnish detail shop drawings for approval, thereby enabling the Department to check individual parts for material, strength and finish, and permitting plant inspectors to determine whether those items are satisfactory before assembly. A quality control program is required of the vendor, and carefully enforced by the plant inspectors. No substitutions are permitted without approval, and additional tests and certificates confirming material quality are required. Prequalification of bidders has been tightened.

Results of these actions are already in evidence by better designs, better plant control, and better delivered equipment. While the initial costs of the pump units will undoubtedly increase because of these actions, long-term savings will be realized in reduced repairs and maintenance costs during the life of the Project.

CHAPTER X. PROJECT COSTS

This chapter discusses the capital and annual operating costs which are expected to be incurred for project facilities during the project repayment period. The costs shown herein as having been incurred through calendar year 1965 are from the accounting records of the Department, summarized in Appendix A. Expenditures shown for calendar year 1966, and for years through the remainder of the project repayment period, are estimates.

This chapter also presents the allocation of facility costs among the purposes of water supply, power generation, flood control, drainage benefit, recreation, and fish and wildlife enhancement. The allocation percentages utilized herein for most facilities are those developed in the Department's Bulletin No. 153-66, "Allocations of Costs Among Purposes of the California State Water Project", dated January 1966.

This chapter further distributes the allocated facility costs among State Utility, State Nonutility, and Federal Programs. These programs include costs which are (1) reimbursable by project contractors, (2) nonreimbursable by project contractors, and (3) recoverable from Federal agencies, respectively. Costs of State Utility Programs are those reimbursable under water supply contracts and include the State's share of costs allocated to the purposes of water supply and power generation, as reduced by Oroville-Thermalito power revenues. State Utility costs also include those reimbursable under assumed future drainage contracts. Costs of State Nonutility Programs include the costs of the Davis-Grunsky Program, herein conservatively assumed to be totally nonreimbursable; the State's share of the costs allocated to the purposes of recreation and fish and wildlife enhancement; and, miscellaneous nonreimbursable costs such as those incurred for features subsequently deleted from the Project. Federal Programs generally include those costs allocated to the purpose of flood control and the federal share of costs to be incurred by the State for joint-use facilities.

This chapter concludes with the development of the estimated capital costs of the State Water Project which must be financed.

Bases for Estimated Costs of Features Not Yet Sized

Portions of the State Water Project have not been finally located and sized, though major construction of the Project as a whole is well under way. These portions include:

1. Abbey Bridge and Dixie Refuge Dams and reservoirs in the Upper Feather Area.

2. The Upper Eel River Development.

3. The North Bay Aqueduct east of the Cordelia Pumping Plant.

4. The Delta Facilities.

5. The means of complementing conveyance capacity in the San Luis division of the California Aqueduct.

6. The California Aqueduct downstream from the junction of the West Branch.

7. The Coastal Branch of the California Aqueduct downstream from the intake to the Devil's Den Pumping Plant.

8. The San Joaquin Master Drain.

The bases for cost estimates utilized herein for Abbey Bridge and Dixie Refuge Dams and reservoirs, the Upper Eel River Development, North Bay Aqueduct east of the Cordelia Pumping Plant, and the Coastal Branch of the California Aqueduct downstream from the intake to the Devil's Den Pumping Plant are as generally described in Appendix C. The basic capacities and alignments contained therein for these project features are the same as those shown in last year's bulletin.

The assumptions made for the analyses in this bulletin, in regard to estimated costs of the other features listed above, are described in the following sections.

Delta Facilities

The Peripheral Canal has been designated as the project facility to transfer water across the Sacramento-San Joaquin Delta.79/ The facility will consist of a canal about 43 miles long that will divert water from the Sacramento River near Hood, convey it past the western extremities

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79/ See page 21, footnote 32.

of the City of Stockton, and terminate at intake facilities to the Tracy Pumping Plant of the federal Central Valley Project and at the Clifton Court Forebay of the California Aqueduct. The Canal and appurtenances are still in the advance planning phase and alignment studies are under way, as described in Chapter II.

The costs shown in last year's bulletin for the Delta Facilities were based upon those components involving the function of nonfederal water supply (the "Peripheral Canal Facilities" and "Western Delta Agricultural Facilities") as shown in Table 5 of the Interagency Delta Committee Report, "Plan of Development, Sacramento-San Joaquin Delta", dated January 1965.

Since the release of the Interagency Delta Committee Report, the Department and the Bureau of Reclamation have been engaged in negotiating a memorandum of understanding so that the Peripheral Canal could serve both the federal Central Valley Project and the State Water Project.

A letter[80/] from the Bureau of Reclamation sets forth a basis for an anticipatory agreement for federal-state cooperation in the location, design, construction, operation and financing of the joint-use facility. Included in the letter were two charts showing a tentative cost allocation and cost sharing proposal for capital and annual operating costs, respectively. This letter represents the latest information available concerning the estimated obligations to the State for the Peripheral Canal and is utilized as a basis for the cost estimates in this bulletin. Though the Department generally agrees with the estimated capital costs summarized in the Bureau's letter, it feels the actual operating costs may be greater than indicated in the letter. For this reason, the estimated annual operating costs included in the analyses in this bulletin for the State's share of the Peripheral Canal are greater than those shown in the Bureau's letter, by the amount of estimated power and energy costs which would be required to pump project water at the head of the Canal.

Complementary Conveyance Capacity in the San Luis Division

The San Luis Agreement[81/] provides 7,100 cubic feet

80/ Letter from Robert J. Pafford, Jr., Regional Director, Region II, Bureau of Reclamation, to William E. Warne, Director of Water Resources, December 20, 1965.

81/ "Agreement Between the United States of America and the Department of Water Resources of the State of California for the Construction and Operation of the Joint-Use Facilities of the San Luis Unit", December 30, 1961.

feet per second as the State's share of the conveyance capacity at the head of the joint-use facilities of the California Aqueduct. The project demands described in Chapter VII would require a capacity for the State Water Project of about 8,093 cubic feet per second at that point, under the planned mode of aqueduct operation. The insufficiency of capacity, amounting to 993 cubic feet per second, would not be experienced until late in the 1980's when annual demands approach maximum values.

This bulletin considers that the required additional capacity will be provided as part of a future transportation facility designed, primarily, to meet growth of water demands in the southern portions of the State after 1990. An estimate of these future requirements and an indication of possible routes of supply are reported on page 99 of the Department's Bulletin No. 160-66:

> "Additional water supplies to be delivered via conveyance facilities not yet identified will also be needed in the San Joaquin Valley, Central Coastal, and Southern California areas beginning in the 1990's. Current studies indicate that by 2020, the Central Coastal and South Coastal areas will require some 490,000 and 1,200,000 acre-feet per year, respectively. The additional requirement within the San Joaquin Valley might be met most favorably through enlargement of the proposed second phase of the East Side Division of the Central Valley Project. There may also be the need for additional transportation facilities on the west side of the valley". 82/

The Department has requested 83/ that an opportunity be provided, through the authorizing legislation, for the State to participate in the East Side Division of the Central Valley Project in accordance with plans to be developed in the years ahead.

Definite proposals have not been developed, as yet, for complementing the present deficiency in conveyance capacity of the San Luis division. The proportionate share of the costs of a future facility which would provide the complement will depend upon the location and total capacity of

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82/ See page 3, footnote 1.
83/ Letter to Robert J. Pafford, Regional Director, Region 2, U. S. Bureau of Reclamation, by William E. Warne, Director, Department of Water Resources, November 10, 1965.

that facility and attendant economies of scale. For the analyses in this bulletin, it is assumed that the supplemental transportation facility would be located adjacent and parallel to the San Luis division and would be of approximately the same scale.

California Aqueduct Downstream from the West Branch Junction

The design capacities for reaches of the California Aqueduct from the Delta to the junction of the West Branch have been established. Construction of these reaches is either completed or under way. Construction has not fully commenced further south, other than that covering exploratory and site preparation work, and the diversion tunnel for Castaic Dam.

The capacities of most reaches of the California Aqueduct below the West Branch junction are subject to change as of April 1, 1966, due to requests submitted by some of the contracting agencies in the area and to a pending agreement with the City of Los Angeles.

The Department prepared, and transmitted to the water supply contractors in Southern California, a preliminary report[84/] proposing final reach capacities for the California Aqueduct downstream from the junction of the West Branch. These capacities have been used as the bases of cost estimates used in this bulletin for this area. Certain of the contractors subsequently requested changes in the location of their points of delivery from the Aqueduct and/or requested changes in the maximum monthly delivery capacities to be provided.

The execution of a cooperative power development agreement with the City of Los Angeles[85/] would also create changes because such an agreement would affect the design capacity of the Angeles Tunnel on the West Branch.

San Joaquin Master Drain

The Master Drain, described in Appendix C, is designed to meet needs for agricultural waste water disposal in the entire San Joaquin Valley. The facility would be

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84/ See page 25, footnote 45.
85/ See page 27, footnote 48.

constructed in three stages. The first stage would extend from Antioch Bridge to Kettleman City and is scheduled to receive waste waters commencing in 1969 and 1970. The second stage would extend from Kettleman City to the southern terminus of the Drain, in the vicinity of Buena Vista Lakebed. This stage would be constructed in the late 1970's. The third stage would not be required until the late 1980's and would consist of an enlargement of the first stage to its final capacity.

Last year's bulletin pointed out that basic agreement between the State and the Bureau of Reclamation had been reached on the sharing of construction and operation costs of the first stage of the Master Drain. The Federal Government would contribute about 60 percent of the construction costs of that stage, for the conveyance of waste waters from the San Luis service area. Construction of the first stage as a joint-use facility will result in an estimated total joint saving of at least $18,000,000, on a present worth basis.

It appears prudent that the construction of the first stage should proceed on schedule to realize its economic benefits as a joint-use facility. However, the eventual construction of the last two stages will depend upon whether or not repayment contracts are secured. For this reason, only the costs of the first stage are included for the purposes of the analyses in this bulletin. The costs of the second and third stages will be included in future bulletins of this series if, and when, contracts covering repayment are executed.

The Department is firmly convinced that a Valley-wide master district provides the most equitable means by which the Master Drain could serve the needs of the San Joaquin Valley, and by which repayment of its reimbursable costs could be secured. Considerable time and effort will be required before a master district can be formed, in view of the large area and the large number of people within its boundaries.

Changes in Estimated Capital Costs

The capital costs of the State Water Project were shown in last year's bulletin to be about $2,559,200,000. The capital costs of project facilities are currently estimated to total about $2,530,400. The following tabulation presents a summary of the major changes which cause the overall decrease in the order of $28,800,000:

Item	Change in total estimated capital costs, in millions of dollars: Increase	: Decrease
Change in bases for reflecting the estimated costs of the Delta Facilities:		
1. Assumed construction of the facilities by the Bureau of Reclamation, with the State contributing its share of costs, rather than vice versa.		70.7[a/]
2. Assumed State's share of costs as shown in the Bureau's letter dated December 20, 1965, rather than the "nonfederal" share shown in the Interagency Delta Committee Report.		28.4
Subtotal		99.1
Cost of features not fully reflected in previous bulletins:		
1. Monitor and control system	30.0	
2. Clifton Court Forebay	10.3	
3. Access roads (Upper Feather Area)	1.3	
Subtotal	41.6	
Cost of features previously reflected but deleted in this bulletin:		
1. Second and third stages, San Joaquin Master Drain		49.7
Change in estimated costs for remaining facilities and features of the Project:		
1. Surveys and engineering studies	5.3	
2. Rights-of-way acquisitions	33.0	
3. Design and construction	30.1	
4. Preoperating expense	10.0	
Subtotal	78.4	
TOTAL CHANGE, Bulletin No. 132-65 to Bulletin No. 132-66:		28.8

a/ The net costs to the State are unaffected by this change. Federal contributions decrease a corresponding amount and offset the reduction in the Project's capital costs. Federal contributions are included in the category of "miscellaneous receipts", which can either be applied directly to reduce capital expenditures by the State or to payments on Water Bond service.

The most significant change in the estimated capital costs of the Project would appear to be the $99,100,000 reduction due to the shift in bases for reflecting the costs of the Delta Facilities. Last year's bulletin included the costs of physical components involving the function of "nonfederal water supply" as shown in the Interagency Delta Committee Report. That approach assumed the Department would act as the constructing agency for those components. This year's bulletin reflects the "State's share" shown in the Bureau of Reclamation's letter of December 20, 1965, and assumes that the Bureau would act as the constructing agency. However, $70,700,000 of the total reduction does not constitute a change in the net costs to the Project, but rather a shift in how the federal share of costs for the Delta Facilities is treated in the financial analysis for the Project, as explained in Note (a) of the preceeding tabulation.

This year's bulletin shows an addition of about $41,600,000 for the costs of features not fully reflected in previous estimates. Most of the increase is for the Monitoring and Control System, for which only planning costs have previously been included, and the Clifton Court Forebay, for which only a partial estimate of the costs were previously included within the estimate for the Delta Facilities.

The costs of the second and third stages of the San Joaquin Master Drain, which were reflected in last year's bulletin but deleted herein, amount to about $49,700,000.

The bulk of the remaining changes, amounting to about an additional $78,400,000 results from changing estimates of construction costs and associated costs of design, rights-of-way acquisitions, relocations, construction, supervision, and construction contingencies. This increase cannot be traced to any one aspect (such as an inflationary trend in construction prices), and constitutes about 3 percent of the total estimated costs of the Project, well within acceptable limits for cost estimation accuracy. These changes are shown in Table 12, by project facilities and features.

Composition of Capital Costs

The capital costs of a project facility constitute all expenditures incurred for the facility between the date when authorized for construction and the date when an operational status is attained.

A facility will generally be considered operational on January 1 of the year following the year in which physical

construction of the facility is completed. However, capital costs also include the initial costs of additional electromechanical units of pumping and power recovery plants, or additional barrels of pipelines and penstocks, which may be installed within the operational period.

Table 13 summarizes the annual capital expenditures for the State Water Project by the major classifications of cost items. These expenditures exclude annual interest charges (i.e., "interest during construction"). As of the end of the calendar year 1965, costs of about $532,562,000 had been incurred. The composition of the estimated remaining costs of about $1,997,824,000 is shown in that table and is described in the following sections.

Surveys and Engineering Studies

The portions of the State Water Project which are still in the formulation phase require additional studies prior to the preparation of final designs. The estimates of future capital expenditures for the project include about $13,762,000 to cover the expense of surveys and engineering studies.

Design, Rights-of-Way, and Construction

The specific items included in the cost classifications of design, rights-of-way acquisitions and relocations, and construction have been described in previous bulletins of this series.

Construction costs of works currently under contract are based on bid data. For work to be done under future contracts, construction costs in this bulletin are based upon preliminary designs and upon unit prices generally prevailing in January 1966. In both cases, allowances are included for contingencies during the construction period which generally range between 15 and 20 percent.

Table 13 shows these categories of future capital costs under the three major classifications. Estimated costs are: design, $51,712,000; rights-of-way acquisitions and relocations, $110,232,000; and construction, $1,598,055,000; totaling $1,759,999,000.

Local Impact Aid

Pursuant to the Byrne Act,[86] payments are made to local governments for the temporarily increased municipal costs directly attributable to the influx of construction workers. Such payments are now being made to the Cities of Oroville and Los Banos. The estimated future costs of this type total about $955,000.

Preoperating Expense

Costs of an operational nature, which are incurred prior to completion of the construction of the various project features, are included in the capital costs of such features. These capitalized costs are of the following two types and amounts, and are more fully described in the section entitled "Composition of Operating Costs":

1. General operating costs, which are incurred for the Project as a whole; $31,466,000.

2. Direct operating costs, which are incurred for a particular facility to insure its being operational at the end of construction activities; $19,962,000.

Local Projects Loans and Grants

The Burns-Porter Act reserved $130,000,000 for assistance to local water development facilities under the Davis-Grunsky Program. In addition, a sum of $1,419,000 was utilized for the Program from funds appropriated prior to passage of the Burns-Porter Act. Approximately $20,024,000 had been expended by the end of 1965. The estimated future annual disbursements for the Program are shown on Table 13.

State Contributions for the San Luis Division

The San Luis division of the California Aqueduct is a joint-use facility being constructed by the Bureau of Reclamation, and financed in part by the State. In accordance with the federal-state agreement of December 30, 1961, the

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86/ Part 7 (commencing with Section 12950) of Division 6 of the Water Code.

Bureau of Reclamation will pay 45 percent and the State will pay 55 percent of the construction costs. The joint costs to be shared are specified as only those costs incurred after July 1, 1959. The total cost of the joint-use facilities is estimated to be about $308,003,000, of which about $169,402,000 will be paid by the State. It is estimated that the State will have to pay about $60,285,000 in 1966 and subsequent years, accounting for moneys already advanced, and for credits received through 1965.

Composition of Operating Costs

All actual and estimated costs of an operational nature are summarized for the State Water Project in Table 14. The bases for these costs are described under the subheadings that follow. Such costs, when incurred for features after they are transferred from a construction to an operational status, are considered herein to be annual operating costs. The actual and estimated annual operating costs for the State Water Project, summarized in the last two columns of Table 14, exclude those "Preoperating Expenses" previously described.

General Operating Costs

General operating costs are for various programs, concerning the operation and maintenance of the State Water Project as a whole, which are not directly assignable to any specific facility or aqueduct reach. Such programs include the following:

1. Water supply contract negotiation and administration.

2. Power contract negotiation and administration.

3. Financing and repayment studies for the project.

4. Formulation of operation and maintenance management criteria.

5. Operational studies to prepare project operation plans.

6. Special continuing investigations and activities concerning the Project, such as obtaining water rights, data collection and analysis, and report preparation.

Costs of insurance required under revenue bond financing, and of administering the Federal Power Commission License, specifically assigned to the Oroville-Thermalito power facilities, are included in Table 14 as general operating costs for purposes of presentation. The two items are not related to categories of direct operating costs discussed under the following subheadings of this section. These costs are estimated to be about $209,000 annually.

General operating costs are estimated to level off at about $7,551,000 annually under conditions of substantially full project utilization.

Salaries and Expenses

This category includes the costs for personnel directly involved in operating and maintaining the various features of the State Water Project. The annual costs shown in Table 14 are based on estimates of the required personnel at field locations, except those needed for certain of the facilities currently under formulation. For the latter facilities, the estimated annual costs for operation and maintenance personnel are based on approximate percentages applied to the total capital costs of each facility.

Salary ranges for operation and maintenance personnel have been tentatively estimated on the bases of analyses of job requirements and comparisons with salaries of existing state civil service classifications. The estimated costs reflect salaries at the top of the pay grades assumed. Basic salary costs have been increased by an allowance of 70 percent to cover expenses of supervision and administration, retirement contributions, standard personnel allowances such as travel expenses, and other indirect charges.

As shown in Table 14, the estimated annual costs of salaries and expenses reach a level of about $2,964,000 for operating personnel and $6,695,000 for maintenance personnel.

Equipment, Materials, and Supplies

This category includes the costs of equipment, materials, and supplies required for the annual maintenance of the State Water Project.

These costs are assumed to be a function of installed capacities for electro-mechanical units, and of

maintenance personnel requirements, for reservoirs and aqueducts. Estimated quantities and costs are based on Bureau of Reclamation experience.

Under full operation of the facilities, these costs will total about $1,682,000 per year.

Cost of Pumping Power and Value of Recovery Generation

Table 14 shows the estimated annual power costs for project pumping plants, and annual values of recovery generation for powerplants located on the California Aqueduct. The costs and values shown do not include the costs of pump-back energy, or the value of generation, for the Oroville-Thermalito power facilities. The value of the net generation of Oroville-Thermalito power is considered herein as a project revenue, and not as a factor reducing the annual operating costs of the Project.

The costs of project power requirement reflects the use of all sources discussed in Chapter VIII, except project recovery generation. Priority of use was given to the lower cost sources, to the extent of their availability. After the required amounts of capacity and energy from each source had been determined, the unit costs of each respective source were applied resulting in the total annual costs shown in Column 5 of Table 14.

The values of recovery generation, shown in column 6 of Table 14, represent the reduction in the above annual power costs which would result when project recovery generation is used as an offset to the project power requirement and assigned the value of the other source which otherwise would have been used.

The estimated costs for project power requirement are about $39,542,000 annually, under conditions of full project operation. This represents about 85 percent of the total annual operating costs of the Project.

Replacement Costs

This category reflects the costs of replacing those physical items (such as pumps, generators, and structures), which are expected to wear out before the end of the project repayment period. Estimates of required replacement costs are based upon recent studies by the Bureau of Reclamation. The costs shown in Column 7 of Table 14 represent annual

deposits to a replacement reserve fund which, when accumulated at 3.5 percent annual interest, will provide sufficient moneys to replace each item at the end of its estimated useful life, based on present cost levels.

Although the annual rate of 3.5 percent is below the current interest yield on the fund in which the replacement reserve is invested, it has been selected as reasonably representative of the average rate that may be realized over the years that the reserve is being accumulated.

The Department intends to periodically review the adequacy of both the above interest rate and the replacement cost assumptions. Required deposits are currently estimated to total $1,837,000 during years of full project operation.

Allocations of Costs

The contracts for a water supply from the State Water Project provide that the contractors will repay, with interest, those costs of the project conservation and transportation facilities which are reimbursable, as determined by the State. This provision requires allocations of costs of project facilities (1) between project conservation facilities and project transportation facilities and (2) between reimbursable and nonreimbursable project purposes. Relative to the latter, costs allocated to water supply, drainage benefit, and power generation are reimbursable by the project contractors for these respective services. Flood control is considered to be a nonreimbursable purpose, the costs of which will be borne primarily by the Federal Government. Costs allocable to the purposes of recreation and fish and wildlife enhancement are nonreimbursable by project contractors under the Davis-Dolwig Act.87/

Cost Allocation Percentages

Presented in this section are descriptions of the cost allocation percentages determined for the allocation of project costs between conservation and transportation facilities and among purposes of the project. The application of these percentages to determine allocated capital and operating costs of the Project are discussed in subsequent sections.

87/ Sections 11900 through 11925 of the Water Code.

Allocations between Conservation and Transportation Facilities. The water supply contracts provide that the costs of aqueduct reaches from the Delta through San Luis reservoir are to be allocated between project conservation facilities and project transportation facilities by the "Proportionate Use of Facilities Method". San Luis reservoir is herein considered to be a project conservation facility. The assumptions as to the measures of use for this allocation were described on pages 176 and 177 of Bulletin No. 132-64. The percentages given in that report have been revised to reflect subsequent changes in water transportation requirements. The derivations of the new percentages are shown in the following tabulation:

Reach of California Aqueduct	Measure of use, in cubic feet per second			Proportionate use, in percent		
	Water conservation	Water transportation	Total	Water conservation	Water transportation	Total
Delta through Bethany reservoir	1,887	8,413	10,300	18.3	81.7	100.0
Bethany reservoir to San Luis Forebay	1,885	8,115	10,000	18.9	81.1	100.0
San Luis Forebay to Dos Amigos Pumping Plant[a/]	11,000	13,100	24,100	45.6	54.4	100.0

a/ Since this entire reach acts as a forebay to both the San Luis Pumping-Generating Plant (conservation) and the Dos Amigos Pumping Plant (transportation), the capacities of these plants are considered to be measures of the proportionate use of the reach between water conservation and water transportation, respectively.

Allocations Among Project Purposes. The percentages for allocating the multiple-purpose costs of project facilities, used in this report, are developed in the Department's Bulletin No. 153-66, "Allocations of Costs Among Purposes of the California State Water Project", dated January 1966. The percentages derived therein are for those project facilities which

are completed, under construction, or on which construction is scheduled to commence during fiscal year 1966-67.

The project facilities for which allocations have not as yet been made include Abbey Bridge and Dixie Refuge Dams and reservoirs of the Upper Feather Area, the Delta Facilities, and the Upper Eel River Development. It was assumed for this report, that 100 percent of the multiple-purpose costs of these facilities, except the Delta Facilities, would be allocated to the primary purpose for which each facility is to be constructed. The allocation of the Delta Facilities is based upon the allocated costs shown in the Bureau of Reclamation's letter dated December 20, 1965.

The cost allocation percentages determined in the Bulletin No. 153 series are applicable to the capital costs and to the minimum operating costs of the multiple-purpose features of each facility covered. Minimum operating costs, as differentiated from variable operating costs, constitute those that are incurred in an amount which neither depends upon, nor varies with, the amounts of water delivered. Variable operating costs are allocated annually among project purposes in proportion to the actual annual deliveries made to the respective purposes.

Allocation of Capital Costs

The allocations of actual and projected capital costs for multiple-purpose facilities of the State Water Project are shown in Table 15. Also shown are the portions of the specific costs of features used solely for particular purposes which are financed by project funds.

The specific costs for the purposes of recreation and fish and wildlife enhancement (abbreviated in the column headings as "R&F&WE"), include only those for lands, easements, and rights-of-way purchased concurrently with multiple-purpose project lands in order to decrease total land costs.

The total costs of specific recreation and fish and wildlife enhancement features, including those financed by project funds, will aggregate more than $142,000,000 based on the following partial estimates summarized in Bulletin No. 153-66:

Facilities covered in Bulletin No. 153-66	Costs of specific recreation and fish and wildlife enhancement features	
	Initial installations[a]	Continuing installations[b]
Upper Feather Area:		
Frenchman Dam and Lake	$ 1,710,000	$ 829,000
Antelope Dam and Lake	450,000	1,103,000
Grizzly Valley Dam and Lake Davis	1,760,000	2,483,000
Oroville Area	19,738,000	36,953,000
California Aqueduct	57,232,000	14,640,000
South Bay Aqueduct	3,050,000	2,521,000
Total	$83,940,000	$58,529,000

a/ Sufficient to accommodate the growth in estimated visitor-use during the initial 10-year period of operation.
b/ Sufficient to accommodate the continuing growth in estimated visitor-use subsequent to the initial 10-year period of operation.

The costs of boat ramps, parking lots, and camp sites, included in the above values, are financed by the State General Fund under the provisions of the Davis-Dolwig Act. Such costs are not accounted for by the Department and are not covered in the project financial analyses in this bulletin. The magnitudes of appropriations by the Legislature to date to cover such costs, as well as multiple-purpose operating costs allocated to recreation and fish and wildlife enhancement, are shown in the following tabulation:

Fiscal year	Legislative Appropriations from the State General Fund for the Davis-Dolwig Program			
	Specific costs		Multiple-purpose operating costs	Total
	Recreation planning	Capital outlay		
	(in thousands of dollars)			
1962-63	96	488	10	594
1963-64	119	689	10	818
1964-65	209	1,126	9	1,344
1965-66	198	2,553	38	2,789
Totals	622	4,856	67	5,545

The columns of Table 15 under the heading "unspecified purposes", include certain unassigned costs and costs of the Davis-Grunsky Program. Unassigned costs include costs incurred for features which were deleted from the Project after the expenditures were made, such as for the reaches of the North Bay Aqueduct beyond the Napa turnout and for the Doolan branch of the South Bay Aqueduct. Local projects receiving loans or grants under the Davis-Grunsky Act may be constructed for a number of purposes. Costs of a local project allocated to recreation and fish and wildlife enhancement may be covered by grants which are nonreimbursable by the project construction agency, while the remaining project costs may be reimbursable under the loan provisions of the Act. Only a small portion of the project funds reserved for local projects has been committed to date, and the total estimated costs of the Davis-Grunsky Program are conservatively considered herein to be nonreimbursable.

Allocation of Operating Costs

The classification of actual and projected operating costs of the State Water Project into the two component categories of minimum and variable costs and the allocation of such costs among project purposes are shown on Table 16.

The items of costs included in the minimum and variable categories of operating costs are described in Appendix B. Also shown in that appendix are the bases for the allocation of annual variable operating costs between the purposes of (1) water supply and (2) recreation and fish and wildlife enhancement.

Separation of Costs into Programs

It was mentioned in the introduction to this chapter that the costs of the State Water Project are divided into (1) State Utility Programs, (2) State Nonutility Programs, and (3) Federal Programs. Tables 17 and 18 present the estimated capital costs and operating costs of the project grouped under these three programs. The costs included in each program and related matters are described under the following headings.

State Utility Programs

The costs of State Utility Programs shown in Tables 17 and 18 include the following:

1. The total costs of project conservation facilities allocated to purposes of water supply and power generation. To determine costs which are reimbursable by the water supply contractors under the Delta Water Charge, these costs must further be reduced by the revenues derived from the sale or other disposal of Oroville-Thermalito power generation.

2. The total costs of project transportation facilities allocated to water supply, less the appropriate operating costs of the San Luis division which will be borne by the Federal Government. These net costs are reimbursable by the water supply contractors under the Transportation Charge.

3. The costs of the first stage of the San Joaquin Master Drain allocated to the purpose of drainage benefit, less the share of such costs to be borne by the Federal Government. These costs will be reimbursable under future drainage contracts.

State Nonutility Programs

The costs of State Nonutility Programs listed in Tables 17 and 18 include the following:

1. The total costs of "unspecified purposes", including currently unassigned project costs and the costs of the Davis-Grunsky Program.

2. The total costs allocated to the purposes of recreation and fish and wildlife enhancement.

Federal Programs

The costs of Federal Programs given in Tables 17 and 18 include the following portions of expenditures from project funds:

1. The total costs allocated to the purpose of flood control.

2. The portion of the costs allocated to water supply and drainage benefit excluded from State Utility Programs.

The bases for determination of the costs referred to under item 2 above are discussed under the following subheadings.

San Luis Division. In accordance with the federal-state agreement regarding construction and operation of the San Luis Unit of the Central Valley Project, the State will operate the joint-use facilities of that unit and the Federal Government will contribute its share of operating costs.

The formulae for the allocation of annual operating costs are currently being negotiated with the Bureau of Reclamation. Based upon the trend of current negotiations, operating costs other than pumping power and energy would be allocated 55 percent to the State and 45 percent to the United States. Pumping power and energy are assumed, in this bulletin, to be provided by each agency for its own requirements.

San Joaquin Drainage Facilities. The first stage of the San Joaquin Master Drain would convey agricultural waste waters from the federal San Luis service area as well as from other areas located north of Kettleman City.

Negotiations with the Bureau of Reclamation are substantially complete on the sharing of costs of the first stage. In accordance with the draft of the proposed agreement, it is assumed that the State will pay 40 percent and the United States 60 percent of the capital costs of the first stage incurred after July 1, 1964, and that the United States will pay $220,000 of the total costs incurred by the State prior to July 1, 1964. It is also assumed that the State will pay 33 percent and the United States 67 percent of the annual operating costs of the first stage.

Total Costs to be Financed

Table 19 summarizes the annual capital expenditures of the State Water Project which must be financed by project funds.

A recapitulation of the total annual costs for each of the major facilities of the State Water Project is shown in Columns 1 through 10 of Table 19. The upper values in these columns indicate costs financed from sources made available prior to the effective date of the Burns-Porter Act, and the lower values indicate costs financed or to be financed by project funds subsequent to that effective date.

Capital Costs Credited with Receipts

Receipts accrue from the sale or other disposal of rights-of-way purchased for features subsequently deleted from the Project and from the rental of rights-of-way. These receipts are credited to the capital costs of the facility concerned in accordance with the Department's accounting procedures.

The required financing for the credited costs has previously been provided. In order to determine the total expenditures to be financed, the amounts of costs which have been so credited must be added to the capital costs of the project facilities. Such costs are shown in Column 12 of Table 19 to total $2,864,000.

Costs Financed from Funds Provided Prior to the Burns-Porter Act

The total costs of the State Water Project financed from funds provided prior to the effective date of the Burns-Porter Act are shown in the upper portion of Column 13 of Table 19 to total about $100,275,000. The funds utilized to finance this amount are summarized in the following tabulation:

General Fund	$ 11,495,000
California Water Fund	87,518,000
Local Projects Assistance Fund	1,262,000
Total, from funds provided prior to the Burns-Porter Act	$100,275,000

Costs to be Financed from Funds Provided Subsequent to the Burns-Porter Act

The annual capital expenditures which are currently estimated to require financing by project funds are shown in the lower portion of Column 13 of Table 19 to total about $2,433,082,000.

CHAPTER XI. MISCELLANEOUS RECEIPTS AND PROJECT REVENUES

This chapter describes the total estimated receipts and revenues to be realized for the State Water Project. The annual receipts and revenues through calendar year 1965 are derived from the accounting records of the Department and are summarized in Appendix A. Those for calendar year 1966, and thereafter, are estimated from the costs developed in Chapter X. Estimated in this chapter are the annual net values of project revenues, over and above project operating costs and Oroville-Thermalito power revenues reserved for the coverage of revenue bonds. These net values will be available for meeting service on general obligation bonds and are basic to the financial analysis developed in Chapter XII.

First presented in the following sections is a general description of the interest rates and repayment periods applicable to the estimates contained herein. Second, a discussion of the receipts to be realized from State Utility, State Nonutility and Federal Programs. Finally, estimated project revenues to be derived from State Utility Programs under the payment provisions of water supply, drainage, and power contracts are described.

Project Interest Rates

Article 1(r) of the "Standard Provisions for Water Supply Contract" specifies that the "project interest rate" shall mean the weighted average of interest rates paid by the State on bonds issued under the Burns-Porter Act, without regard to any premiums received on the sale thereof.

Under the Department's present method, the project interest rate is determined by the ratio of the total interest cost to the total "dollar-years" of Water Bonds issued to date, expressed as a percentage. The project interest rate is currently 3.573 percent per annum, determined by the following data on Water Bond issues through Series "E":

Water Bonds issued to date	Dollar-years[a]	Total interest cost
	(in thousands of dollars)	
$50,000,000 Bond Anticipation Notes dated December 1, 1963, due June 15, 1964.	26,944	531
$100,000,000 Series "A" Water Bonds dated March 1, 1964, due September 1, 1973-2013.	3,402,000	119,750
$50,000,000 Series "B" Water Bonds dated May 1, 1964, due May 1, 1974-2014.	1,726,000	60,985
$100,000,000 Series "C" Water Bonds dated November 1, 1964, due November 1, 1974-2014.	3,452,000	123,764
$100,000,000 Series "D" Water Bonds dated March 1, 1965, due March 1, 1975-2015.	3,497,900	122,403
$100,000,000 Series "E" Water Bonds dated December 1, 1965, due December 1, 1975-2015.	3,497,900	130,029
TOTALS through Series "E"	15,602,744	557,462

a/ A dollar-year is a unit equivalent to one dollar of principal amount outstanding for one year.

The annual statements of charges to water supply contractors for payment in 1967, partially substantiated in Appendix B, are based on the project interest rate of 3.573 percent, pursuant to the water supply contracts. The statements for each year thereafter will include adjustments, as necessary, to account for subsequent changes in the project

interest rate. It is assumed that the project interest rate will increase in the future, to a certain extent.

For financial planning purposes, and for the reasons stated in Chapter XII, project interest rate of 3.700 percent is assumed in calculating the revenues expected to be received during the entire project repayment period. This rate was also assumed in the corresponding analyses contained in last year's bulletin.

Project Repayment Period

Article 1(t) of the standard contract provisions specifies that the "project repayment period" is the period beginning on January 1, 1961, and extending until all bonds secured by the pledge of revenues under the Burns-Porter Act have been repaid. Since the maximum term of such bonds is 50 years, the project repayment period will end no later than 50 years after the last bonds are issued.

It was assumed, for the determination of available revenues in this chapter, that the final sale of Water Bonds will occur in 1983, which is the last year in which proceeds from the sale of general obligation bonds is utilized in the financial analysis described in Chapter XII. It was also assumed that final repayment of those bonds will occur 50 years thereafter. The project repayment period will extend through the year 2032, under this premise.

It was assumed, for the detailed repayment tables developed in Appendix B, that the project repayment period will extend at least to the year 2039, fifty years after the last year of construction shown in this bulletin. This assumption recognizes the difficulty of accurately predicting when the last year of repayment of general obligation bonds, issued under the Burns-Porter Act, will occur. This assumption also ties the term of repayment to Article 24(c) of the water supply contracts, which provides that the annual capital costs of the project transportation facilities allocated to each contractor shall be repaid in not more than 50 equal annual installments of principal and interest. Previous repayment tables supplied to the contractors have been based upon this assumption. If, under future financial analyses, it is determined that the project repayment period will terminate before 2039, the amortization period for allocated transportation capital costs during the later years of the construction period will be adjusted so as to match the actual project repayment period.

Miscellaneous Receipts

Miscellaneous receipts include the following items for each major classification of program:

1. State Utility Programs; the annual advances by water supply contractors for excess peaking capacity requested in reaches of the project transportation facilities.

2. State Nonutility Programs; appropriations provided by the Legislature, including those under the procedures of Assembly Bill No. 12.

3. Federal Programs; the annual reimbursements to be provided for the costs allocated to the purpose of flood control and for the federal share of the costs allocated to water supply and drainage benefit.

Miscellaneous receipts also include sales and rentals of rights-of-way, which were described in Chapter X, and other minor reimbursements credited to capital costs.

State Utility Programs

The standard contract provisions provide that the State shall not contract to deliver, in any month of any year, a total amount of project water greater than 11 percent of each contractor's annual entitlement put to municipal use, and 18 percent of each contractor's annual entitlement put to agricultural use. These percentages may be increased for a particular contractor by contract amendment, providing the contractor advances funds to cover costs of enlarging the reaches involved. The amounts of such advances are determined pursuant to Article 24(d) of the contracts.

Article 24(d) also provides that the difference between the estimated costs of the reaches, had excess capacity not been provided, and the actual total costs of the reaches, will be allocated to the contractor requesting such excess capacity as a final adjusted cost. Since the formula for advance of funds will normally require advance of a greater sum than the adjusted cost, the difference will be credited to the contractor's account.

Amendment No. 2 to the water supply contract with The Metropolitan Water District of Southern California,

executed in February 1965, was described in last year's bulletin. Under this amendment, excess capacity will be provided for the District as follows:

1. In each reach of the California Aqueduct from Kettleman City to the junction of the West Branch, 238 cubic feet per second; and,

2. In each reach of the West Branch of the California Aqueduct, exclusive of regulatory storage reservoirs, from the junction of the West Branch to Castaic reservoir, 809 cubic feet per second.

The Department was notified[88/] of action taken by the Board of Directors of the Antelope Valley-East Kern Water Agency, modifying the Agency's previous request for aqueduct turnout locations and capacities, and requesting the initiation of negotiations for amendments to the Agency's water supply contract necessitated thereby. This request would result in five cubic feet per second of excess capacity for the Agency in the West Branch of the California Aqueduct, from the junction to a point near the Aqueduct's crossing of State Route 138. The requested negotiations are currently under way. The analyses in this bulletin, which began about January 1, 1966, are based upon a previous request from the Agency which would have resulted in 40 cubic feet per second of excess capacity for this portion of the Aqueduct. The five cubic feet per second figure presumably will be utilized in the analyses in next year's bulletin.

The calculation of the gross annual advances and allocated costs for the excess capacities included for The Metropolitan Water District of Southern California, and assumed herein for the Antelope Valley-East Kern Water Agency, is shown in Appendix B. These values are summarized by Aqueduct division in Table 20. The last column of Table 20 presents a summary of the calculation and the application of credits for the estimated amounts of advances in excess of allocated costs. Overall credits to the two contractors' accounts would accrue as shown by the negative values of that column. These credits, totaling about $32,700,000, are herein applied to the water supply charges of the two contractors in 1971, and would reduce that year's revenues from State Utility Programs by a like amount.

88/ Letter to Mr. James J. Doody, Southern District Director, Department of Water Resources, from Mr. Wallace G. Spinarski, Assistant Manager, Antelope Valley-East Kern Water Agency, February 2, 1966.

State Nonutility Programs

Legislative appropriations are contemplated which will cover the costs allocated to the project purposes of recreation and fish and wildlife enhancement included in State Nonutility Programs. These costs are shown in Tables 17 and 18, for capital and operating costs, respectively.

Reimbursement of the operating costs of multiple-purpose features allocated to these purposes will be from the State General Fund under the provisions of the Davis-Dolwig Act. Such reimbursements have been included annually as items in the Department's budgets and have been appropriated by the Legislature.

Reimbursement of the capital costs of multiple-purpose features allocated to these purposes and reimbursement of expenditures for recreational lands acquired with Project Funds are herein assumed to occur in the manner provided by Assembly Bill No. 12 of the 1966 First Extraordinary Session. This enacted bill, which was described in Chapter II, will permit the Department to draw upon the portion of the State's share of tidelands oil and dry gas revenue to be deposited annually in the Central Valley Water Project Construction Fund for coverage of such costs, to the extent the Legislature approves such allocations and expenditures. The magnitude of the annual deposit will be $5,000,000 under the new law.

Such miscellaneous receipts are assumed to accrue to the Project commencing in calendar year 1966. Legislative approval of the multiple-purpose allocations, and of the expenditures from Project Funds for acquiring recreational lands, made by the Department to date is not expected until the 1967 session. It is herein assumed that the annual deposits for 1966 and 1967 would be available to the Project in 1967 and that the annual deposits thereafter would be utilized during the year in which made. The portion of the capital costs allocated to recreation and fish and wildlife enhancement are shown in Table 17 to total about $106,787,000 Reimbursement of this amount, and interest thereon at the future project interest rate of 3.7 percent, would be completed in calendar year 2000 with annual deposits of $5,000,000. This reimbursement schedule is developed in Column 3 of Table 21.

Federal Programs

The total reimbursements to the Project from Federal Programs are shown in Table 22. These annual contributions

would cover the capital and operating costs of Federal Programs shown in Tables 17 and 18. The agreement with the Federal Government for the reimbursement of costs of Oroville Dam and reservoir allocated to flood control, and a proposed similar agreement for Del Valle Dam and reservoir, provide for the payment of estimated future annual operating costs on a capitalized basis, along with payments for capital costs. The federal contributions for these two features are briefly described under the subheadings that follow:

Oroville Dam and Reservoir. The Federal Government agreed to contribute toward the total costs of the Oroville division, allocable to the project purpose of flood control, an amount equal to 22 percent of the actual capital costs of the dam and reservoir, exclusive of the Oroville-Thermalito power facilities, not to exceed $85,000,000.89/ Federal administrative costs and interest on the federal investment during construction are to be deducted from this value to obtain the maximum net contribution. Reimbursements to date under the contract amount to $39,750,000. It is presently estimated that the total reimbursement, which includes the capitalized value of annual operating costs allocable to the purpose of flood control, will be about $67,670,000.

Del Valle Dam and Reservoir. A federal contribution for the costs of Del Valle Dam and reservoir allocated to flood control has been authorized.90/ A draft of contract with the Corps of Engineers has been prepared.91/ The contract draft provides for a contribution equal to 30.7 percent of the actual capital costs of the Dam and reservoir, including federal administrative costs during construction, but not to exceed $4,080,000. In addition, $776,000 would be contributed for the capitalized value of annual operating costs allocable to flood control. The maximum total federal reimbursement, under the provisions of the contract draft, would be $4,856,000.

89/ Contract No. DA-04-167-CIVENG-62-56, DWR 152012, March 8, 1962.

90/ Section 203 of the Flood Control Act of 1962, 76 Stat. 1173, authorizes a contribution substantially in accordance with the plans, and subject to the conditions set forth in the report, of the Chief of Engineers in Senate Document 128, 87th Congress, Second Session.

91/ No. DA-04-203-CIVENG-66-195.

The capital costs allocable to flood control, based upon the above-mentioned 30.7 percent applied to the latest estimates of costs for Del Valle Dam and reservoir as shown herein, would be $7,331,000. Thus, the total contribution which would cover all estimated costs allocable to flood control, including the $776,000 for capitalized operating costs, would be $8,107,000.

It was stated in last year's bulletin that the Department had asked the Corps of Engineers to review the present limitation in the hope that it could be raised to reflect more recent cost estimates. The San Francisco District of the Corps of Engineers subsequently notified the Department92/ that the existing legislation authorizing the federal participation specifically limits the federal contribution to $4,080,000 for construction; that there is no authority to modify the monetary limit; and, that it is not appropriate for the Corps of Engineers to initiate action on additional legislation by the Congress.

The Director of Water Resources, on March 3, 1966, approved a program93/ whereby the Department will seek the assistance of local congressional representatives in obtaining legislation to eventually increase the ceiling on federal participation, but to conclude negotiations with the San Francisco District, Corps of Engineers, with the objective of executing a satisfactory contract for a federal flood control contribution within existing statutory limits.

Miscellaneous receipts totalling $8,107,000, which would cover all estimated costs presently allocable to flood control, are included herein for Del Valle Dam and reservoir. There are reasonable expectations that the full amount allocable to flood control will eventually be reimbursed to the Project.

Miscellaneous Receipts Available for Project Financing

The total miscellaneous receipts which will be available to assist in financing the project are summarized

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92/ Letter to Mr. William E. Warne, Director, Department of Water Resources, from Lt. Colonel Robert H. Allan, District Engineer, San Francisco District, Corps of Engineers, February 1, 1966.

93/ Department of Water Resources Memorandum by Mr. C. A. McCullough to Messrs. John R. Teerink, Alfred R. Golze', and William E. Warne, entitled "Program for Del Valle Dam and Reservoir", March 1, 1966.

in Table 26, which is described in Chapter XII. That tabulation supports the financial analysis presented therein, and develops the respective annual use of such receipts for (1) coverage of general obligation bond service, and (2) direct application to capital expenditures. The miscellaneous receipts in Table 26 include only reimbursements for capital costs, and for those annual operating costs which are recovered on a capitalized basis. The treatment in this bulletin of operating costs repaid on an annual basis is described in the following paragraphs.

The only operating costs associated with State Nonutility Programs are those allocated to the purposes of recreation and fish and wildlife enhancement. As stated heretofore, these costs are being paid directly from the State General Fund under the procedures of the Davis-Dolwig Act. Thus, they are excluded from the financial analysis described in Chapter XII.

The operating costs associated with Federal Programs, which are allocated to the purposes of water supply and drainage, are herein assumed to be paid on an annual basis. Since these annual receipts will directly offset annual operating costs, they are likewise excluded from the financial analysis.

Project Revenues

The total estimated revenues to be realized from State Utility Programs are summarized in Table 23 and include those under existing and assumed water supply, power, and drainage contracts.

Water supply contracts will return, with interest, the State's share of the costs of facilities which are reimbursable by water supply contractors under two separate water charges: (1) the Delta Water Charge, which will return costs of project conservation facilities allocated to water supply and power generation, less Oroville-Thermalito power revenues; and, (2) the Transportation Charge, which will return costs of project transportation facilities allocated to water supply.

Contracts assumed herein covering the sale of Oroville-Thermalito power will return to the State, with interest, those costs allocated to power generation and the portion of the water supply costs credited with power revenues in the determination of the Delta Water Charges.

Drainage contracts assumed herein will return, with interest, the State's share of the costs of the first stage of the San Joaquin Master Drain.

Water Supply and Oroville-Thermalito Power

Water supply contracts, executed or under negotiation, cover about 99 percent of the total capital costs, included in State Utility Programs, which are allocated to water supply. As stated above, the costs and revenues associated with Oroville-Thermalito power, as well as the water supply costs, are used in the calculation of Delta Water Charges. Considering water supply and Oroville-Thermalito power as one program of the State Utility, water supply contracts cover about 88 percent of the associated capital costs.

Oroville-Thermalito Power Revenues. The annual revenues[94/] estimated to be realized under the future contract, or contracts, covering the sale of power and net energy generation of the Oroville-Thermalito power facilities are shown in Table 23. These total revenues are reflected in the calculation of Delta Water Charges and include revenues which may be reserved for coverage of revenue bonds.

Delta Water Charges for Financial Analysis. Article 22(c) of the water supply contracts provides that the Delta Water Charge for each contractor shall be determined as the product of the entity's annual entitlement (for the capital cost and minimum operation, maintenance, power and replacement components) or actual deliveries of project water (for the variable component) and the applicable Delta Water Rate for each component. It also provides that, through December 31, 1969, the Delta Water Rate will be $3.50 per acre-foot, without regard to components. The computation, thereafter, of the Rate for each component of the Charge is specified by a formula, also set forth in Article 22(c). For purposes of this bulletin, the formula for computing Delta Water Rates may be paraphrased as follows:

94/ See page 95.

1. The present worths, at the future project interest rate, of all appropriate costs which have been incurred, and which are estimated to be incurred, for the entire project repayment period; plus

2. The present worths, at the future project interest rate, of all power revenues which have been realized, and which are estimated to be realized, for the project repayment period; minus

3. The present worths, at the future project interest rate, of all actual revenues received to date under the appropriate component; the above quantities all divided by

4. The present worths, at the future project interest rate, of the annual entitlements to be delivered during the remaining portion of the project repayment period.

The computations of future Delta Water Rates, for the analyses in this bulletin, treat the annual quantities of cooling water, estimated to be required by a nuclear powerplant located at the Tehachapi Pumping Plant, in a similar manner as annual entitlements to project water. These analyses consider that the operating agency of the powerplant would bear a share of the costs of project conservation facilities matching that of an entity contracting for a corresponding water supply under the standard contract provisions. The revenues which would be realized from the charges paid by the operating agency are also accounted for in these analyses. If one of the coastal powerplant sites located in Southern California were selected, instead of the Tehachapi site, ocean water would be used for condenser cooling. In this eventuality, the Delta Water Rates calculated herein would be about $0.05 per acre-foot higher than shown, subsequent to 1969.

The computations of the components of the Delta Water Rates applicable for the project repayment period after 1969, which were used to derive the revenues shown in Table 23, are summarized in the following tabulation:

Item	Capital cost component rate	Operation, Maintenance, power, and replacement component rates		Total, Delta Water Rate
		Minimum	Variable	
Present worth of costs, power revenues and charges at 3.7 percent interest (in millions of dollars):				
Total cost of project conservation facilities under State Utility Programs allocated to water supply and to Oroville-Thermalito power for the entire project repayment period.[a]	772.36	40.23	1.93	814.52
Oroville-Thermalito power revenues for the entire project repayment period.[a]	-391.92	-0.00	-0.00	-391.92
Delta Water Charges through 1969 ($3.50 per acre-foot applied to present worths of entitlements through 1969).	- 1.87	-0.00	-0.00	- 1.87
Net Values	378.57	40.23	1.93	420.73
Present worth of annual entitlements from 1970 through remainder of project repayment period[a] (in millions of acre-feet).	65.89	65.89	65.89	65.89
Unit Delta Water Charges (Above net values divided by present worth of remaining entitlements, in dollars per acre-foot).	5.75	0.61	0.03	6.39

a/ Considering the project repayment period to end in calendar year 2034.

The above calculations assume that:

1. The fixed rate of $3.50 per acre-foot of annual entitlement through 1969 consists entirely of the capital cost component.

2. The net revenues to be derived from the sale or other disposal of electrical energy, in excess of the costs allocable to power generation, will be credited entirely to the capital cost component.

The estimated rates will repay the reimbursable costs of the initial project conservation facilities and additional project conservation facilities included in the State Utility Programs analyzed in this bulletin. The facilities involved would have sufficient capacity to satisfy the project repayment period, with anticipated continuing depletions of flow in the Delta watershed. These rates reflect the necessity of presenting a complete integral or "closed" project for the purposes of the financial analysis of Chapter XII. The conservation facilities of the State Water Resources Development System are thus assumed to develop only the yield required for the present State Water Project.

The State Water Resources Development System is, of course, dynamic and will continue to grow after the present State Water Project can no longer satisfy the demands for supplemental water supplies subsequent to 1990. The continuing implementation of conservation facilities to meet the supplemental demands under an expanding System is reflected in the structure of the Delta Water Charge. Article 22(g) of the water supply contracts provides that, upon the construction of supplemental conservation facilities, the Delta Water Charge will be adjusted, as necessary, to recover the costs of such facilities. It further provides that the new rates will be paid by both contractors for supplemental water and contractors supplied by the present minimum project yield. These might be termed "open" Delta Water Rates. A presentation of illustrative "open" Delta Water Rates was included in Bulletin No. 132-65, pages 147 through 150, and is not repeated herein.

Transportation Charges. Revenues under the Transportation Charge are computed in detail, in Appendix B, for substantiation of the annual statements of charges to water supply contractors. That appendix performs the following functions.

1. It shows annual capital, minimum operating, and variable operating costs allocated to water supply for each reach of the project transportation facilities.

2. It sets forth the detailed criteria and factors utilized to distribute these costs among water supply contractors.

3. It performs the above distribution.

4. It compiles comprehensive repayment schedules pursuant to the applicable standard and special provisions of each water supply contract in accordance with the project costs and other conditions set forth in this bulletin, including the current project interest rate of 3.573 percent per annum, without regard to actual prior payments made. Adjustments for actual payments are contained in the data accompanying the statements of charges to each contractor.

Table 23 summarizes the annual values of actual or estimated revenues from the Transportation Charge. It corresponds with the data developed in Appendix B, with the following exceptions:

1. Payments received through calendar year 1965, and payments to be received under outstanding statements for 1966 (billed in June 1965) and for 1967 (billed in June 1966) were shown as the revenues realized for these years.

2. The future project interest rate of 3.7 percent per annum, rather than the current project interest rate of 3.573 percent, was utilized.

3. Overpayments or underpayments indicated for all years through 1967, with relation to charges computed on the basis of annual costs shown in Chapter X, were accumulated at 3.7 percent per annum and algebraically added to the estimated payments for 1968.

4. Transportation Charges were terminated in the year 2032, fifty years after the last general obligation bond issue indicated in the financial analysis of Chapter XII, rather than in the year 2039, which would be fifty years after the last construction cost of the project transportation facilities is estimated to occur.

It should be noted that the operating cost components of the Transportation Charge, shown in Table 23, are less than the estimated total operating costs of the water transportation facilities, allocated to water supply, shown included for State Utility Programs in Table 18. The difference between these values comprises the operating costs associated with assumed future contractors which are borne by the Project.

Drainage

The repayment structure of the drainage program of the State Utility has not as yet been established. It is arbitrarily assumed for the drainage revenues shown in Table 23 that:

1. A repayment contract would be executed with a master drainage district in the San Joaquin Valley in 1967.

2. The repayment provisions of the contract, or contracts, would correspond with those set forth in Article 24(c) of water supply contracts for the amortization of allocated capital costs, whereby each year's capital cost is repaid to the State in 50 equal annual installments of principal and interest at the project interest rate.

3. The first payment by the district would commence in 1969, for the San Joaquin Master Drain.

These assumptions generally correspond with those utilized in last year's bulletin. However, these assumptions are applied to only the costs of the first stage of the Master Drain rather than to all three stages as considered in Bulletin No. 132-65.

Net Operating Revenues

The total estimated evenues remaining after defraying the operating costs included in the State Utility Programs are shown in Table 24. These net operating revenues must be further reduced for certain considerations to derive the revenues available for coverage of annual service on the general obligation bonds issued to finance the Project. These considerations are described in the following paragraphs.

Net Credits from Advances for Requested Excess Capacity

The estimated net credits from advances to be made by water supply contractors for excess capacity, over-and-above the allocated costs of such capacity, are herein applied to the capital cost components which would otherwise be required from the contractors under the Transportation Charge. The amounts and the timing of application of these credits are shown by the negative values in the last column of Table 20.

Revenues Applied to Capital Expenditures

Minor amounts of project revenues have, in the past, been applied directly to capital expenditures. These total about $108,000. In this analysis, they are deducted from the revenues available for coverage of bond service.

Net Operating Revenues Reserved for Coverage of Revenue Bonds

The financing program described in Chapter XII uses $210,000,000 of revenue bond proceeds for the construction of the Oroville-Thermalito power facilities, to be covered by a contract, or contracts, for the sale of at least 710,000 kilowatts dependable capacity of Oroville-Thermalito power. All of the net operating revenues associated with the Oroville-Thermalito power are herein deducted from the net operating revenues of the Project, to compute the portion available for coverage of general obligation bond service.

Operating Costs of Federal Programs Allocated to Flood Control

The operating costs of Federal Programs allocated to flood control are recovered by the State on a capitalized basis, as previously described in this chapter. These receipts are treated in the financial program as available for coverage of general obligation bond service. Therefore, the annual operating costs covered by such receipts must be paid from project revenues and are herein deducted from the net operating revenues of the Project.

CHAPTER XII. PROJECT FINANCING

This chapter discusses the financial program for the State Water Project, based on current estimates of capital expenditures and revenues. The program has been developed in close cooperation with the Department's financial consultants, Dillon, Read & Co. Inc.

General Discussion

The financial program is based on the principles of the Burns-Porter Act, which became effective November 8, 1960, and the Governor's Contracting Principles relating to the water supply provided by the State Water Project, which were announced January 20, 1960. The sale of securities under the program was delayed by litigation which was decided by the California Supreme Court in 1963.95/ The Court upheld the authority to issue the securities and also upheld the Department's position as to other relevant matters.

The financial analysis contained in this chapter projects the manner in which the State Water Project is expected to be financed, and its costs repaid, on the basis of the Department's estimates and assumptions at the time of preparation of this report. Estimates of project costs continue to be refined and made more precise as activity in design, construction, water supply contracts, power negotiation, and related matters progresses toward the completion date.

The figures shown in the various tables in this section and the financial analysis contained herein are based principally on the following tables included in the bulletin and reference is made to them for more detailed information:

Tables

19	Summary of Annual Capital Expenditures
24	Net Operating Revenues Available for Coverage of General Obligation Bond Service

95/ Metropolitan Water District v Marquardt, 59 Cal. 2d 159, 28 Cal. Rptr. 724, 379 Pac. 2d 28 (February 21, 1963); Warne v Harkness, 60 Cal. 2d 579, 35 Cal. Rptr. 601, 387 Pac. 2d 377 (December 12, 1963).

25 Financial Analysis for Water Bonds - June 1966

26 Miscellaneous Receipts and the Expenditures Thereof

27 Analysis of Offset Bonds

28 Service on Actual and Projected General Obligation Bonds

29 State of California Water Bonds - Schedule of Maturities, Amounts and Coupons

30 Redemption Premiums for State of California Water Bonds

Capital Expenditures to be Financed

The total capital cost of the State Water Project, including appropriate contingency allowances, is estimated at $2,533,357,000, of which $535,533,000 had been expended through 1965 leaving $1,997,824,000 to be expended during the period 1966-1989. These amounts exclude interest during construction and expenditures to be made by the Federal Government for facilities used jointly with the State. It is also possible that a nuclear generating plant will be constructed to supply pumping power. If such a facility is constructed and financed by revenue bonds, it would not affect the financial analysis. Such a facility would be a self-liquidating project.

The total capital cost set forth above reflects a net decrease of about $28,800,000 as compared with the total capital cost shown in Bulletin No. 132-65. For detailed information regarding this decrease, and to project costs in general, reference is made to Chapter X.

The tabulation on the following page gives a breakdown of the total estimated cost by major project facilities. Annual capital expenditures are shown graphically on Figure 3.

Project facilities	Actual through 1965	Projected 1966-1989	Total
	(in millions of dollars)		
Project Conservation Facilities:			
Upper Feather division	10	12	22
Oroville division (including Oroville-Thermalito power facilities)	240	238	478
Delta Facilities	6	49	55
Upper Eel River Development	1	226	227
California Aqueduct (conservation portion)	77	50	127
Total, Project Conservation Facilities	334	575	909
Project Transportation Facilities:			
California Aqueduct (transportation portion)	141	1,225	1,366
North Bay Aqueduct	-	10	10
South Bay Aqueduct	34	25	59
Total, Project Transportation Facilities	175	1,260	1,435
Other Project Facilities			
San Joaquin Drainage Facilities	3	51	54
Local Projects (Davis-Grunsky Program)	20	112	132
Miscellaneous	3	0	3
Total, Other Project Facilities	26	163	189
TOTAL, STATE WATER PROJECT	535	1,998	2,533

The State Water Project, as now designed, will provide a firm supply of 4,230,000 acre-feet of water annually to the end of the project repayment period, estimated to be about the year 2032. It has been assumed in this bulletin that the demand for project water would reach this amount by about 1990. The Department has always recognized, however, that the State's water program must be considered as a continuing one; that there may be an acceleration of demands; and that, in any case, the demand for water after 1990 will continue to grow beyond 4,230,000 acre-feet.

As and when it becomes necessary to enlarge the State Water Project, the Department can consider various alternative means of financing, or a combination of some or all of them. The alternative means of financing to be considered for a future enlargement of the State Water Project could include a more extended use of any or all of the supplemental sources of funds being used for, or potentially available for, the 4,230,000 acre-foot project, including: state appropriations, federal reimbursements, advances by water supply contractors, revenue bonds and general obligation bonds issued under a supplemental bond act.

Sources of Funds for Construction

The sources of funds under the financial program are the following:

1. General Obligation Bonds - "Water Bonds". The major part of the financing will be accomplished by the sale of General Obligation Bonds of the State. The Burns-Porter Act authorizes the issuance of $1,750,000,000 of these bonds for the State Water Project, of which $1,300,000,000 remain unsold.

2. California Water Fund. It is estimated that about $372,321,000 of the moneys required to construct the State Water Project will be provided out of the California Water Fund. Approximately $150,458,000 of such moneys had been expended by the end of 1965. The Burns-Porter Act contains an appropriation of these moneys for the construction of the State Water Project, subject to the right of the Legislature to reappropriate California Water Fund moneys for other purposes, which right has been exercised as to a portion of the Fund.

3. Revenue Bonds. The Department of Water Resources expects to issue revenue bonds to be supported by the power revenues of the Oroville-Thermalito power facilities. Such issue is estimated to provide about $210,000,000 of construction funds. These bonds are authorized by the provision of the Water Code governing the Central Valley Project, the provisions of which were incorporated in the Burns-Porter Act. The Department's authority to issue these bonds was upheld in the decision of the California Supreme Court in 1963.

4. Miscellaneous Receipts. Most of the remaining moneys required for the construction of the State Water Project are being provided from the following sources: certain state appropriations made available prior to the effective date of the Burns-Porter Act and future appropriations assumed to be made available in the

ANNUAL CAPITAL EXPENDITURES

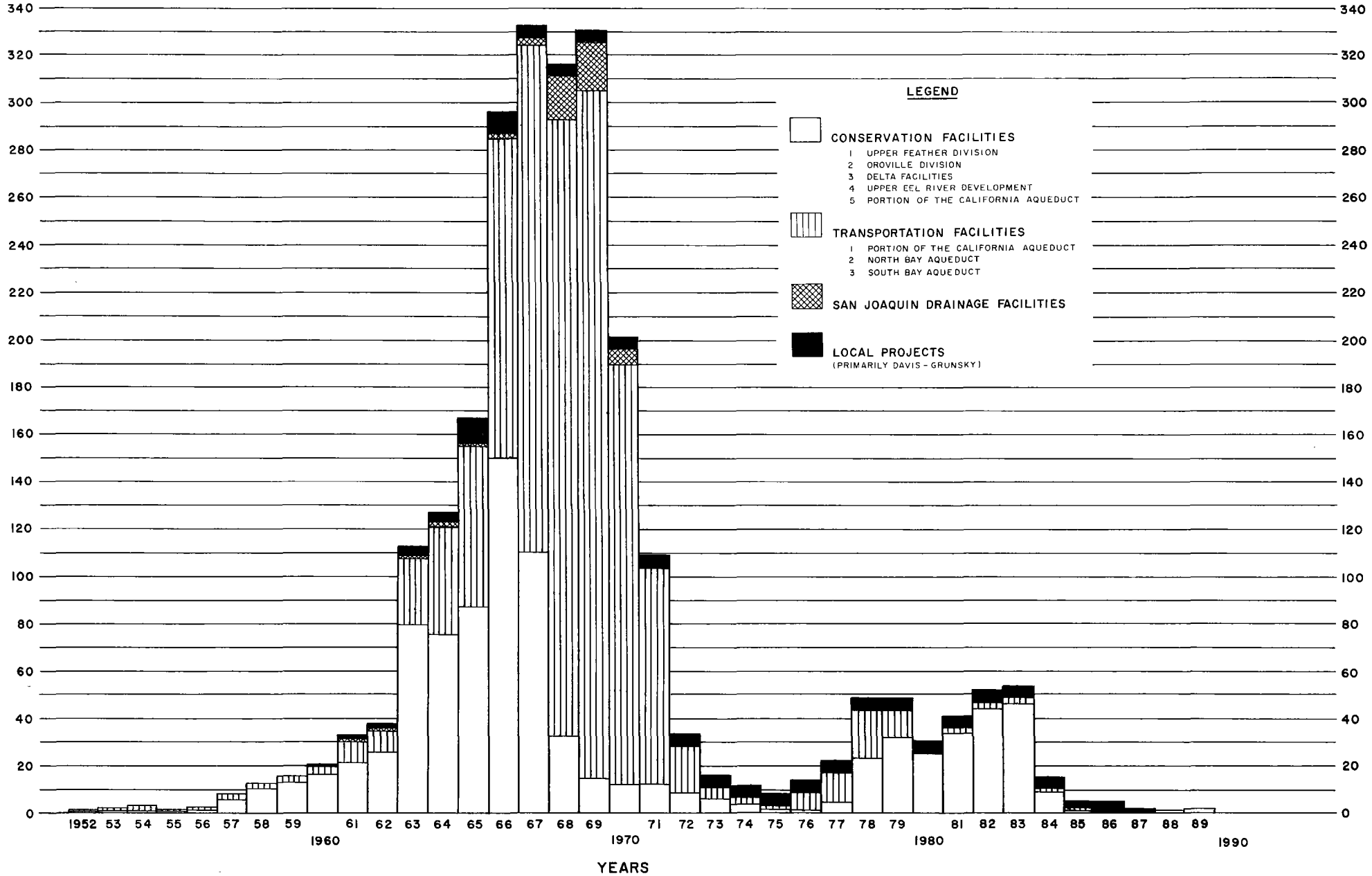


FIGURE 3

manner provided in Assembly Bill No. 12; federal reimbursements for project costs allocated to flood control and for a share of the costs of certain facilities constructed by the State and to be used jointly by the federal Central Valley Project and the State Water Project; advance payments by water supply contractors for excess delivery capability; and, proceeds of rights-of-way sales and rentals, the costs for acquisition of which are included in capital expenditures for the Project.

Summary of Financing

The source and amount of funds assumed to be applied to the capital expenditures required for the State Water Project are shown in the following summary, and graphically on Figure 4:

Item	Actual through 1965	Projected 1966-1989	Total
	(in millions of dollars)		
General obligation bonds proceeds	450	1,247	1,697
Revenue bond proceeds	0	210	210
California Water Fund	150	222	372
Subtotal	600	1,679	2,279
Miscellaneous receipts:			
State appropriations and federal reimbursements[a/]	100	99	199
Advance payments for excess delivery capacity	0	55	55
Total miscellaneous receipts[b/]	100	154	254
Total funds applied to capital expenditures	700	1,833	2,533
Plus (minus) carryover of temporary excess of unexpended bond proceeds.	(165)	165	-
Total capital expenditures	535	1,998	2,533

a/ Consists solely of state appropriations for the period through 1965.

b/ Represents the balance of miscellaneous receipts which are not applied to payment of general obligation bond service, as shown in the next section.

Payment of General Obligation Bond Service

The financial analysis shows that the projected net operating revenues, together with certain other moneys available

FINANCING OF CAPITAL EXPENDITURES

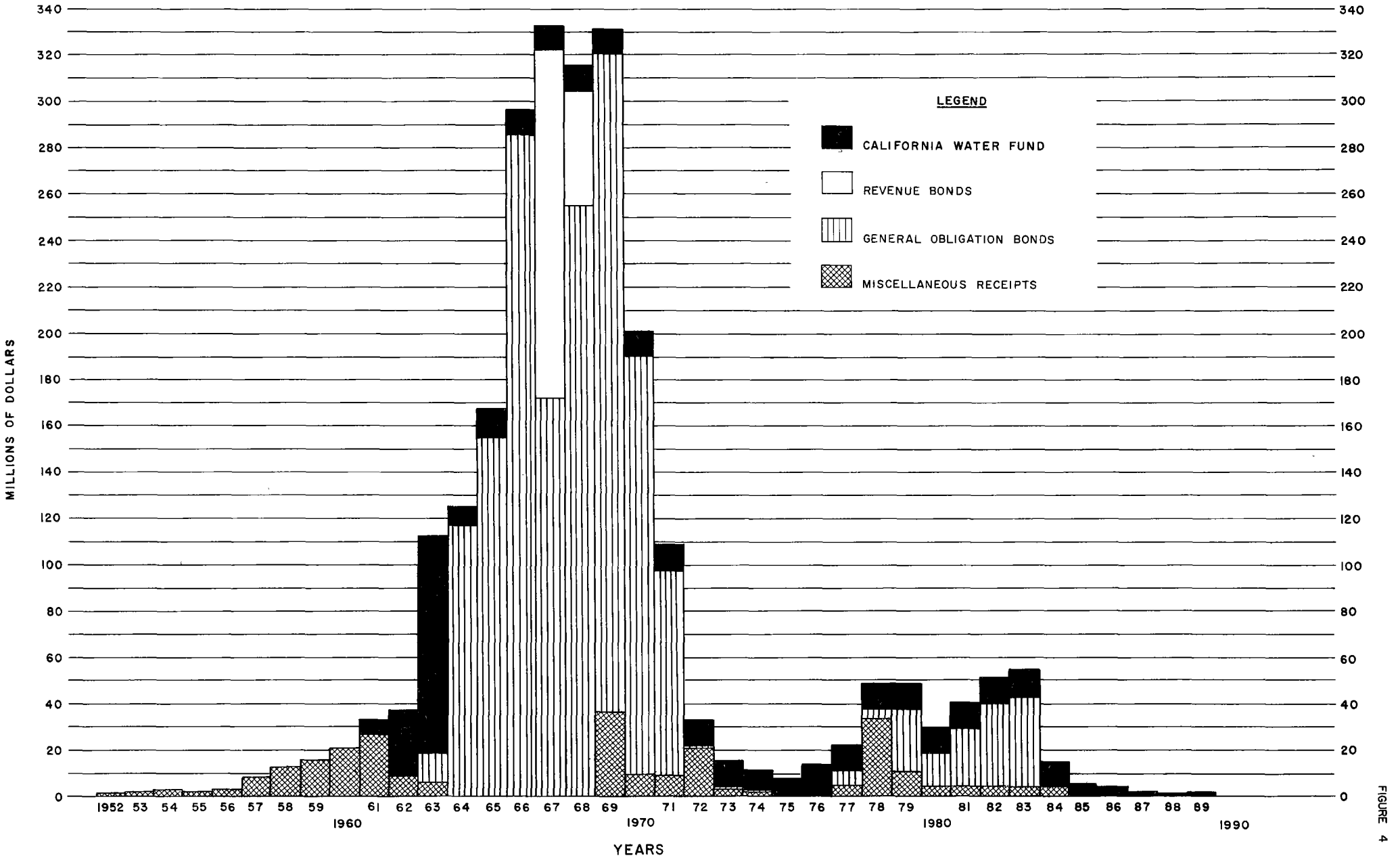


FIGURE 4

for general obligation bond service, are sufficient at all times to take care of the entire general obligation bond service, thus avoiding recourse to the General Fund for this purpose. It also shows a substantial remainder, following the completion of the construction period, of net operating revenues after providing for bond service.

The financial analysis of the application of net operating revenues and other receipts to bond service and the application of the balance is shown in the following table.

Period	Net operating revenues	Miscellaneous receipts applied to bond service[a/]	Water Bond service	Balance of net operating revenues deducted: Paid to California Water Fund	Balance of net operating revenues deducted: Available for construction[b/]
	(in millions of dollars)				
6 years 1960-65	10	8	18	0	0
5 years 1966-70	125	63	188	0	0
5 years 1971-75	265	43	308	0	0
5 years 1976-80	348	14	362	0	0
5 years 1981-85	394	4	394	4	0
5 years 1986-90	425	0	400	25	0
10 years 1991-20	876	0	810	66	0
10 years 2001-10	876	0	811	65	0
10 years 2011-20	744	0	533	211	0
10 years 2021-30	343	0	68	1	274
4 years 2031-34	64	0	5	0	59
TOTALS	4,470	132	3,897	372	333

a/ The miscellaneous receipts shown represent the amount required, together with net operating revenues, to cover bond service. The balance of miscellaneous receipts has been applied to capital costs.

b/ Under the Burns-Porter Act, any net revenues remaining after reimbursement of the California Water Fund become available for construction of additional facilities of the State Water Resources Development System.

Burns-Porter Financing

The funds available to the State under the Burns-Porter Act consist of the proceeds of Water Bonds in the aggregate principal amount of $1,750,000,000, together with certain California Water Fund moneys which are derived from payments to the State of oil and gas royalties and bonuses under certain tidelands leases. The Water Bonds are general obligations of the State, and the payment of interest and principal on such bonds are secured by the pledge of the full faith and credit of the State. In addition, the net revenues of the Project, with certain exceptions, are pledged to support the Water Bonds.

The revenues which are pledged by the Burns-Porter Act to the payment of the Water Bonds constitute solely the portion of the revenues which is allocable to the facilities, or portions thereof, constructed out of funds provided by such Act, namely, proceeds of such bonds and California Water Fund moneys. Thus, if additional general obligation bonds are issued under a supplemental bond act to finance the completion of construction or the enlargement of the Project, they can also be serviced out of those net revenues of the Project which are allocated to the facilities, or portion of facilities, financed by such additional bonds.

Currently, $11,000,000 annually is being made available from the California Water Fund for project construction, and this amount is used in the projections. This is the amount which is provided in the 1966-67 State budget and in Chapter 138, of California Statutes, 1964 First Extraordinary Session, relative to the disposition of tideland revenues.

Revenue Bond Financing

Funds available to the Department for financing capital expenditures, in addition to Burns-Porter Act financing, include the proceeds of revenue bonds issuable under the Central Valley Project Act. In line with the California Supreme Court's decision in 1963, revenues allocable to the facilities financed by revenue bonds can be pledged for such bonds.

The Department presently estimates that revenue bonds proposed to be issued under the financial program will provide proceeds for construction of approximately $210,000,000, equivalent to the cost of the Oroville division allocated to the purpose of generating 710,000 kilowatts of firm power, and will be secured by the pledge of the revenues from the sale of this power. The assumed figure excludes proceeds to be used for the payment of interest during construction. As required by law, the amount of revenue bond issue will provide for such interest

to a date one year following the estimated completion date, for operating expenses during one year following completion, and repayment to the State, with interest, of amounts heretofore appropriated and expended on the facilities.

As negotiations with the potential power purchasers were still in progress at the time of the preparation of this report, the amount of proceeds from revenue bonds is subject to revision.

As the revenue bonds proposed to be issued under the financial program will be supported by power revenues, neither the service on these bonds nor the revenues from such sale are shown in the financial analysis.

The issue of revenue bonds for Oroville is assumed for purposes of this report to be early 1967. The revenue bonds, as planned, will mature over a period of not exceeding 50 years from their date, with fixed retirements in the form of serial maturities and sinking fund payments, calculated to produce approximately level annual bond service.

The security for the revenue bonds would be a power contract or contracts covering the sale of Oroville-Thermalito power, extending over the period to final maturity of the bonds. Under the Central Valley Project Act, a power contract made with other than a state agency must be cancellable by the Department upon five years' notice, if and when the State or any financially responsible stage agency makes application for the power, but only if the applicant entered into a contract whereby the Department receives total revenues at least equal to that which it would have received under the original contract.

Miscellaneous Receipts

Federal Reimbursements

The estimated costs of Oroville and Del Valle Dams and reservoirs which are allocable to the purpose of flood control, assumed to be a responsibility of the Federal Government, would justify a federal contribution of $75,774,000. The San Joaquin Drainage Facilities are assumed to be constructed by the State and to be jointly used by the federal Central Valley Project. The federal share of the capital costs of these facilities is estimated to be $31,599,000.

The federal reimbursement for Oroville Dam and reservoir, although subject to revision as to the total amount and

to congressional appropriations, from time to time, of the unreimbursed balance, are covered by agreement between the Department and the Corps of Engineers. The amounts of the other federal reimbursements are based on tentative agreements and on discussions with the concerned federal agencies.

State Appropriations

Capital expenditures covered by state appropriations made available to the State Water Project, prior to the effective date of the Burns-Porter Act, total about $100,275,000.

In addition to the $11,000,000 annually available to the California Water Fund from tideland oil and gas revenues, appropriations by the State of an additional $5,000,000 annually from such revenues are provided for in Assembly Bill 12, passed during the 1966 First Extraordinary Session and signed by Governor Brown. This appropriation will be used to reimburse the Department for capital costs previously incurred for multiple-purpose features allocated to the purposes of recreation and fish and wildlife enhancement, and for purchases of recreational land.

These costs are estimated to total $106,787,000. The annual appropriation which would fully reimburse such costs to the Department, together with appropriate interest charges, would extend until the year 2000 and would total $173,689,000. About $78,963,000 of the total amount are excluded from the financial analysis since this amount could not be utilized to cover capital expenditures under the existing construction schedule. The unused amount would be available for construction of additional facilities, however.

Advance Payments from Contractors

Certain of the Project's water supply contractors, notably The Metropolitan Water District of Southern California, have requested capacity in the project transportation facilities which would permit delivery rates in excess of those to be provided by the State for other contractors. The requesting contractors must advance to the State the additional capital costs associated with excess capacity prior to construction of the facilities. The net advances so required are estimated to be $54,981,000, with credits resulting therefrom applied to the annual water charges to be paid by the requesting contractors.

The estimated total amount of miscellaneous receipts available for financing the Project are shown in the table on page 163.

Offset Bonds

Under the Burns-Porter Act, as and when California Water Fund moneys are expended for the construction of the initial "State Water Facilities", the amount of unissued Water Bonds available for construction of these facilities is reduced in the amount of these California Water Fund expenditures. The "State Water Facilities" are defined in the Act and constitute those facilities comprising the State Water Project exclusive of the Upper Eel River Development. A corresponding amount of Water Bonds is reserved for additional facilities, which include the Upper Eel River Development. The bonds so reserved are frequently referred to as "Offset Bonds". This reservation of Water Bonds for additional facilities operates at the time the California Water Fund expenditures are made.

The effect of this provision is to limit the total of Water Bond proceeds and of California Water Fund moneys expended for the construction of the State Water Facilities to the sum of (1) $1,750,000,000, plus (2) the amount of any California Water Fund moneys so expended after the combined expenditure of $1,750,000,000 from these two sources.

The effect of the offset provision is illustrated in the table that follows. No Water Bonds are issued for the State Water Facilities after 1971, by which time $1,535,000,000 of these bonds will have been issued for that purpose. The balance of the cost of the State Water Facilities is expected to be met by California Water Fund moneys, revenue bonds, and miscellaneous receipts.

Source	State Water Facilities			Additional Facilities (Upper Eel River Development)	Total State Water Project
	Through mid-1971	Mid-1971 -1989	Total		
	(in millions of dollars)				
Water Bonds	1,535	0	1,535	162[a]	1,697
California Water Fund	215[b]	140	355	17	372
Subtotal	1,750	140	1,890	179	2,069
Revenue bonds	210	0	210	0	210
Miscellaneous receipts	146	60	206	48	254
TOTAL	2,106	200	2,306	227	2,533

a/ There remain some $53,000,000 of authorized by unissued Water Bonds (Offset Bonds), which are available for still further additional facilities but not for State Water Facilities as defined in the Burns-Porter Act.

b/ These expenditures reserve Offset Bonds.

Source	Actual through 1965	Projected 1966-1989	Total
	(in millions of dollars)		
Federal reimbursements:			
Oroville Dam and reservoir-flood control	35	33	68
Del Valle Dam and reservoir-flood control	-	8	8
San Joaquin Master Drain-drainage benefit	-	32	32
Total federal reimbursements	35	73	108
State appropriations:			
Various facilities - recreation and fish and wildlife enhancement (total through 2000)	0	174	174
Less: portion excluded available for construction of future facilities	0	79	79
Total use of appropriations made prior to the Burns-Porter Act	100	0	100
Total state appropriations	100	95	195
Advance payments from contractors	0	55	55
Rights-of-way sales and rentals	3	0	3
Estimated interest earned on receipts	3	22	25
TOTAL MISCELLANEOUS RECEIPTS	141	245	386
Applied to: Capital costs	100	154	254
Bond service	9	123	132
Plus (minus) carry-over of unused amounts	32	(32)	-
Total	141	245	386

Past Sales of Securities under the Financial Program

The first issue of securities under the financial program consisted of $50,000,000 of bond anticipation notes, sold on November 1, 1963 at an interest cost of 1.96492 percent. Since then, $450,000,000 in Water Bonds have been sold as tabulated below:

Series	Amount, in millions of dollars	Date of sale	Net interest cost, in percent	Maturity dates
A	100	2/18/64	3.520	9/1/73-2013
B	50	5/ 5/64	3.533	5/1/74-2014
C	100	10/ 7/64	3.585	11/1/74-2014
D	100	2/16/65	3.499	3/1/75-2015
E	100	11/23/65	3.717	12/1/75-2015

Tables 29 and 30 set forth, respectively, the maturities and coupon rates of the outstanding Water Bond issues and the redemption provisions thereof. Although the Burns-Porter Act contains no provision for refunding the bonds, they could be refunded under a supplemental bond act as to one or more series.

Pattern of General Obligation Bond Service

The Burns-Porter Act provides that each issue of the Water Bonds must commence to mature not later than 10 years after issuance, with a final maturity not later than 50 years after issuance. The rate structure is intended to amortize the State's recoverable capital investment over the project repayment period, generally 50 years from the date of the investment. A bond service pattern which conforms to the revenue pattern is obtained by providing no maturity until the tenth year after issuance, with maturities scheduled so as to produce approximately level annual service for the last 41 years. It has been assumed in this report that future Water Bond issues will be sold at a net interest cost of 3.75 percent.

Scheduling of Water Bond Sales

About 83 percent of the authorized Water Bonds are expected to be sold before the end of 1970.

The financial analysis provides for annual issues of from $170,000,000 to $230,000,000 during the 1966-70 period. Water Bonds totaling $200,000 were sold in 1965. A schedule of bond sales in such quantities will have to be reviewed in the light of market conditions prevailing from time to time. The annual amounts of Water Bond issues will necessarily vary, in practice, from the pattern set up in the financial program. The issues will have to be fitted in with the State's overall financial requirements in a planned marketing procedure; and, from time to time, the Department may again avail itself of the flexibility provided through the issuance of bond anticipation notes.

The Department and the State Treasurer have consulted and cooperated in planning the timing and amounts of Water Bond sales, in the interest of orderly marketing of all state general obligation bonds. Water Bonds will have to be sold in advance of actual construction in order to maintain a prudent level of working capital. Sales may be further advanced to fit in with the needs of the State for other financing. This will provide a backlog of unexpended bond proceeds, the investment of which at short term will produce interest income approximately offsetting the interest cost involved in selling the bonds in advance of actual requirements.

Rate Structure

The Department has adopted a rate concept under which the rates charged for water will amortize, with interest, all reimbursable costs incurred after a facility's authorization which are properly chargeable to the construction of and the furnishing of equipment for the facilities. The weighted average interest rate on the Water Bonds issued for the Project, including bond anticipation notes, is taken as the interest rate allowed to the State. The costs include the expenditures financed by state appropriations prior to the effective date of the Burns-Porter Act, together with interest thereon.

Details of the rate structure used by the Department, and the application, are set forth in Chapter XI of this bulletin.

Revenues Calculated from Rate Structure

The application of the conservation and transportation charges provided under the rate structure produces the annual

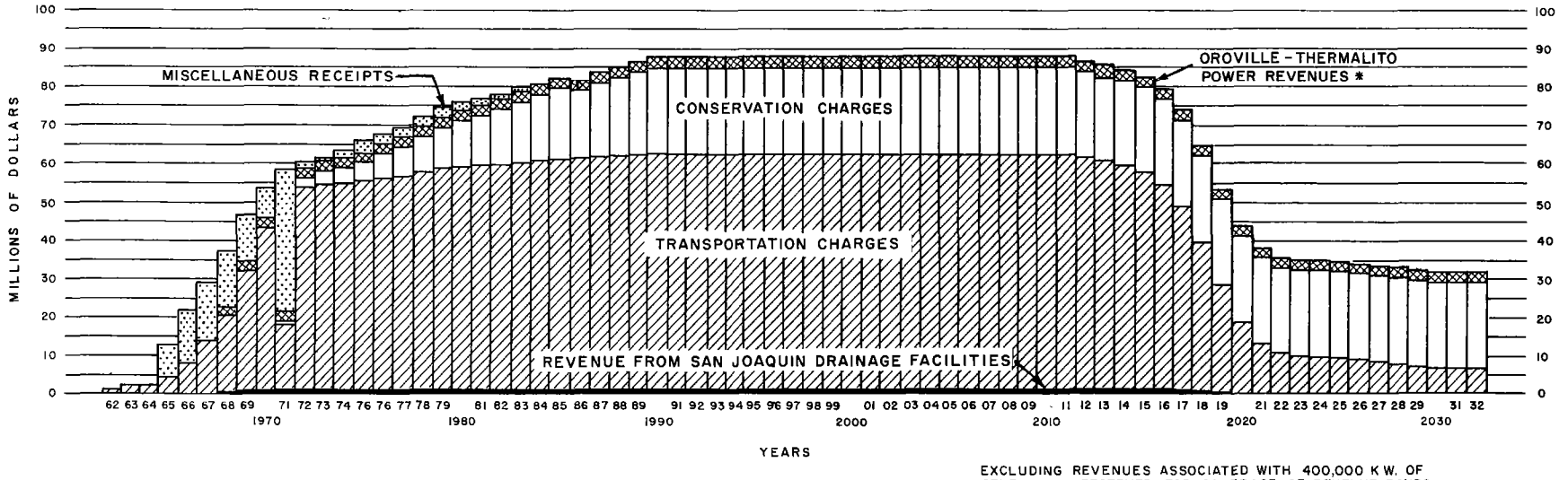
operation revenues shown in the table below. The table also shows the Department's estimate of annual expenses and the resulting net operating revenues. Annual net operating revenues, and the application thereof, are shown graphically on Figure 5.

Period	Operating revenues	Operation, maintenance power and replacement expenses	Net operating revenues
	(in millions of dollars)		
6 years, 1960-65	10	-	10
5 years, 1966-70	147	22	125
5 years, 1971-75	401	136	265
5 years, 1976-80	476	128	348
5 years, 1981-85	559	165	394
5 years, 1986-90	616	191	425
10 years, 1991-2000	1,280	404	876
10 years, 2001-10	1,280	404	876
10 years, 2011-20	1,148	404	744
10 years, 2021-30	747	404	343
4 years, 2031-34	145	81	64
Total	6,809	2,339	4,470

The calculation of future revenues uses an assumed project interest rate of 3.70 percent. This rate is derived on the assumption that future Water Bond issues will be sold at a net interest cost of 3.75 percent, which compares with an average of about 3.57 percent for the outstanding Water Bonds. The assumed project interest rate of 3.70 percent is a weighted average of the actual interest cost on outstanding bond issues and the assumed interest cost of 3.75 percent on future issues.

The foregoing discussion of revenues has excluded from consideration any future recoveries under the Davis-Grunsky Program of loans and grants for local projects. Under

NET OPERATING REVENUES



EXCLUDING REVENUES ASSOCIATED WITH 400,000 K W. OF GENERATION RESERVED FOR COVERAGE OF REVENUE BONDS

APPLICATION OF NET OPERATING REVENUES

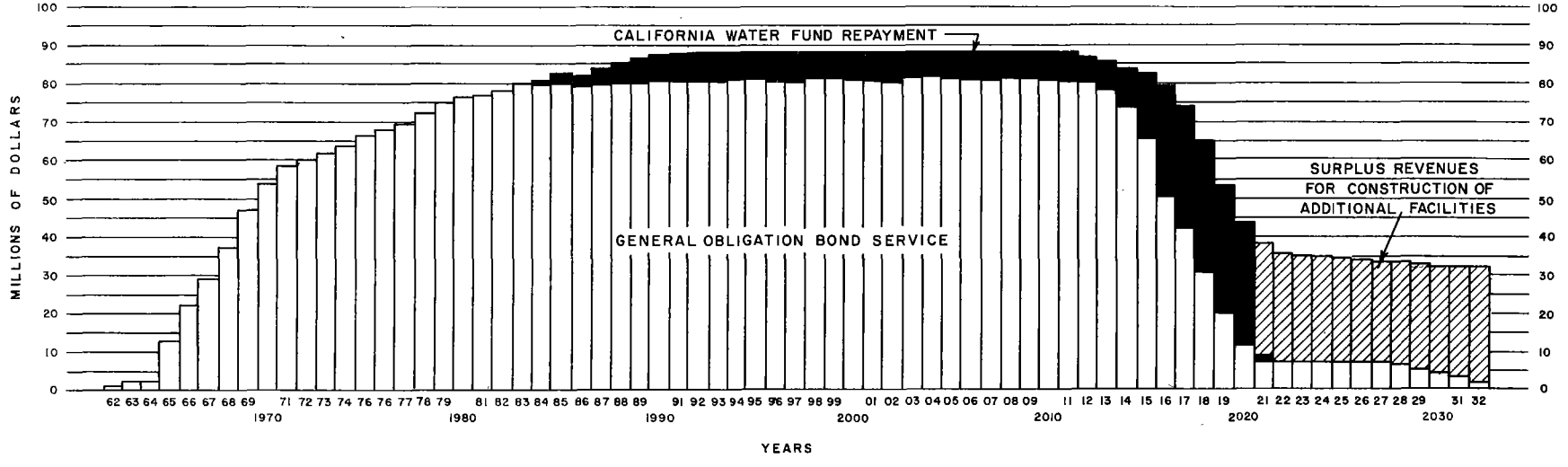


FIGURE 5

the Burns-Porter Act, $130,000,000 is set aside exclusively for this program. Each Davis-Grunsky loan is specific as to the borrowing agency's loan service and repayment obligation. The total amount of loans to be made under the program and the amortization schedule on which the State will recover such loans cannot be determined at this time. For these reasons, no payments of interest or principal on loans made under the Davis-Grunsky Program are included in the projections herein.

Estimated operation, maintenance, power and replacement expenses exclude the amounts of such expenses allocated to recreation and fish and wildlife enhancement or attributable to the Federal Government's share of the cost of operation of joint facilities, i.e., the San Luis Facilities, Delta Facilities, and San Joaquin Drainage Facilities. These amounts are assumed to be reimbursed to the State Water Project. It is assumed that the state appropriations are to be made out of the General Fund, pursuant to the Davis-Dolwig Act, and the federal reimbursements made on the basis of proposed agreements which are under discussion with the Federal Government.

When water deliveries reach the minimum project yield of 4,230,000 acre-feet annually in about 1990, the percentage breakdown of operating revenues among the principal water supply contractors of the Project is expected to be as follows:

Water supply contractor	Project conservation facilities	Project transportation facilities
	(in percent)	
The Metropolitan Water District of Southern California	47	63
Kern County Water Agency	27	10
Antelope Valley-East Kern Water Agency	3	5
San Bernardino Valley Municipal Water District	2	4
Other 28 water supply contractors[a/]	20	17
Future contractors	1	1
	100	100

a/ Includes two agencies with which current negotiations are expected to result in executed contracts.

TABLES

I thru 30

TABLE 1

CONSTRUCTION CONTRACTS
AS OF APRIL 1, 1966

CONTRACT		CONTRACTOR				
	UPPER FEATHER AREA					
59-19	Frenchman Dam & reservoir	Isbell Construction Company Reno, Nevada	1,725,827	Sep. 15, 1959	Oct. 18, 1961	100
62-04	Frenchman Dam - Road Relocations	Isbell Construction Company Reno, Nevada	258,293	Jul. 21, 1962	Nov. 16, 1962	100
62-20	Antelope Valley Dam & reservoir	Norman I. Fidel, Inc. and Granite Construction Company Eureka, California	2,908,774*	Aug. 28, 1962	Jul. 28, 1964	100
63-14	Recreation Access Road near Frenchman reservoir	A. Teichert & Son, Inc. Sacramento, California	384,904	Sep. 20, 1963	Jul. 7, 1964	100
64-22	Grizzly Valley Dam & Lake Davis	Pascal and Ludwig Upland, California	1,833,131*	Oct. 20, 1964		40
65-20	Frenchman Reservoir Access Road	Stroco Construction Company Santa Rosa, California	429,210*	Jun. 6, 1965		46
	Area Total		7,541,139			82
	OROVILLE AREA					
57-3TC-38Y	U.S. 40A, Wicks Corner to Jarbo Gap	McCammon-Underlich San Diego, California	8,546,738	Jun. 1957	Dec. 16, 1960	100
Agreement No. 351653	Poe Siding (Administered by W.P.R.R.)	Morrison-Knudsen Company Oroville, California	508,588*	Dec. 1, 1961	Dec. 7, 1962	100
57-03	Western Pacific R.R. - Tunnels Nos. 4 & 5	Peter Kiewit Sons' Company Omaha, Nebraska	10,417,600	May 24, 1957	Dec. 30, 1960	100
57-13	Western Pacific R.R. - North Fork Bridge	Pacific Bridge Company Alameda, California	1,580,940	Feb. 10, 1958	Jun. 29, 1960	100
58-01	Western Pacific R.R. - Feather River Bridge	John C. Gist Sacramento, California	1,293,159	Apr. 29, 1958	Mar. 16, 1960	100
59-16	Western Pacific R.R. - Tunnels Nos. 2 & 3	Gordon H. Ball, Gordon H. Ball, Inc., and Ball & Simpson Danville, California	6,236,000	Aug. 11, 1959	Sep. 8, 1961	100
60-07	Western Pacific R.R. - Tunnel No. 1	Frazier-Davis Construction Company St. Louis, Missouri	1,951,632	Aug. 1, 1960	Nov. 3, 1961	100
60-08	Western Pacific R.R. - Grading	Gordon H. Ball, Gordon H. Ball, Inc., and Ball & Simpson Danville, California	4,043,180	Sep. 15, 1960	Apr. 20, 1962	100
60-14TC16-Y	U.S. 40A - West Branch Bridge	Stolte & Morrison-Knudsen Oakland, California	8,620,000	Nov. 10, 1959	Feb. 20, 1962	100
60-21	Western Pacific R.R. - Western Union Telegraph Line Relocation	Coopman Electric Company San Francisco, California	262,352	Oct. 28, 1960	Aug. 2, 1962	100
61-05	Diversion Tunnel No. 1	Frazier-Davis Construction Company St. Louis, Missouri	6,193,683*	Aug. 18, 1961	Jan. 16, 1964	100
61-15	Palermo Outlet Works	Morrison-Knudsen Company Oroville, California	801,118	Nov. 16, 1961	May 7, 1963	100
61-17	Western Pacific R.R. - Section Headquarters	El Rey Builders, Inc. Van Nuys, California	168,324	Dec. 11, 1961	Jul. 13, 1962	100
61-21	Waterproofing North Fork and Feather River Bridges	Sacramento Roofing & Insulation Company, Inc. Sacramento, California	16,658	Jan. 3, 1962	Mar. 30, 1962	100
62-01	Feather River Hatchery - Interim Facilities	Frazier-Davis Construction Company St. Louis, Missouri				100
62-3T3C26	U.S. 40A - Oroville to Wicks Corner	Harms Bros. and Lord & Bishop, Inc. Sacramento, California	3,741,510*	Jan. 4, 1962	Jan. 16, 1964	100
63-3T13C1	U.S. 40A - Approaches & Surfacing West Branch Bridge	Baldwin Construction Company Marysville, California	222,241	Mar. 22, 1962	Sep. 26, 1962	100
62-05	Oroville Dam, Diversion Tunnel No. 2, & Thermalito Diversion Dam	Oro Dam Constructors Oroville, California	120,863,333*	Aug. 13, 1962		78
62-11	Oroville Seismograph Station	El Rey Builders, Inc. Van Nuys, California	39,469	Jul. 23, 1962	Oct. 26, 1962	100
62-13	Left Abutment Access Road	Piombo Construction Company San Carlos, California	549,400	Jul. 14, 1962	Apr. 9, 1963	100
62-27	Oroville Construction Headquarters	A. Teichert & Son, Inc. Sacramento, California	938,000*	Nov. 16, 1962	Oct. 25, 1963	100
62-30	Middle Fork Bridge	Bethlehem Steel Company San Francisco, California	4,436,104*	Feb. 11, 1963	Aug. 24, 1965	100
63-04	Employee Housing	Nomellini Construction Company Stockton, California	618,543	Jul. 9, 1963	May 13, 1964	100
63-05	Turbines & Pump Turbines - Oroville Powerplant	Allis-Chalmers Mfg. Company York, Pennsylvania	7,238,791*			59
63-06	Oroville Powerplant - Initial Contract	McNamara Corp. and G. A. Fuller Company Burlingame, California	18,366,780*	Jun. 24, 1963		66

*Bid amount.

TABLE 1 (Continued)

CONSTRUCTION CONTRACTS
AS OF APRIL 1, 1966

SPECIFICATION NUMBER	CONTRACT	CONTRACTOR	TOTAL COST (in dollars)	DATE STARTED	DATE COMPLETED	PERCENT COMPLETE APRIL 1, 1966
	OROVILLE AREA (Continued)					
63-11	Modification & Repairs to Powers Canal	Baldwin Construction Company Marysville, California	24,262	Mar. 28, 1963	Jun. 17, 1963	100
63-35	Oroville to Quincy County Road - Forbestown Road to Middle Fork Bridge	Piombo Construction Company San Carlos, California	1,521,868	Jan. 3, 1964	Sep. 8, 1965	100
63-38	Construction Overlook Modifications	A. Teichert & Son, Inc. Sacramento, California	114,280	Dec. 18, 1963	May 15, 1964	100
63-36	Powers Canal Repair & Added Construction	Harms Bros. Sacramento, California	65,984	Dec. 20, 1963	Mar. 10, 1964	100
63-39	Thermalito Powerplant Pump Turbines, Kapland Turbine and Governors	Allis-Chalmers Mfg. Co. York, Pennsylvania	3,766,785*	Feb. 25, 1964		50
64-13	Oroville Powerplant 114-inch Spherical Valves	Baldwin-Lima-Hamilton Corp. Philadelphia, Pa.	2,259,760*	Mar. 27, 1964		69
64-17	Pioneer Cemetery and Grave Relocations	Frank P. Donovan Sacramento, California	67,714	Jun. 11, 1964	Sep. 2, 1964	100
64-19	Oroville Powerplant Bridge Cranes	Star Iron & Steel Company Tacoma, Washington	299,950	Jun. 26, 1964	Jun. 25, 1965	100
64-16	Oroville Powerplant Generators and Motor Generators	Westinghouse Electric Corp. Sacramento, California	6,427,899*	Jul. 3, 1964		4
64-25	Thermalito Diversion Dam Slide Gates	Rodney Hunt Machine Co. Farmingham, Mass.	20,876*	Jun. 29, 1964	Nov. 27, 1964	100
64-26	Thermalito Diversion Dam Fixed Dispersion Cone Valve	Willamette Iron & Steel Co. Portland, Ore.	24,418*	Jun. 25, 1964		95
64-30	Headquarters & Employee Housing Landscaping	Frank M. Smith Eureka, California	40,982	Jul. 24, 1964	Oct. 15, 1964	100
64-44	Bidwell Bar Emergency Crossing	Frank P. Donovan Santa Maria, California	31,189	Sep. 28, 1964	Nov. 24, 1964	100
64-31	Thermalito Power Canal Relocations	Osborn Construction Company Redding, California	963,647	Oct. 30, 1964	Nov. 1, 1965	100
64-37	Thermalito Powerplant	Guy F. Atkinson Company So. San Francisco, California	15,248,037*	Dec. 4, 1964		36
64-43	Thermalito Diversion Dam Radial Gates & Hoists	Berkeley Steel Construction Co., Inc. Berkeley, California	751,400*	Dec. 11, 1964		99
64-51	Temporary Access Road - Middle Fork Bridge to Existing County Road	Crooks Brothers Construction Co. Fair Oaks, California	327,904*	Dec. 3, 1964	Jun. 16, 1965	100
65-02	Furnish and Install One Generator and Three Motor Generators - Thermalito Powerplant	Allis-Chalmers Manufacturing Co. Milwaukee, Wisconsin	2,150,000*	Jun. 3, 1965		1
65-05	Clearing Oroville Reservoir site	C. J. Langenfelder and Son, Inc. Baltimore, Maryland	3,515,970*	Apr. 12, 1965		55
65-09	Oroville Dam Spillway	Oro Pacific Constructors and George Farnsworth Construction Corp. Oroville, California	12,249,850*	Jun. 25, 1965		17
65-10	Procurement - Oroville Generator Switchgear	Westinghouse Electric Corp. Sacramento, California	347,754*	May 55, 1965		8
65-11	Procurement - Trashracks, Supports and Control Shutters - Oroville Powerplant	Michel and Pfeffer Iron Works, Inc. So. San Francisco, California	1,961,870*	Apr. 30, 1965		51
65-14	Procurement - Oroville Powerplant Governors	Baldwin-Lima-Hamilton Philadelphia, Pennsylvania	415,294*	May 21, 1965		9
65-23	Oroville-Feather Falls Road Relocation	O. K. Mittry and Sons Gardena, California	2,347,401*	Dec. 23, 1965		5
65-25	Procurement - Control Switchyard Oroville Powerplant	Westinghouse Electric Corp. Sacramento, California	307,334*	Aug. 4, 1965		6
65-26	South Fork Bridge	Rothchild, Raffin, and Weirick and Piombo Construction Company San Carlos, California	2,733,236*	Aug. 10, 1965		15
65-27	Thermalito Forebay and Afterbay	Guy F. Atkinson Company So. San Francisco, California	14,452,680*	Oct. 25, 1965		3
65-31	Procurement - Oroville Powerplant Transformers	Maloney Electric Company St. Louis, Missouri	1,434,990*	Aug. 25, 1965		4
65-34	Procurement - Thermalito Powerplant Power Transformers	Westinghouse Electric Company Sacramento, California	536,631*	Aug. 19, 1965		5
65-37	Thermalito Power Canal	Morrison-Knudsen Company Southgate, California	5,549,348*	Oct. 7, 1965		7
Butte County 27561-65-1	Oro Quincy Road Relocation	Piombo Construction Company San Carlos, California	4,363,254*	May 11, 1965		27
65-38	Procurement - High Voltage Circuit Breakers, Oroville Powerplant	General Electric Company Sacramento, California	924,790*	Dec. 29, 1965		1

*Bid amount.

TABLE 1 (Continued)

CONSTRUCTION CONTRACTS
AS OF APRIL 1, 1966

SPECIFICATION NUMBER	CONTRACT	CONTRACTOR	TOTAL COST (in dollars)	DATE STARTED	DATE COMPLETED	PERCENT COMPLETE APRIL 1, 1966
	OROVILLE AREA (Continued)					
65-44	Log Scaling Station, Oroville Forbes Forbestown Road	Dair A. Tandy Oroville, California	7,777*	Jan. 8, 1966	Feb. 14, 1966	100
65-46	Procurement - Thermalito Afterbay Gates - Hoists and Standby Generators	Rodney Hunt Machine Company Farmington, Mass.	227,613*	Dec. 28, 1965		0
65-47	Thermalito Diversion Dam Electrical Installation	Abbett Electric Corp. San Francisco, California	103,963*	Jan. 12, 1966		2
65-52	Penstock Intake Completion - Oroville Powerplant	Yuba Consolidated Industries, Inc. Benecia, California	4,429,816*	Jan. 25, 1966		3
65-57	Procurement - Secondary Unit Sub-station, Station Service, Thermalito Powerplant	Golden Gate Switchboard Company San Francisco, California	77,000*	Feb. 8, 1966		0
65-58	Procurement - 13.8 kv Generator, Switchgear and Bus, Thermalito Powerplant	Allis-Chalmers Mfg. Co. York, Penn.	2,150,000*	May 7, 1965		1
65-59	Oroville Construction Overlook Relocation	Baldwin Contracting Co., Inc. Marysville, California	123,887*	Jan. 19, 1966		3
66-05	Procurement - Bulkhead Gates for Diversion Tunnel No. 1	Berkeley Steel Company Berkeley, California	67,000*	Jan. 28, 1966		0
	AREA TOTAL		301,185,282			65
	SOUTH BAY AQUEDUCT					
59-22	Interim Canal, Forebay Pumping Plant & Bethany Dam**	O. K. Mittry & Sons Gardena, California	876,339	Nov. 25, 1959	Mar. 9, 1961	100
60-01	South Bay Pumping Plant	Fred J. Early, Jr., Company, Inc. Torrance, California	869,157	May 226, 1960	May 23, 1962	100
60-14	Pumping Units - South Bay & Forebay Pumping Plants	Fairbanks-Morse & Company Sacramento, California	101,324	Sep. 9, 1960	Aug. 7, 1962	100
60-15	Surge Tank to Patterson Reservoir	Case-Hood Whittier, California	3,204,072	Nov. 15, 1960	Aug. 8, 1962	100
62-08	Asphalt Lining - Interim Canal	Capital Roofing Company, Sacramento, California	38,703	Mar. 19, 1962	Apr. 9, 1962	100
62-12	Alameda Division Canal	McGuire & Hester Oakland, California	1,420,018	Aug. 7, 1962	Aug. 27, 1963	100
62-15	Mortar Lining - Interim Canal	Sacramento Gunite Company Sacramento, California	9,902	Jun. 1, 1962	Jun. 8, 1962	100
62-35	Project Maintenance Headquarters	Red Feather Construction Company Hayward, California	38,104	Jan. 22, 1963	Jun. 14, 1963	100
63-02	Instrumentation & Control	Darrel E. Jordon Fullerton, California	57,149	May 27, 1963	May 15, 1964	100
63-03	La Costa & Mission Tunnels	Peter Kiewit Sons' Company Omaha, Nebraska	3,082,458	Apr. 9, 1963	Aug. 18, 1964	100
63-12	Forebay Pump Procurement	Fairbanks-Morse & Company Sacramento, California	21,048*	Apr. 11, 1963	Mar. 31, 1966	100
63-13	South Bay Pump Procurement	Peerless Pump Division Sacramento, California	108,300*	Apr. 11, 1963	Dec. 17, 1964	100
63-15	Installation of Additional Pump Units-South Bay & Forebay Pumping Plants	Fred J. Early, Jr., Company, Inc. Torrance, California	88,222	Jul. 25, 1963	Jun. 15, 1964	100
63-16	Del Valle & Sunol Pipelines	U. S. Steel Corporation So. San Francisco, California	4,200,332	Jul. 10, 1963	Mar. 22, 1965	100
63-24	Floor Surfacing - South Bay Pumping Plant	Kivah Corporation Sacramento, California	4,546	Aug. 22, 1963	Sep. 19, 1963	100
63-31	Patterson Reservoir Repair	McGuire & Hester Oakland, California	24,865	Aug. 24, 1963	Sep. 23, 1963	100
63-33	Pump Units Nos. 8 & 9 - South Bay Pumping Plant	Johnston Pump Company Pasadena, California	129,021*	Oct. 24, 1963		99
63-34	South Bay Pumping Plant - 2nd Stage	S & Q Construction Company So. San Francisco, California	632,926	Oct. 22, 1963	Aug. 31, 1965	100
63-40	30-Inch Discharge Valves - South Bay Pumping Plant - 2nd Stage	Chapman Valve Mfg. Company Emeryville, California	52,921*	Feb. 25, 1964	Apr. 1965	100
63-41	South Bay Pumping Plant to Dyer Canal-- 2nd Stage	Green Construction Company and Winton Bros. Company San Mateo, California	1,306,265	Jan. 23, 1964	Aug. 10, 1965	100
64-03	Dyer Canal Check Structure	Roen Construction Company Danville, California	30,018	Feb. 28, 1964	Dec. 14, 1964	100
64-04	Niles & Santa Clara Division Pipeline	Kaiser Steel Corp. Oakland, California	4,070,660*	Apr. 9, 1964	Jun. 8, 1965	100
64-24	Santa Clara Terminal Facilities	McGuire and Hester Oakland, California	1,111,111*	Jun. 17, 1964	Jul. 2, 1965	100
64-49	Modification of Patterson Reservoir	A. Teichert & Son, Inc. Sacramento, California	75,872	Dec. 4, 1964	Aug. 10, 1965	100

*Bid amount.
**Feature of the California Aqueduct.

TABLE 1 (Continued)

CONSTRUCTION CONTRACTS
AS OF APRIL 1, 1966

SPECIFICATION NUMBER	CONTRACT	CONTRACTOR	TOTAL COST (in dollars)	DATE STARTED	DATE COMPLETED	PERCENT COMPLETE APRIL 1, 1966
	SOUTH BAY AQUEDUCT (Continued)					
64-53	Grout Sealing Mission Tunnel	The Prepakt Concrete Company Cleveland, Ohio	35,147	Jan. 11, 1965	Mar. 5, 1965	100
65-17	Del Valle reservoir - County Road Relocation Mines Road to Naftzger Ranch Ranch	L. Stevens and L. Stevens, Inc. Stockton, California	1,256,439*	Jun. 21, 1965		45
65-18	Procurement - Sunol Pipeline Blowoff Valve	Underground Construction Co. San Leandro, California	28,700*	Sep. 2, 1965	Mar. 8, 1966	100
65-22	Furnish and Install 20-inch Hollow Cone Valve - Sunol Pipeline	Yuba Manufacturing Division Benicia, California	14,300*	Sep. 2, 1965		50
65-33	South Bay Aqueduct - Control System	Aerojet-General, Corp. Sacramento, California	772,460*	Jan. 5, 1966		3
65-49	Highway 50 Tunnel Extension	Halbach & Flynn Castro Valley, California	88,696*	Jan. 4, 1966		31
65-54	Electrical Modification to South Bay Pumping Plant	C. W. Roen Construction Co. Danville, California	28,195*	Dec. 29, 1965		76
66-01	Del Valle Dam and reservoir	Green & Winston Bros. Construction Co. San Mateo, California	16,577,802*	Mar. 28, 1966		0
	TOTAL SOUTH BAY AQUEDUCT		40,355,072			55
	NORTH SAN JOAQUIN DIVISION, CALIFORNIA AQUEDUCT					
63-01	1st Stage Construction, Sta. 2500 to Sta. 3000	Eugene Luhr Company and Elmer G. Wendt Rio Vista, California	885,469	Feb. 8, 1963	Dec. 5, 1963	100
63-21	Delta Seismograph Station	Chas. I. Cunningham Company Oakdale, California	2,999	Oct. 5, 1963	Jan. 3, 1964	100
63-22	Intake Channel - Sta. 85+00 to Sta. 174+50	Peter Kiewit Sons' Company Omaha, Nebraska	5,955,761	Jul. 27, 1963	Oct. 26, 1964	100
63-28	1st Stage Construction, Sta. 175 to Sta. 655	Morrison-Knudsen Company Southgate, California	1,962,933	Sep. 6, 1963	Nov. 20, 1964	100
64-02	Aqueduct - Del Puerto Canyon Road to Orestimba Creek	Western Contracting Corp. Sioux City, Iowa	7,775,441*	May 11, 1964		70
64-10	Delta Pumping Plant - Pumps	Newport News Shipbuilding and Drydock Company Newport News, Va.	1,621,365*	Jun. 30, 1964		51
64-20	Delta Pumping Plant Bridge Crane	American Crane and Hoist Corp. Downey, California	90,000*	Aug. 11, 1964	Feb. 8, 1966	100
64-08	Delta Operation and Maintenance Facilities Phase I	Baldwin - Warren Co., Inc. San Francisco, California	1,164,251	Aug. 12, 1964	Jan. 7, 1966	100
64-09	Delta Pumping Plant - Initial Contract	Guy F. Atkinson Company So. San Francisco, California	6,332,053*	Aug. 25, 1964		81
64-28	Aqueduct - Orestimba Creek to San Luis Forebay	Western Constructing Corp. Sioux City, Iowa	12,694,128*	Sep. 3, 1964		40
64-48	Procurement - Discharge Valves	Westinghouse Electric Corp. Sacramento, California	1,070,000*	May 24, 1965		8
65-06	Aqueduct - Delta Pumping Plant to Chrisman Road	Wunderlich Company Palo Alto, California	11,145,712*	Jun. 3, 1965		30
65-07	Intake Channel, Station 0+00 to 85+00	Piombo Construction Co. San Carlos, California	2,448,718*	May 3, 1965		59
65-08	Aqueduct - Chrisman Road to Del Puerto Canyon Road	Western Contracting Corp. Sioux City, Iowa	12,390,374*	May 20, 1965		19
65-12	Motors - Delta Pumping Plant	General Electric Company San Francisco, California	3,045,394*	May 17, 1965		1
65-32	Procurement - Power Transformers For Delta Pumping Plant	General Electric Company Sacramento, California	438,949*	Aug. 11, 1965		7
65-35	Procurement - Power Circuit Breakers For Delta Pumping Plant	Westinghouse Electric Corp. Sacramento, California	75,255*	Aug. 25, 1965		5
65-39	Delta Operation and Maintenance Facilities, Phase II	Baldwin-Warren Company San Francisco, California	1,258,697*	Oct. 28, 1965		29
65-40	Delta Pumping Plant Switchgear and Station Service	General Electric Company Sacramento, California	508,682*	Sep. 13, 1965		6
14-089604	Bridges - Patterson Pass and U.S. Highway 50	Gallagher and Burke (State Share) Oakland, California	522,115	Apr. 21, 1965		80
65-41	Delta Pumping Plant - Completion	Baldwin-Warren Company San Francisco, California	2,865,616	Feb. 7, 1966		1
	DIVISION TOTAL		74,253,912			47

*Bid amount.

TABLE 1 (Continued)

CONSTRUCTION CONTRACTS
AS OF APRIL 1, 1966

SPECIFICATION NUMBER	CONTRACT	CONTRACTOR	TOTAL COST (in dollars)	DATE STARTED	DATE COMPLETED	PERCENT COMPLETE APRIL 1, 1966
	SAN LUIS DIVISION, CALIFORNIA AQUEDUCT (Major U.S.B.R. Contracts)					
DC-5818	Detour of State Highway Route 152	James H. Harrison San Ardo, California	450,984	Aug. 13, 1962	Feb. 9, 1963	100
DC-5821	Preconsolidation - Reach 2	Wilmoth Construction Company Fresno, California	273,746	Oct. 24, 1962	Jan. 22, 1963	100
DS-5825	Pump-Turbines - San Luis Pumping-Generating Plant	Hitachi, New York, Ltd. New York, New York	3,221,813*	Nov. 20, 1962		85
64-10T13C1	Relocation of State Highway Route 152 (Administered by California Division of Highways)	McNamara & Mannix Burlingame, California	12,803,466	Jan. 25, 1963		100
DC-5862	Preconsolidation - Reach 3	Eugene Luhr Co. and Elmer G. Wendt Rio Vista, California	1,230,027	Feb. 8, 1963	Nov. 1963	100
DC-5855	San Luis Dam, Pumping-Generating Plant and Forebay Dam	Morrison-Knudsen Company, Utah Construction & Mining Company, and Brown & Root Southgate, California	85,926,608*	Feb. 4, 1963		83
DS-5890	Pumps - Mile 18 Pumping Plant (Dos Amigos Pumping Plant)	English Electric Company New York, New York	2,039,250*	Jun. 10, 1963		88
DC-5900	San Luis Canal - Reach 1	Guy F. Atkinson Company San Francisco, California	19,100,000	Jun. 5, 1963	Dec. 9, 1965	100
DC-5977	San Luis Canal - Reach 2	Morrison-Knudsen Company and Utah Construction & Mining Company Southgate, California	11,946,556*	Aug. 30, 1963		56
DC-5982	Mile 18 Pumping Plant (Dos Amigos Pumping Plant)	Stolte, Sundt & Santa Fe Oakland, California	8,972,555*	Sep. 18, 1963		95
DC-6080	Los Banos Creek Detention Dam	Guy F. Atkinson Co. San Francisco, California	3,556,954*	May 19, 1964	Apr. 19, 1966	100
DC-6148	San Luis Canal - Reach 3	Peter Kiewit Sons' Company Omaha, Nebraska	24,175,380*	Dec. 5, 1964		18
DS-6137	Transformers for Mile 18 Pumping Plant (Dos Amigos Pumping Plant) and San Luis Pumping-Generating Plant	General Electric Company Pittsfield, Mass.	1,345,716*	Aug. 27, 1964		43
DS-6180	Synchronou Motors - Dos Amigos Pumping Plant	A.S.E.A. Electric Co. San Francisco, California	3,080,725*	Feb. 4, 1965		4
DC-6266	Little Panoche Creek Detention Dam	Darkenwald Construction Co. and Morrison-Knudsen Co. Sacramento, California	2,263,989*	May 6, 1965		53
DC-6255	Dos Amigos Pumping Plant Contract Completion	Gunther and Shirley Co. and E.V. Lane Corp. Sherman Oaks, California	2,832,607*	Jun. 10, 1965		10
DC-6280	San Luis Canal - Reach 4	Granite Construction Co. and Gordon H. Ball Enterprises Watsonville, California	6,416,436*	Jul. 7, 1965		21
DC-6344	San Luis Canal - Reach 5	Granite Construction Co. and Gordon H. Ball Enterprises Watsonville, California	15,608,556*	Nov. 17, 1965		1
	DIVISION TOTALS, STATE SHARE FEDERAL SHARE TOTAL	112,884,952 92,360,416	205,245,368			67
	SOUTH SAN JOAQUIN DIVISION, CALIFORNIA AQUEDUCT					
63-18	Drilling & Developing Two 16-inch Water Wells	Midway Drilling & Pump Company Saticoy, California	152,008	Jun. 24, 1963	Dec. 16, 1963	100
63-32	Preconsolidation Features - Standard Oil Co. Rd. to Grapevine Cr. (Mi. 284 to Mi. 289)	Pascal & Ludwig Upland, California	635,092	Nov. 8, 1963	Apr. 19, 1965	100
64-36	Pumps, Motors and Structures for Water Wells	Pylon, Inc. Compton, California	175,957	Jul. 30, 1964	Sep. 22, 1965	100
64-21	Preconsolidation Features - Wheeler Ridge Pumping Plant to Standard Oil Co. Rd. (Mi. 279 to Mi. 284)	William H. Schallock Bakersfield, California	796,403	Jun. 22, 1964	Apr. 19, 1965	100
64-41	Preconsolidation Features Lerdo Highway to Tupman Road (Mi. 217 to Mi. 238)	Peter Kiewit Sons' Company Arcadia, California	2,213,629*	Nov. 18, 1964	Nov. 26, 1965	100
64-46	Preconsolidation Features Buena Vista Pumping Plant to Wheeler Ridge Pumping Plant (Mi. 256 to Mi. 279)	Eugene Luhr & Company and Hood Corp. and Hood Construction Co. West Sacramento, California	3,910,386*	Jan. 2, 1965	Jan. 2, 1966	100
65-16	Preconsolidation Features - Arroyo Pino Vicinity South San Joaquin	W. M. Lyles Company Avenal, California	16,972	May 17, 1965	Jun. 18, 1965	100
65-28	Aqueduct - Avenal Gap to 7th Standard Road (Mile 187 - Mile 221)	Gordon H. Ball Enterprises and Granite Construction Company Watsonville, California	20,883,720*	Jul. 24, 1965		11
65-36	Buena Vista Pumping Plant Intake Channel	Griffith Company Los Angeles, California	3,447,228*	Sep. 28, 1965		26

*Bid amount.

TABLE 1 (Continued)

CONSTRUCTION CONTRACTS
AS OF APRIL 1, 1966

SPECIFICATION NUMBER	CONTRACT	CONTRACTOR	TOTAL COST (in dollars)	DATE STARTED	DATE COMPLETED	PERCENT COMPLETE APRIL 1, 1966
	SOUTH SAN JOAQUIN DIVISION, CALIFORNIA AQUEDUCT (Continued)					
A-153431	Preconsolidation Water Agreement	Buena Vista Associates, Inc. San Francisco, California	2,525,301*	Oct. 1964		63
A-153430	Preconsolidation Water Agreement	Kern County Canal & Water Co. Bakersfield, California.	972,360*	Jul. 1, 1965		22
A-153697	Preconsolidation Water Agreement	Buena Vista Water Storage District Buttonwillow, California	522,192*	Jul. 1, 1965		29
A-354021	Preconsolidation Water Agreement	Western Oilfield Supply Company Bakersfield, California	27,101*	Jun. 1965		100
66-03	Aqueduct - Kettleman City to Avenal Gap	Gordon H. Ball and Granite Construction Co. Watsonville, California	9,108,350*	Feb. 17, 1966		0
66-11	Intake Channels - Wheeler Ridge and Wind Gap Pumping Plants	Gordon H. Ball Enterprises and Altfillish-Fulton Co. Danville, California	4,575,273*			0
66-12	Preconsolidation - Sunset R. R. to Maricopa Highway	W. H. Schallock Bakersfield, California	565,410*			0
	DIVISION TOTAL		50,527,382			26
	TEHACHAPI DIVISION, CALIFORNIA AQUEDUCT					
63-19	Tehachapi Access Roads	W. H. Schallock Bakersfield, California	572,306	Jul. 9, 1963	Jun. 17, 1964	100
64-34	Carley V. Porter Tunnel, Phase I	J. F. Shea Co., Inc. Redding, California	1,353,382	Jul. 22, 1964	Jun. 8, 1965	100
65-04	South Portal - Carley V. Porter Tunnel	A. A. Baxter Corp. El Cajon, California	659,715	Mar. 29, 1965	Nov. 29, 1965	100
65-29	Carley V. Porter Tunnel	Dravo Corp., Guy F. Atkinson and S. J. Groves and Sons San Francisco, California	33,788,800*	Sep. 7, 1965		5
65-56	Tehachapi Lift Adit to Discharge Line Tunnels	Gates & Fox Co., Inc. Placerville, California	591,707*	Jan. 31, 1966		48
	DIVISION TOTAL		36,965,910			12
	MOJAVE DIVISION, CALIFORNIA AQUEDUCT					
65-01	Neenach Aqueduct Embankment	M. J. Bevanda Company North Hollywood, California	224,225*	Jun. 22, 1965	Mar. 8, 1966	100
	DIVISION TOTAL		224,225			100
	WEST BRANCH, CALIFORNIA AQUEDUCT					
65-42	Castaic Dam Foundation Trench	Tomei Construction Co. Manhattan Beach, California	412,269	Aug. 11, 1965	Dec. 21, 1965	100
66-16	Castaic Dam Diversion Tunnel	Peter Kiewit Sons' Company Omaha, Nebraska	8,580,940*			0
	DIVISION TOTAL		8,993,209			5
	COASTAL BRANCH, CALIFORNIA AQUEDUCT					
65-55	Preconsolidation - Devil's Den Vicinity	Eugene Luhr & Co.	81,288*	Dec. 22, 1965	Feb. 25, 1966	100
66-04	Aqueduct - Mile 0 to Mile 14.8	Fredrickson Watson Construction Co. Oakland, California	3,674,659*	Mar. 22, 1966		0
	COASTAL BRANCH TOTAL		3,755,947			2
	TOTAL CONTRACTS AS OF APRIL 1, 1966					
	STATE SHARE	636,687,030				55
	FEDERAL SHARE	92,360,416				67
	TOTAL		729,047,446			57

*Bid amount.

TABLE 2

GENERAL DATA
RELATING TO WATER SUPPLY CONTRACTORS

AGENCY	LOCATION (County)	OFFICE (City)	PREDOMINANT TYPE OF WATER SERVICE	MAXIMUM ANNUAL ENTITLEMENT (Acre-feet)	DATE EXECUTED	GROSS AREA AS OF JULY 1, 1965 (Acres)	ASSESSED VALUATION (1964-65)	ESTIMATED POPULATION (July 1, 1965)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Feather River Area								
City of Yuba City	Sutter	Yuba City	Urban	8,300 1,300	Dec 30, 1963 Sep. 28, 1964	2,100	$ 33,813,000	13,300
County of Butte	Butte	Oroville	Urban	27,500	Dec. 26, 1963	1,075,600	220,800,000	98,300
Plumas County Flood Control and Water Conservation District	Plumas	Quincy	Urban	2,700	Dec. 26, 1963	1,636,000[1/]	78,438,000[1/]	12,300[1/]
North Bay Area								
Napa County Flood Control and Water Conservation District	Napa	Napa	Urban	25,000	Dec. 19, 1963	500,500	105,442,000	75,700
Solano County Flood Control and Water Conservation District	Solano	Fairfield	Urban	42,000	Dec. 26, 1963	529,300	222,686,000	164,700
South Bay Area								
Alameda County Flood Control and Water Conservation District, Zone 7	Alameda	Hayward	Urban	40,000 6,000	Nov. 20, 1961 Dec. 30, 1963	272,000	77,200,000	44,000
Alameda County Water District	Alameda	Fremont	Urban	42,000	Nov. 29, 1961	60,000	196,683,000	110,000
Santa Clara County Flood Control and Water District	Santa Clara	San Jose	Urban	88,000 12,000	Nov. 20, 1961 Dec. 30, 1963	849,300	1,819,075,000	883,000
San Joaquin Valley								
Devil's Den Water District	Kings & Kern	Fresno	Agricultural	11,000 1,700	Dec. 20, 1963 Sep. 28, 1964	8,700	194,900	Less than 100
Dudley Ridge Water District	Kings	Corcoran	Agricultural	50,000 7,700	Dec. 13, 1963 Sep. 28, 1964	29,900	296,100	Less than 50
Empire West Side Irrigation District	Kings	Lemoore	Agricultural	3,000	Dec. 30, 1963	7,700	757,000	Less than 100
Hacienda Water District	Kings	Corcoran	Agricultural	8,500	Dec. 20, 1963	15,300	177,000	Less than 50
Kern County Water Agency	Kern	Bakersfield	Agricultural	1,000,000 153,400	Nov. 15, 1963 Sep. 28, 1964	4,379,300[4/]	772,986,700[4/]	304,400[4/]
Oak Flat Water District	Stanislaus	Westley	Agricultural	5,700	Mar. 23, 1965	2,200	148,600	Less than 50
Tulare Lake Basin Water Storage District	Kings & Tulare	Corcoran	Agricultural	90,000 20,000	Dec. 20, 1963 Dec. 30, 1963	193,000	8,500,000	Less than 50
Central Coastal Area								
San Luis Obispo County Flood Control and Water Conservation Disitrict	San Luis Obispo	San Luis Obispo	Urban	25,000	Feb. 26, 1963	2,128,600	233,337,000	100,600
Santa Barbara County Flood Control and Water Conservation District	Santa Barbara	Santa Barbara	Urban	50,000 7,700	Feb. 26, 1963 Jan. 26, 1965	1,756,800	523,585,000	243,100
Southern California								
Antelope Valley-East Kern Water Agency	Los Angeles, Kern & Ventura	Lancaster	Urban	120,000 18,400	Sep. 20, 1962 Sep. 22, 1964	1,506,200	151,045,400	92,200
Coachella Valley County Water District	Riverside, Imperial & San Diego	Coachella	Urban	20,000 3,100	Mar. 29, 1963 Sep. 28, 1964	617,000	165,193,000	53,000
Crestline-Lake Arrowhead Water Agency	San Bernardino	Crestline	Urban	5,000 800	Jun. 22, 1963 Sep. 28, 1964	45,700	23,371,400	8,000
Desert Water Agency	Riverside	Palm Springs	Urban	33,000 5,100	Oct. 17, 1962 Oct. 2, 1964	165,000	101,367,300	24,400
Littlerock Creek Irrigation District	Los Angeles	Littlerock	Urban	2,000 300	Jun. 22, 1963 Sep. 28, 1964	11,300	2,630,000	1,300
Mojave Water Agency	San Bernardino	Victorville	Urban	44,000 6,800	Jun. 22, 1963 Sep 28, 1964	3,050,000	164,000,000	71,500
Palmdale Irrigation District	Los Angeles	Palmdale	Urban	15,000 2,300	Feb. 2, 1963 Sep. 28, 1964	73,000	21,000,000	20,400
San Bernardino Valley Municipal Water District	San Bernardino	San Bernardino	Urban	85,000 13,000	Dec. 30, 1960 Sep. 28, 1964	150,000	430,643,400	280,000
San Gabriel Valley Municipal Water District	Los Angeles	Alhambra	Urban	25,000 3,800	Nov. 3, 1962 Sep. 28, 1964	16,000	259,631,200	150,000
San Gorgonio Pass Water Agency	Riverside	Beaumont	Urban	15,000 2,300	Nov. 16, 1962 Jan. 19, 1965	131,000	42,113,300	28,000
The Metropolitan Water District of Southern California	Los Angeles, San Diego, Riverside, San Bernardino, Orange, & Ventura	Los Angeles	Urban	1,500,000 500,000 11,500	Nov. 4, 1960 Sep. 28, 1964 Aug. 4, 1965	2,880,000	17,758,000,000	9,398,400
Upper Santa Clara Valley Water Agency	Los Angeles	Newhall	Urban	23,000 3,500 15,000	Apr. 30, 1963 Dec. 22, 1964 Jan. 24, 1966	86,700	56,368,700	27,000
Ventura County Flood Control District	Ventura	Ventura	Urban	20,000	Dec. 2, 1963	961,000[2/ 3/]	423,480,900[2/]	169,400[2/]
Contracts Under Negotiation								
Kings County	Kings	Hanford	Recreation	4,000		893,000	146,855,000	67,000
Big Bear Municipal Water District	San Bernardino	Big Bear Lake	Recreation	4,600		53,000	17,881,600	3,700
TOTALS FOR AGENCY AREAS				4,230,000		24,085,200	$ 24,057,609,500	12,444,100
Percent of State Total in Agency Areas						24%	61%	66%
TOTALS FOR STATE						101,314,000	$ 39,464,011,000	18,756,000

1/ Excluding Last Chance Creek Water District.
2/ The following values have been deleted from the Ventura County Flood Control District: Area, 212,000 acres; Population, 160,000; Assessed Valuation, $241,027,000; as they have been included in The Metropolitan Water District of Southern California service area.
3/ 6,000 acres of Ventura County Flood Control District have been annexed to the Antelope Valley-East Kern Water Agency service area.
4/ The following values have been deleted from the Kern County Water Agency: Area, 850,720 acres; Population, 25,000; Assessed Valuation, $43,118,300; as they have been included in the Antelope Valley-East Kern Water Agency service area.

TABLE 3

DISTRIBUTION OF MINIMUM PROJECT YIELD

(in acre-feet)

AREA	MAXIMUM ANNUAL ENTITLEMENTS				CHANGE IN ENTITLEMENT FROM BULLETIN NO. 132-65
	BULLETIN NO. 132-63 (Assumed)	BULLETIN NO. 132-64 (Assumed)	BULLETIN NO. 132-65 (Actual)	THIS ANALYSIS (Actual)	
	(1)	(2)	(3)	(4)	(5)
Feather River	275,000	38,500	39,800	39,800	0
North Bay	150,000	73,000	67,000	67,000	0
South Bay	210,000	194,000	188,000	188,000	0
San Joaquin Valley	1,475,000	1,362,500	1,345,300	1,355,000 1/	(+) 9,700
Central Coastal	75,000	75,000	82,700	82,700	0
Southern California	1,800,000	2,257,000	2,477,900	2,497,500 1/	(+) 19,600
TOTAL DISTRIBUTED	3,985,000	4,000,000	4,200,700	4,230,000	(+) 29,300
Unassigned	15,000	0	29,300	0	(-) 29,300
TOTAL, MINIMUM PROJECT YIELD	4,000,000	4,000,000	4,230,000	4,230,000	0

1/ Includes 4,000 acre-feet for the San Joaquin Valley and 4,600 acre feet for Southern California under contracts currently being negotiated.

TABLE 4

ANNUAL ENTITLEMENTS TO PROJECT WATER[1]

(in acre-feet)

CALENDAR YEAR	FEATHER RIVER AREA				NORTH BAY AREA			SOUTH BAY AREA[2]			
	CITY OF YUBA CITY	COUNTY OF BUTTE	PLUMAS COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT	TOTAL	NAPA COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT[3]	SOLANO COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT	TOTAL	ALAMEDA COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT ZONE 7	ALAMEDA COUNTY WATER DISTRICT	SANTA CLARA COUNTY FLOOD CONTROL AND WATER DISTRICT	TOTAL
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
1962	0	0	0	0	0	0	0	494	8,412	0	8,906
63	0	0	0	0	0	0	0	1,731	10,914	0	12,645
64	0	0	0	0	0	0	0	1,673	19,238	0	20,911
65	0	0	0	0	0	0	0	2,605	16,407	15,014	34,026
66	0	0	0	0	0	0	0	4,200	19,120	37,610	60,930
67	0	0	0	0	0	0	0	4,000	14,300	50,600	68,900
68	0	300	250	550	0	0	0	7,500	15,000	88,000	110,500
69	0	350	270	620	0	0	0	8,800	15,500	88,000	112,300
1970	0	400	300	700	0	0	0	10,000	16,200	88,000	114,200
71	0	450	440	890	0	0	0	11,200	17,000	88,000	116,200
72	0	500	470	970	0	0	0	12,400	17,900	88,000	118,300
73	0	600	500	1,100	0	0	0	13,600	18,800	88,000	120,400
74	0	700	530	1,230	0	0	0	14,800	19,600	88,000	122,400
75	0	1,050	560	1,610	0	0	0	16,000	20,500	88,000	124,500
76	0	1,400	590	1,990	0	0	0	17,200	21,300	88,000	126,500
77	0	1,800	620	2,420	0	0	0	18,400	22,200	88,000	128,600
78	0	2,200	650	2,850	0	0	0	19,600	23,100	88,000	130,700
79	0	2,600	680	3,280	0	0	0	20,800	23,900	88,000	132,700
1980	0	4,000	710	4,710	12,500	6,750	19,250	22,000	24,800	88,000	134,800
81	4,200	5,450	740	10,390	13,750	8,000	21,750	23,000	26,000	88,000	137,000
82	4,600	6,900	770	12,270	15,000	9,400	24,400	24,000	27,200	88,000	139,200
83	5,050	8,350	800	14,200	16,250	10,800	27,050	25,000	28,400	88,000	141,400
84	5,500	9,800	830	16,130	17,500	12,100	29,600	26,000	29,600	88,000	143,600
85	5,950	12,250	860	19,060	18,750	14,000	32,750	27,000	30,800	88,000	145,800
86	6,600	14,700	890	22,190	20,000	16,500	36,500	28,000	32,100	88,000	148,100
87	7,300	17,150	920	25,370	21,250	20,000	41,250	29,000	33,300	88,000	150,300
88	8,000	20,600	960	29,560	22,500	27,000	49,500	30,000	34,500	88,000	152,500
89	8,800	24,050	1,000	33,850	23,750	34,500	58,250	31,000	35,700	90,000	156,700
1990	9,600	27,500	1,040	38,140	25,000	42,000	67,000	32,000	36,900	92,000	160,900
91	9,600	27,500	1,080	38,180	25,000	42,000	67,000	34,000	38,400	94,000	166,400
92	9,600	27,500	1,120	38,220	25,000	42,000	67,000	36,000	39,900	96,000	171,900
93	9,600	27,500	1,160	38,260	25,000	42,000	67,000	38,000	41,400	98,000	177,400
94	9,600	27,500	1,200	38,300	25,000	42,000	67,000	40,000	42,000	100,000	182,000
95	9,600	27,500	1,250	38,350	25,000	42,000	67,000	42,000	42,000	100,000	184,000
96	9,600	27,500	1,300	38,400	25,000	42,000	67,000	44,000	42,000	100,000	186,000
97	9,600	27,500	1,350	38,450	25,000	42,000	67,000	46,000	42,000	100,000	188,000
98	9,600	27,500	1,400	38,500	25,000	42,000	67,000	46,000	42,000	100,000	188,000
99	9,600	27,500	1,450	38,550	25,000	42,000	67,000	46,000	42,000	100,000	188,000
2000	9,600	27,500	1,510	38,610	25,000	42,000	67,000	46,000	42,000	100,000	188,000
01	9,600	27,500	1,570	38,670	25,000	42,000	67,000	46,000	42,000	100,000	188,000
02	9,600	27,500	1,630	38,730	25,000	42,000	67,000	46,000	42,000	100,000	188,000
03	9,600	27,500	1,690	38,790	25,000	42,000	67,000	46,000	42,000	100,000	188,000
04	9,600	27,500	1,750	38,850	25,000	42,000	67,000	46,000	42,000	100,000	188,000
05	9,600	27,500	1,810	38,910	25,000	42,000	67,000	46,000	42,000	100,000	188,000
06	9,600	27,500	1,880	38,980	25,000	42,000	67,000	46,000	42,000	100,000	188,000
07	9,600	27,500	1,950	39,050	25,000	42,000	67,000	46,000	42,000	100,000	188,000
08	9,600	27,500	2,020	39,120	25,000	42,000	67,000	46,000	42,000	100,000	188,000
09	9,600	27,500	2,090	39,190	25,000	42,000	67,000	46,000	42,000	100,000	188,000
2010	9,600	27,500	2,160	39,260	25,000	42,000	67,000	46,000	42,000	100,000	188,000
11	9,600	27,500	2,240	39,340	25,000	42,000	67,000	46,000	42,000	100,000	188,000
12	9,600	27,500	2,320	39,420	25,000	42,000	67,000	46,000	42,000	100,000	188,000
13	9,600	27,500	2,410	39,510	25,000	42,000	67,000	46,000	42,000	100,000	188,000
14	9,600	27,500	2,500	39,600	25,000	42,000	67,000	46,000	42,000	100,000	188,000
15	9,600	27,500	2,600	39,700	25,000	42,000	67,000	46,000	42,000	100,000	188,000
2016[4]	9,600	27,500	2,700	39,800	25,000	42,000	67,000	46,000	42,000	100,000	188,000

1/ From Tables A and Articles 6(a) of executed and proposed water supply contracts as of April 1, 1966.
2/ It is currently estimated that the entitlements shown for the South Bay area will be supplied by nonproject water through 1966. Actual delivery quantities are shown for 1962, 1963, 1964, and 1965. Quantities shown for 1966 are those requested by the contractors and approved by the Department pursuant to Article 12(a) of water supply contracts.
3/ Districts' Table A quantities exclude those during the period 1968-1979 which assumed to be supplied by nonproject water.
4/ And each year thereafter for the remainder of the project repayment period.

TABLE 4 (Continued)

ANNUAL ENTITLEMENTS TO PROJECT WATER[1/]

(in acre-feet)

CALENDAR YEAR	SAN JOAQUIN VALLEY AREA									CENTRAL COASTAL AREA		
	DEVIL'S DEN WATER DISTRICT	DUDLEY RIDGE WATER DISTRICT	EMPIRE WEST SIDE IRRIGATION DISTRICT	HACIENDA WATER DISTRICT	KERN COUNTY WATER AGENCY	KINGS COUNTY (Assumed)	OAK FLAT WATER DISTRICT	TULARE LAKE BASIN WATER STORAGE DISTRICT	TOTAL	SAN LUIS OBISPO COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT	SANTA BARBARA COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT	TOTAL
	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)
1962	0	0	0	0	0	0	0	0	0	0	0	0
63	0	0	0	0	0	0	0	0	0	0	0	0
64	0	0	0	0	0	0	0	0	0	0	0	0
65	0	0	0	0	0	0	0	0	0	0	0	0
66	0	0	0	0	0	0	0	0	0	0	0	0
67	0	0	0	0	0	0	0	0	0	0	0	0
68	3,700	11,500	3,000	1,300	87,000	1,600	2,300	26,900	137,300	0	0	0
69	4,700	13,600	3,000	1,600	95,700	1,800	2,500	29,300	152,200	0	0	0
1970	5,700	15,700	3,000	2,000	145,100	2,100	2,600	31,800	208,000	0	0	0
71	6,700	17,900	3,000	2,300	190,300	2,300	2,800	34,200	259,500	0	0	0
72	7,700	20,000	3,000	2,600	270,700	2,600	2,900	36,700	346,200	0	0	0
73	8,700	22,000	3,000	2,900	310,500	2,800	3,100	39,100	392,100	0	0	0
74	9,700	24,100	3,000	3,300	347,000	3,000	3,200	43,000	436,300	0	0	0
75	10,700	26,200	3,000	3,600	385,500	3,300	3,400	46,900	482,600	0	0	0
76	11,700	28,300	3,000	3,900	432,800	3,500	3,500	50,800	537,500	0	0	0
77	12,700	30,400	3,000	4,200	483,600	3,800	3,700	54,800	596,200	0	0	0
78	12,700	32,500	3,000	4,600	534,300	4,000	3,900	58,700	653,700	0	0	0
79	12,700	34,600	3,000	4,900	583,900	4,000	4,000	62,600	709,700	0	0	0
1980	12,700	36,700	3,000	5,200	634,500	4,000	4,200	66,500	766,800	1,000	1,200	2,200
81	12,700	38,800	3,000	5,600	691,400	4,000	4,300	70,400	830,200	1,000	2,300	3,300
82	12,700	41,000	3,000	5,900	745,300	4,000	4,500	74,300	890,700	2,000	4,600	6,600
83	12,700	42,900	3,000	6,200	805,100	4,000	4,600	78,200	956,700	3,000	6,900	9,900
84	12,700	45,100	3,000	6,500	860,600	4,000	4,800	82,100	1,018,800	4,500	10,400	14,900
85	12,700	47,200	3,000	6,900	915,000	4,000	4,900	86,000	1,079,700	7,500	17,300	24,800
86	12,700	49,300	3,000	7,200	968,200	4,000	5,100	90,000	1,139,500	10,000	23,100	33,100
87	12,700	51,400	3,000	7,500	1,023,500	4,000	5,200	93,900	1,201,200	12,500	28,800	41,300
88	12,700	53,500	3,000	7,800	1,074,600	4,000	5,400	97,800	1,258,800	15,500	35,800	51,300
89	12,700	55,600	3,000	8,200	1,112,300	4,000	5,600	101,700	1,303,100	20,000	46,100	66,100
1990	12,700	57,700	3,000	8,500	1,153,400	4,000	5,700	110,000	1,355,000	25,000	57,700	82,700
91	12,700	57,700	3,000	8,500	1,153,400	4,000	5,700	110,000	1,355,000	25,000	57,700	82,700
92	12,700	57,700	3,000	8,500	1,153,400	4,000	5,700	110,000	1,355,000	25,000	57,700	82,700
93	12,700	57,700	3,000	8,500	1,153,400	4,000	5,700	110,000	1,355,000	25,000	57,700	82,700
94	12,700	57,700	3,000	8,500	1,153,400	4,000	5,700	110,000	1,355,000	25,000	57,700	82,700
95	12,700	57,700	3,000	8,500	1,153,400	4,000	5,700	110,000	1,355,000	25,000	57,700	82,700
96	12,700	57,700	3,000	8,500	1,153,400	4,000	5,700	110,000	1,355,000	25,000	57,700	82,700
97	12,700	57,700	3,000	8,500	1,153,400	4,000	5,700	110,000	1,355,000	25,000	57,700	82,700
98	12,700	57,700	3,000	8,500	1,153,400	4,000	5,700	110,000	1,355,000	25,000	57,700	82,700
99	12,700	57,700	3,000	8,500	1,153,400	4,000	5,700	110,000	1,355,000	25,000	57,700	82,700
2000	12,700	57,700	3,000	8,500	1,153,400	4,000	5,700	110,000	1,355,000	25,000	57,700	82,700
01	12,700	57,700	3,000	8,500	1,153,400	4,000	5,700	110,000	1,355,000	25,000	57,700	82,700
02	12,700	57,700	3,000	8,500	1,153,400	4,000	5,700	110,000	1,355,000	25,000	57,700	82,700
03	12,700	57,700	3,000	8,500	1,153,400	4,000	5,700	110,000	1,355,000	25,000	57,700	82,700
04	12,700	57,700	3,000	8,500	1,153,400	4,000	5,700	110,000	1,355,000	25,000	57,700	82,700
05	12,700	57,700	3,000	8,500	1,153,400	4,000	5,700	110,000	1,355,000	25,000	57,700	82,700
06	12,700	57,700	3,000	8,500	1,153,400	4,000	5,700	110,000	1,355,000	25,000	57,700	82,700
07	12,700	57,700	3,000	8,500	1,153,400	4,000	5,700	110,000	1,355,000	25,000	57,700	82,700
08	12,700	57,700	3,000	8,500	1,153,400	4,000	5,700	110,000	1,355,000	25,000	57,700	82,700
09	12,700	57,700	3,000	8,500	1,153,400	4,000	5,700	110,000	1,355,000	25,000	57,700	82,700
2010	12,700	57,700	3,000	8,500	1,153,400	4,000	5,700	110,000	1,355,000	25,000	57,700	82,700
11	12,700	57,700	3,000	8,500	1,153,400	4,000	5,700	110,000	1,355,000	25,000	57,700	82,700
12	12,700	57,700	3,000	8,500	1,153,400	4,000	5,700	110,000	1,355,000	25,000	57,700	82,700
13	12,700	57,700	3,000	8,500	1,153,400	4,000	5,700	110,000	1,355,000	25,000	57,700	82,700
14	12,700	57,700	3,000	8,500	1,153,400	4,000	5,700	110,000	1,355,000	25,000	57,700	82,700
15	12,700	57,700	3,000	8,500	1,153,400	4,000	5,700	110,000	1,355,000	25,000	57,700	82,700
2016[2/]	12,700	57,700	3,000	8,500	1,153,400	4,000	5,700	110,000	1,355,000	25,000	57,700	82,700

1/ From Tables A and Articles 6(a) of executed and proposed water supply contracts as of April 1, 1966.
2/ And each year thereafter for the remainder of the project repayment period.

TABLE 4 (Continued)

TABLE 4 (Continued)

ANNUAL ENTITLEMENTS TO PROJECT WATER[1/]

(in acre-feet)

CALENDAR YEAR	SOUTHERN CALIFORNIA AREA															TOTAL STATE WATER PROJECT
	ANTELOPE VALLEY-EAST KERN WATER AGENCY	BIG BEAR MUNICIPAL WATER DISTRICT (Assumed)	COACHELLA VALLEY COUNTY WATER DISTRICT	CRESTLINE-LAKE ARROWHEAD WATER AGENCY	DESERT WATER AGENCY	LITTLEROCK CREEK IRRIGATION DISTRICT	MOJAVE WATER AGENCY	PALMDALE IRRIGATION DISTRICT	SAN BERNARDINO VALLEY MUNICIPAL WATER DISTRICT	SAN GABRIEL VALLEY MUNICIPAL WATER DISTRICT	SAN GORGONIO PASS WATER AGENCY	THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA	UPPER SANTA CLARA VALLEY WATER AGENCY	VENTURA COUNTY FLOOD CONTROL DISTRICT	TOTAL	
	(24)	(25)	(26)	(27)	(28)	(29)	(30)	(31)	(32)	(33)	(34)	(35)	(36)	(37)	(38)	(39)
1962	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8,906
63	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12,645
64	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	20,911
65	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	34,026
66	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	60,930
67	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	68,900
68	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	248,350
69	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	265,120
1970	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	322,900
71	0	0	0	0	0	0	0	0	0	0	0	254,200	1,600	0	255,800	632,390
72	20,000	4,600	5,200	580	8,000	170	8,400	1,620	45,541	10,600	1,000	354,600	3,700	0	464,011	929,481
73	25,000	4,600	5,800	870	9,000	290	10,700	2,940	47,559	11,500	1,700	454,900	5,700	0	580,559	1,094,159
74	30,000	4,600	6,400	1,160	10,000	400	13,100	4,260	49,806	12,300	2,400	555,200	7,500	0	697,126	1,257,056
75	35,000	4,600	7,000	1,450	11,000	520	15,400	5,580	51,826	13,100	3,100	655,600	9,500	0	813,676	1,422,386
76	44,000	4,600	7,600	1,740	12,000	640	17,800	6,900	53,842	14,000	3,800	755,900	11,400	0	934,222	1,600,212
77	50,000	4,600	8,421	2,030	13,000	730	20,200	8,220	55,860	14,800	4,500	856,300	13,400	0	1,052,061	1,779,281
78	57,000	4,600	9,242	2,320	14,000	920	22,500	9,340	57,878	15,700	5,200	956,600	15,300	0	1,170,600	1,957,850
79	63,000	4,600	10,063	2,610	15,000	1,040	24,900	10,260	60,010	16,600	5,900	1,057,000	17,700	0	1,288,683	2,134,363
1980	69,200	4,600	10,884	2,900	17,000	1,150	27,200	11,180	61,913	17,400	6,800	1,157,300	20,100	1,000	1,408,627	2,336,387
81	75,000	4,600	12,105	3,190	19,000	1,270	29,600	11,700	64,161	18,300	7,800	1,257,600	22,100	2,000	1,528,426	2,531,066
82	81,300	4,600	13,326	3,480	21,000	1,380	31,900	12,320	64,161	19,100	8,800	1,358,000	24,600	3,000	1,646,967	2,720,137
83	87,700	4,600	14,547	3,770	23,000	1,500	34,300	12,940	64,161	19,900	9,800	1,458,300	26,900	4,000	1,765,418	2,914,668
84	94,000	4,600	15,768	4,060	25,000	1,610	36,700	13,560	64,161	20,700	10,800	1,558,700	29,100	5,000	1,883,759	3,106,789
85	100,400	4,600	16,989	4,350	27,000	1,730	39,000	14,180	64,161	21,800	11,800	1,659,300	30,900	6,000	2,002,210	3,304,320
86	106,700	4,600	18,210	4,640	29,000	1,840	41,400	14,800	66,179	23,200	12,900	1,759,800	32,900	8,000	2,124,169	3,503,559
87	113,000	4,600	19,431	4,930	31,500	1,960	43,700	15,420	72,462	24,600	14,000	1,860,400	35,300	10,000	2,251,303	3,710,723
88	119,400	4,600	20,652	5,220	34,000	2,070	46,000	16,040	78,745	26,000	15,100	1,961,000	37,400	13,000	2,379,227	3,920,887
89	125,700	4,600	21,873	5,510	36,500	2,190	48,500	16,660	84,915	27,400	16,200	2,011,500	39,300	16,000	2,456,848	4,074,848
1990	132,100	4,600	23,100	5,800	38,100	2,300	50,800	17,300	91,198	28,800	17,300	2,011,500	41,500	20,000	2,484,398	4,188,138
91	138,400	4,600	23,100	5,800	38,100	2,300	50,800	17,300	98,000	28,800	17,300	2,011,500	41,500	20,000	2,497,500	4,206,780
92	138,400	4,600	23,100	5,800	38,100	2,300	50,800	17,300	98,000	28,800	17,300	2,011,500	41,500	20,000	2,497,500	4,212,320
93	138,400	4,600	23,100	5,800	38,100	2,300	50,800	17,300	98,000	28,800	17,300	2,011,500	41,500	20,000	2,497,500	4,217,860
94	138,400	4,600	23,100	5,800	38,100	2,300	50,800	17,300	98,000	28,800	17,300	2,011,500	41,500	20,000	2,497,500	4,222,500
95	138,400	4,600	23,100	5,800	38,100	2,300	50,800	17,300	98,000	28,800	17,300	2,011,500	41,500	20,000	2,497,500	4,224,550
96	138,400	4,600	23,100	5,800	38,100	2,300	50,800	17,300	98,000	28,800	17,300	2,011,500	41,500	20,000	2,497,500	4,226,600
97	138,400	4,600	23,100	5,800	38,100	2,300	50,800	17,300	98,000	28,800	17,300	2,011,500	41,500	20,000	2,497,500	4,228,650
98	138,400	4 600	23,100	5,800	38,100	2,300	50,800	17,300	98,000	28,800	17,300	2,011,500	41,500	20,000	2,497,500	4,228,700
99	138,400	4,600	23,100	5,800	38,100	2,300	50,800	17,300	98,000	28,800	17,300	2,011,500	41,500	20,000	2,497,500	4,228,750
2000	138,400	4,600	23,100	5,800	38,100	2,300	50,800	17,300	98,000	28,800	17,300	2,011,500	41,500	20,000	2,497,500	4,228,810
01	138,400	4,600	23,100	5,800	38,100	2,300	50,800	17,300	98,000	28,800	17,300	2,011,500	41,500	20,000	2,497,500	4,228,870
02	138,400	4,600	23,100	5,800	38,100	2,300	50,800	17,300	98,000	28,800	17,300	2,011,500	41,500	20,000	2,497,500	4,228,930
03	138,400	4,600	23,100	5,800	38,100	2,300	50,800	17,300	98,000	28,800	17,300	2,011,500	41,500	20,000	2,497,500	4,228,990
04	138,400	4,600	23,100	5,800	38,100	2,300	50,800	17,300	98,000	28,800	17,300	2,011,500	41,500	20,000	2,497,500	4,229,050
05	138,400	4,600	23,100	5,800	38,100	2,300	50,800	17,300	98,000	28,800	17,300	2,011,500	41,500	20,000	2,497,500	4,229,110
06	138,400	4,600	23,100	5,800	38,100	2,300	50,800	17,300	98,000	28,800	17,300	2,011,500	41,500	20,000	2,497,500	4,229,180
07	138,400	4,600	23,100	5,800	38,100	2,300	50,800	17,300	98,000	28,800	17,300	2,011,500	41,500	20,000	2,497,500	4,229,250
08	138,400	4,600	23,100	5,800	38,100	2,300	50,800	17,300	98,000	28,800	17,300	2,011,500	41,500	20,000	2,497,500	4,229,320
09	138,400	4,600	23,100	5,800	38,100	2,300	50,800	17,300	98,000	28,800	17,300	2,011,500	41,500	20,000	2,497,500	4,229,390
2010	138,400	4,600	23,100	5,800	38,100	2,300	50,800	17,300	98,000	28,800	17,300	2,011,500	41,500	20,000	2,497,500	4,229,460
11	138,400	4,600	23,100	5,800	38,100	2,300	50,800	17,300	98,000	28,800	17,300	2,011,500	41,500	20,000	2,497,500	4,229,540
12	138,400	4,600	23,100	5,800	38,100	2,300	50,800	17,300	98,000	28,800	17,300	2,011,500	41,500	20,000	2,497,500	4,229,620
13	138,400	4,600	23,100	5,800	38,100	2,300	50,800	17,300	98,000	28,800	17,300	2,011,500	41,500	20,000	2,497,500	4,229,710
14	138,400	4,600	23,100	5,800	38,100	2,300	50,800	17,300	98,000	28,800	17,300	2,011,500	41,500	20,000	2,497,500	4,229,800
15	138,400	4,600	23,100	5,800	38,100	2,300	50,800	17,300	98,000	28,800	17,300	2,011,500	41,500	20,000	2,497,500	4,229,900
2016[2/]	138,400	4,600	23,100	5,800	38,100	2,300	50,800	17,300	98,000	28,800	17,300	2,011,500	41,500	20,000	2,497,500	4,230,000

1/ From Tables A and Articles 6(a) of executed and proposed water supply contracts as of April 1, 1966.
2/ And each year thereafter for the remainder of the project repayment period.

TABLE 5

PROJECT WATER DEMANDS AND WATER SUPPLIES
AT THE DELTA

(in acre-feet)

CALENDAR YEAR	DEMANDS ON DELTA POOL (STATE ONLY)							SUPPLIED FROM THE DELTA POOL			
	ANNUAL ENTITLEMENTS TO PROJECT WATER					OTHER WATER[1]	TOTAL	PURCHASED BUREAU WATER[2]	INITIAL CONSERVATION FACILITIES[3]	ADDITIONAL CONSERVATION FACILITIES[4]	TOTAL
	FEATHER RIVER AREA	NORTH BAY AQUEDUCT	SOUTH BAY AQUEDUCT	CALIFORNIA AQUEDUCT	TOTAL						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
1962	0	0	8,906	0	8,906	798	9,704	9,704	0	0	9,704
63	0	0	12,645	0	12,645	567	13,212	13,212	0	0	13,212
64	0	0	20,911	0	20,911	832	21,743	21,743	0	0	21,743
65	0	0	34,026	0	34,026	1,959	35,985	35,985	0	0	35,985
66	0	0	60,930	0	60,930	1,820	62,750	62,750	0	0	62,750
67	0	0	68,900	0	68,900	2,230	71,130	0	71,130	0	71,130
68	550	0	110,500	137,300	248,350	539,037	787,387	0	787,387	0	787,387
69	620	0	112,300	152,200	265,120	920,330	1,185,450	0	1,185,450	0	1,185,450
1970	700	0	114,200	208,000	322,900	220,630	543,530	0	543,530	0	543,530
71	890	0	116,200	515,300	632,390	336,530	968,920	0	968,920	0	968,920
72	970	0	118,300	810,211	929,481	539,330	1,468,811	0	1,468,811	0	1,468,811
73	1,100	0	120,400	972,659	1,094,159	534,530	1,628,689	0	1,628,689	0	1,628,689
74	1,230	0	122,400	1,133,426	1,257,056	417,930	1,674,986	0	1,674,986	0	1,674,986
75	1,610	0	124,500	1,296,276	1,422,386	303,730	1,726,116	0	1,726,116	0	1,726,116
76	1,990	0	126,500	1,471,722	1,600,212	303,730	1,903,942	0	1,903,942	0	1,903,942
77	2,420	0	128,600	1,648,261	1,779,281	303,730	2,083,011	0	2,083,011	0	2,083,011
78	2,850	0	130,700	1,824,300	1,957,850	303,730	2,261,580	0	2,261,580	0	2,261,580
79	3,280	0	132,700	1,998,383	2,134,363	303,730	2,438,093	0	2,438,093	0	2,438,093
1980	4,710	19,250	134,800	2,177,627	2,336,387	323,650	2,660,037	0	2,660,037	0	2,660,037
81	10,390	21,750	137,000	2,361,926	2,531,066	323,330	2,854,396	0	2,854,396	0	2,854,396
82	12,270	24,400	139,200	2,544,267	2,720,137	323,330	3,043,467	0	3,043,467	0	3,043,467
83	14,200	27,050	141,400	2,732,018	2,914,668	340,830	3,255,498	0	3,255,498	0	3,255,498
84	16,130	29,600	143,600	2,917,459	3,106,789	340,830	3,447,619	0	3,447,619	0	3,447,619
85	19,060	32,750	145,800	3,106,710	3,304,320	340,830	3,645,150	0	3,645,150	0	3,645,150
86	22,190	36,500	148,100	3,296,769	3,503,559	340,830	3,844,389	0	3,749,719	94,670	3,844,389
87	25,370	41,250	150,300	3,493,803	3,710,723	340,830	4,051,553	0	3,835,493	216,060	4,051,553
88	29,560	49,500	152,500	3,689,327	3,920,887	340,830	4,261,717	0	3,924,257	337,460	4,261,717
89	33,850	58,250	156,700	3,826,048	4,074,848	340,830	4,415,678	0	3,962,318	453,360	4,415,678
1990	38,140	67,000	160,900	3,922,098	4,188,138	340,830	4,528,968	0	3,948,408	580,560	4,528,968
91	38,180	67,000	166,400	3,925,200	4,206,780	340,830	4,547,610	0	3,955,250	592,360	4,547,610
92	38,220	67,000	171,900	3,935,200	4,212,320	340,830	4,553,150	0	3,948,990	604,160	4,553,150
93	38,260	67,000	177,400	3,935,200	4,217,860	340,830	4,558,690	0	3,942,830	651,860	4,558,690
94	38,300	67,000	182,000	3,935,200	4,222,500	340,830	4,563,330	0	3,935,680	627,650	4,563,330
95	38,350	67,000	184,000	3,935,200	4,224,550	340,830	4,565,380	0	3,925,930	639,450	4,565,380
96	38,400	67,000	186,000	3,935,200	4,226,600	340,830	4,567,430	0	3,919,080	648,350	4,567,430
97	38,450	67,000	188,000	3,935,200	4,228,650	340,830	4,569,480	0	3,912,230	657,250	4,569,480
98	38,500	67,000	188,000	3,935,200	4,228,700	340,830	4,569,530	0	3,903,480	666,050	4,569,530
99	38,550	67,000	188,000	3,935,200	4,228,750	340,830	4,569,580	0	3,900,640	668,940	4,569,580
2000	38,610	67,000	188,000	3,935,200	4,228,810	340,830	4,569,640	0	3,885,800	683,840	4,569,640
01	38,670	67,000	188,000	3,935,200	4,228,870	340,830	4,569,700	0	3,878,460	691,240	4,569,700
02	38,730	67,000	188,000	3,935,200	4,228,930	340,830	4,569,760	0	3,871,120	698,640	4,569,760
03	38,790	67,000	188,000	3,935,200	4,228,990	340,830	4,569,820	0	3,863,780	706,040	4,569,820
04	38,850	67,000	188,000	3,935,200	4,229,050	340,830	4,569,880	0	3,856,440	713,440	4,569,880
05	38,910	67,000	188,000	3,935,200	4,229,110	340,830	4,569,940	0	3,849,110	702,830	4,569,940
06	38,980	67,000	188,000	3,935,200	4,229,180	340,830	4,570,010	0	3,841,880	728,130	4,570,010
07	39,050	67,000	188,000	3,935,200	4,229,250	340,830	4,570,080	0	3,834,550	735,530	4,570,080
08	39,120	67,000	188,000	3,935,200	4,229,320	340,830	4,570,150	0	3,827,220	742,930	4,570,150
09	39,190	67,000	188,000	3,935,200	4,229,390	340,830	4,570,220	0	3,819,890	750,330	4,570,220
2010	39,260	67,000	188,000	3,935,200	4,229,460	340,830	4,570,290	0	3,812,570	757,720	4,570,290
11	39,340	67,000	188,000	3,935,200	4,229,540	340,830	4,570,370	0	3,808,250	762,120	4,570,370
12	39,420	67,000	188,000	3,935,200	4,229,620	340,830	4,570,450	0	3,803,840	766,610	4,570,450
13	39,510	67,000	188,000	3,935,200	4,229,710	340,830	4,570,540	0	3,799,530	771,010	4,570,540
14	39,600	67,000	188,000	3,935,200	4,229,800	340,830	4,570,630	0	3,795,130	775,500	4,570,630
15	39,700	67,000	188,000	3,935,200	4,229,900	340,830	4,570,730	0	3,790,830	779,900	4,570,730
2016	39,800	67,000	188,000	3,935,200	4,230,000	340,830	4,570,830	0	3,786,530	784,300	4,570,830
2025	39,800	67,000	188,000	3,935,200	4,230,000	340,830	4,570,830	0	3,738,930	831,900	4,570,830
2035	39,800	67,000	188,000	3,935,200	4,230,000	340,830	4,570,830	0	3,679,930	890,900	4,570,830

1/ Includes water to compensate for operation losses, deliveries for specific recreational usage, coolant water for a nuclear powerplant of the pressurized or boiling reactor type, and water for the initial filling of all facilities below the Delta; but excludes surplus water.

2/ Total of Bureau Water estimated to be purchased is 143,394 acre-feet.

3/ The initial project conservation facilities include the Upper Feather Area; the Oroville Area; the Delta Facilities; San Luis Dam, reservoir, and Pumping-Generating Plant; and an allocated share of the California Aqueduct between the Delta and Dos Amigos Pumping Plant.

4/ The Upper Eel River Development.

TABLE 6

ESTIMATED ANNUAL PROJECT ENERGY GENERATION

(in millions of kilowatt-hours)

CALENDAR YEAR	OROVILLE-THERMALITO POWERPLANTS	COTTONWOOD POWERPLANT	PYRAMID AND CASTAIC POWERPLANTS	SAN LUIS PUMPING-GENERATING PLANT	UPPER & LOWER DEVIL CANYON POWERPLANTS	SAN LUIS OBISPO POWERPLANT	TOTAL GENERATION AT POWERPLANTS
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
1967	0	0	0	0	0	0	0
68	1,188	0	0	3	0	0	1,191
69	2,799	0	0	12	0	0	2,811
1970	2,846	0	36	33	0	0	2,915
71	2,846	6	450	88	7	0	3,397
72	2,846	34	581	141	165	0	3,767
73	2,846	37	726	149	181	0	3,939
74	2,846	36	775	1	155	0	3,813
75	2,846	36	783	3	179	0	3,847
76	2,846	41	913	32	302	0	4,134
77	2,846	45	1,026	54	338	0	4,309
78	2,846	56	1,139	79	373	0	4,493
79	2,846	55	1,248	95	410	0	4,654
1980	2,846	59	1,363	133	444	2	4,847
81	2,846	66	1,444	132	512	2	5,002
82	2,846	74	1,518	143	576	4	5,161
83	2,846	80	1,593	149	640	6	5,314
84	2,846	88	1,674	161	704	9	5,482
85	2,846	95	1,748	169	769	15	5,642
86	2,846	101	1,838	0	833	19	5,637
87	2,846	104	1,988	38	841	24	5,841
88	2,846	106	2,142	73	851	30	6,048
89	2,846	110	2,216	95	862	38	6,167
1990	2,846	111	2,230	119	872	48	6,226
91	2,846	113	2,227	118	881	48	6,233
92	2,846	113	2,227	118	881	48	6,233
93	2,846	113	2,227	118	881	48	6,233
94	2,846	113	2,227	118	881	48	6,233
95	2,846	113	2,227	118	881	48	6,233
96	2,846	113	2,227	118	881	48	6,233
97	2,846	113	2,227	118	881	48	6,233
98	2,846	113	2,227	118	881	48	6,233
99	2,846	113	2,227	118	881	48	6,233
2000 1/	2,846	113	2,227	118	881	48	6,233

1/ And each year thereafter for the remainder of the project repayment period.

TABLE 7

ESTIMATED ANNUAL PROJECT ENERGY REQUIREMENTS
FOR PUMPING

(in millions of kilowatt-hours)

CALENDAR YEAR	OROVILLE-THERMALITO POWERPLANTS	NORTH BAY AQUEDUCT		PERIPHERAL CANAL PUMPING PLANT	SOUTH BAY AQUEDUCT PUMPING PLANTS	CALIFORNIA AQUEDUCT											SAN JOAQUIN DRAIN PUMPING PLANTS	TOTAL STATE WATER PROJECT
		CALHOUN PUMPING PLANT	CORDELIA PUMPING PLANT			DELTA PUMPING PLANT	SAN LUIS PUMPING-GENERATING PLANT	DOS AMIGOS PUMPING PLANT	BUENA VISTA PUMPING PLANT	WHEELER RIDGE PUMPING PLANT	WIND GAP PUMPING PLANT	TEHACHAPI PUMPING PLANT	PEARBLOSSOM PUMPING PLANT	OSO PUMPING PLANT	LAS PERILLAS & BADGER HILL PUMPING PLANTS	DEVIL'S DEN, SAWTOOTH, & POLONIO PUMPING PLANTS		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
1962	0	0	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	7
63	0	0	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	10
64	0	0	0	0	19	0	0	0	0	0	0	0	0	0	0	0	0	19
65	0	0	0	0	28	0	0	0	0	0	0	0	0	0	0	0	0	28
66	0	0	0	0	46	1	0	0	0	0	0	0	0	0	0	0	0	47
67	0	0	0	0	56	48	0	0	0	0	0	0	0	0	0	0	0	104
68	14	0	1	0	81	200	102	36	0	0	0	0	0	0	11	0	0	445
69	469	0	1	0	92	393	184	37	0	0	0	0	0	0	11	0	0	1,187
1970	469	0	1	0	87	162	84	49	17	18	32	96	0	11	12	0	0	1,038
71	469	0	2	0	88	247	86	114	113	122	260	932	40	84	12	0	0	2,569
72	469	0	3	0	90	349	123	186	217	237	515	1,884	212	106	13	0	0	4,404
73	469	0	3	0	91	379	140	209	242	269	589	2,102	220	137	14	0	0	4,864
74	469	0	4	15	93	595	122	217	246	272	591	2,102	196	144	15	0	0	5,081
75	469	0	4	15	95	595	124	222	248	274	595	2,106	190	145	15	0	0	5,097
76	469	0	4	14	96	584	99	247	280	310	675	2,383	212	165	17	0	0	5,555
77	469	0	5	15	98	607	89	273	313	346	753	2,655	234	184	18	0	0	6,059
78	469	0	5	14	100	634	109	298	344	381	828	2,931	256	204	20	0	0	6,593
79	469	0	6	18	100	681	133	323	375	415	901	3,203	282	222	23	0	0	7,151
1980	469	1	6	18	102	723	163	355	405	448	974	3,472	301	242	25	11	1	7,716
81	469	1	7	28	103	811	199	379	432	483	1,052	3,756	340	257	25	13	1	8,356
82	469	2	7	30	105	855	204	405	468	520	1,129	4,035	385	268	26	20	1	8,929
83	469	2	8	32	107	908	211	434	502	557	1,211	4,289	421	281	27	27	1	9,487
84	469	2	8	36	109	957	219	462	537	595	1,295	4,585	463	296	30	38	1	10,102
85	469	2	9	39	110	1,017	226	489	569	629	1,367	4,849	502	308	34	59	1	10,679
86	469	2	10	49	112	1,268	187	517	601	666	1,447	5,126	535	324	38	77	1	11,429
87	469	2	10	43	114	1,132	61	544	636	703	1,528	5,421	547	350	41	94	1	11,696
88	469	3	11	43	116	1,158	81	573	669	741	1,610	5,716	557	376	45	116	1	12,285
89	469	3	11	47	118	1,216	122	593	695	766	1,659	5,895	572	388	50	147	1	12,752
1990	469	3	12	46	121	1,245	150	607	704	770	1,677	5,959	577	391	56	183	1	12,971
91	469	3	12	48	126	1,254	159	608	707	779	1,685	5,990	585	391	56	183	1	13,056
92	469	3	12	48	128	1,254	159	608	707	779	1,685	5,990	585	391	56	183	1	13,058
93	469	3	12	48	132	1,255	159	608	707	779	1,685	5,990	585	391	56	183	1	13,063
94	469	3	12	48	136	1,257	159	608	707	779	1,685	5,990	585	391	56	183	1	13,069
95	469	3	12	48	137	1,257	159	608	707	779	1,685	5,990	585	391	56	183	1	13,070
96	469	3	12	48	139	1,258	159	608	707	779	1,685	5,990	585	391	56	183	1	13,073
97	469	3	12	48	140	1,258	159	608	707	779	1,685	5,990	585	391	56	183	1	13,074
98	469	3	12	48	140	1,258	159	608	707	779	1,685	5,990	585	391	56	183	1	13,074
99	469	3	12	48	140	1,258	159	608	707	779	1,685	5,990	585	391	56	183	1	13,074
2000 1/	469	3	12	48	140	1,258	159	608	707	779	1,685	5,990	585	391	56	183	1	13,074

1/ And each year thereafter for the remainder of the project repayment period.

TABLE 8

FRENCHMAN LAKE MONTHLY OPERATION

(in acre-feet unless otherwise indicated)

MONTH	RESERVOIR STORAGE			OUTFLOW				INFLOW	RELEASES	
	WATER SURFACE ELEVATION, IN FEET	END OF MONTH STORAGE	MONTHLY STORAGE CHANGE	REGULATED RELEASE	SPILL	ESTIMATED EVAPORATION AND SEEPAGE	TOTAL GROSS OUTFLOW	COMPUTED OR ESTIMATED	WATER RIGHT ENTITLEMENT OR CONTRACT RELEASE[1]	PROJECT WATER[2]
1965	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Jan.	5,579.88	43,494	4,809	123	0	92	215	5,024	0	123
Feb.	5,580.93	44,938	1,444	2,432	0	107	2,539	3,983	0	2,432[3]
Mar.	5,585.54	51,617	6,679	232	0	181	413	7,092	0	232
Apr.	5,589.71	58,160	6,543	417	6,987[4]	310	7,714	14,257	0	417
May	5,588.49	56,194	-1,966	432	9,884[4]	597	10,913	8,947	285	147
Jun.	5,586.98	53,821	-2,373	3,160	504[4]	670	4,334	1,961	3,160	0
Jul.	5,585.53	51,602	-2,219	1,763	0	945	2,708	489	1,763	0
Aug.	5,583.62	48,768	-2,834	2,501	0	738	3,239	405	2,501	0
Sep.	5,582.05	46,510	-2,258	1,817	0	520	2,337	79	1,817	0
Oct.	5,581.63	45,917	- 593	470	0	435	905	312	470	0
Nov.	5,581.97	46,397	480	163	0	227	390	870	83	80
Dec.	5,582.40	47,008	611	123	0	149	272	883	0	123
Totals	-	-	8,323	13,633	17,375	4,971	35,979	44,302	10,079	3,554

1/ Releases under the interim contract with the Last Chance Water District.
2/ Releases required specifically for streamflow maintenance.
3/ Flood control releases made to provide space for anticipated heavy spring runoff.
4/ Computed from "Little Last Chance Creek near Chilcoot" gaging station record.

TABLE 9

ANTELOPE LAKE MONTHLY OPERATION

(in acre-feet unless otherwise indicated)

MONTH	RESERVOIR STORAGE			OUTFLOW				INFLOW	RELEASES	
	WATER SURFACE ELEVATION IN FEET	END OF MONTH STORAGE	MONTHLY STORAGE CHANGE	REGULATED RELEASE	SPILL 1/	ESTIMATED EVAPORATION AND SEEPAGE	TOTAL GROSS OUTFLOW	COMPUTED OR ESTIMATED	WATER RIGHT ENTITLEMENT OR CONTRACT RELEASE 2/	PROJECT WATER 3/
1965	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Jan.	5,002.63	23,104	5,967	123	664 4/	62	849	6,816	123	0
Feb.	5,002.65	23,122 5/	18	111	4,947 4/	73	5,131	5,149	111	0
Mar.	5,002.83	23,293 5/	171	123	6,803 4/	119	7,045	7,216	123	0
Apr.	5,003.89	24,310	1,017	119	14,150 4/	187	14,456	15,473	119	0
May	5,002.94	23,397	- 913	123	16,620 4/	356	17,099	16,186	123	0
Jun.	5,002.50	22,981	- 416	58	5,258 4/	404	5,720	5,304	58	0
Jul.	5,002.13	22,634	- 347	257	1,062 4/	478	1,797	1,450	257	0
Aug.	5,002.04	22,550	- 84	453	167	359	979	895	453	0
Sep.	4,994.94	15,723 5/	-6,827	7,196	0	354	7,550	723	7,196 6/	0
Oct.	4,993.38	13,305 5/	- 418	615	0	155	770	352	0	615
Nov.	4,994.09	15,836	531	595	0	120	715	1,246	0	595
Dec.	4,994.51	16,156 5/	320	615	0	80	695	1,015	0	615
Total			- 981	10,388	49,671	2,747	62,806	61,825	8,423	1,825

1/ Preliminary figures.
2/ Releases required to satisfy water right entitlements in Indian Valley and the agreement with the Pacific Gas and Electric Company.
3/ Releases required specifically for streamflow maintenance.
4/ Computed from the record of the gaging stations, "Indian Creek near Boulder Creek Guard Station".
5/ Estimated from periodic gage readings.
6/ Release made to draw reservoir down to determine effect on the phreatic line within the dam section.

TABLE 10

SOUTH BAY AQUEDUCT MONTHLY OPERATION

(All figures in acre-feet unless otherwise indicated)

MONTH	SUPPLY FROM DELTA-MENDOTA CANAL	DELTA-MENDOTA CANAL TO SOUTH BAY PUMPING PLANT				AMOUNT PUMPED AT SOUTH BAY PUMPING PLANT	SOUTH BAY PUMPING PLANT TO TERMINUS						ELECTRICAL ENERGY CONSUMPTION (Kilowatt Hours)
		STORAGE CHANGES		LOSSES[1]	DELIVERIES		STORAGE CHANGES		LOSSES[1]	DELIVERIES			
		BETHANY RESERVOIR	AQUEDUCT		WATER SUPPLY CONTRACTORS		PATTERSON RESERVOIR	AQUEDUCT		CONSTRUCTION CONTRACTORS	INITIAL AQUEDUCT FILL	WATER SUPPLY CONTRACTORS	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
1965													
Jan.	0	- 79	0	0	1	78	0	0	0	0	6	72	81,600
Feb.	31	-113	31	0	7	106	0	23	4	7[2]	0	72	105,600
Mar.	192	20	0	29	10	133	0	0	37	0	4	92	124,800
Apr.	206	32	0	34	7	133	0	0	36	0	0	97	129,600
May	2,012	211	0	9	8	1,784	0	18	0	3[3]	0	1,763	1,166,400
Jun.	3,683	68	0	244	6	3,365	0	0	92	0	69	3,204	2,747,200
Jul.	5,655	- 46	0	0	10	5,691	75	0	0	0	4	5,612	4,372,800
Aug.	7,537	-234	0	223	8	7,540	22	0	51	0	0	7,467	5,515,200
Sep.	7,032	219	0	123	10	6,680	1	0	58	0	0	6,621	5,910,140
Oct.	7,005	- 57	0	267	9	6,786	0	- 5	188	0	0	6,603	5,456,000
Nov.	2,463	162	0	66	5	2,230	- 3	0	189	0	0	2,044	2,299,200
Dec.	169	- 95	0	23	1	240	- 2	- 68	13	0	0	297	268,800
TOTAL	35,985	88	31	1,018	82	34,766	93	- 32	668	10	83	33,944	28,177,340
1966													
Jan.	0	- 52	0	0	0	52	-17	0	- 7	0	0	76	139,200
Feb.	1,453	149	31	52	1	1,220	22	123	9	0	0	1,066	710,400
TOTAL[4] Mar.-Feb.	37,407	377	31	1,070	75	35,854	98	68	666	3	77	34,942	28,839,740

MONTH	SUMMARY OF DELIVERIES TO WATER SUPPLY CONTRACTORS BY AQUEDUCT TURNOUT												
	BETHANY RESERVOIR	ALTAMONT				PATTERSON	WENTE	VALLECITOS		SANTA CLARA METER		TOTAL	
	ALAMEDA CO. F.C. & W.C.D., ZONE 7			ALAMEDA CO. W.D.		ALAMEDA CO. F.C. & W.C.D., ZONE 7		ALAMEDA CO. W.D.		SANTA CLARA CO. F.C. & W.D.		MUNICIPAL & INDUSTRIAL	AGRICULTURAL
	MUNICIPAL & INDUSTRIAL	MUNICIPAL & INDUSTRIAL	AGRICULTURAL	MUNICIPAL & INDUSTRIAL	AGRICULTURAL	MUNICIPAL & INDUSTRIAL	AGRICULTURAL	MUNICIPAL & INDUSTRIAL	AGRICULTURAL	MUNICIPAL & INDUSTRIAL	AGRICULTURAL		
	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)
1965													
Jan.	1	0	0	0	0	72	0	0	0	0	0	73	0
Feb.	7	5	0	0	0	67	0	0	0	0	0	79	0
Mar.	10	15	0	0	0	77	0	0	0	0	0	102	0
Apr.	7	10	0	0	0	87	0	0	0	0	0	104	0
May	8	33	0	788	788	150	4	0	0	0	0	979	792
Jun.	6	52	56	1,203	1,202	238	46	0	0	195	212	1,694	1,516
Jul.	10	66	77	1,357	1,357	328	59	0	0	1,137	1,231	2,898	2,724
Aug.	8	57	60	1,512	1,513	274	29	0	0	1,931	2,091	3,782	3,693
Sep.	10	48	43	1,436	1,436	183	0	0	0	1,668	1,807	3,345	3,286
Oct.	9	24	0	1,297	1,297	181	0	188	187	1,646	1,783	3,345	3,267
Nov.	5	3	0	47	47	96	0	347	347	555	602	1,053	996
Dec.	1	6	0	0	0	77	0	29	29	75	81	188	110
TOTAL	82	319	236	7,640	7,640	1,830	138	564	563	7,207	7,807	17,642	16,384
1966													
Jan.	0	2	0	0	0	74	0	0	0	0	0	76	0
Feb.	1	2	0	0	0	75	0	0	0	475	514	553	514
TOTAL[4] Mar.-Feb.	75	318	236	7,640	7,640	1,840	138	564	563	7,682	8,321	18,119	16,898

1/ Includes operational spills, water surface evaporation, and seepage.
2/ To United States Steel Corporation.
3/ To Kaiser Steel Corporation.
4/ Bureau Water Year totals.

TABLE 11

WATER QUALITY AT SOUTH BAY PUMPING PLANT

(Parts per million unless otherwise noted)

Month	Constituents					
	Total Dissolved Solids 1/	Total Hardness 1/	Chlorides 1/	Sulfates 1/	Boron 2/	Sodium 2/ Percent
1965						
January	329	128	87	56	0.3	51
February	329	128	87	56	0.3	55
March	328	128	86	56	0.3	51
April	309	122	81	52	0.3	50
May	211	91	52	30	0.2	48
June	153	73	35	17	0.1	43
July	202	88	49	28	0.1	46
August	209	91	51	29	0.1	42
September	287	113	72	47	0.1	45
October	256	103	63	40	0.1	55
November	297	116	75	50	0.2	52
December	274	109	69	45	0.3	52
Annual Average	234	98	58	35	0.1	47

1/ Weighted average computed from daily flow and correlation with electrical conductivity.
2/ Laboratory analysis of monthly random sample.

TABLE 12

GENERAL RECONCILIATION OF CAPITAL COST CHANGES

(in millions of dollars)

PROJECT FACILITIES	BULLETIN NO. 132-65	BULLETIN NO. 132-66	CHANGE	COSTS OF ADDITIONAL FEATURES		CHANGES IN COSTS ITEMS				
				FEATURE[1]	COST	ADVANCED PLANNING[2]	DESIGN AND CONSTRUCTION[3] FEATURE		CHANGE	RIGHT OF WAY[4]	PREOPERATING[2]
UPPER FEATHER AREA:											
Frenchman Dam and Lake	3.3	3.2	- 0.1								- 0.1
Grizzly Valley Dam and Lake Davis	3.8	4.1	+ 0.3				Dam	(+ 0.5)	+ 0.5	+ 0.2	- 0.4
Antelope Dam and Lake	4.3	4.5	+ 0.2								+ 0.2
Dixie Refuge Dam and reservoir	2.1	4.7	+ 2.6	Access Road	+ 1.3		Dam	(+ 0.3)			
							Road Relocations	(+ 0.5)			
							Construction Supervision	(+ 0.5)	+ 1.3		
Abbey Bridge Dam and reservoir	4.4	5.3	+ 0.9				Dam	(+ 0.6)			
							Road Relocations	(+ 0.5)			
							Access Road	(- 0.8)			
							Construction Supervision	(+ 0.6)	+ 0.9		
SUBTOTAL, Upper Feather Area	17.9	21.8	+ 3.9		+ 1.3				+ 2.7	+ 0.2	- 0.3
OROVILLE AREA:											
Oroville Dam and reservoir	311.5	307.6	- 3.9				Dam	(- 0.6)			
							Feather River Hatchery	(+ 0.6)			
							Feather River Railroad	(- 8.6)			
							Relocations	(- 1.8)	-10.4	+ 5.9	+ 0.6
Oroville-Thermalito Power Facilities	148.7	170.9	+22.2	Monitor & Control System	+ 1.7		Powerplant	(+ 5.8)			
							Thermalito Powerplant	(+ 2.7)			
							Thermalito Diversion Dam	(+ 1.4)			
							Other Features	(+ 1.7)	+11.7	+ 7.2	+ 1.6
SUBTOTAL, Oroville Area	460.2	478.5	+18.3		+ 1.7				+ 1.3	+13.1	+ 2.2
DELTA FACILITIES	154.2	55.1	-99.1[6]						-99.1[6]		
UPPER EEL RIVER DEVELOPMENT	220.3	226.5	+ 6.2			+ 5.3					+ 0.9
NORTH BAY AQUEDUCT	9.3	10.5	+ 1.2	Monitor & Control System	+ 0.8		Aqueduct	(+ 0.5)	+ 0.5	+ 0.1	- 0.2
SOUTH BAY AQUEDUCT	50.2	59.4	+ 9.2	Monitor & Control System	+ 0.6		Del Valle Dam & reservoir	(+ 6.0)			
							Del Valle Pumping Plant	(+ 0.1)			
							Aqueduct	(+ 1.0)	+ 7.1	+ 1.5	
SUBTOTAL	434.0	351.5	-82.5		+ 1.4	+ 5.3			-91.5	+ 1.6	+ 0.7
CALIFORNIA AQUEDUCT:											
North San Joaquin Division	120.4	134.8	+14.4	Clifton Court Forebay (+10.3)			Delta Pumping Plant	(- 7.0)			
				Monitor & Control System (+ 5.3)	+15.6		Aqueduct	(- 1.1)	- 8.1	+ 8.0	+ 1.1
San Luis Division	195.7	190.0	- 5.7	Monitor & Control System	+ 5.5		San Luis Dam & reservoir	(- 1.7)			
							San Luis Forebay	(- 0.7)			
							Pumping-Generating Plant	(+ 0.9)			
							Dos Amigos Pumping Plant	(- 0.3)			
							Canal	(- 2.8)			
							Channels, Levees, Floodworks	(-10.0)	-14.6	+ 0.7	+ 2.7
South San Joaquin Division	235.3	252.3	+17.0	Monitor & Control System	+ 6.0		Buena Vista Pumping Plant				
							Design & Construction	(+ 2.7)			
							Construction Supervision	(+ 2.0)			
							Contingencies	(+ 2.3)			
							Aqueduct - Tupman to Buena Vista P.P.	(+ 5.7)			
							Aqueduct - Wheeler Ridge P.P. to Wind Gap P.P.	(- 2.7)			
							Aqueduct - Wind Gap P.P. to Tehachapi P.P.	(- 3.0)			
							Aqueduct - Other Reaches	(- 1.2)	+ 5.8	+ 5.2	
Tehachapi Division	209.7	234.9	+25.2	Monitor & Control System	+ 1.5		Tehachapi Pumping Plant				
							Design & Construction	(+ 5.9)			
							Construction Supervision	(+ 8.3)			
							Contingencies	(+ 7.8)			
							Aqueduct	(+ 1.4)	+23.4		+ 0.3
Mojave Division	156.0	194.4	+38.4	Monitor & Control System	+ 4.9		Cottonwood Powerplant	(+ 3.5)			
							Pearblossom Pumping Plant	(+ 6.9)			
							Cedar Springs Dam & res.	(+ 2.1)			
							Aqueduct - Palmdale to Littlerock Creek	(+ 8.3)			
							Aqueduct - Pearblossom P.P. to W. Fork Mojave R.	(+ 2.8)			
							Aqueduct - Other Reaches	(+ 4.4)	+28.0	+ 0.9	+ 4.6
Santa Ana Division	139.2	144.5	+ 5.3	Monitor & Control System	+ 1.5		Devil Canyon Powerplants	(- 5.0)			
							Perris Dam & reservoir	(+ 5.1)			
							San Bernardino Tunnel	(+ 2.6)			
							Aqueduct - Other Reaches	(- 0.3)	+ 2.4	+ 0.6	+ 0.8
West Branch	301.9	284.5	-17.4	Monitor & Control System	+ 2.2		Oso Pumping Plant	(- 0.4)			
							Pyramid Powerplant	(- 8.1)			
							Pyramid Dam & reservoir	(- 0.9)			
							Castaic Powerplant	(- 8.8)			
							Castaic Dam & reservoir	(- 0.1)			
							Aqueduct	(- 2.6)	-20.9	+ 1.8	- 0.5
Coastal Branch	52.5	56.5	+ 4.0				Las Perillas & Badger Hill P.Ps.	(+ 1.5)			
							Other Plants	(+ 0.6)			
							Aqueduct	(+ 0.4)	+ 2.5	+ 0.9	+ 0.6
SUBTOTAL, California Aqueduct	1,410.7	1,491.9	+81.2		+37.2				+18.5	+18.1	+ 7.4
LOCAL PROJECTS (DAVIS-GRUNSKY PROGRAM)	131.4	131.4	0.0								
SAN JOAQUIN MASTER DRAIN	103.6	53.9	-49.7				Deletion of second and third stages		-50.2		+ 0.5
MISCELLANEOUS ADDITIONAL EXPENDITURES	1.4	1.4	0.0								
SUBTOTAL	236.4	186.7	-49.7						-50.2		+ 0.5
TOTAL CAPITAL EXPENDITURES FINANCED	2,559.2	2,530.4	-28.8		+41.6	+ 5.3			-119.2	+33.0	+10.5

1/ Estimated costs for these features were not included in Bulletin No. 132-65.
2/ Estimate of future expenditures for facility implementation and fish and wildlife protection has increased.
3/ Current estimate of design and construction costs based on more recent contracts and experience has resulted in the changes in this item.
4/ Current estimate based on actual appraisals has generally increased the right of way costs over those estimates utilized in Bulletin No. 132-65.
5/ In general the increased cost estimates for planning for operation and maintenance and for power programs more than offset the decreased construction costs of operation and maintenance facilities, adjustments of actual costs by utility accounting and the costs for pumping reservoir fill water.
6/ This decrease in cost primarily results from assuming that the State will share in a facility constructed by the Federal Government, rather than the Federal Government sharing in a state-constructed Canal.

TABLE 13

COMPOSITION OF PROJECTED ANNUAL CAPITAL COSTS

(in dollars)

CALENDAR YEAR	PROJECTED ANNUAL EXPENDITURES										TOTAL ACTUAL FROM ACCOUNTING RECORDS[2]
	SURVEYS AND ENGINEERING STUDIES	DESIGN	RIGHTS OF WAY ACQUISITION AND RELOCATIONS	CONSTRUCTION	LOCAL IMPACT AID	PREOPERATING EXPENSE[1]		LOCAL PROJECTS (Davis-Grunsky Program)	STATE PARTICIPATION IN COSTS OF SAN LUIS DIVISION	TOTAL PROJECTED	
						GENERAL	DIRECT				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
1952											277,837
53											657,142
54											737,392
55											391,022
56											1,755,476
57											7,824,064
58											12,170,810
59											15,116,029
1960											20,630,155
61											31,821,960
62											36,486,149
63											112,669,177
64											125,491,768
65											166,533,011
Subtotal											$32,561,992
1966	2,638,000	13,852,000	51,819,000	181,685,983	235,000	5,729,000	637,000	9,273,244	30,686,000	296,555,227	
67	2,699,000	12,216,000	26,750,000	255,018,000	470,000	6,521,000	2,064,000	5,000,000	21,871,000	332,609,000	
68	2,675,000	7,307,000	15,899,000	271,707,000	250,000	4,276,000	1,201,000	5,000,000	7,605,000	315,920,000	
69	2,579,000	3,876,000	4,209,000	309,292,000	0	4,261,000	1,918,000	5,000,000	123,000	331,258,000	
1970	2,076,000	2,383,000	1,120,000	186,433,000	0	4,033,000	3,347,000	5,000,000	0	204,392,000	
71	1,095,000	1,418,000	1,091,000	96,293,000	0	1,931,000	2,392,000	5,000,000	0	109,220,000	
72	0	451,000	44,000	22,718,000	0	1,188,000	3,698,000	5,000,000	0	33,099,000	
73	0	239,000	180,000	5,918,000	0	1,115,000	3,318,000	5,000,000	0	15,770,000	
74	0	299,000	520,000	3,850,000	0	255,000	1,387,000	5,000,000	0	11,311,000	
75	0	483,000	420,000	1,531,000	0	253,000	0	5,000,000	0	7,687,000	
76	0	715,000	320,000	7,608,000	0	251,000	0	5,000,000	0	13,894,000	
77	0	661,000	2,420,000	14,084,000	0	243,000	0	5,000,000	0	22,408,000	
78	0	2,710,000	2,620,000	38,340,000	0	243,000	0	5,000,000	0	48,913,000	
79	0	2,515,000	1,120,000	39,756,000	0	243,000	0	5,000,000	0	48,634,000	
1980	0	2,500,000	850,000	21,650,000	0	154,000	0	5,000,000	0	30,154,000	
81	0	0	850,000	35,420,000	0	154,000	0	5,000,000	0	41,424,000	
82	0	0	0	46,539,000	0	154,000	0	5,000,000	0	51,693,000	
83	0	60,000	0	49,079,000	0	154,000	0	5,000,000	0	54,293,000	
84	0	15,000	0	10,558,000	0	154,000	0	5,000,000	0	15,727,000	
85	0	0	0	315,000	0	154,000	0	5,000,000	0	5,469,000	
86	0	0	0	0	0	0	0	5,000,000	0	5,000,000	
87	0	12,000	0	0	0	0	0	2,122,195	0	2,134,195	
88	0	0	0	100,000	0	0	0	0	0	100,000	
89	0	0	0	160,000	0	0	0	0	0	160,000	
1990	0	0	0	0	0	0	0	0	0	0	
Subtotal	13,762,000	51,712,000	110,232,000	1,598,054,983	955,000	31,466,000	19,962,000	111,395,439[3]	60,285,000	1,997,824,422	
										GRAND TOTAL 2,530,386,414	

1/ Annual operating costs incurred for each facility prior to the conversion from construction to an operational status.
2/ Preliminary, subject to adjustment pending policy decisions.
3/ Balance of the $130,000,000 reserved under the Burns-Porter Act.

TABLE 14

COMPOSITION OF PROJECTED ANNUAL OPERATING COSTS

(in thousands of dollars)

CALENDAR YEAR	PROJECTED ANNUAL EXPENDITURES								LESS, PREOPERATING EXPENSE[6]	TOTAL PROJECTED ANNUAL OPERATING COSTS	TOTAL ACTUAL, FROM ACCOUNTING RECORDS[7]
	GENERAL OPERATING EXPENSE[1]	SALARIES AND EXPENSES[2]		EQUIPMENT, MATERIALS, AND SUPPLIES[3]	POWER AND ENERGY[4]		DEPOSITS TO REPLACEMENT RESERVES[5]	TOTAL			
		OPERATING PERSONNEL	MAINTENANCE PERSONNEL		PUMPING PLANTS	RECOVERY PLANTS					
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
1962											108
63											213
64											244
65											469
66	5,802	530	342	13	223	0	11	6,921	6,366	555	0
67	7,582	895	1,259	193	452	0	62	10,443	8,585	1,858	0
68	7,833	1,879	3,231	556	1,645	- 6	611	15,749	5,477	10,272	0
69	8,013	2,265	4,134	952	2,486	- 40	727	18,537	6,179	12,358	0
1970	7,829	2,903	5,177	994	2,573	- 217	730	19,989	7,380	12,609	0
71	8,107	3,279	6,047	1,313	8,050	- 2,009	1,048	25,835	4,323	21,512	0
72	7,993	3,437	6,392	1,597	14,331	- 3,589	1,392	31,553	4,886	26,667	0
73	7,644	3,022	6,583	1,614	15,966	- 4,170	1,466	32,125	4,433	27,692	0
74	7,620	2,845	6,247	1,614	14,481	- 4,721	1,709	29,795	1,642	28,153	0
75	7,570	2,848	6,253	1,614	13,623	- 4,324	1,745	29,329	253	29,076	0
76	7,551	2,847	6,257	1,650	14,285	- 5,266	1,745	29,069	251	28,818	0
77	7,551	2,747	6,249	1,650	16,878	- 6,503	1,782	30,354	243	30,111	0
78	7,551	2,818	6,178	1,650	19,153	- 7,710	1,782	31,422	243	31,179	0
79	7,551	2,860	6,136	1,650	22,095	- 8,765	1,782	33,309	243	33,066	0
1980	7,551	2,818	6,350	1,675	24,454	- 9,788	1,811	34,871	154	34,717	0
81	7,551	2,818	6,365	1,675	26,857	-10,733	1,811	36,344	154	36,190	0
82	7,551	2,818	6,365	1,675	30,041	-11,255	1,811	39,006	154	38,852	0
83	7,551	2,818	6,365	1,675	33,434	-12,785	1,811	40,869	154	40,715	0
84	7,551	2,762	6,521	1,676	34,561	-12,976	1,811	41,906	154	41,752	0
85	7,551	2,817	6,365	1,680	33,297	-13,766	1,811	39,755	154	39,601	0
86	7,551	2,964	6,705	1,680	33,056	-10,847	1,836	42,945	0	42,945	0
87	7,551	2,964	6,695	1,680	33,465	-11,476	1,836	42,715	0	42,715	0
88	7,551	2,964	6,832	1,680	35,837	-12,222	1,836	44,478	0	44,478	0
89	7,551	2,964	6,694	1,682	37,908	-12,974	1,837	45,662	0	45,662	0
1990	7,551	2,964	6,695	1,682	39,137	-13,582	1,837	46,284	0	46,284	0
91	7,551	2,964	6,698	1,682	39,448	-13,584	1,837	46,596	0	46,596	0
92	7,551	2,964	6,695	1,682	39,521	-13,584	1,837	46,666	0	46,666	0
93	7,551	2,964	6,695	1,682	39,527	-13,584	1,837	46,672	0	46,672	0
94	7,551	2,964	6,695	1,682	39,534	-13,584	1,837	46,679	0	46,679	0
95	7,551	2,964	6,695	1,682	39,536	-13,584	1,837	46,681	0	46,681	0
96	7,551	2,964	6,695	1,682	39,540	-13,584	1,837	46,685	0	46,685	0
97	7,551	2,964	5,695	1,682	39,542	-13,584	1,837	46,687	0	46,687	0
98	7,551	2,964	6,695	1,682	39,542	-13,584	1,837	46,687	0	46,687	0
99	7,551	2,964	6,695	1,682	39,542	-13,584	1,837	46,687	0	46,687	0
2000[8]	7,551	2,964	6,695	1,682	39,542	-13,584	1,837	46,687	0	46,687	0

1/ Includes the costs of project-wide programs for contract negotiation and administration, operation and maintenance management, and research and development. Also included in this column is a miscellaneous cost of about $209,000 annually for insurance required under revenue bond financing and for administrative costs of the Federal Power Commission license of the Oroville-Thermalito power facilities.

2/ Includes the direct costs of salaries and expenses, including general administrative and indirect costs of the Department.

3/ Includes the costs of materials, supplies, and equipment rental for electrical-mechanical plants, reservoirs, and aqueduct reaches.

4/ Does not include power and energy requirements or production by power features of the Oroville division or for the federal share of power and pumping plant features of the San Luis division.

5/ Based on sinking funds earning 3.5 percent per annum.

6/ These costs of an operational nature, which occur during the construction periods of the respective facilities, are transferred to the capital costs category as shown in Columns 6 and 7 of Table 13, and are deducted herein from the annual operating costs of the Project.

7/ Preliminary, subject to adjustment pending accounting, engineering, and legal decisions.

8/ And each year thereafter for the remainder of the project repayment period.

TABLE 15

ACTUAL AND PROJECTED CAPITAL COSTS OF FACILITIES
BY PROJECT PURPOSE

(in dollars)

CALENDAR YEAR	UNSPECIFIED PURPOSES		SAN JOAQUIN MASTER DRAIN, DRAINAGE BENEFIT (100.0%)	UPPER FEATHER AREA (PROJECT CONSERVATION FACILITIES)									
				FRENCHMAN DAM AND LAKE				GRIZZLY VALLEY DAM AND LAKE DAVIS[7]			ANTELOPE DAM AND LAKE, R&F&WE[4] (100%)	REMAINING UNITS, ALL ASSUMED R&F&WE [3], [4], [8]	TOTAL
					MULTIPLE-PURPOSE[5]			MULTIPLE-PURPOSE[5]					
	LOCAL PROJECTS[1] (DAVIS-GRUNSKY PROGRAM)	UNASSIGNED COSTS [2]		SPECIFIC R&F&WE [4]	R&F&WE[4] (50.0%)	WATER SUPPLY[6] (50.0%)	TOTAL	R&F&WE[4] (94.9%)	WATER SUPPLY (5.1%)	TOTAL			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
1952	0	22,201	0	0	0	0	0	0	0	0	0	0	0
53	0	61,096	0	0	0	0	0	0	0	0	0	0	0
54	0	77,060	0	0	0	0	0	0	0	0	0	0	0
55	0	40,852	0	0	0	0	0	0	0	0	0	0	0
56	0	54,883	0	0	0	0	0	0	0	0	0	0	0
57	0	211,800	0	0	1,306	1,306	2,612	1,736	93	1,829	2,175	3,243	9,859
58	0	356,752	0	0	102,244	102,244	204,488	1,962	105	2,067	2,433	3,640	212,628
59	12,666	201,755	0	42,110	210,693	253,804	506,607	11,465	616	12,081	29,445	75,393	623,526
1960	86,983	98,573	53,438	0	491,898	491,898	983,796	12,773	686	13,459	33,717	89,181	1,120,153
61	544,167	72,834	418,557	0	408,866	408,866	817,732	879	47	926	197,319	5,297	1,021,274
62	623,352	20,947	447,017	- 154	219,750	226,961	446,557	117,610	6,320	123,930	933,979	10,516	1,514,982
63	3,695,417	53,491	437,998	- 282	65,754	65,322	130,794	172,666	9,279	181,945	2,542,562	6,027	2,861,328
64	4,212,212	19,770	515,376	-1,696	7,196	-8,317	-2,817	528,413	28,397	556,810	428,451	29,790	1,012,234
65	10,848,808	3,015	851,182	1,926	4,874	8,700	15,500	1,150,232	61,980	1,212,212	248,533	53,567	1,529,812
66	9,273,244	0	1,815,000	0	5,000	6,000	11,000	1,702,000	91,000	1,793,000	10,000	51,000	1,865,000
67	5,000,000	0	2,994,000	0	29,000	29,000	58,000	219,000	12,000	231,000	57,000	333,000	679,000
68	5,000,000	0	18,511,000	0	0	0	0	0	0	0	0	1,204,000	1,204,000
69	5,000,000	0	20,786,000	0	0	0	0	0	0	0	0	2,364,000	2,364,000
1970	5,000,000	0	7,104,000	0	0	0	0	0	0	0	0	3,681,000	3,681,000
71	5,000,000	0	0	0	0	0	0	0	0	0	0	2,072,000	2,072,000
72	5,000,000	0	0	0	0	0	0	0	0	0	0	60,000	60,000
73	5,000,000	0	0	0	0	0	0	0	0	0	0	0	0
74	5,000,000	0	0	0	0	0	0	0	0	0	0	0	0
75	5,000,000	0	0	0	0	0	0	0	0	0	0	0	0
76	5,000,000	0	0	0	0	0	0	0	0	0	0	0	0
77	5,000,000	0	0	0	0	0	0	0	0	0	0	0	0
78	5,000,000	0	0	0	0	0	0	0	0	0	0	0	0
79	5,000,000	0	0	0	0	0	0	0	0	0	0	0	0
1980	5,000,000	0	0	0	0	0	0	0	0	0	0	0	0
81	5,000,000	0	0	0	0	0	0	0	0	0	0	0	0
82	5,000,000	0	0	0	0	0	0	0	0	0	0	0	0
83	5,000,000	0	0	0	0	0	0	0	0	0	0	0	0
84	5,000,000	0	0	0	0	0	0	0	0	0	0	0	0
85	5,000,000	0	0	0	0	0	0	0	0	0	0	0	0
86	5,000,000	0	0	0	0	0	0	0	0	0	0	0	0
87	2,122,195	0	0	0	0	0	0	0	0	0	0	0	0
88	0	0	0	0	0	0	0	0	0	0	0	0	0
89	0	0	0	0	0	0	0	0	0	0	0	0	0
1990	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTALS	131,419,044	1,295,029	53,933,568	41,904	1,546,581	1,585,784	3,174,269	3,918,736	210,523	4,129,259	4,485,614	10,041,654	21,830,796

Footnotes on Sheet 5.

TABLE 15 (Continued)

ACTUAL AND PROJECTED CAPITAL COSTS OF FACILITIES
BY PROJECT PURPOSE

(in dollars)

CALENDAR YEAR	OROVILLE AREA (PROJECT CONSERVATION FACILITIES)								DELTA FACILITIES[10] (PROJECT CONSERVATION FACILITIES)				UPPER EEL RIVER DEVELOPMENT, ALL ASSUMED WATER SUPPLY[3]
	SPECIFIC			MULTIPLE-PURPOSE[5]				TOTAL	SPECIFIC	MULTIPLE-PURPOSE		TOTAL	
	R&F&WE[4]	POWER GENERATION[2]	TOTAL	WATER SUPPLY (54.0%)	POWER GENERATION (24.8%)	FLOOD CONTROL (21.2%)	TOTAL		R&F&WE[4]	R&F&WE[4]	WATER SUPPLY		
	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)
1952	0	20,016	20,016	71,411	32,796	28,035	132,242	152,258	0	0	0	0	0
53	0	44,065	44,065	119,156	54,723	46,780	220,659	264,724	0	0	0	0	0
54	0	37,549	37,549	112,269	51,560	44,076	207,905	245,454	0	0	0	0	0
55	0	29,531	29,531	65,809	30,224	25,836	121,869	151,400	0	0	0	0	0
56	0	76,534	76,534	661,421	303,764	259,669	1,224,854	1,301,388	0	0	0	0	0
57	0	165,829	165,829	3,204,668	1,471,774	1,258,129	5,934,571	6,100,400	0	0	0	0	0
58	0	174,695	174,695	4,956,776	2,276,445	1,945,993	9,179,214	9,353,909	0	0	0	0	0
59	0	368,954	368,954	5,354,827	2,459,254	2,102,266	9,916,347	10,285,301	0	0	0	0	0
1960	0	609,485	609,485	6,740,084	3,095,446	2,646,107	12,481,637	13,091,122	0	63,634	8,326	71,960	0
61	7,640	1,225,961	1,233,601	9,478,609	4,353,139	3,721,232	17,552,980	18,786,581	0	383,455	50,160	433,615	0
62	73,101	2,505,014	2,578,115	10,061,921	4,621,031	3,950,236	18,633,188	21,211,303	0	587,904	76,881	664,785	0
63	259,661	5,508,383	5,768,044	23,421,396	10,756,493	9,195,067	43,372,956	49,141,000	0	1,123,316	146,922	1,270,238	0
64	67,833	17,314,492	17,382,325	18,345,187	8,425,197	7,202,185	33,972,569	51,354,894	0	1,332,693	174,303	1,506,996	199,268
65	71,848	25,251,600	25,323,448	17,913,288	8,226,844	7,032,624	33,172,756	58,496,204	14,001	1,354,423	176,999	1,545,423	979,357
66	0	52,206,000	52,206,000	38,346,000	17,611,000	15,054,000	71,011,000	123,217,000	0	577,574	321,409	898,983	1,371,000
67	0	44,548,000	44,548,000	23,765,000	10,914,000	9,330,000	44,009,000	88,557,000	0	812,000	450,000	1,262,000	1,542,000
68	0	16,579,000	16,579,000	3,067,000	1,409,000	1,204,000	5,680,000	22,259,000	0	2,324,000	1,290,000	3,614,000	1,563,000
69	0	2,226,000	2,226,000	314,000	145,000	124,000	583,000	2,809,000	0	4,957,000	2,751,000	7,708,000	1,614,000
1970	0	8,000	8,000	36,000	16,000	14,000	66,000	74,000	0	6,432,000	3,570,000	10,002,000	1,384,000
71	0	3,000	3,000	29,000	14,000	12,000	55,000	58,000	0	6,300,000	3,497,000	9,797,000	678,000
72	0	4,000	4,000	24,000	11,000	9,000	44,000	48,000	0	5,337,000	2,963,000	8,300,000	168,000
73	0	741,000	741,000	0	0	0	0	741,000	0	3,533,000	1,962,000	5,495,000	157,000
74	0	735,000	735,000	0	0	0	0	735,000	0	1,625,000	902,000	2,527,000	156,000
75	0	0	0	0	0	0	0	0	0	0	0	0	155,000
76	0	0	0	0	0	0	0	0	0	0	0	0	154,000
77	0	0	0	0	0	0	0	0	0	0	0	0	5,154,000
78	0	0	0	0	0	0	0	0	0	0	0	0	24,154,000
79	0	0	0	0	0	0	0	0	0	0	0	0	32,154,000
1980	0	0	0	0	0	0	0	0	0	0	0	0	25,154,000
81	0	0	0	0	0	0	0	0	0	0	0	0	35,154,000
82	0	0	0	0	0	0	0	0	0	0	0	0	44,154,000
83	0	0	0	0	0	0	0	0	0	0	0	0	44,154,000
84	0	0	0	0	0	0	0	0	0	0	0	0	6,154,000
85	0	0	0	0	0	0	0	0	0	0	0	0	154,000
86	0	0	0	0	0	0	0	0	0	0	0	0	0
87	0	0	0	0	0	0	0	0	0	0	0	0	0
88	0	0	0	0	0	0	0	0	0	0	0	0	0
89	0	0	0	0	0	0	0	0	0	0	0	0	0
1990	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTALS	480,083	170,382,108	170,862,191	166,087,822	76,278,690	65,205,235	307,571,747	478,433,938	14,001	36,742,999	18,340,000	55,097,000	226,506,625

Footnotes on Sheet 5.

TABLE 15 (Continued)

ACTUAL AND PROJECTED CAPITAL COSTS OF FACILITIES
BY PROJECT PURPOSE

(in dollars)

CALENDAR YEAR	CALIFORNIA AQUEDUCT												NORTH BAY AQUEDUCT, ALL ASSUMED WATER SUPPLY
	PROJECT CONSERVATION FACILITIES					PROJECT TRANSPORTATION FACILITIES						TOTAL	
	SPECIFIC R&F&WE 4/	MULTIPLE-PURPOSE 5/			TOTAL	SPECIFIC		MULTIPLE-PURPOSE 5/			TOTAL		
		R&F&WE 4/ (5.6%)	WATER SUPPLY (94.4%)	TOTAL		R&F&WE 4/	WATER SUPPLY 11/	R&F&WE 4/ (2.6%)	WATER SUPPLY (97.4%)	TOTAL			
	(27)	(28)	(29)	(30)	(31)	(32)	(33)	(34)	(35)	(36)	(37)	(38)	(39)
1952	0	185	3,105	3,290	3,290	0	0	2,590	97,102	99,692	99,692	102,982	0
53	0	466	7,856	8,322	8,322	0	0	8,347	312,678	321,025	321,025	329,347	0
54	0	570	9,613	10,183	10,183	0	0	10,354	387,890	398,244	398,244	408,427	0
55	0	294	4,970	5,264	5,264	0	0	4,803	180,044	184,847	184,847	190,111	0
56	0	2,649	44,678	47,327	47,327	0	0	6,124	229,537	235,661	235,661	282,988	0
57	0	4,640	78,212	82,852	82,852	0	0	16,662	624,216	640,878	640,878	723,730	20,880
58	0	7,427	125,200	132,627	132,627	0	0	31,446	1,178,099	1,209,545	1,209,545	1,342,172	40,881
59	0	68,041	1,146,983	1,215,024	1,215,024	0	54,980	50,392	1,887,763	1,938,155	1,993,135	3,208,159	22,547
1960	2,085	87,492	1,474,863	1,562,355	1,564,440	0	112,338	68,047	2,549,113	2,617,160	2,729,498	4,293,938	18,958
61	0	55,231	931,027	986,258	986,258	371,144	62,653	125,775	4,711,809	4,837,584	5,271,381	6,257,639	15,869
62	51,629	117,942	1,988,153	2,106,095	2,157,724	665	89,524	168,862	6,325,893	6,494,755	6,584,944	8,742,668	6,063
63	1,124	1,518,471	25,597,086	27,115,557	27,116,681	324,026	162,131	559,111	20,945,270	21,504,381	21,990,538	49,107,219	4,931
64	0	1,157,107	19,505,511	20,662,618	20,662,618	-3	450,536	1,050,787	33,864,479	34,915,266	35,365,799	56,028,417	81,660
65	28,017	1,312,058	22,117,538	23,429,596	23,457,613	694,892	767,884	1,676,178	60,191,368	61,867,546	63,330,322	86,787,935	219,461
66	0	1,321,320	22,273,680	23,595,000	23,595,000	0	2,569,000	3,050,944	114,293,056	117,344,000	119,913,000	143,508,000	724,000
67	0	1,047,424	17,656,576	18,704,000	18,704,000	0	7,639,000	5,097,066	190,943,934	196,041,000	203,680,000	222,384,000	1,617,000
68	0	204,176	3,441,824	3,646,000	3,646,000	0	1,232,000	6,667,830	249,787,170	256,455,000	257,687,000	261,333,000	291,000
69	0	48,832	823,168	872,000	872,000	0	206,000	7,528,574	282,069,426	289,598,000	289,804,000	290,676,000	238,000
1970	0	784	13,216	14,000	14,000	0	71,000	4,602,624	172,421,376	177,024,000	177,095,000	177,109,000	34,000
71	0	336	5,664	6,000	6,000	0	91,000	2,369,692	88,772,308	91,142,000	91,233,000	91,239,000	34,000
72	0	392	6,608	7,000	7,000	0	374,000	487,968	18,280,032	18,768,000	19,142,000	19,149,000	32,000
73	0	0	0	0	0	0	662,000	86,268	3,231,732	3,318,000	3,980,000	3,980,000	397,000
74	0	0	0	0	0	0	1,117,000	36,062	1,350,938	1,387,000	2,504,000	2,504,000	389,000
75	0	0	0	0	0	0	2,403,000	2,600	97,400	100,000	2,503,000	2,503,000	29,000
76	0	0	0	0	0	0	6,274,000	59,800	2,240,200	2,300,000	8,574,000	8,574,000	166,000
77	0	0	0	0	0	0	8,034,000	104,000	3,896,000	4,000,000	12,034,000	12,034,000	220,000
78	0	0	0	0	0	0	15,089,000	62,400	2,337,600	2,400,000	17,489,000	17,489,000	2,270,000
79	0	0	0	0	0	0	7,893,000	0	0	0	7,893,000	7,893,000	3,587,000
1980	0	0	0	0	0	0	0	0	0	0	0	0	0
81	0	13,384	225,616	239,000	239,000	0	0	26,806	1,004,194	1,031,000	1,031,000	1,270,000	0
82	0	26,824	452,176	479,000	479,000	0	0	53,560	2,006,440	2,060,000	2,060,000	2,539,000	0
83	0	53,648	904,352	958,000	958,000	0	60,000	107,146	4,013,854	4,121,000	4,181,000	5,139,000	0
84	0	40,208	677,792	718,000	718,000	0	765,000	80,340	3,009,660	3,090,000	3,855,000	4,573,000	0
85	0	0	0	0	0	0	315,000	0	0	0	315,000	315,000	0
86	0	0	0	0	0	0	0	0	0	0	0	0	0
87	0	0	0	0	0	0	0	0	0	0	0	0	0
88	0	0	0	0	0	0	0	0	0	0	0	0	0
89	0	0	0	0	0	0	0	0	0	0	0	0	0
1990	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTALS	82,855	7,089,901	119,515,467	126,605,368	126,688,223	1,390,724	56,494,046	34,203,158	1,273,240,581	1,307,443,739	1,365,328,509	1,492,016,732	10,469,250

Footnotes on Sheet 5.

TABLE 15 (Continued)

ACTUAL AND PROJECTED CAPITAL COSTS OF FACILITIES
BY PROJECT PURPOSE

(in dollars)

CALENDAR YEAR	SOUTH BAY AQUEDUCT (PROJECT TRANSPORTATION FACILITIES)						TOTAL BY PURPOSE, STATE WATER PROJECT						
	SPECIFIC WATER SUPPLY 12/	MULTIPLE-PURPOSE 5/				TOTAL	UNSPECIFIED 13/	DRAINAGE BENEFIT 14/	RECREATION AND FISH AND WILDLIFE ENHANCEMENT 15/	FLOOD CONTROL 16/	WATER SUPPLY AND OROVILLE POWER		TOTAL
		R&F&WE (28.6%) 4/	WATER SUPPLY (40.0%)	FLOOD CONTROL (31.4%)	TOTAL						PROJECT CONSERVATION FACILITIES 17/	PROJECT TRANSPORTATION FACILITIES 18/	
	(40)	(41)	(42)	(43)	(44)	(45)	(46)	(47)	(48)	(49)	(50)	(51)	(52)
1952	291	30	42	33	105	396	22,201	0	2,805	28,068	127,328	97,435	277,837 19/
53	1,451	150	210	164	524	1,975	61,096	0	8,963	46,944	225,800	314,339	657,142 19/
54	4,741	489	684	537	1,710	6,451	77,060	0	11,413	44,613	210,991	393,315	737,392 19/
55	6,374	654	913	718	2,285	8,659	40,852	0	5,751	26,554	130,534	187,331	391,022 19/
56	87,791	8,130	11,370	8,926	28,426	116,217	54,883	0	16,903	268,595	1,086,397	328,698	1,755,476 19/
57	692,714	18,499	25,872	20,310	64,681	757,395	211,800	0	48,261	1,278,439	4,921,882	1,363,682	7,824,064 19/
58	826,446	10,874	15,209	11,939	38,022	864,468	356,752	0	160,026	1,957,932	7,635,465	2,060,635	12,170,810 19/
59	709,414	15,061	21,064	16,536	52,661	762,075	214,421	0	502,600	2,118,802	9,584,438	2,695,768	15,116,029 19/
1960	1,602,695	55,008	76,934	60,393	192,335	1,795,030	185,556	53,438	903,835	2,706,500	12,420,788	4,360,038	20,630,155 19/
61	4,048,607	63,726	89,127	69,964	222,817	4,271,424	617,001	418,557	1,619,332	3,791,196	16,447,809	8,928,065	31,821,960 19/
62	3,143,680	31,847	44,540	34,965	111,352	3,255,032	644,299	447,017	2,313,651	3,985,201	19,486,281	9,609,700	36,486,149 19/
63	5,559,428	151,044	211,251	165,832	528,127	6,087,555	3,748,908	437,998	6,723,480	9,360,899	65,504,881	26,893,011	112,669,177 19/
64	9,795,056	219,043	306,354	240,488	765,885	10,560,941	4,231,982	515,376	4,819,614	7,442,673	63,984,038	44,498,085	125,491,768 19/
65	3,757,023	504,437	534,709	475,645	1,514,791	5,271,814	10,851,823	851,182	7,114,986	7,508,269	74,736,306	65,470,445	166,533,011 19/
66	2,409,000	3,282,000	4,590,000	3,602,000	11,474,000	13,883,000	9,273,244	1,815,000	9,999,838	18,656,000	132,226,089	124,585,056	296,555,227
67	846,000	2,210,000	3,091,000	2,427,000	7,728,000	8,574,000	5,000,000	2,994,000	9,804,490	11,757,000	98,916,576	204,136,934	332,609,000
68	1,521,000	178,000	250,000	196,000	624,000	2,145,000	5,000,000	18,511,000	10,578,006	1,400,000	27,349,824	253,081,170	315,920,000
69	63,000	0	0	0	0	63,000	5,000,000	20,786,000	14,898,406	124,000	7,873,168	282,576,426	331,258,000
1970	4,000	0	0	0	0	4,000	5,000,000	7,104,000	14,716,408	14,000	5,027,216	172,530,376	204,392,000
71	342,000	0	0	0	0	342,000	5,000,000	0	10,742,028	12,000	4,226,664	89,239,308	109,220,000
72	342,000	0	0	0	0	342,000	5,000,000	0	5,885,360	9,000	3,176,608	19,028,032	33,099,000
73	0	0	0	0	0	0	5,000,000	0	3,619,268	0	2,860,000	4,290,732	15,770,000
74	0	0	0	0	0	0	5,000,000	0	1,661,062	0	1,793,000	2,856,938	11,311,000
75	0	0	0	0	0	0	5,000,000	0	2,600	0	155,000	2,529,400	7,687,000
76	0	0	0	0	0	0	5,000,000	0	59,800	0	154,000	8,680,200	13,894,000
77	0	0	0	0	0	0	5,000,000	0	104,000	0	5,154,000	12,150,000	22,408,000
78	0	0	0	0	0	0	5,000,000	0	62,400	0	24,154,000	19,696,600	48,913,000
79	0	0	0	0	0	0	5,000,000	0	0	0	32,154,000	11,480,000	48,634,000
1980	0	0	0	0	0	0	5,000,000	0	0	0	25,154,000	0	30,154,000
81	0	0	0	0	0	0	5,000,000	0	40,190	0	35,379,616	1,004,194	41,424,000
82	0	0	0	0	0	0	5,000,000	0	80,384	0	44,606,176	2,006,440	51,693,000
83	0	0	0	0	0	0	5,000,000	0	160,794	0	45,058,352	4,073,854	54,293,000
84	0	0	0	0	0	0	5,000,000	0	120,548	0	6,831,792	3,774,660	15,727,000
85	0	0	0	0	0	0	5,000,000	0	0	0	154,000	315,000	5,469,000
86	0	0	0	0	0	0	5,000,000	0	0	0	0	0	5,000,000
87	12,000	0	0	0	0	12,000	2,122,195	0	0	0	0	12,000	2,134,195
88	100,000	0	0	0	0	100,000	0	0	0	0	0	100,000	100,000
89	160,000	0	0	0	0	160,000	0	0	0	0	0	160,000	160,000
1990	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTALS	36,034,711	6,748,992	9,269,279	7,331,450	23,349,721	59,384,432	132,714,073	53,933,568	106,787,202	72,536,685	778,907,019	1,385,507,867	2,530,386,414

Footnotes on Sheet 5.

TABLE 15 (Continued)

ACTUAL AND PROJECTED CAPITAL COSTS OF FACILITIES
BY PROJECT PURPOSE

1/ Projects financed under the Davis-Grunsky Program may be constructed for a number of purposes as set forth in Water Code Section 12880. The allocation of the future costs of the program among purposes can not be projected at this time.

2/ Includes costs previously incurred for features deleted from the North and South Bay Aqueducts.

3/ In order to present a complete tabulation, the costs of those facilities not covered in Bulletin No. 153-66 are herein shown allocated to the primary purposes for which the facilities will be constructed.

4/ "R&F&WE" represents the abbreviation of the term "Recreation and Fish and Wildlife Enhancement". These project purposes were considered as one in Bulletin No. 153-66. Costs of R&F&WE shown consist of allocated multiple-purpose costs and certain specific costs. The latter includes costs of recreation lands purchased concurrently with project lands pursuant to Water Code Section 346.

5/ Multiple-purpose costs allocated to project purposes as determined by the percentages contained in Bulletin No. 153-66. In the case of allocations determined by the Federal Government, (Oroville and Del Valle Dams and reservoirs) the percentages reported in Bulletin No. 153-66 have been converted to percentages applicable only to the costs accounted for by the State.

6/ Includes operation and maintenance costs allocated to water supply incurred through 1965, as reduced by income from interim water sales, totaling $1,245. ($7,211 in 1962; -$432 in 1963; and -$10,784 in 1964; and $5,250 in 1965)

7/ Does not include the costs of the Grizzly Valley Pipeline (estimated to be about $463,000) which may be added at a later date.

8/ Includes the costs of Dixie Refuge and Abbey Bridge Dams and reservoirs.

9/ Consists of the costs of the Oroville-Thermalito power facilities.

10/ Based upon the State's share of costs for the Peripheral Canal, as shown in a letter from the Bureau of Reclamation, dated December 30, 1965.

11/ Consists of the total costs of the Coastal Branch. Recreation and fish fish and wildlife enhancement developments are currently not contemplated for this portion of the California Aqueduct.

12/ Consists of the total costs of the South Bay Aqueduct except those associated with Del Valle Dam and reservoir.

13/ The total of Columns 1 and 2.

14/ The same as Column 3.

15/ The total of Columns 4, 5, 8, 11, 12, 14, 22, 23, 27, 28, 32, 34, and 41.

16/ The total of Columns 19 and 43.

17/ The total of Columns 6, 9, 15, 17, 18, 24, 26, and 29.

18/ The total of Columns 33, 35, 39, 40, and 42.

19/ Actual costs; all others projected herein.

TABLE 16

ACTUAL AND PROJECTED OPERATING COSTS OF FACILITIES
BY PROJECT PURPOSE AND BY CATEGORY[1]

(in thousands of dollars)

CALENDAR YEAR	SAN JOAQUIN MASTER DRAIN, ASSUMED SPECIFIC DRAINAGE	UPPER FEATHER AREA (PROJECT CONSERVATION FACILITIES)							OROVILLE AREA (PROJECT CONSERVATION FACILITIES)				
		FRENCHMAN UNIT MULTIPLE-PURPOSE[2]			GRIZZLY VALLEY UNIT MULTIPLE-PURPOSE[2]			REMAINING UNITS, ALL SPECIFIC R&F&WE[3] (MINIMUM)	SPECIFIC POWER GENERATION	MULTIPLE-PURPOSE[2]			TOTAL (MINIMUM)
		R&F&WE[3] (50.0%)	WATER SUPPLY (50.0%)	TOTAL (MINIMUM)	R&F&WE[3] (91.2%)	WATER SUPPLY (8.8%)	TOTAL (MINIMUM)			WATER SUPPLY AND POWER GENERATION (83.5%)	FLOOD CONTROL (16.5%)	TOTAL	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
1962	0	0	0	0	0	0	0	0	0	0	0	0	0
63	0	0	0	0	0	0	0	0	0	0	0	0	0
64	0	0	0	0	0	0	0	0	0	0	0	0	0
65	0	0	0	0	0	0	0	0	0	0	0	0	0
66	0	11	11	22	18	2	20	21	0	0	0	0	0
67	486	18	17	35	19	2	21	22	0	0	0	0	0
68	503	14	13	27	25	2	27	27	2,095	285	57	342	2,437
69	790	13	14	27	25	2	27	27	2,443	385	76	461	2,904
1970	973	14	13	27	25	2	27	27	2,443	383	76	459	2,903
71	985	13	14	27	25	2	27	54	2,434	380	75	455	2,889
72	977	14	13	27	25	2	27	81	2,429	371	74	445	2,874
73	958	13	13	26	24	2	26	78	2,414	366	72	438	2,852
74	959	13	13	26	24	2	26	78	2,412	366	72	438	2,850
75	955	13	13	26	24	2	26	78	2,408	365	72	437	2,845
76	954	13	13	26	24	2	26	78	2,407	365	72	437	2,844
77	854	13	13	26	24	2	26	78	2,407	365	72	437	2,844
78	854	13	13	26	24	2	26	78	2,407	365	72	437	2,844
79	854	13	13	26	24	2	26	78	2,407	365	72	437	2,844
1980	854	13	13	26	24	2	26	78	2,407	365	72	437	2,844
81	854	13	13	26	24	2	26	78	2,407	365	72	437	2,844
82	854	13	13	26	24	2	26	78	2,407	365	72	437	2,844
83	854	13	13	26	24	2	26	78	2,407	365	72	437	2,844
84	854	13	13	26	24	2	26	78	2,407	365	72	437	2,844
85	854	13	13	26	24	2	26	78	2,407	365	72	437	2,844
86	854	13	13	26	24	2	26	78	2,407	365	72	437	2,844
87	854	13	13	26	24	2	26	78	2,407	365	72	437	2,844
88	854	13	13	26	24	2	26	78	2,407	365	72	437	2,844
89	854	13	13	26	24	2	26	78	2,407	365	72	437	2,844
1990	854	13	13	26	24	2	26	78	2,407	365	72	437	2,844
91	854	13	13	26	24	2	26	78	2,407	365	72	437	2,844
92	854	13	13	26	24	2	26	78	2,407	365	72	437	2,844
93	854	13	13	26	24	2	26	78	2,407	365	72	437	2,844
94	854	13	13	26	24	2	26	78	2,407	365	72	437	2,844
95	854	13	13	26	24	2	26	78	2,407	365	72	437	2,844
96	854	13	13	26	24	2	26	78	2,407	365	72	437	2,844
97	854	13	13	26	24	2	26	78	2,407	365	72	437	2,844
98	854	13	13	26	24	2	26	78	2,407	365	72	437	2,844
99	854	13	13	26	24	2	26	78	2,407	365	72	437	2,844
2000[17]	854	13	13	26	24	2	26	78	2,407	365	72	437	2,844

Footnotes on Sheet 5.

TABLE 16 (CONTINUED)

ACTUAL AND PROJECTED OPERATING COSTS OF FACILITIES
BY PROJECT PURPOSE AND BY CATEGORY[1/]

(in thousands of dollars)

CALENDAR YEAR	DELTA FACILITIES (PROJECT CONSERVATION FACILITIES)				UPPER EEL RIVER DEVELOPMENT, SPECIFIC WATER SUPPLY (MINIMUM)	CALIFORNIA AQUEDUCT							
						PROJECT CONSERVATION FACILITIES				PROJECT TRANSPORTATION FACILITIES			
	MINIMUM		VARIABLE, WATER SUPPLY[4/]	TOTAL		MULTIPLE-PURPOSE (MINIMUM)[2/]		VARIABLE WATER SUPPLY[5/]	TOTAL	SPECIFIC WATER SUPPLY[6/]		MULTIPLE-PURPOSE (MINIMUM)[2/]	
	R&F&WE[3/]	WATER SUPPLY				R&F&WE[3/] (5.6%)	WATER SUPPLY (94.4%)			MINIMUM	VARIABLE	R&F&WE[3/] (7.1%)	WATER SUPPLY (92.9%)
	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)
1962	0	0	0	0	0	0	0	0	0	0	0	0	0
63	0	0	0	0	0	0	0	0	0	0	0	0	0
64	0	0	0	0	0	0	0	0	0	0	0	0	0
65	0	0	0	0	0	0	0	0	0	0	0	0	0
66	0	0	0	0	0	0	0	0	0	0	0	0	0
67	0	0	0	0	0	5	91	21	117	0	0	31	405
68	0	0	0	0	0	64	1,624	508	2,196	91	159	211	3,406
69	0	0	0	0	0	66	1,691	567	2,324	110	149	266	4,209
1970	0	0	0	0	0	66	1,680	506	2,252	110	139	292	4,521
71	0	0	0	0	0	67	1,701	362	2,130	129	138	664	9,404
72	0	0	0	0	0	67	1,686	- 3	1,750	131	147	857	11,929
73	0	0	0	0	0	65	1,658	247	1,970	128	172	836	11,672
74	429	92	113	634	0	65	1,657	608	2,330	128	193	832	11,602
75	429	92	97	618	0	64	1,652	646	2,362	128	187	828	11,556
76	429	92	92	613	0	64	1,651	491	2,206	127	189	822	11,460
77	429	92	119	640	0	64	1,651	427	2,142	127	194	821	11,501
78	429	92	80	601	0	64	1,651	75	1,790	127	220	822	11,515
79	429	92	90	611	0	64	1,651	- 90	1,625	127	254	827	11,565
1980	429	92	87	608	0	64	1,651	-315	1,400	424	273	827	11,561
81	429	92	102	623	0	64	1,651	-136	1,579	411	302	827	11,568
82	429	92	88	609	0	64	1,651	-197	1,518	384	345	831	11,620
83	429	92	124	645	0	64	1,651	-423	1,292	365	351	834	11,653
84	429	92	113	634	0	64	1,651	-536	1,179	378	554	833	11,618
85	429	92	106	627	0	64	1,651	-541	1,174	349	468	820	11,504
86	429	92	171	692	658	64	1,651	773	2,488	345	482	822	11,479
87	429	92	176	697	658	64	1,651	445	2,160	341	489	818	11,434
88	429	92	146	667	658	64	1,651	635	2,350	341	409	819	11,444
89	429	92	154	675	658	64	1,651	98	1,813	338	642	820	11,462
1990	429	92	180	701	658	64	1,651	- 50	1,665	338	767	823	11,481
91	429	92	182	703	658	64	1,651	- 81	1,634	338	779	823	11,485
92	429	92	182	703	658	64	1,651	- 81	1,634	338	779	823	11,488
93	429	92	182	703	658	64	1,651	- 81	1,634	338	779	823	11,488
94	429	92	182	703	658	64	1,651	- 81	1,634	338	779	823	11,488
95	529	92	182	703	658	64	1,651	- 81	1,634	338	779	823	11,488
96	429	92	182	703	658	64	1,651	- 81	1,634	338	779	823	11,488
97	429	92	182	703	658	64	1,651	- 81	1,634	338	779	823	11,488
98	429	92	182	703	658	64	1,651	- 81	1,634	338	779	823	11,488
99	429	92	182	703	658	64	1,651	- 81	1,634	338	779	823	11,488
2000[17/]	429	92	182	703	658	64	1,651	- 81	1,634	338	779	823	11,488

Footnotes on Sheet 5.

TABLE 16 (Continued)

TABLE 16 (CONTINUED)

ACTUAL AND PROJECTED OPERATING COSTS OF FACILITIES
BY PROJECT PURPOSE AND BY CATEGORY[1/]

(in thousands of dollars)

CALENDAR YEAR	CALIFORNIA AQUEDUCT			TOTAL, CALIFORNIA AQUEDUCT	NORTH BAY AQUEDUCT (PROJECT TRANSPORTATION FACILITIES)			SOUTH BAY AQUEDUCT (PROJECT TRANSPORTATION FACILITIES)					
	PROJECT TRANSPORTATION FACILITIES (CONT'D)				SPECIFIC WATER SUPPLY			SPECIFIC WATER SUPPLY[8/]		MULTIPLE-PURPOSE (MINIMUM) [2/]			
	MULTIPLE-PURPOSE (VARIABLE)[7/]												
	R&F&WE[3/]	WATER SUPPLY	TOTAL		MINIMUM	VARIABLE	TOTAL	MINIMUM	VARIABLE	R&F&WE[3/] (25.6%)	WATER SUPPLY (41.9%)	FLOOD CONTROL (32.5%)	TOTAL
	(27)	(28)	(29)	(30)	(31)	(32)	(33)	(34)	(35)	(36)	(37)	(38)	(39)
1962	0	0	0	0	0	0	0	69	39	0	0	0	108
63	0	0	0	0	0	0	0	153	60	0	0	0	213
64	0	0	0	0	0	0	0	166	78	0	0	0	244
65	0	0	0	0	0	0	0	320	149	0	0	0	469
66	0	0	0	0	0	0	0	268	224	0	0	0	492
67	0	184	620	737	0	0	0	269	288	0	0	0	557
68	0	502	4,369	6,565	28	15	43	255	388	0	0	0	643
69	0	818	5,552	7,876	28	17	45	278	370	4	5	5	662
1970	0	566	5,628	7,880	28	19	46	279	433	4	5	5	726
71	14	4,286	14,635	16,765	28	21	49	279	423	4	5	5	716
72	295	6,799	20,158	21,908	28	21	49	272	438	4	5	5	724
73	302	7,902	21,012	22,982	27	21	48	268	441	3	6	4	722
74	257	7,435	20,447	22,777	27	25	52	268	470	3	6	4	751
75	244	8,466	21,409	23,771	27	32	59	264	421	3	6	4	698
76	224	8,489	21,311	23,517	27	33	60	264	423	3	6	4	700
77	223	9,868	22,734	24,876	27	34	61	264	429	3	6	4	706
78	230	11,294	24,208	25,998	27	35	62	263	414	3	6	4	690
79	245	13,215	26,233	27,858	27	40	67	263	426	3	6	4	702
1980	268	14,629	27,982	29,382	144	61	205	263	418	3	6	4	694
81	272	15,886	29,266	30,845	143	54	197	263	421	3	6	4	697
82	290	18,513	31,983	33,501	143	45	188	263	450	3	6	4	726
83	298	20,511	34,012	35,304	143	50	193	264	468	3	6	4	745
84	287	21,498	35,168	36,347	143	67	210	263	457	3	6	4	733
85	255	19,669	33,065	34,239	143	66	209	262	423	3	6	4	698
86	249	21,032	34,409	36,897	143	50	193	261	403	3	6	4	677
87	238	21,186	34,506	36,666	143	50	193	261	399	3	6	4	673
88	240	22,850	36,103	38,453	143	52	195	261	403	3	6	4	677
89	245	24,283	37,790	39,603	143	54	197	261	427	3	6	4	701
1990	248	24,861	38,518	40,183	143	56	199	261	441	3	6	4	715
91	251	25,179	38,855	40,489	143	56	199	261	445	3	6	4	719
92	252	25,238	38,918	40,552	143	56	199	260	453	3	6	4	726
93	252	25,240	38,920	40,554	143	56	199	260	457	3	6	4	730
94	252	25,242	38,922	40,556	143	56	199	260	462	3	6	4	735
95	252	25,242	38,922	40,556	143	56	199	260	464	3	6	4	737
96	252	25,244	38,924	40,558	143	56	199	260	466	3	6	4	739
97	252	25,244	38,924	40,558	143	56	199	260	468	3	6	4	741
98	252	25,244	38,924	40,558	143	56	199	260	468	3	6	4	741
99	252	25,244	38,924	40,558	143	56	199	260	468	3	6	4	741
2000[17/]	252	25,244	38,924	40,558	143	56	199	260	468	3	6	4	741

Footnotes on Sheet 5.

TABLE 16 (CONTINUED)

TABLE 16 (Continued)

ACTUAL AND PROJECTED OPERATION COSTS OF FACILITIES
BY PROJECT PURPOSE AND BY CATEGORY[1]

(in thousands of dollars)

CALENDAR YEAR	TOTAL BY PURPOSE AND BY CATEGORY, STATE WATER PROJECT												
	RECREATION AND FISH AND WILDLIFE ENHANCEMENT[3]			DRAINAGE[11]	FLOOD CONTROL[12] (MINIMUM)	WATER SUPPLY AND OROVILLE POWER							TOTAL ALL PURPOSES
						PROJECT CONSERVATION FACILITIES			PROJECT TRANSPORTATION FACILITIES			TOTAL	
	MINIMUM[9]	VARIABLE[10]	TOTAL			MINIMUM[13]	VARIABLE[14]	TOTAL	MINIMUM[15]	VARIABLE[16]	TOTAL		
	(40)	(41)	(42)	(43)	(44)	(45)	(46)	(47)	(48)	(49)	(50)	(51)	(52)
1962	0	0	0	0	0	0	0	0	69	39	108	108	108[18]
63	0	0	0	0	0	0	0	0	153	60	213	213	213[18]
64	0	0	0	0	0	0	0	0	166	78	244	244	244[18]
65	0	0	0	0	0	0	0	0	320	149	469	469	469[18]
66	50	0	50	0	0	13	0	13	268	224	492	505	555
67	95	0	95	486	0	110	21	131	674	472	1,146	1,277	1,858
68	341	0	341	503	57	4,019	508	4,527	3,780	1,064	4,844	9,371	10,272
69	401	0	401	790	81	4,535	567	5,102	4,630	1,354	5,984	11,086	12,358
1970	428	0	428	973	81	4,521	506	5,027	4,943	1,157	6,100	11,127	12,609
71	827	14	841	985	80	4,531	362	4,893	9,845	4,868	14,713	19,606	21,512
72	1,048	295	1,343	977	79	4,501	- 3	4,498	12,365	7,405	19,770	24,268	26,667
73	1,019	302	1,321	958	76	4,453	247	4,700	12,101	8,536	20,637	25,337	27,692
74	1,444	257	1,701	959	76	4,542	721	5,263	12,031	8,123	20,154	25,417	28,153
75	1,439	244	1,683	955	76	4,532	743	5,275	11,981	9,106	21,087	26,362	29,076
76	1,433	224	1,657	954	76	4,530	583	5,113	11,884	9,134	21,018	26,131	28,818
77	1,432	223	1,655	854	76	4,530	546	5,076	11,925	10,525	22,450	27,526	30,111
78	1,433	230	1,663	854	76	4,530	155	4,685	11,938	11,963	23,901	28,586	31,179
79	1,438	245	1,683	854	76	4,530	0	4,530	11,988	13,935	25,923	30,453	33,066
1980	1,438	268	1,706	854	76	4,530	-228	4,302	12,398	15,381	27,779	32,081	34,717
81	1,438	272	1,710	854	76	4,530	- 34	4,496	12,391	16,663	29,054	33,550	36,190
82	1,442	290	1,732	854	76	4,530	-109	4,421	12,416	19,353	31,769	36,190	38,852
83	1,445	298	1,743	854	76	4,530	-299	4,231	12,431	21,380	33,811	38,042	40,715
84	1,444	287	1,731	854	76	4,530	-423	4,107	12,408	22,576	34,984	39,091	41,752
85	1,431	255	1,686	854	76	4,530	-435	4,095	12,264	20,626	32,890	36,985	39,601
86	1,433	249	1,682	854	76	5,188	944	6,132	12,234	21,967	34,201	40,333	42,945
87	1,429	238	1,667	854	76	5,188	621	5,809	12,185	22,124	34,309	40,118	42,715
88	1,430	240	1,670	854	76	5,188	781	5,969	12,195	23,714	35,909	41,878	44,478
89	1,431	245	1,676	854	76	5,188	252	5,440	12,210	25,406	37,616	43,056	45,662
1990	1,434	248	1,682	854	76	5,188	130	5,318	12,229	26,125	38,354	43,672	46,284
91	1,434	251	1,685	854	76	5,188	101	5,289	12,233	26,459	38,692	43,981	46,596
92	1,434	252	1,686	854	76	5,188	101	5,289	12,235	26,526	38,761	44,050	46,666
93	1,434	252	1,686	854	76	5,188	101	5,289	12,235	26,532	38,767	44,056	46,672
94	1,434	252	1,686	854	76	5,188	101	5,289	12,235	26,539	38,774	44,063	46,679
95	1,434	252	1,686	854	76	5,188	101	5,289	12,235	26,541	38,776	44,065	46,681
96	1,434	252	1,686	854	76	5,188	101	5,289	12,235	26,545	38,780	44,069	46,685
97	1,434	252	1,686	854	76	5,188	101	5,289	12,235	26,547	38,782	44,071	46,687
98	1,434	252	1,686	854	76	5,188	101	5,289	12,235	26,547	38,782	44,071	46,687
99	1,434	252	1,686	854	76	5,188	101	5,289	12,235	26,547	38,782	44,071	46,687
2000[17]	1,434	252	1,686	854	76	5,188	101	5,289	12,235	26,547	38,782	44,071	46,687

Footnotes on Sheet 5.

TABLE 16 (CONTINUED)

ACTUAL AND PROJECTED OPERATING COSTS OF FACILITIES
BY PROJECT PURPOSE AND BY CATEGORY 1/

1/ The operating costs of facilities involving the purpose of water supply are shown in this table by the two respective categories defined in the "Standard Provisions for Water Supply Contract":

Minimum operation, maintenance, power and replacements costs: those incurred irrespective of the amount of project water delivered to water supply contractors.

Variable operation, maintenance, power and replacement costs: those incurred in an amount which is dependent upon and varies with the amount delivered to water supply contractors.

Note that operating costs of Local Projects (the Davis-Grunsky Program) and of specific recreation and fish and wildlife enhancement features are not included in this table since these costs are not accounted for by the Department.

2/ Based upon the percentages determined in Bulletin No. 153-66, "Allocations of Costs Among Purposes of the State Water Project", and summarized on page 5 therein, applied to the currently estimated minimum operating costs of features jointly used by project purposes.

3/ "R&F&WE" represents the abbreviation of the purposes of "Recreation and Fish and Wildlife Enhancement", considered as one purpose in the allocations determined in Bulletin No. 153-66.

4/ Includes primarily the costs of electrical power and energy required for pumping project water at the head of the Peripheral Canal.

5/ Includes primarily the net costs of electrical power and energy required for pumping project water through the San Luis Pumping-Generating Plant and the share of the power and energy required for the Delta Pumping Plant which is allocated to conservation.

6/ Consists of the operating costs of the Coastal Branch, California Aqueduct.

7/ The percentages determined in Bulletin No. 153-66 for operating costs apply only to those of the minimum category. The variable operating costs of features jointly used by project purposes are allocated annually among purposes in proportion to the annual deliveries to each respective purpose.

8/ Consists of the operating costs of the entire South Bay Aqueduct, except those of Del Valle Dam and reservoir.

9/ The total of Columns 2, 5, 8, 14, 19, 25, and 36.

10/ Equal to Column 27.

11/ Equal to Column 1.

12/ The total of Columns 11 and 38.

13/ The total of Columns 3, 6, 9, 10, 15, 18, and 20.

14/ The total of Columns 16 and 21.

15/ The total of Columns 23, 26, 31, 34, and 37.

16/ The total of Columns 24, 28, 32, and 35.

17/ And each year thereafter for the remainder of the project repayment period

18/ Actual costs; all others projected herein.

TABLE 17

ACTUAL AND PROJECTED CAPITAL COSTS
BY PROGRAMS

(in dollars)

CALENDAR YEAR	STATE UTILITY PROGRAMS				STATE NONUTILITY PROGRAMS				FEDERAL PROGRAMS			TOTAL, ALL PROGRAMS
	WATER SUPPLY AND OROVILLE POWER		DRAINAGE	TOTAL	UNSPECIFIED PURPOSES		RECREATION AND FISH AND WILDLIFE ENHANCEMENT	TOTAL	FLOOD CONTROL	DRAINAGE	TOTAL	
	PROJECT CONSERVATION FACILITIES	PROJECT TRANSPORTATION FACILITIES			LOCAL PROJECTS (DAVIS-GRUNSKY PROGRAMS)	DELETED FEATURES						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
1952	127,328	97,435	0	224,763	0	22,201	2,805	25,006	28,068	0	28,068	277,837 1/
53	225,800	314,339	0	540,139	0	61,096	8,963	70,059	46,944	0	46,944	657,142 1/
54	210,991	393,315	0	604,306	0	77,060	11,413	88,473	44,613	0	44,613	737,392 1/
55	130,534	187,331	0	317,865	0	40,852	5,751	46,603	26,554	0	26,554	391,022 1/
56	1,086,397	328,698	0	1,415,095	0	54,883	16,903	71,786	268,595	0	268,595	1,755,476 1/
57	4,921,882	1,363,682	0	6,285,564	0	211,800	48,261	260,061	1,278,439	0	1,278,439	7,824,064 1/
58	7,635,465	2,060,635	0	9,696,100	0	356,752	160,026	516,778	1,957,932	0	1,957,932	12,170,810 1/
59	9,584,438	2,695,768	0	12,280,206	12,666	201,755	502,600	717,021	2,118,802	0	2,118,802	15,116,029 1/
1960	12,420,788	4,360,038	46,330	16,827,156	86,983	98,573	903,835	1,089,391	2,706,500	7,108	2,713,608	20,630,155 1/
61	16,447,809	8,928,065	362,890	25,738,764	544,167	72,834	1,619,332	2,236,333	3,791,196	55,667	3,846,863	31,821,960 1/
62	19,486,281	9,609,700	387,564	29,483,545	623,352	20,947	2,313,651	2,957,950	3,985,201	59,453	4,044,654	36,486,149 1/
63	65,504,881	26,893,011	379,744	92,777,636	3,695,417	53,491	6,723,480	10,472,388	9,360,899	58,254	9,419,153	112,669,177 1/
64	63,984,038	44,498,085	333,449	108,815,572	4,212,212	19,770	4,819,614	9,051,596	7,442,673	181,927	7,624,600	125,491,768 1/
65	74,736,306	65,470,445	340,473	140,547,224	10,848,808	3,015	7,114,986	17,966,809	7,508,269	510,709	8,018,978	166,533,011 1/
66	132,226,089	124,585,056	726,000	257,537,145	9,273,244	0	9,999,838	19,273,082	18,656,000	1,089,000	19,745,000	296,555,227
67	98,916,576	204,136,934	1,198,000	304,251,510	5,000,000	0	9,804,490	14,804,490	11,757,000	1,796,000	13,553,000	332,609,000
68	27,349,824	253,081,170	7,404,000	287,834,994	5,000,000	0	10,578,006	15,578,006	1,400,000	11,107,000	12,507,000	315,920,000
69	7,873,168	282,576,426	8,314,000	298,763,594	5,000,000	0	14,898,406	19,898,406	124,000	12,472,000	12,596,000	331,258,000
1970	5,027,216	172,530,376	2,842,000	180,399,592	5,000,000	0	14,716,408	19,716,408	14,000	4,262,000	4,276,000	204,392,000
71	4,226,664	89,239,308	0	93,465,972	5,000,000	0	10,742,028	15,742,028	12,000	0	12,000	109,220,000
72	3,176,608	19,028,032	0	22,204,640	5,000,000	0	5,885,360	10,885,360	9,000	0	9,000	33,099,000
73	2,860,000	4,290,732	0	7,150,732	5,000,000	0	3,619,268	8,619,268	0	0	0	15,770,000
74	1,793,000	2,856,938	0	4,649,938	5,000,000	0	1,661,062	6,661,062	0	0	0	11,311,000
75	155,000	2,529,400	0	2,684,400	5,000,000	0	2,600	5,002,600	0	0	0	7,687,000
76	154,000	8,680,200	0	8,834,200	5,000,000	0	59,800	5,059,800	0	0	0	13,894,000
77	5,154,000	12,150,000	0	17,304,000	5,000,000	0	104,000	5,104,000	0	0	0	22,408,000
78	24,154,000	19,696,600	0	43,850,600	5,000,000	0	62,400	5,062,400	0	0	0	48,913,000
79	32,154,000	11,480,000	0	43,634,000	5,000,000	0	0	5,000,000	0	0	0	48,634,000
1980	25,154,000	0	0	25,154,000	5,000,000	0	0	5,000,000	0	0	0	30,154,000
81	35,379,616	1,004,194	0	36,383,810	5,000,000	0	40,190	5,040,190	0	0	0	41,424,000
82	44,606,176	2,006,440	0	46,612,616	5,000,000	0	80,384	5,080,384	0	0	0	51,693,000
83	45,058,352	4,073,854	0	49,132,206	5,000,000	0	160,794	5,160,794	0	0	0	54,293,000
84	6,831,792	3,774,660	0	10,606,452	5,000,000	0	120,548	5,120,548	0	0	0	15,727,000
85	154,000	315,000	0	469,000	5,000,000	0	0	5,000,000	0	0	0	5,469,000
86	0	0	0	0	5,000,000	0	0	5,000,000	0	0	0	5,000,000
87	0	12,000	0	12,000	2,122,195	0	0	2,122,195	0	0	0	2,134,195
88	0	100,000	0	100,000	0	0	0	0	0	0	0	100,000
89	0	160,000	0	160,000	0	0	0	0	0	0	0	160,000
1990	0	0	0	0	0	0	0	0	0	0	0	0
TOTALS	778,907,019	1,385,507,867	22,334,450	2,186,749,336	131,419,044	1,295,029	106,787,202	239,501,275	72,536,685	31,599,118	104,135,803	2,530,386,414

1/ Actual costs; all others projected herein.

TABLE 18

ACTUAL AND PROJECTED OPERATING COSTS BY PROGRAMS

(In thousands of dollars)

CALENDAR YEAR	STATE UTILITY PROGRAMS				STATE NONUTILITY PROGRAMS	FEDERAL PROGRAMS				TOTAL, ALL PROGRAMS
	WATER SUPPLY AND OROVILLE POWER		DRAINAGE	TOTAL	RECREATION AND FISH AND WILDLIFE ENHANCEMENT	WATER SUPPLY	FLOOD CONTROL	DRAINAGE	TOTAL	
	PROJECT CONSERVATION FACILITIES	PROJECT TRANSPORTATION FACILITIES								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1962	0	108	0	108	0	0	0	0	0	108 1/
63	0	213	0	213	0	0	0	0	0	213 1/
64	0	244	0	244	0	0	0	0	0	244 1/
65	0	469	0	469	0	0	0	0	0	469 1/
66	13	492	0	505	50	0	0	0	0	555
67	131	1,146	159	1,436	95	0	0	327	327	1,858
68	3,836	4,137	164	8,137	341	1,398	57	339	1,794	10,272
69	4,397	5,198	258	9,853	401	1,491	81	532	2,104	12,358
1970	4,335	5,322	318	9,975	428	1,470	81	655	2,206	12,609
71	4,190	13,918	322	18,430	841	1,498	80	663	2,421	21,512
72	3,796	18,978	319	23,093	1,343	1,494	79	658	2,231	26,667
73	4,007	19,856	313	24,176	1,321	1,474	76	645	2,195	27,692
74	4,571	19,374	313	24,258	1,701	1,472	76	646	2,194	28,153
75	4,584	20,308	312	25,204	1,683	1,470	76	643	2,189	29,076
76	4,422	20,241	312	24,975	1,657	1,468	76	642	2,186	28,818
77	4,385	21,673	279	26,337	1,655	1,468	76	575	2,119	30,111
78	3,994	23,124	279	27,397	1,663	1,468	76	575	2,119	31,179
79	3,839	25,146	279	29,264	1,683	1,468	76	575	2,119	33,066
1980	3,611	26,998	279	30,888	1,706	1,472	76	575	2,123	34,717
81	3,805	28,273	279	32,357	1,710	1,472	76	575	2,123	36,190
82	3,730	30,988	279	34,997	1,732	1,472	76	575	2,123	38,852
83	3,540	33,030	279	36,849	1,743	1,472	76	575	2,123	40,715
84	3,416	34,203	279	37,898	1,731	1,472	76	575	2,123	41,752
85	3,404	32,109	279	35,792	1,686	1,472	76	575	2,123	39,601
86	5,441	33,420	279	39,140	1,682	1,472	76	575	2,123	42,945
87	5,118	33,528	279	38,925	1,667	1,472	76	575	2,123	42,715
88	5,278	35,128	279	40,685	1,670	1,472	76	575	2,123	44,478
89	4,749	36,835	279	41,863	1,676	1,472	76	575	2,123	45,662
1990	4,627	37,573	279	42,479	1,682	1,472	76	575	2,123	46,284
91	4,598	37,911	279	42,788	1,685	1,472	76	575	2,123	46,596
92	4,598	37,980	279	42,857	1,686	1,472	76	575	2,123	46,666
93	4,598	37,986	279	42,863	1,686	1,472	76	575	2,123	46,672
94	4,598	37,993	279	42,870	1,686	1,472	76	575	2,123	46,679
95	4,598	37,995	279	42,872	1,686	1,472	76	575	2,123	46,681
96	4,598	37,999	279	42,876	1,686	1,472	76	575	2,123	46,685
97	4,598	38,001	279	42,878	1,686	1,472	76	575	2,123	46,687
98	4,598	38,001	279	42,878	1,686	1,472	76	575	2,123	46,687
99	4,598	38,001	279	42,878	1,686	1,472	76	575	2,123	46,687
2000 2/	4,598	38,001	279	42,878	1,686	1,472	76	575	2,123	46,687

1/ Actual costs, all others projected herein.

2/ And each year thereafter for the remainder of the project repayment period.

TABLE 19

SUMMARY OF ANNUAL CAPITAL EXPENDITURES

(in dollars)

CALENDAR YEAR	LOCAL PROJECTS (DAVIS-GRUNSKY PROGRAMS)	SUMMARY OF EXPENDITURES BY FACILITIES[1]									TOTAL	MISCELLANEOUS ADDITIONAL EXPENDITURES[2]	CAPITAL EXPENDITURES COVERED IN FINANCIAL ANALYSIS[3]
		SAN JOAQUIN MASTER DRAIN	UPPER FEATHER AREA	OROVILLE AREA	DELTA FACILITIES	UPPER EEL RIVER DEVELOPMENT	CALIFORNIA AQUEDUCT	NORTH BAY AQUEDUCT	SOUTH BAY AQUEDUCT	DELETED FEATURES			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
						FROM FUNDS PROVIDED PRIOR TO THE BURNS-PORTER ACT[4]							
1952	0	0	0	152,258	0	0	102,982	0	396	22,201	277,837	0	277,837
53	0	0	0	264,724	0	0	329,347	0	1,975	61,096	657,142	0	657,142
54	0	0	0	245,454	0	0	408,427	0	6,451	77,060	737,392	0	737,392
55	0	0	0	151,400	0	0	190,111	0	8,659	40,852	391,022	0	391,022
56	0	0	0	1,301,388	0	0	282,988	0	116,217	54,883	1,755,476	0	1,755,476
57	0	0	9,859	6,100,400	0	0	723,730	20,880	757,395	211,800	7,824,064	0	7,824,064
58	0	0	212,628	9,353,909	0	0	1,342,172	40,881	864,468	356,752	12,170,810	19,413	12,190,223
59	12,666	0	623,526	10,285,301	0	0	3,208,159	22,547	762,075	201,755	15,116,029	27,745	15,143,774
1960	86,983	53,438	1,120,028	13,086,041	71,960	0	4,278,740	18,576	1,794,570	98,573	20,608,909	93,666	20,702,575
61	483,005	254,717	712,724	16,721,563	271,587	0	3,649,245	10,995	3,595,122	75,691	25,774,649	129,809	25,904,458
62	79,858	17,192	114,295	4,265,969	142,071	0	1,794,084	-23,440	1,699,570	21,349	8,110,948	229,898	8,340,846
63	755,966	-880	- 2,806	1,541,621	9,517	0	3,703,105	-54,906	901,597	54,423	6,907,637	272,070	7,179,707
64	566	909	- 9,395	-863,141	2,373	0	-317,136	- 6,678	-569,377	12,077	-1,749,802	953,441	-796,361
1965	0	4	-12,592	-254,299	5	0	-221,859	5	-682,775	- 2	-1,171,513	1,138,425	- 33,088
Subtotal	1,419,044	325,380	2,768,267	62,352,588	497,513	0	19,474,095	28,860	9,256,343	1,288,510	97,410,600	2,864,467	100,275,067
						FROM FUNDS PROVIDED SUBSEQUENT TO THE BURNS-PORTER ACT[5]							
1960	0	0	125	5,081	0	0	15,198	382	460	0	21,246	0	21,246
61	61,162	163,840	308,550	2,065,018	162,028	0	2,608,394	4,874	676,302	-2,857	6,047,311	0	6,047,311
62	543,494	429,825	1,400,687	16,945,334	522,714	0	6,948,584	29,503	1,555,462	- 402	28,375,201	39,870	28,415,071
63	2,939,451	438,878	2,864,134	47,599,379	1,260,721	0	45,404,114	69,837	5,185,958	- 932	105,761,540	15,989	105,777,529
64	4,211,646	514,467	1,021,629	52,218,035	1,504,623	199,268	56,345,553	88,338	11,130,318	7,693	127,241,570	16,722	127,258,292
65	10,848,808	851,178	1,542,404	58,750,503	1,545,418	979,357	87,009,794	219,456	5,954,589	3,017	167,704,524	33,732	167,738,256
66	9,273,244	1,815,000	1,865,000	123,217,000	898,983	1,371,000	143,508,000	724,000	13,883,000	0	296,555,227	0	296,555,227
67	5,000,000	2,994,000	679,000	88,557,000	1,262,000	1,542,000	222,384,000	1,617,000	8,574,000	0	332,609,000	0	332,609,000
68	5,000,000	18,511,000	1,204,000	22,259,000	3,614,000	1,563,000	261,333,000	291,000	2,145,000	0	315,920,000	0	315,920,000
69	5,000,000	20,786,000	2,364,000	2,809,000	7,708,000	1,614,000	290,676,000	238,000	63,000	0	331,258,000	0	331,258,000
1970	5,000,000	7,104,000	3,681,000	74,000	10,002,000	1,384,000	177,109,000	34,000	4,000	0	204,392,000	0	204,392,000
71	5,000,000	0	2,072,000	58,000	9,797,000	678,000	91,239,000	34,000	342,000	0	109,220,000	0	109,220,000
72	5,000,000	0	60,000	48,000	8,300,000	168,000	19,149,000	32,000	342,000	0	33,099,000	0	33,099,000
73	5,000,000	0	0	741,000	5,495,000	157,000	3,980,000	397,000	0	0	15,770,000	0	15,770,000
74	5,000,000	0	0	735,000	2,527,000	156,000	2,504,000	389,000	0	0	11,311,000	0	11,311,000
75	5,000,000	0	0	0	0	155,000	2,503,000	29,000	0	0	7,687,000	0	7,687,000
76	5,000,000	0	0	0	0	154,000	8,574,000	166,000	0	0	13,894,000	0	13,894,000
77	5,000,000	0	0	0	0	5,154,000	12,034,000	220,000	0	0	22,408,000	0	22,408,000
78	5,000,000	0	0	0	0	24,154,000	17,489,000	2,270,000	0	0	48,913,000	0	48,913,000
79	5,000,000	0	0	0	0	32,154,000	7,893,000	3,587,000	0	0	48,634,000	0	48,634,000
1980	5,000,000	0	0	0	0	25,154,000	0	0	0	0	30,154,000	0	30,154,000
81	5,000,000	0	0	0	0	35,154,000	1,270,000	0	0	0	41,424,000	0	41,424,000
82	5,000,000	0	0	0	0	44,154,000	2,539,000	0	0	0	51,693,000	0	51,693,000
83	5,000,000	0	0	0	0	44,154,000	5,139,000	0	0	0	54,293,000	0	54,293,000
84	5,000,000	0	0	0	0	6,154,000	4,573,000	0	0	0	15,727,000	0	15,727,000
85	5,000,000	0	0	0	0	154,000	315,000	0	0	0	5,469,000	0	5,469,000
86	5,000,000	0	0	0	0	0	0	0	0	0	5,000,000	0	5,000,000
87	2,122,195	0	0	0	0	0	0	0	12,000	0	2,134,195	0	2,134,195
88	0	0	0	0	0	0	0	0	100,000	0	100,000	0	100,000
89	0	0	0	0	0	0	0	0	160,000	0	160,000	0	160,000
1990	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal	130,000,000	53,608,188	19,062,529	416,081,350	54,599,487	226,506,625	1,472,542,637	10,440,390	50,128,089	6,519	2,432,975,814	106,313	2,433,082,127
TOTALS	131,419,044	53,933,568	21,830,796	478,433,938	55,097,000	226,506,625	1,492,016,732	10,469,250	59,384,432	1,295,029	2,530,386,414	2,970,780	2,533,357,194

1/ Shown distributed to project purposes in Table 15.

2/ The costs in the upper portion of Column 12, totaling $2,864,467, represent those covered by miscellaneous project receipts, including those from rights-of-way rentals and sales. Such receipts are applied for accounting purposes to reduce the capital costs of the particular facilities from which realized. The costs so credited must, however, be initially financed from other sources.

The costs in the lower portion of Column 12, totaling $106,313, represent certain reimbursable operating costs not covered by repayment contracts which have been included in the capital costs of the project.

3/ The financial analysis is described in Chapter XII.

4/ Includes actual expenditures from the General Fund, California Water Fund, and Local Projects Assistance Fund. Negative amounts reflect accounting adjustments.

5/ Includes actual and projected expenditures from Water Bond proceeds, California Water Fund, and miscellaneous receipts.

TABLE 20

PROJECTED CAPITAL EXPENDITURES AND RECEIPTS
FOR REQUESTED EXCESS DELIVERY CAPABILITIES,[1]
STATE UTILITY PROGRAMS

(in thousands of dollars)

CALENDAR YEAR	TOTAL ESTIMATED COSTS				ESTIMATED COSTS WITHOUT EXCESS CAPACITY[3]				ALLOCATED COSTS FOR EXCESS CAPACITY[4]	TOTAL REQUIRED ADVANCE OF FUNDS[5]	INTEREST CREDITS ON ANNUAL ADVANCES IN EXCESS OF COSTS[6]	ESTIMATED TOTAL CREDITS TO DISTRICTS' ACCOUNT	NET REQUIRED ADVANCE OF FUNDS[7]
	CALIFORNIA AQUEDUCT			TOTAL	CALIFORNIA AQUEDUCT			TOTAL					
	SOUTH SAN JOAQUIN DIVISION	TEHACHAPI DIVISION	WEST BRANCH[2]		SOUTH SAN JOAQUIN DIVISION	TEHACHAPI DIVISION	WEST BRANCH[2]						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
1952	14	12	4	30	14	12	4	30					
1953	52	37	13	102	52	37	13	102					
1954	68	69	14	151	68	69	14	151					
1955	32	45	5	82	32	45	5	82					
1956	77	55	5	137	77	55	5	137					
1957	215	147	17	379	215	147	17	379					
1958	481	206	27	714	481	206	27	714					
1959	722	172	52	946	722	172	52	946					
1960	766	200	79	1,045	766	200	79	1,045					
1961	1,205	503	80	1,788	1,205	503	80	1,788					
1962	1,217	482	329	2,028	1,217	482	329	2,028					
1963	2,207	1,418	597	4,222	2,207	1,418	597	4,222					
1964	6,323	2,539	1,111	9,973	6,323	2,539	1,111	9,973					
1965	14,260	5,118	2,384	21,762	14,027	4,989	2,292	21,308	454	1,030			
1966	25,796	13,287	4,203	43,286	25,437	12,741	3,723	41,901	1,385	2,882			
1967	45,521	42,961	23,148	111,630	44,931	41,015	18,712	104,658	6,972	13,382			9,127
1968	61,617	63,428	45,863	170,908	60,445	60,521	39,507	160,473	10,435	20,210	14	303	19,907
1969	62,485	46,928	50,584	159,997	61,066	44,709	43,900	149,675	10,322	20,605	69	917	19,688
1970	21,532	29,292	15,912	66,736	21,070	27,915	13,762	62,747	3,989	7,527	102	1,268	6,259
1971	7,250	13,935	3,767	24,952	7,250	13,935	3,767	24,952	0	0	2,963	32,739	-32,739
1972	495	5,247	593	6,335	495	5,247	593	6,335	0	0	0	0	0
1973	0	0	0	0	0	0	0	0	0	0	0	0	0
1974	0	0	0	0	0	0	0	0	0	0	0	0	0
1975	0	100	0	100	0	100	0	100	0	0	0	0	0
1976	0	2,300	0	2,300	0	2,300	0	2,300	0	0	0	0	0
1977	0	4,000	0	4,000	0	4,000	0	4,000	0	0	0	0	0
1978	0	2,400	0	2,400	0	2,400	0	2,400	0	0	0	0	0
TOTALS	252,335	234,881	148,787	636,003	248,100	225,757	128,589	602,446	33,557	65,636	3,148	35,227	22,242

1/ Pursuant to "Amendment No. 2 to Water Supply Contract between the State of California Department of Water Resources and The Metropolitan Water District of Southern California", dated February 23, 1965; and assumed pursuant to requests by the Antelope Valley-East Kern Water Agency.

2/ Excluding the costs of Pyramid and Castaic reservoirs.

3/ These estimated capital costs, reduced by those allocable to the nonreimbursable purposes of recreation and fish and wildlife enhancement, are distributed among all water supply contractors utilizing the concerned aqueduct reaches in accordance with Article 24(b) of the "Standard Provisions for Water Supply Contract".

4/ The costs allocated to the Agencies pursuant to Article 24(d) of the "Standard Provisions", constituting the estimated costs shown in Column 4, less the estimated cost had no such excess capacity been provided as shown in Column 8.

5/ Funds bear the same proportion to the total capital costs of the concerned aqueduct reaches, including the costs of providing such excess capacity, as such excess capacity bears to to the total capacity of the concerned aqueduct reaches, including such excess capacity. (See Table B-6, Appendix B).

6/ Interest credits computed from date of advance to completion of construction for each respective reach, at a rate of 3.5 percent per annum.

7/ Negative value denotes credit, herein applied to reduce the capital cost components of the Transportation Charge of the two contractors.

TABLE 21

PROJECTED CAPITAL EXPENDITURES AND RECEIPTS
FOR RECREATION AND FISH AND WILDLIFE ENHANCEMENT,
STATE NONUTILITY PROGRAMS

(in thousands of dollars)

CALENDAR YEAR	OUTSTANDING BALANCE AT BEGINNING OF YEAR[1]	CAPITAL COSTS OF STATE NONUTILITY PROGRAMS ALLOCATED TO RECREATION AND FISH AND WILDLIFE ENHANCEMENT		OUTSTANDING BALANCE AT END OF YEAR, PRIOR TO INTEREST ACCRUAL[4]	INTEREST ACCRUAL ON AVERAGE BALANCE AT 3.7%
		EXPENDITURES[2]	RECEIPTS[3]		
	(1)	(2)	(3)	(4)	(5)
1952	0	3	0	3	0
1953	3	9	0	12	0
1954	12	11	0	23	1
1955	24	6	0	30	1
1956	31	17	0	48	1
1957	49	48	0	97	3
1958	100	160	0	260	7
1959	267	503	0	770	19
1960	789	904	0	1,693	46
1961	1,739	1,619	0	3,358	94
1962	3,452	2,314	0	5,766	171
1963	5,937	6,723	0	12,660	344
1964	13,004	4,820	0	17,824	570
1965	18,394	7,115	0	25,509	812
1966	26,321	10,000	0	36,321	1,159
1967	37,480	9,804	10,000	37,284	1,383
1968	38,667	10,578	5,000	44,245	1,534
1969	45,779	14,899	5,000	55,678	1,877
1970	57,555	14,716	5,000	67,271	2,309
1971	69,580	10,742	5,000	75,322	2,681
1972	78,003	5,885	5,000	78,888	2,902
1973	81,790	3,619	5,000	80,409	3,001
1974	83,410	1,661	5,000	80,071	3,024
1975	83,095	3	5,000	78,098	2,982
1976	81,080	60	5,000	76,140	2,909
1977	79,049	104	5,000	74,153	2,834
1978	76,987	62	5,000	72,049	2,757
1979	74,806	0	5,000	69,806	2,675
1980	72,481	0	5,000	67,481	2,589
1981	70,070	40	5,000	65,110	2,501
1982	67,611	80	5,000	62,691	2,411
1983	65,102	161	5,000	60,263	2,319
1984	62,582	121	5,000	57,703	2,225
1985	59,928	0	5,000	54,928	2,125
1986	57,053	0	5,000	52,053	2,018
1987	54,071	0	5,000	49,071	1,908
1988	50,979	0	5,000	45,979	1,794
1989	47,773	0	5,000	42,773	1,675
1990	44,448	0	5,000	39,448	1,552
1991	41,000	0	5,000	36,000	1,424
1992	37,424	0	5,000	32,424	1,292
1993	33,716	0	5,000	28,716	1,155
1994	29,871	0	5,000	24,871	1,013
1995	25,884	0	5,000	20,884	865
1996	21,749	0	5,000	16,749	712
1997	17,461	0	5,000	12,461	554
1998	13,015	0	5,000	8,015	389
1999	8,404	0	5,000	3,404	218
2000	3,622	0	3,689	0	67
TOTALS	-	106,787	173,689	-	66,902

1/ The total of Columns 4 and 5 for the preceeding year.

2/ From Column 7, Table 17.

3/ As limited to $5,000,000 annually under Assembly Bill No. 12 of the 1966 Legislative Session. The 1966 receipts are included in 1967 because legislative approval must be obtained prior to disbursement. Approval is not expected in 1966.

4/ The total of Columns 1 and 2 less Column 3.

TABLE 22

ACTUAL AND PROJECTED RECEIPTS, FEDERAL PROGRAMS

(in dollars)

CALENDAR YEAR	FLOOD CONTROL			WATER SUPPLY			DRAINAGE SAN JOAQUIN DRAINAGE FACILITIES[4]		TOTAL RECEIPTS, COVERING:		
	OROVILLE DAM AND RESERVOIR[1]	DEL VALLE DAM AND RESERVOIR[2]	TOTAL	SAN LUIS DIVISION[3]							
	CAPITAL AND CAPITALIZED OPERATING COSTS			ANNUAL OPERATING COSTS			CAPITAL COSTS	ANNUAL OPERATING COSTS	CAPITAL AND CAPITALIZED OPERATING COSTS	ANNUAL OPERATING COSTS	TOTAL
				CONSERVATION	TRANSPORTATION	TOTAL					
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
1962	13,950,000	0	13,950,000	0	0	0	0	0	13,950,000	0	13,950,000[5]
63	0	0	0	0	0	0	0	0	0	0	0
64	13,040,000	0	13,040,000	0	0	0	0	0	13,040,000	0	13,040,000[5]
65	8,000,000	0	8,000,000	0	0	0	0	0	8,000,000	0	8,000,000[5]
66	16,760,000	0	16,760,000	0	0	0	0	0	16,760,000	0	16,760,000
67	4,819,643	4,708,450	9,528,093	0	0	0	3,758,118	327,000	13,286,211	327,000	13,613,211
68	9,681,980	2,427,000	12,108,980	691,000	707,000	1,398,000	11,107,000	339,000	23,215,980	1,737,000	24,952,980
69	1,249,600	972,000	2,221,600	705,000	786,000	1,491,000	12,472,000	532,000	14,693,600	2,023,000	16,716,600
1970	128,260	0	128,260	692,000	778,000	1,470,000	4,262,000	655,000	4,390,260	2,125,000	6,515,260
71	14,520	0	14,520	703,000	795,000	1,498,000	0	663,000	14,520	2,161,000	2,175,520
72	12,100	0	12,100	702,000	792,000	1,494,000	0	658,000	12,100	2,152,000	2,165,100
73	9,680	0	9,680	693,000	781,000	1,474,000	0	645,000	9,680	2,119,000	2,128,680
74	0	0	0	692,000	780,000	1,472,000	0	646,000	0	2,118,000	2,118,000
75	0	0	0	691,000	779,000	1,470,000	0	643,000	0	2,113,000	2,113,000
76	0	0	0	691,000	777,000	1,468,000	0	642,000	0	2,110,000	2,110,000
77	0	0	0	691,000	777,000	1,468,000	0	575,000	0	2,043,000	2,043,000
78	0	0	0	691,000	777,000	1,468,000	0	575,000	0	2,043,000	2,043,000
79	0	0	0	691,000	777,000	1,468,000	0	575,000	0	2,043,000	2,043,000
1980	0	0	0	691,000	781,000	1,472,000	0	575,000	0	2,047,000	2,047,000
81	0	0	0	691,000	781,000	1,472,000	0	575,000	0	2,047,000	2,047,000
82	0	0	0	691,000	781,000	1,472,000	0	575,000	0	2,047,000	2,047,000
83	0	0	0	691,000	781,000	1,472,000	0	575,000	0	2,047,000	2,047,000
84	0	0	0	691,000	781,000	1,472,000	0	575,000	0	2,047,000	2,047,000
85	0	0	0	691,000	781,000	1,472,000	0	575,000	0	2,047,000	2,047,000
86	0	0	0	691,000	781,000	1,472,000	0	575,000	0	2,047,000	2,047,000
87	0	0	0	691,000	781,000	1,472,000	0	575,000	0	2,047,000	2,047,000
88	0	0	0	691,000	781,000	1,472,000	0	575,000	0	2,047,000	2,047,000
89	0	0	0	691,000	781,000	1,472,000	0	575,000	0	2,047,000	2,047,000
1990	0	0	0	691,000	781,000	1,472,000	0	575,000	0	2,047,000	2,047,000
91	0	0	0	691,000	781,000	1,472,000	0	575,000	0	2,047,000	2,047,000
92	0	0	0	691,000	781,000	1,472,000	0	575,000	0	2,047,000	2,047,000
93	0	0	0	691,000	781,000	1,472,000	0	575,000	0	2,047,000	2,047,000
94	0	0	0	691,000	781,000	1,472,000	0	575,000	0	2,047,000	2,047,000
95	0	0	0	691,000	781,000	1,472,000	0	575,000	0	2,047,000	2,047,000
96	0	0	0	691,000	781,000	1,472,000	0	575,000	0	2,047,000	2,047,000
97	0	0	0	691,000	781,000	1,472,000	0	575,000	0	2,047,000	2,047,000
98	0	0	0	691,000	781,000	1,472,000	0	575,000	0	2,047,000	2,047,000
99	0	0	0	691,000	781,000	1,472,000	0	575,000	0	2,047,000	2,047,000
2000[6]	0	0	0	691,000	781,000	1,472,000	0	575,000	0	2,047,000	2,047,000
TOTALS	67,665,783	8,107,450	75,773,233	-	-	-	31,599,118	-	107,372,351	-	-

1/ Based upon the agreement executed March 8, 1962, whereby the United States shall contribute 22.0 percent of the capital costs of Oroville Dam and reservoir; shown in Column 19 of Table 15.

2/ Based upon the proposed agreement authorized by Congress, whereby the United States shall reimburse to the State 30.7 percent of the total State and Federal capital costs of Del Valle Dam and reservoir (or 31.4 percent of the State's cost, shown on Column 43 of Table 15); plus $776,000 for a capitalized share of total annual operating costs.

3/ Based upon a proposed agreement whereby the United States would bear 45 percent of the joint operating costs of the San Luis division.

4/ Based upon a proposed agreement whereby the United States would bear 60 percent of the capital costs and 67 percent of the operating costs of the first stage of the San Joaquin Master Drain.

5/ Actual receipts; all others projected herein.

6/ And each year thereafter for the remainder of the project repayment period.

TABLE 23

ACTUAL AND PROJECTED STATE UTILITY REVENUES

(in thousands of dollars)

CALENDAR YEAR	DELTA WATER CHARGES				OROVILLE-THERMALITO POWER REVENUES 5/	TRANSPORTATION CHARGES				DRAINAGE CHARGES				TOTAL STATE UTILITY REVENUES (ADJUSTED) 11/
	CAPITAL COST COMPONENTS		OPERATING COST COMPONENTS 3/	TOTAL (ADJUSTED) 4/		CAPITAL COST COMPONENTS		OPERATING COST COMPONENTS 6/	TOTAL (ADJUSTED) 7/	CAPITAL COST COMPONENTS		OPERATING COST COMPONENTS 9/	TOTAL (ADJUSTED) 10/	
	ACTUAL 1/	ADJUSTED 2/				ACTUAL 6/	ADJUSTED 2/			ACTUAL 8/	ADJUSTED 2/			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
1961	0	0	0	0	0	0	0	0	0	0	0	0	0	0 13/
1962	0	0	0	0	0	0	964	60	1,024	0	0	0	0	1,024 13/
1963	0	0	0	0	0	1,927	2,199	116	2,315	0	0	0	0	2,315 13/
1964	0	0	0	0	0	2,471	2,364	186	2,550	0	0	0	0	2,550 13/
1965	0	0	0	0	0	2,858	4,141	430	4,844	0	0	0	0	4,844 13/
1966	0	120	0	120	0	6,569	7,772	503	8,275	0	0	0	0	8,395
1967	241	555	0	555	0	8,975	13,694	842	14,536	0	0	159	159	15,250
1968	869	898	0	898	3,170	18,413	23,274	4,087	27,361	0	258	164	422	31,851
1969	928	1,392	0	1,392	15,174	28,135	34,100	5,138	39,238	515	698	258	956	56,760
1970	1,855	2,744	207	2,951	17,100	40,065	43,892	5,259	49,151	882	945	318	1,263	70,465
10 Years 1961-1970	3,893	5,709	207	5,916	35,444	108,813	132,673	16,621	149,294	1,397	1,901	899	2,800	193,454
1971	3,634	4,488	405	4,893	17,100	47,719	49,904	13,835	63,739	1,008	1,008	322	1,330	87,062
1972	5,341	5,864	595	6,459	17,100	52,090	52,728	18,894	71,622	1,008	1,008	319	1,327	96,508
1973	6,387	6,855	711	7,566	17,100	53,366	53,578	19,822	73,400	1,008	1,008	313	1,321	99,387
1974	7,323	7,798	816	8,614	17,100	53,791	53,961	19,340	73,301	1,008	1,008	313	1,321	100,336
1975	8,273	8,784	921	9,705	17,100	54,131	54,480	20,274	74,754	1,008	1,008	312	1,320	102,879
1976	9,295	9,810	1,035	10,845	17,100	54,830	55,170	20,207	75,377	1,008	1,008	312	1,320	104,642
1977	10,324	10,837	1,150	11,987	17,100	55,510	55,926	21,639	77,565	1,008	1,008	279	1,287	107,939
1978	11,350	11,857	1,264	13,121	17,100	56,341	56,914	23,091	80,005	1,008	1,008	279	1,287	111,513
1979	12,364	12,944	1,377	14,321	17,100	57,488	57,890	25,113	83,003	1,008	1,008	279	1,287	115,711
1980	13,525	14,084	1,506	15,590	17,100	58,291	58,445	26,970	85,415	1,008	1,008	279	1,287	119,392
10 Years 1971-1980	87,816	93,321	9,780	103,101	171,000	543,557	548,996	209,185	758,181	10,080	10,080	3,007	13,087	1,015,369
1981	14,644	15,187	1,631	16,818	17,100	58,599	58,755	28,240	86,995	1,008	1,008	279	1,287	122,200
1982	15,730	16,339	1,752	18,091	17,100	58,911	59,104	30,955	90,059	1,008	1,008	279	1,287	126,537
1983	16,918	17,500	1,887	19,387	17,100	59,297	59,508	32,997	92,505	1,008	1,008	279	1,287	130,279
1984	18,052	18,620	2,010	20,630	17,100	59,718	59,929	34,170	94,099	1,008	1,008	279	1,287	133,116
1985	19,187	19,760	2,137	21,897	17,100	60,140	60,293	32,076	92,369	1,008	1,008	279	1,287	132,653
1986	20,332	20,927	2,264	23,191	17,100	60,446	60,601	33,378	93,979	1,008	1,008	279	1,287	135,557
1987	21,522	22,126	2,397	24,523	17,100	60,756	60,878	33,495	94,373	1,008	1,008	279	1,287	137,283
1988	22,730	23,172	2,531	25,703	17,100	61,000	61,116	35,264	96,380	1,008	1,008	279	1,287	140,470
1989	23,614	23,910	2,630	26,570	17,100	61,231	61,370	36,802	98,172	1,008	1,008	279	1,287	143,129
1990	24,265	24,318	2,702	27,020	17,100	61,508	61,508	37,540	99,048	1,008	1,008	279	1,287	144,455
10 Years 1981-1990	197,024	201,889	21,941	223,830	171,000	601,606	603,062	334,917	937,979	10,080	10,080	2,790	12,870	1,345,679
10 Years 1991-2000	244,630	244,693	27,242	271,935	171,000	615,080	615,080	379,533	994,613	10,080	10,080	2,790	12,870	1,450,418
10 Years 2001-2010	245,010	245,012	27,284	272,296	171,000	615,080	615,080	379,680	994,760	10,080	10,080	2,790	12,870	1,450,926
10 Years 2011-2020	245,051	245,053	27,290	272,343	171,000	508,226	484,934	379,680	864,614	8,683	8,179	2,790	10,969	1,318,926
10 Years 2021-2030	245,060	245,060	27,290	272,350	171,000	96,670	92,718	379,680	472,398	0	0	2,790	2,790	918,538
2 Years 2031-2032	49,012	49,012	5,458	54,470	34,200	14,012	13,970	75,936	89,906	0	0	558	558	179,134
TOTALS 12/	1,317,496	1,329,749	146,492	1,476,241	1,095,644	3,103,044	3,106,513	2,155,232	5,261,745	50,400	50,400	18,414	68,814	7,902,444

1/ As determined by applying the following unit rates to the sum of the annual entitlements shown in Column 5, Table 5 and the coolant water for the nuclear powerplant; $3.50 per acre-foot for the period 1967 through 1969, and $5.75 per acre-foot for 1970 and each year thereafter. (Water for nuclear powerplant is 17,500 acre-feet annually for the years 1973-1982 and 35,000 acre-feet annually thereafter.)

2/ Since annual service on general obligation bonds is shown on an accrual basis in the financial analysis described in Chapter XII, project revenues are herein adjusted to a similar accrual basis.

3/ As determined by applying a unit rate of $0.64 per acre-foot to the sum of the annual entitlements shown in Column 5, Table 5, and to the coolant water for the nuclear powerplant for 1970 and each year thereafter.

4/ The total of Columns 2 and 3.

5/ The total estimated sales less the costs of energy consumed in the pumpback operation.

6/ The total annual components developed in Appendix B, converted to a future project interest rate of 3.7 percent.

7/ The total of Columns 7 and 8.

8/ Repayment of the annual capital costs shown in Column 3, Table 17, in 50 equal annual installments of principal and interest, at a future project interest rate of 3.7 percent, and commencing in 1969.

9/ See Column 3, Table 18.

10/ The total of Columns 11 and 12.

11/ The total of Columns 4, 5, 9, and 13.

12/ In the financial analysis described in Chapter XII, revenues are considered only through the final repayment of general obligation bonds shown therein. For the purpose of the preparation of relevant revenue tables, it was necessary to assume that the repayment of capital costs would extend for a period of 50 years beyond the completion of construction.

13/ Actual revenues; all others projected herein.

TABLE 24

NET OPERATING REVENUES AVAILABLE
FOR
COVERAGE OF GENERAL OBLIGATION BOND SERVICE

(in thousands of dollars)

CALENDAR YEAR	STATE UTILITY PROGRAMS				PRIOR REVENUES APPLIED TO CAPITAL EXPENDITURES 5/	NET OPERATING REVENUES RESERVED FOR COVERAGE OF REVENUE BONDS 6/	OPERATING COSTS OF FEDERAL PROGRAMS ALLOCATED TO FLOOD CONTROL 7/	AVAILABLE NET OPERATING REVENUES 8/
	TOTAL REVENUES (ADJUSTED) 1/	TOTAL OPERATING COSTS 2/	NET CREDITS FROM ADVANCES FOR REQUESTED EXCESS CAPACITY 3/	TOTAL NET OPERATING REVENUES 4/				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1961	0	0	0	0	0	0	0	0
1962	1,024	108	0	916	47	0	0	869
1963	2,315	213	0	2,102	16	0	0	2,086
1964	2,550	244	0	2,306	6	0	0	2,300
1965	4,844	469	0	4,375	39	0	0	4,336
1966	8,395	505	0	7,890	0	0	0	7,890
1967	15,250	1,436	0	13,814	0	0	0	13,814
1968	31,851	8,137	0	23,714	0	935	57	22,722
1969	56,760	9,853	0	46,907	0	12,542	81	34,284
1970	70,465	9,975	0	60,490	0	14,469	81	45,940
10 Years 1961 - 1970	193,454	30,940	0	162,514	108	27,946	219	134,241
1971	87,062	18,430	32,739	35,893	0	14,479	80	21,334
1972	96,508	23,093	0	73,415	0	14,489	79	58,847
1973	99,387	24,176	0	75,211	0	14,506	76	60,629
1974	100,336	24,258	0	76,078	0	14,508	76	61,494
1975	102,879	25,204	0	77,675	0	14,513	76	63,086
1976	104,642	24,975	0	79,667	0	14,514	76	65,077
1977	107,939	26,337	0	81,602	0	14,514	76	67,012
1978	111,513	27,397	0	84,116	0	14,514	76	69,526
1979	115,711	29,264	0	86,447	0	14,514	76	71,857
1980	119,392	30,888	0	88,504	0	14,514	76	73,914
10 Years 1971 - 1980	1,045,369	254,022	32,739	758,608	0	145,065	767	612,776
1981	122,200	32,357	0	89,843	0	14,514	76	75,253
1982	126,537	34,997	0	91,540	0	14,514	76	76,950
1983	130,279	36,849	0	93,430	0	14,514	76	78,840
1984	133,116	37,898	0	95,218	0	14,514	76	80,628
1985	132,653	35,792	0	96,861	0	14,514	76	82,271
1986	135,557	39,140	0	96,417	0	14,514	76	81,827
1987	137,283	38,925	0	98,358	0	14,514	76	83,768
1988	140,470	40,685	0	99,785	0	14,514	76	85,195
1989	143,129	41,363	0	101,266	0	14,514	76	86,676
1990	144,455	42,479	0	101,976	0	14,514	76	87,386
10 Years 1981 - 1990	1,345,679	380,985	0	964,694	0	145,140	760	818,794
10 Years 1991 - 2000	1,450,418	428,638	0	1,021,780	0	145,140	760	875,880
10 Years 2001 - 2010	1,450,926	428,780	0	1,022,146	0	145,140	760	876,246
10 Years 2011 - 2020	1,318,926	428,780	0	890,146	0	145,140	760	744,246
10 Years 2021 - 2030	918,538	428,780	0	489,758	0	145,140	760	343,858
2 Years 2031 - 2032	179,134	85,756	0	93,378	0	29,028	152	64,198
TOTALS	7,902,444	2,466,681	32,739	5,403,024	108	927,739	4,938	4,470,239

1/ From Column 14, Table 23.

2/ From Column 4, Table 18.

3/ Negative value shown in Column 13, Table 20.

4/ Column 1, less Columns 2 and 3.

5/ Represents minor revenues derived from water charges applied to capital expenditures.

6/ Represents the annual revenues from the sale of 710,000 kilowatts of Oroville-Thermalito power, reduced by associated annual operating costs, which are herein reserved for the coverage of revenue bonds.

7/ From Column 7, Table 18.

8/ Column 4, less Columns 5, 6, and 7.

TABLE 25

FINANCIAL ANALYSIS FOR WATER BONDS
JUNE 1966

(in thousands of dollars)

CALENDAR YEAR	TOTAL CAPITAL EXPENDITURES 1/	FINANCING OF CAPITAL EXPENDITURES				GENERAL OBLIGATION BOND SERVICE 5/	NET OPERATING REVENUES 6/	BOND SERVICE IN EXCESS OF NET OPERATING REVENUES 7/	NET OPERATING REVENUES IN EXCESS OF BOND SERVICE	
		GENERAL OBLIGATION BONDS 2/	CALIFORNIA WATER FUND	REVENUE BOND PROCEEDS 3/	MISCELLANEOUS RECEIPTS 4/				PAID TO CALIF. WATER FUND 8/	AVAILABLE FOR CONSTRUCTION 9/
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Prior appropriations	100,275 10/				100,275					
6 years, 1960-1965	435,258	450,000	150,458	0	108	18,144	9,591	8,553	0	0
1966	296,555	200,000	11,000	0	0	21,942	7,890	14,052	0	0
1967	332,609	175,000	11,000	150,000	0	29,092	13,814	15,278	0	0
1968	315,920	230,000	11,000	60,000	0	37,347	22,722	14,625	0	0
1969	331,258	230,000	11,000	0	36,426	46,317	34,284	12,033	0	0
1970	204,392	170,000	11,000	00	9,000	53,727	45,940	7,787	0	0
5 years, 1960-1970	1,480,734	1,005,000	55,000	210,000	45,426	188,425	124,650	63,775	0	0
1971	109,220	89,542	11,000	0	8,678	58,265	21,334	36,931	0	0
1972	33,099	168	11,000	0	21,931	59,833	58,847	986	0	0
1973	15,770	157	11,000	0	4,613	61,220	60,629	591	0	0
1974	11,311	156	11,000	0	155	63,254	61,494	1,760	0	0
1975	7,687	0	7,687	0	0	66,006	63,086	2,920	0	0
1976	13,894	0	13,894	0	0	67,483	65,077	2,406	0	0
1977	22,408	5,154	11,419	0	5,835	69,718	67,012	2,706	0	0
1978	48,913	4,154	11,000	0	33,759	72,216	69,526	2,690	0	0
1979	48,634	27,154	11,000	0	10,480	74,689	71,857	2,832	0	0
1980	30,154	14,154	11,000	0	5,000	76,043	73,914	2,129	0	0
10 years, 1971-1980	341,090	140,639	110,000	0	90,451	668,727	612,776	55,951	0	0
1981	41,424	26,424	11,000	0	4,000	76,824	75,253	1,571	0	0
1982	51,693	36,193	11,000	0	4,500	77,983	76,950	1,033	0	0
1983	54,293	38,900	11,000	0	4,393	79,482	78,840	642	0	0
1984	15,727	0	11,000	0	4,727	80,063	80,628	0	565	0
1985	5,469	0	5,469	0	0	79,828	82,271	0	2,443	0
1986	5,000	0	5,000	0	0	79,620	81,827	0	2,207	0
1987	2,134	0	2,134	0	0	79,606	83,768	0	4,162	0
1988	100	0	100	0	0	79,960	85,195	0	5,235	0
1989	160	0	160	0	0	80,163	86,676	0	6,513	0
1990	0	0	0	0	0	80,292	87,386	0	7,094	0
10 years, 1981-1990	176,000	101,517	56,863	0	17,620	793,821	818,794	3,246	28,219	0
10 years, 1991-2000	0	0	0	0	0	809,619	875,880	0	66,261	0
10 years, 2001-2010	0	0	0	0	0	810,844	876,246	0	65,402	0
10 years, 2011-2020	0	0	0	0	0	533,055	744,246	0	211,191	0
10 years, 2021-2030	0	0	0	0	0	68,564	343,858	0	1,248	274,046
2 years, 2031-2032	0	0	0	0	0	5,501	64,198	0	0	58,697
TOTALS	2,533,357	1,697,156	372,321	210,000	253,880	3,896,700	4,470,239	131,525	372,321	332,743

1/ From Column 13, Table 19.

2/ Amounts of bonds issued during the period through 1969 produce a temporary excess of unexpended bond proceeds which are utilized by the end of 1970.

3/ From revenue bonds supported by sale of 710,000 kilowatts of Oroville-Thermalito power. The financing of the project may include the issuance of revenue bonds for certain other purposes as well.

4/ From Column 10, Table 26.

5/ From Column 7, Table 28.

6/ From Column 8, Table 24. Excludes net operating revenues from 710,000 kilowatts of Oroville-Thermalito power, which are assumed herein to be applied to payment of revenue bond service.

7/ See Column 11, Table 26. These deficiencies are covered by miscellaneous receipts.

8/ These amounts represent projected reimbursement of expenditures made from the California Water Fund, shown in Column 3 to be $372,321,000.

9/ These amounts represent those available for future construction under the fourth priority of revenues under the Burns-Porter Act.

10/ Represents expenditures made during the period 1952-1965 from appropriations made prior to the effective date of the Burns-Porter Act (November 8, 1960).

TABLE 26

MISCELLANEOUS RECEIPTS AND THE EXPENDITURES THEREOF

(in thousands of dollars)

CALENDAR YEAR	CUMULATIVE BALANCE AT BEGINNING OF YEAR[1]	MISCELLANEOUS RECEIPTS							CUMULATIVE BALANCE PLUS RECEIPTS[7]	EXPENDITURES		BALANCE AT END OF YEAR, EXCLUDING INTEREST[10]	INTEREST ON AVERAGE BALANCE AT 3.5%[11]
		LEGISLATIVE APPROPRIATIONS[2]	FEDERAL REIMBURSEMENTS[3]			RIGHT OF WAY SALES, ETC.[4]	NET ADVANCES FOR EXCESS CAPACITY[5]	TOTALS[6]		FINANCING OF CAPITAL EXPENDITURES[8]	COVERAGE OF BOND SERVICE[9]		
			OROVILLE DAM AND RESERVOIR	DEL VALLE DAM AND RESERVOIR	SAN JOAQUIN DRAINAGE FACILITIES								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Prior appropriations	-	100,275	0	0	0	0	0	100,275	-	100,275	0	-	0
6 years, 1960-1965	-	0	34,990	0	0	2,865	0	37,855	-	108	8,553	-	2,631
1966	31,825	0	16,760	0	0	0	0	16,760	48,585	0	14,052	34,533	1,161
1967	35,694	10,000	4,820	4,708	3,758	0	9,127	32,413	68,107	0	15,278	52,829	1,549
1968	54,378	5,000	9,682	2,427	11,107	0	19,907	48,123	102,501	0	14,625	87,876	2,489
1969	90,365	5,000	1,250	972	12,472	0	19,688	39,382	129,747	36,426	12,033	81,288	3,004
1970	84,292	5,000	128	0	4,262	0	6,259	15,649	99,941	9,000	7,787	83,154	2,930
5 years, 1966-1970	-	25,000	32,640	8,107	31,599	0	54,981	152,327	-	45,426	63,775	-	11,133
1971	86,084	5,000	15	0	0	0	0	5,015	91,099	8,678	36,931	45,490	2,302
1972	47,792	5,000	12	0	0	0	0	5,012	52,804	21,931	986	29,887	1,359
1973	31,246	5,000	10	0	0	0	0	5,010	36,256	4,613	591	31,052	1,090
1974	32,142	5,000	0	0	0	0	0	5,000	37,142	155	1,760	35,227	1,179
1975	36,406	5,000	0	0	0	0	0	5,000	41,406	0	2,920	38,486	1,311
1976	39,797	5,000	0	0	0	0	0	5,000	44,797	0	2,406	42,391	1,438
1977	43,829	5,000	0	0	0	0	0	5,000	48,829	5,835	2,706	40,288	1,472
1978	41,760	5,000	0	0	0	0	0	5,000	46,760	33,759	2,690	10,311	911
1979	11,222	5,000	0	0	0	0	0	5,000	16,222	10,480	2,832	2,910	247
1980	3,157	5,000	0	0	0	0	0	5,000	8,157	5,000	2,129	1,028	73
10 years, 1971-1980	-	50,000	37	0	0	0	0	50,037	-	90,451	55,951	-	11,382
1981	1,101	5,000	0	0	0	0	0	5,000	6,101	4,000	1,571	530	28
1982	558	5,000	0	0	0	0	0	5,000	5,558	4,500	1,033	25	10
1983	35	5,000	0	0	0	0	0	5,000	5,035	4,393	642	0	1
1984	1	4,726	0	0	0	0	0	4,726	4,727	4,727	0	0	0
1985	0	0	0	0	0	0	0	0	0	0	0	0	0
1986	0	0	0	0	0	0	0	0	0	0	0	0	0
1987	0	0	0	0	0	0	0	0	0	0	0	0	0
1988	0	0	0	0	0	0	0	0	0	0	0	0	0
1989	0	0	0	0	0	0	0	0	0	0	0	0	0
1990	0	0	0	0	0	0	0	0	0	0	0	0	0
10 years, 1981-1990	-	19,726	0	0	0	0	0	19,726	-	17,620	3,246	-	39
TOTALS	-	195,001	67,667	8,107	31,599	2,865	54,981	360,220	-	253,880	131,525	-	25,185

1/ The total of Columns 12 and 13 for the preceeding year.

2/ Appropriations under the provision of AB 12 for the Capital Costs of multiple-purpose features of the State Water Project allocated to the purposes of recreation and fish and wildlife enhancement and for recreational lands purchased by project funds. The 1966 and 1967 values are combined because legislative authorization must be obtained prior to expenditure, and that authorization is not herein assumed until 1967.

3/ From values shown in Table 22.

4/ From the values shown in the upper portion of Column 12, Table 19.

5/ Positive values from Column 13, Table 20.

6/ The total of Columns 2 through 7.

7/ The total of Columns 1 and 8.

8/ See Column 5, Table 25.

9/ See Column 8, Table 25.

10/ Column 9, less Columns 10 and 11.

11/ Interest accruals on the average of Columns 1 and 12 at an interest rate of 3.5 percent per annum.

TABLE 27

ANALYSIS OF OFFSET BONDS

(in thousands of dollars)

CALENDAR YEAR	FINANCING OF CAPITAL EXPENDITURES												BALANCE OF UNISSUED OFFSET BONDS 6/
	TOTAL STATE WATER PROJECT				STATE WATER FACILITIES				ADDITIONAL FACILITIES				
	CALIFORNIA WATER FUND 1/	GENERAL OBLIGATION BONDS 2/	ALL OTHER 3/	TOTAL 4/	CALIFORNIA WATER FUND	GENERAL OBLIGATION BONDS	ALL OTHER	TOTAL	CALIFORNIA WATER FUND	GENERAL OBLIGATION BONDS	ALL OTHER	TOTAL 5/	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Prior Appropriations	0	0	100,275	100,275	0	0	100,275	100,275	0	0	0	0	0
6 years, 1960-1965	150,458	284,692	108	435,258	150,458	283,513	108	434,079	0	1,179	0	1,179	-
1966	11,000	285,555	0	296,555	11,000	284,184	0	295,184	0	1,371	0	1,371	158,908
1967	11,000	171,609	150,000	332,609	11,000	170,067	150,000	331,067	0	1,542	0	1,542	168,366
1968	11,000	244,920	60,000	315,920	11,000	243,357	60,000	314,357	0	1,563	0	1,563	177,803
1969	11,000	283,832	36,426	331,258	11,000	282,218	36,426	329,644	0	1,614	0	1,614	187,189
1970	11,000	184,392	9,000	204,392	11,000	183,008	9,000	203,008	0	1,384	0	1,384	196,805
5 years, 1966-1970	55,000	1,170,308	255,426	1,480,734	55,000	1,162,834	255,426	1,473,260	0	7,474	0	7,474	-
1971	11,000	89,542	8,678	109,220	11,000	88,864	8,678	108,542	0	678	0	678	205,458
1972	11,000	168	21,931	33,099	11,000	0	21,931	32,931	0	168	0	168	205,290
1973	11,000	157	4,613	15,770	11,000	0	4,613	15,613	0	157	0	157	205,133
1974	11,000	156	155	11,311	11,000	0	155	11,155	0	156	0	156	204,977
1975	7,687	0	0	7,687	7,532	0	0	7,532	155	0	0	155	204,977
1976	13,894	0	0	13,894	13,740	0	0	13,740	154	0	0	154	204,977
1977	11,419	5,154	5,835	22,408	11,419	0	5,835	17,254	0	5,154	0	5,154	199,823
1978	11,000	4,154	33,759	48,913	11,000	0	13,759	24,759	0	4,154	20,000	24,154	195,669
1979	11,000	27,154	10,480	48,634	11,000	0	5,480	16,480	0	27,154	5,000	32,154	168,515
1980	11,000	14,154	5,000	30,154	5,000	0	0	5,000	6,000	14,154	5,000	25,154	154,361
10 years, 1971-1980	110,000	140,639	90,451	341,090	103,691	88,864	60,451	253,006	6,309	51,775	30,000	88,084	-
1981	11,000	26,424	4,000	41,424	6,270	0	0	6,270	4,730	26,424	4,000	35,154	127,937
1982	11,000	36,193	4,500	51,693	7,539	0	0	7,539	3,461	36,193	4,500	44,154	91,744
1983	11,000	38,900	4,393	54,293	10,139	0	0	10,139	861	38,900	4,393	44,154	52,844
1984	11,000	0	4,727	15,727	9,573	0	0	9,573	1,427	0	4,727	6,154	52,844
1985	5,469	0	0	5,469	5,315	0	0	5,315	154	0	0	154	52,844
1986	5,000	0	0	5,000	5,000	0	0	5,000	0	0	0	0	52,844
1987	2,134	0	0	2,134	2,134	0	0	2,134	0	0	0	0	52,844
1988	100	0	0	100	100	0	0	100	0	0	0	0	52,844
1989	160	0	0	160	160	0	0	160	0	0	0	0	52,844
1990	0	0	0	0	0	0	0	0	0	0	0	0	52,844
10 years, 1981-1990	56,863	101,517	17,620	176,000	46,230	0	0	46,230	10,633	101,517	17,620	129,770	-
TOTALS	372,321	1,697,156	463,880	2,533,357	355,379	1,535,211	416,260	2,306,850	16,942	161,945	47,620	226,507	-

1/ From Column 3, Table 25.
2/ From Column 2, Table 25, after elimination of temporary excess of unexpended bond proceeds during the period through 1970.
3/ From Columns 4 and 5, Table 25.
4/ From Column 1, Table 25.
5/ Costs of Upper Eel River Development as shown in Column 6, Table 19.
6/ Cumulative values of Column 5, less Column 10 through calendar year 1970; plus $9,331,000, less Column 10 in 1971; and less Column 10 in 1972 and each year thereafter. The value of $9,331,000 represents the amount of $1,750,000,000 reduced by expenditures from the California Water Fund and general obligation bond proceeds shown for the State Water Facilities in Columns 5 and 6 during the period through 1970, together with the amount shown in Column 6 for 1971.

TABLE 28

SERVICE ON ACTUAL AND PROJECTED GENERAL OBLIGATION BONDS

(in thousands of dollars)

CALENDAR YEAR	BOND SERVICE ON ACTUAL ISSUES THROUGH SERIES "E"[1]			BOND SERVICE ON PROJECTED ISSUES[2]			TOTAL BOND SERVICE ACTUAL AND PROJECTED
	PRINCIPAL	INTEREST	TOTAL	PRINCIPAL	INTEREST	TOTAL	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
1961	0	0	0	0	0	0	0
62	0	0	0	0	0	0	0
63	0	0	0	0	0	0	0
64	0	5,507	5,507	0	0	0	5,507
65	0	12,637	12,637	0	0	0	12,637
66	0	16,742	16,742	0	5,200	5,200	21,942
67	0	16,742	16,742	0	12,350	12,350	29,092
68	0	16,742	16,742	0	20,605	20,605	37,347
69	0	16,742	16,742	0	29,575	29,575	46,317
1970	0	16,742	16,742	0	36,985	36,985	53,727
71	0	16,742	16,742	0	41,523	41,523	58,265
72	400	16,742	17,142	0	42,691	42,691	59,833
73	1,800	16,722	18,522	0	42,698	42,698	61,220
74	3,917	16,633	20,550	0	42,704	42,704	63,254
75	5,000	16,448	21,448	1,852	42,706	44,558	66,006
76	5,091	16,214	21,305	3,556	42,622	46,178	67,483
77	5,300	15,976	21,276	5,846	42,596	48,442	69,718
78	5,741	15,728	21,469	8,239	42,508	50,747	72,216
79	6,150	15,458	21,608	10,183	42,898	53,081	74,689
1980	6,242	15,170	21,412	11,471	43,160	54,631	76,043
81	6,442	14,878	21,320	11,989	43,515	55,504	76,824
82	6,617	14,577	21,194	12,529	44,260	56,789	77,983
83	6,941	14,268	21,209	13,095	45,178	58,273	79,482
84	7,341	13,943	21,284	13,684	45,095	58,779	80,063
85	7,450	13,599	21,049	14,300	44,479	58,779	79,828
86	7,542	13,251	20,793	14,991	43,836	58,827	79,620
87	7,842	12,899	20,741	15,704	43,161	58,865	79,606
88	8,300	12,543	20,843	16,662	42,455	59,117	79,960
89	8,691	12,224	20,915	17,543	41,705	59,248	80,163
1990	8,891	11,909	20,800	18,577	40,915	59,492	80,292
91	9,000	11,586	20,586	19,748	40,079	59,827	80,413
92	9,225	11,273	20,498	20,997	39,191	60,188	80,686
93	9,892	10,951	20,843	21,942	38,246	60,188	81,031
94	10,492	10,605	21,097	22,930	37,258	60,188	81,285
95	10,600	10,237	20,837	23,961	36,227	60,188	81,025
96	10,691	9,865	20,556	25,040	35,148	60,188	80,744
97	11,058	9,489	20,547	26,166	34,022	60,188	80,735
98	11,842	9,097	20,939	27,344	32,844	60,188	81,127
99	12,542	8,679	21,221	28,574	31,614	60,188	81,409
2000	12,742	8,234	20,976	29,860	30,328	60,188	81,164
01	12,942	7,778	20,720	31,204	28,984	60,188	80,908
02	13,342	7,315	20,657	32,550	27,638	60,188	80,845
03	14,242	6,838	21,080	33,904	26,284	60,188	81,268
04	15,042	6,326	21,368	35,248	24,940	60,188	81,556
05	15,242	5,782	21,024	36,579	23,609	60,188	81,212
06	15,533	5,231	20,764	37,911	22,277	60,188	80,952
07	16,008	4,669	20,677	39,266	20,922	60,188	80,865
08	16,792	4,089	20,881	40,671	19,517	60,188	81,069
09	17,583	3,480	21,063	42,125	18,063	60,188	81,251
2010	17,892	2,838	20,730	43,632	16,556	60,188	80,918
11	18,092	2,184	20,276	45,193	14,995	60,188	80,464
12	18,383	1,528	19,911	46,790	13,398	60,188	80,099
13	17,358	951	18,309	48,403	11,785	60,188	78,497
14	12,892	513	13,405	50,029	10,159	60,188	73,593
15	4,875	146	5,021	51,671	8,517	60,188	65,209
16	0	0	0	43,767	6,769	50,536	50,536
17	0	0	0	36,793	5,297	42,090	42,090
18	0	0	0	26,965	4,025	30,990	30,990
19	0	0	0	16,827	3,064	19,891	19,891
2020	0	0	0	9,244	2,442	11,686	11,686
21	0	0	0	5,271	2,094	7,365	7,365
22	0	0	0	5,447	1,910	7,357	7,357
23	0	0	0	5,629	1,720	7,349	7,349
24	0	0	0	5,818	1,524	7,342	7,342
25	0	0	0	6,016	1,326	7,342	7,342
26	0	0	0	6,218	1,124	7,342	7,342
27	0	0	0	6,176	917	7,093	7,093
28	0	0	0	6,177	716	6,893	6,893
29	0	0	0	5,070	512	5,582	5,582
2030	0	0	0	4,549	350	4,899	4,899
31	0	0	0	3,426	198	3,624	3,624
32	0	0	0	1,804	73	1,877	1,877
TOTALS	450,000	557,462	1,007,462	1,247,156	1,642,082	2,889,238	3,896,700

1/ Placed on an accrual basis.

2/ All projected issues are assumed at approximately 3.75 percent net interest cost, with amortization commencing in the tenth year of such issues, to produce level annual bond service for the 41-year period beginning with the tenth and ending with the fiftieth year.

TABLE 29

STATE OF CALIFORNIA WATER BONDS
SCHEDULE OF MATURITIES, AMOUNTS AND COUPONS

(In thousands of dollars unless otherwise noted)

CALENDAR YEAR	SERIES A[1]/ MATURITY DATE SEPTEMBER 1		SERIES B MATURITY DATE MAY 1		SERIES C MATURITY DATE NOVEMBER 1		SERIES D MATURITY DATE MARCH 1		SERIES E MATURITY DATE DECEMBER 1	
	AMOUNT	COUPON(%)	AMOUNT	COUPON(%)	AMOUNT	COUPON(%)	AMOUNT	COUPON(%)	AMOUNT	COUPON(%)
1973	1,200	5.00	0	0	0	0	0	0	0	0
1974	1,200	5.00	600	5.00	1,200	4.50	0	0	0	0
1975	1,200	5.00	600	5.00	1,200	4.50	1,000	4.50	1,000	4.50
1976	1,200	5.00	600	5.00	1,200	4.50	1,000	4.50	1,000	4.50
1977	1,200	5.00	600	5.00	1,200	4.50	1,100	4.50	1,100	4.50
1978	1,500	5.00	600	5.00	1,200	4.50	1,100	4.50	1,100	4.50
1979	1,500	5.00	750	5,00	1,500	4.50	1,200	4.50	1,200	4.50
1980	1,500	5.00	750	5.00	1,500	4.50	1,200	4.50	1,200	4.50
1981	1,500	5.00	750	5.00	1,500	4.50	1,300	4.50	1,300	4.50
1982	1,500	5.00	750	5.00	1,500	4.50	1,400	4.50	1,400	4.50
1983	1,700	5.00	750	5.00	1,500	4.50	1,400	4.50	1,400	4.50
1984	1,700	5.00	850	5.00	1,700	4.50	1,500	4.50	1,500	4.50
1985	1,700	5.00	850	5.00	1,700	4.50	1,600	4.50	1,600	4.50
1986	1,700	5.00	850	5.00	1,700	4.50	1,600	4.50	1,600	4.50
1987	1,700	5.00	850	5.00	1,700	4.50	1,700	4.50	1,700	4.50
1988	2,000	4.00	850	4.75	1,700	3.75	1,800	4.50	1,800	4.50
1989	2,000	3.40	1,000	3.40	2,000	3.40	1,800	3.25	1,800	4.50
1990	2,000	3.40	1,000	3.40	2,000	3.40	1,900	3.40	1,900	4.50
1991	2,000	3.40	1,000	3.50	2,000	3.50	2,000	3.40	2,000	3.60
1992	2,000	3.40	1,000	3.50	2,000	3.50	2,000	3.40	2,000	3.60
1993	2,400	3.50	1,000	3.50	2,000	3.50	2,100	3.40	2,100	3.60
1994	2,400	3.50	1,200	3.50	2,400	3.50	2,200	3,40	2,200	3.625
1995	2,400	3.50	1,200	3.50	2,400	3.55	2,300	3.40	2,300	3.625
1996	2,400	3.50	1,200	3.50	2,400	3.55	2,300	3.40	2,300	3.625
1997	2,400	3.50	1,200	3.50	2,400	3.55	2,400	3.40	2,400	3.625
1998	2,900	3.50	1,200	3.50	2,400	3.55	2,500	3.50	2,500	3.625
1999	2,900	3.50	1,450	3.50	2,900	3.55	2,600	3.50	2,600	3.625
2000	2,900	3.50	1,450	3.60	2,900	3.60	2,700	3.50	2,700	3.70
2001	2,900	3.50	1,450	3.60	2,900	3.60	2,800	3.50	2,800	3.70
2002	2,900	3.50	1,450	3.60	2,900	3.60	2,900	3.50	2,900	3.70
2003	3,500	3.50	1,450	3.60	2,900	3.60	3,000	3.50	3,000	3.75
2004	3,500	3.60	1,750	3.60	3,500	3.625	3,100	3.50	3,100	3.75
2005	3,500	3.60	1,750	3.60	3,500	3.625	3,200	3.50	3,200	3.75
2006	3,500	3.60	1,750	3.625	3,500	3.625	3,300	3.50	3,300	3.75
2007	3,500	3.60	1,750	3.625	3,500	3.625	3,500	3.50	3,500	3.75
2008	4,000	3.625	1,750	3.625	3,500	3.65	3,600	3.50	3,600	3.75
2009	4,000	3.625	2,000	3.625	4,000	3.65	3,700	3.50	3,700	3.75
2010	4,000	3.625	2,000	3.625	4,000	3.65	3,900	3.60	3,900	3.75
2011	4,000	3.625	2,000	3.625	4,000	3.65	4,000	3.60	4,000	3.75
2012	4,000	3.625	2,000	3.625	4,000	3.00	4,100	3.60	4,100	3.75
2013	4,000	1/10	2,000	3.625	4,000	3.00	4,300	3.00	4,300	3.75
2014	0	0	2,000	1/20	4,000	3.00	4,400	3.00	4,400	3.00
2015	0	0	0	0	0	0	4,500	3.00	4,500	3.00
Total	100,000		50,000		100,000		100,000		100,000	
Average Life (years)	34.02		34.52		34.52		34.98		34.98	

1/ Bond Anticipation Notes dated December 1, 1963, in the amount of $50,000,000 and maturing on June 15, 1964, had a life of 0.27 years.

TABLE 30

REDEMPTION PREMIUMS FOR STATE OF CALIFORNIA WATER BONDS

Year of Maturity	Maturity dates for respective Series: Series A, September 1. Series B, May 1. Series C, November 1. Series D, March 1. Series E, December 1. % premium if redemption occurs during 12-month period ending on maturity date for respective Series in year named below:																			
	1983[1]	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003[2]
1984	1/8	0																			
1985	1/4	1/8	0																		
1986	3/8	1/4	1/8	0																	
1987	1/2	3/8	1/4	1/8	0																
1988	5/8	1/2	3/8	1/4	1/8	0															
1989	3/4	5/8	1/2	3/8	1/4	1/8	0														
1990	7/8	3/4	5/8	1/2	3/8	1/4	1/8	0													
1991	1	7/8	3/4	5/8	1/2	3/8	1/4	1/8	0												
1992	1 1/8	1	7/8	3/4	5/8	1/2	3/8	1/4	1/8	0											
1993	1 1/4	1 1/8	1	7/8	3/4	5/8	1/2	3/8	1/4	1/8	0										
1994	1 3/8	1 1/4	1 1/8	1	7/8	3/4	5/8	1/2	3/8	1/4	1/8	0									
1995	1 1/2	1 3/8	1 1/4	1 1/8	1	7/8	3/4	5/8	1/2	3/8	1/4	1/8	0								
1996	1 5/8	1 1/2	1 3/8	1 1/4	1 1/8	1	7/8	3/4	5/8	1/2	3/8	1/4	1/8	0							
1997	1 3/4	1 5/8	1 1/2	1 3/8	1 1/4	1 1/8	1	7/8	3/4	5/8	1/2	3/8	1/4	1/8	0						
1998	1 7/8	1 3/4	1 5/8	1 1/2	1 3/8	1 1/4	1 1/8	1	7/8	3/4	5/8	1/2	3/8	1/4	1/8	0					
1999	2	1 7/8	1 3/4	1 5/8	1 1/2	1 3/8	1 1/4	1 1/8	1	7/8	3/4	5/8	1/2	3/8	1/4	1/8	0				
2000	2 1/8	2	1 7/8	1 3/4	1 5/8	1 1/2	1 3/8	1 1/4	1 1/8	1	7/8	3/4	5/8	1/2	3/8	1/4	1/8	0			
2001	2 1/4	2 1/8	2	1 7/8	1 3/4	1 5/8	1 1/2	1 3/8	1 1/4	1 1/8	1	7/8	3/4	5/8	1/2	3/8	1/4	1/8	0		
2002	2 3/8	2 1/4	2 1/8	2	1 7/8	1 3/4	1 5/8	1 1/2	1 3/8	1 1/4	1 1/8	1	7/8	3/4	5/8	1/2	3/8	1/4	1/8	0	
2003[2]	2 1/2	2 3/8	2 1/4	2 1/8	2	1 7/8	1 3/4	1 5/8	1 1/2	1 3/8	1 1/4	1 1/8	1	7/8	3/4	5/8	1/2	3/8	1/4	1/8	0

Bonds maturing prior to 1984 are not callable. Bonds of each series maturing in 1984 or later are callable for redemption, in inverse order of maturities, on the 1983 maturity date for the respective series, and on any date thereafter, at premiums of 1/8% for each full 12-month period from the redemption date to the earlier of (1) the maturity date of the bonds being called or (2) the 2003 maturity date for respective series.

1/ Premium shown in this column applies only if called for redemption on the 1983 maturity date for the respective series, since bonds of each series are not callable for redemption prior thereto.

2/ Or later.

APPENDIX A

FINANCIAL STATEMENTS

INTRODUCTION

This appendix to Bulletin 132-66 contains the financial statements of the State Water Resources Development System as of December 31, 1965, and explanatory notes thereto.

Significant changes since the date of the financial statements included in Bulletin 132-65 (December 31, 1964), are summarized below.

There were additional sales of General Obligation Bonds authorized by the Burns-Porter Act totaling $200,000,000. In addition, funds in the amount of $12,000,000 were utilized from the California Water Fund.

The above funds were applied principally to additions for construction of the State Water Project in the amount of $174,000,000 (including interest during construction of $14,500,000) and to increase net current assets of $38,000,000 which will be utilized for construction during 1966.

Total revenues in 1965 from water supply contractors amounted to $2,900,000 which included $689,000 for water deliveries from the South Bay Aqueduct and Frenchman Dam and Lake. Federal flood control contributions for Oroville Dam were received in the amount of $8,000,000.

Interest charges on bonds were $12,500,000 and interest earnings on investments amounted to $6,800,000 in 1965.

Payments on grants to local agencies made under the Davis-Grunsky Local Projects Assistance Program, totaled $9,900,000 during the year.

STATE WATER RESOURCES DEVELOPMENT SYSTEM
(Excluding Davis-Grunsky Local Projects Assistance Program)
DEPARTMENT OF WATER RESOURCES
BALANCE SHEET - DECEMBER 31, 1965

EXHIBIT 1

ASSETS

Utility Plant: (Note A)			
Construction Work in Progress -			
Water Conservation Facilities (including Oroville Power)	$300,366,337		
Water Transportation Facilities	148,035,616		
San Joaquin Drainage Facilities	2,916,702		
Accrued (Unallocated)	14,306,398		
		$465,625,053	
Plant in Service -			
Water Conservation Facilities	$ 1,867,248		
Water Transportation Facilities	28,602,243		
	$ 30,469,491		
Less: Reserve for Depreciation	1,140,819		
		29,328,672	
Plant Held for Future Use -			
Water Transportation Facilities		3,219,093	
			$498,172,818
Nonutility Plant: (Note A)			
Construction Work in Progress -			
Recreation Facilities	$ 14,668,522		
Flood Control Facilities	42,010,174		
Delta Facilities	2,536,053		
		$ 59,214,749	
Plant in Service -			
Recreation Facilities		5,973,100	
			65,187,849
Special Funds: (Note B)			
Central Valley Water Project Construction Fund		$ 37,408,534	
Central Valley Water Project Revenue Fund		30,141	
California Water Resources Development Bond Fund - Replacement Account		44,908	
			37,483,583
Current Assets: (Note B)			
Cash		$ 1,384,640	
Investments		167,464,700	
Accounts Receivable		4,439,713	
Advances to Water Resources Revolving Fund		2,088,722	
			175,377,775
Deferred Charges:			
Operation and Maintenance			184,773
			$776,406,798

See Notes to Financial Statements

EXHIBIT 1

LIABILITIES

Capitalization:			
Long-Term Debt -			
Bonds Payable (Note C)		$450,000,000	
Advances from California Water Fund (Note D)		132,336,568	
Grants in Aid of Construction - (Note E)			
From Prior Appropriations -			
California Water Fund	$ 86,082,087		
General Fund	11,269,082		
	$ 97,351,169		
Other			
Interest on State Advances and Grants	29,487,605		
Federal Fund Control Contributions	34,990,000		
		161,828,774	
Accumulated Deferred Net Income (Note F)		8,157,897	
Advances for Delivery Structures		759,086	
			$753,082,325
Current Liabilities:			
Accounts Payable		$ 6,701,082	
Contract Retentions		12,453,771	
Due to California Water Fund		106,398	
Accrued Interest on Bonds Payable		3,579,827	
			22,841,078
Reserves:			
Reserve for Replacements - Transportation		$ 44,908	
Reserve for Deferred Accounts Receivables		32,520	
			77,428
Deferred Credits:			
Operation and Maintenance		$ 175,596	
Advance ~~Payments~~ - Transportation (Note G)		198,027	
Delivery Structures		32,344	
			405,967
			$776,406,798

STATE WATER RESOURCES DEVELOPMENT SYSTEM
DEPARTMENT OF WATER RESOURCES
STATEMENT OF DEFERRED NET INCOME
FOR THE CALENDAR YEAR ENDED DECEMBER 31, 1965

EXHIBIT 2A

REVENUES (EXHIBIT 3)		
Conservation		$ 14,000
Transportation		
Capital Cost Component	$ 2,258,212	
Operation Components	675,917	2,934,129
Total Revenues		$ 2,948,129
COST OF OPERATIONS (EXHIBIT 4)		
Conservation	$ 14,000	
Transportation	658,435	
Provision for Replacements	17,482	
Provision for Depreciation	792,665	
Total Cost of Operations		1,482,582
NET OPERATING REVENUES		$ 1,465,547
INTEREST EARNINGS FROM INVESTMENTS		6,785,814
GROSS INCOME		$ 8,251,361
DEDUCTIONS		
Interest on Bonds	$12,557,236	
Interest on State Advances and Grants, Credited to Grants in Aid of Construction	7,508,228	
	$20,065,464	
Less: Interest Charged to Construction	14,472,399	
Total Deductions		5,593,065
DEFERRED NET INCOME		$ 2,658,296
Accumulated Deferred Net Income, December 31, 1964		5,499,601
ACCUMULATED DEFERRED NET INCOME (EXHIBIT 1)		$ 8,157,897

EXHIBIT 2A

STATE WATER RESOURCES DEVELOPMENT SYSTEM
DEPARTMENT OF WATER RESOURCES
STATEMENT OF DEFERRED NET INCOME
CUMULATIVE TO DECEMBER 31, 1965

EXHIBIT 2B

REVENUES		
Conservation		$ 42,000
Transportation		
Capital Cost Component	$ 6,656,375	
Operation Components	1,492,699	8,149,074
Total Revenues		$ 8,191,074
COST OF OPERATIONS		
Conservation	$ 42,000	
Transportation	1,447,790	
Provision for Replacements	44,909	
Provision for Depreciation	1,140,819	
Total Cost of Operations		2,675,518
NET OPERATING REVENUES		$ 5,515,556
INTEREST EARNINGS FROM INVESTMENTS		11,507,554
GROSS INCOME		$17,023,110
DEDUCTIONS		
Interest on Bonds	$17,575,173	
Interest on State Advances and Grants, Credited to Grants in Aid of Construction	29,487,605	
	$47,062,778	
Less: Interest Charged to Construction	38,197,565	
Total Deductions		8,865,213
ACCUMULATED DEFERRED NET INCOME (EXHIBIT 1)		$ 8,157,897

EXHIBIT 2B

STATE WATER RESOURCES DEVELOPMENT SYSTEM
DEPARTMENT OF WATER RESOURCES
STATEMENT OF REVENUES
FOR THE CALENDAR YEAR ENDED DECEMBER 31, 1965

EXHIBIT 3

	Conservation	Transportation: Capital Cost Component	Transportation: Operation Component	Total
CONSERVATION FACILITIES				
Frenchman Dam and Lake				
Last Chance Creek Water District	$14,000			$ 14,000
TRANSPORTATION FACILITIES				
South Bay Aqueduct				
Alameda County Water District		$ 195,496	$250,366	445,862
Alameda County F. C. & W. C. District		131,912	98,369	230,281
Santa Clara County F. C. & Water District		780,713	327,182	1,107,895
California Aqueduct				
Antelope Valley - East Kern Water Agency		60,949		60,949
City of West Covina		9,165		9,165
Coachella Valley County Water District		16,674		16,674
Crestline - Lake Arrowhead Water Agency		4,483		4,483
Desert Water Agency		22,750		22,750
Littlerock Creek Irrigation District		1,686		1,686
Metropolitan Water District of Southern California		692,541		692,541
Mojave Water Agency		37,774		37,774
Palmdale Irrigation District		12,236		12,236
San Bernardino Valley Municipal Water District		66,808		66,808
San Gabriel Valley Municipal Water District		19,564		19,564
San Gorgonio Pass Water Agency		11,101		11,101
San Luis Obispo County F. C. & W. C. District		18,277		18,277
Santa Barbara County F. C. & W. C. District		39,520		39,520
Upper Santa Clara Valley Water Agency		23,632		23,632
Ventura County Flood Control District		20,055		20,055
Plumas County F. C. & W. C. District		726		726
Kern County Water Agency		92,150		92,150
Total (Exhibit 2A)	$14,000	$2,258,212	$675,917	$2,948,129

EXHIBIT 3

STATE WATER RESOURCES DEVELOPMENT SYSTEM
DEPARTMENT OF WATER RESOURCES
STATEMENT OF COST OF OPERATIONS
FOR THE CALENDAR YEAR ENDED DECEMBER 31, 1965

EXHIBIT 4

	Grand Total	Operation, Maintenance and Power			
		Conservation Facilities	Transportation Facilities		
			Minimum Component	Variable Component	Bureau Water Charge
CONSERVATION FACILITIES					
Frenchman Dam and Lake					
Operation and Maintenance	$ 11,581	$11,581			
TRANSPORTATION FACILITIES					
South Bay Aqueduct					
Reach No. 1 - Bethany Forebay to Altamont Turnout					
Operation	153,172		$153,172		
Maintenance	64,488		64,488		
Management	6,335		6,335		
Water Purchased	242,577				$242,577
Power Purchased	138,046			$138,046	
Water Quality Testing	4,943			4,943	
Reclassification of Transportation Losses			299	- 299	
Total - Reach No. 1	$ 609,561		$224,294	$142,690	$242,577
Reach No. 2 - Altamont Turnout thru Patterson Reservoir					
Operation	9,498		9,498		
Maintenance	10,333		10,333		
Management	2,748		2,748		
Total - Reach No. 2	$ 22,579		$ 22,579		
Reach No. 4 - Patterson Reservoir to Del Valle Junction					
Operation	22,988		22,988		
Maintenance	16,699		16,699		
Management	4,223		4,223		
Total - Reach No. 4	$ 43,910		$ 43,910		
Reach No. 6 - Del Valle Junction to South Livermore Turnout					
Operation	54		54		
Maintenance	400		400		
Management	1,401		1,401		
Total - Reach No. 6	$ 1,855		$ 1,855		
Reach No. 7 - South Livermore Turnout to Vallecitos Turnout					
Operation	652		652		
Maintenance	1,036		1,036		
Management	4,500		4,500		
Total - Reach No. 7	$ 6,188		$ 6,188		
Reach No. 8 - Vallecitos Turnout to Alameda Bayside Turnout					
Operation	435		435		
Maintenance	467		467		
Management	2,295		2,295		
Total - Reach No. 8	$ 3,197		$ 3,197		
Reach No. 9 - Alameda Bayside Turnout to Santa Clara Terminus					
Operation	1,368		1,368		
Maintenance	1,033		1,033		
Management	3,116		3,116		
Total - Reach No. 9	$ 5,517		$ 5,517		
Total - Transportation Facilities	$ 692,807		$307,540	$142,690	$242,577
Total Expenditures	$ 704,388	$11,581	$307,540	$142,690	$242,577
Provision for Replacements	17,482		322	17,160	
Provision for Depreciation	792,665				
Less:					
Deferred Operating Costs (C.Y. 1965)	32,159		32,159		
Deferred Operating Costs (C.Y. 1964)	-1,463	-2,419	956		
Charges to Construction	1,257			672	585
Total (Exhibit 2A)	$1,482,582	$14,000	$274,747	$159,178	$241,992

EXHIBIT 5A

STATE WATER RESOURCES DEVELOPMENT SYSTEM
DEPARTMENT OF WATER RESOURCES
STATEMENT OF SOURCE AND APPLICATION OF FUNDS
FOR THE CALENDAR YEAR ENDED DECEMBER 31, 1965

	Utility & Non-Utility Plant	Davis-Grunsky Program	Total
FUNDS PROVIDED			
Burns-Porter Act Appropriation			
Sales of General Obligation Bonds	$200,000,000		$200,000,000
California Water Fund	1,309,967	$10,849,480	12,159,447
Grants in Aid of Construction			
From Prior Appropriations (Adjustments)			
California Water Fund	-347,756		-347,756
General Fund	-78,601		-78,601
Interest on State Advances and Grants	7,508,228		7,508,228
Federal Flood Control Constributions	8,000,000		8,000,000
Local Project Assistance Fund			
Deferred Net Income	2,658,296		2,658,296
Advances for Delivery Structures	245,980		245,980
Interest Earnings on Loans		62,252	62,252
Provision for Depreciations	792,665		792,665
Provision for Replacements	17,481		17,481
Deferred Accounts Receivable	32,520		32,520
Increase in Deferred Credits (Net)	13,940	-5,967	7,973
Total	$220,152,720	$10,905,765	$231,058,485
FUNDS APPLIED			
Additions to Plant			
Reimbursable under Project Contracts			
Conservation (Including Oroville Power)	$ 74,024,871		$ 74,024,871
Transportation	64,314,264		64,314,264
Delivery Structures	245,980		245,980
Drainage	829,647		829,647
Interest During Construction	14,472,399		14,472,399
Unallocated	4,856,866		4,856,866
Nonreimbursable			
Recreation	6,818,220		6,818,220
Flood Control	7,667,068		7,667,068
Delta Facilities-Federal & Local Participation	666,944		666,944
Total	$173,896,259		$173,896,259
Davis-Grunsky Program			
Loans		$ 502,500	502,500
Grants		9,897,504	9,897,504
Administrative Expenses		449,476	449,476
Total		$10,849,480	$ 10,849,480
Less Repayments		5,900	5,900
Increases in			
Special Funds	$ 8,165,918		8,165,918
Net Current Assets	38,090,543	62,185	38,152,728
Total	$220,152,720	$10,905,765	$231,058,485

EXHIBIT 5A

STATE WATER RESOURCES DEVELOPMENT SYSTEM
DEPARTMENT OF WATER RESOURCES
STATEMENT OF SOURCE AND APPLICATION OF FUNDS
CUMULATIVE TO DECEMBER 31, 1965

EXHIBIT 5B

	Utility & Non-Utility Plant	Davis-Grunsky Program	Total
FUNDS PROVIDED			
Burns-Porter Act Appropriation			
Sales of General Obligation Bonds	$450,000,000		$450,000,000
California Water Fund	132,336,568	$18,604,560	150,941,128
Grants in Aid of Construction			
From Prior Appropriations			
California Water Fund	86,082,087	102,549	86,184,636
General Fund	11,269,082	54,487	11,323,569
Interest on State Advances and Grants	29,487,605		29,487,605
Federal Flood Control Contributions	34,990,000		34,990,000
Local Project Assistance Fund		1,262,008	1,262,008
Accumulated Deferred Net Income	8,157,897		8,157,897
Advances for Delivery Structures	759,086		759,086
Accumulated Interest Earnings on Loans		135,241	135,241
Reserve for Depreciation	1,140,819		1,140,819
Reserve for Replacements	44,908		44,908
Reserve for Deferred Accounts Receivable	32,520		32,520
Increase in Deferred Credits (Net)	221,194	-5,967	215,227
Total	$754,521,766	$20,152,878	$774,674,644
FUNDS APPLIED			
Additions to Plant			
Reimbursable Under Project Contracts			
Conservation (Including Oroville Power)	$276,168,102		$276,168,102
Transportation	167,318,307		167,318,307
Delivery Structures	759,086		759,086
Drainage	2,694,743		2,694,743
Interest During Construction	38,197,565		38,197,565
Accrued (Unallocated)	14,175,834		14,175,834
Nonreimbursable			
Recreation	20,641,622		20,641,622
Flood Control	42,010,174		42,010,174
Delta Facilities-Federal & Local Participation	2,536,053		2,536,053
Total	$564,501,486		$564,501,486
Davis-Grunsky Program			
Loans		$ 3,401,000	3,401,000
Grants		15,136,739	15,136,739
Administrative Expenses		1,485,865	1,485,865
Total		$20,023,604	$ 20,023,604
Less Repayments		12,550	12,550
Increases in			
Special Funds	$ 37,483,583		37,483,583
Net Current Assets	152,536,697	141,824	152,678,521
Total	$754,521,766	$20,152,878	$774,674,644

EXHIBIT 5B

STATE WATER RESOURCES DEVELOPMENT SYSTEM
DEPARTMENT OF WATER RESOURCES
DAVIS-GRUNSKY LOCAL PROJECT ASSISTANCE PROGRAM
BALANCE SHEET - DECEMBER 31, 1965

EXHIBIT 6

ASSETS

CURRENT ASSETS		
Cash	$ 136,544	
Loans Receivable, Current Portion	5,280	$ 141,824
LONG-TERM LOANS RECEIVABLE		
Loans Receivable	$ 3,389,697	
Less: Current Portion Included Above	5,280	3,384,417
NONREIMBURSABLE GRANTS FOR LOCAL PROJECTS AND ADMINISTRATIVE COSTS		16,622,604
		$20,148,845

LIABILITIES

CAPITALIZATION		
Long-Term Debt:		
Due to California Water Fund		
Burns-Porter Act Appropriation	$18,594,822	
Special Appropriation	1,250,000	$19,844,822
Due to California Water Resources Development Bond Fund		9,738
Accumulated Interest Earnings on Loans		135,241
State's Contribution From Prior Appropriations		159,044
		$20,148,845

EXHIBIT 6

State of California
The Resources Agency
DEPARTMENT OF WATER RESOURCES

STATE WATER RESOURCES DEVELOPMENT SYSTEM
Notes to Financial Statements
December 31, 1965

NOTE A

UTILITY AND NONUTILITY PLANT

Utility Plant includes interest during construction at 3.573% which is the project interest rate after reflecting the sale of Series E Bonds. Depreciation of Plant in Service is being recorded which will fully depreciate the facilities, including land, over their estimated service lives.

Capital costs included in Utility Plant and Nonutility Plant for the period from 1952 through 1960 are subject to adjustments pending legal, policy and engineering review of these costs.

Costs allocated between Utility Plant and Nonutility Plant are subject to adjustments in future years until the allocations of costs among all purposes and for all facilities of the project have been completed.

NOTE B

SPECIAL FUNDS AND CURRENT ASSETS

Special funds and current assets are subject to certain applications according to their source and purpose. Current assets consist of funds planned for expenditure during 1966. Special funds include those funds to be expended after 1966. The amounts shown in the Balance Sheet at December 31, 1965, consist of:

	Cash	Investments*	Accounts Receivable	Total
CURRENT ASSETS				
Bond Fund:				
Revenue	$ 784,163	$ 508,557	$ 22,001	$ 1,314,721
Construction	567,957	166,841,443	6,506,434	173,915,834
CVWP Funds:				
Construction	32,520	114,700		147,220
Total	$1,384,640	$167,464,700	$6,528,435	$175,377,775
SPECIAL FUNDS				
Bond Fund:				
Replacements	$ 43,803		$ 1,105	$ 44,908
CVWP Funds:				
Construction	2,694	$ 36,735,300	670,540	37,408,534
Revenue	4,618	25,000	523	30,141
Total	$ 51,115	$ 36,760,300	$ 672,168	$ 37,483,583
TOTAL	$1,435,755	$204,225,000	$7,200,603	$212,861,358

*Investments are made through the State's Surplus Money Investment Fund for the account of each of the funds listed.

NOTE B

SPECIAL FUNDS AND CURRENT ASSETS (cont.)

Planned Application of Current Assets and Special Funds:

	Construction	Interest on Bonds	Replacements	Total
CURRENT ASSETS				
Bond Fund:				
Revenue		$ 1,314,721		$ 1,314,721
Construction	$173,915,834			173,915,834
CVWP Funds:				
Construction	147,220			147,220
Total	$174,063,054	$ 1,314,721		$175,377,775
SPECIAL FUNDS				
Bond Fund:				
Replacements			$44,908	$ 44,908
CVWP Funds:				
Construction		$37,408,534		37,408,534
Revenue		30,141		30,141
Total		$37,438,675	$44,908	$ 37,483,583
TOTAL	$174,063,054	$38,753,396	$44,908	$212,861,358

Sources, purposes and restrictions applicable to the funds are as follows:

Bond Fund-Revenue Account: Payments, other than advance payments for replacements and delivery structures, from contracting agencies and other income received are deposited in this fund. Expenditures from this fund are subject to the following priorities under the Burns-Porter Act:

1. Operation and Maintenance Costs
2. Transfers to General Fund for Principal and Interest on General Obligation Bonds
3. Repayments to California Water Fund for Advances (See Note D)
4. Construction of Additional Facilities

Bond Fund-Construction Account: Proceeds from sales of general obligation bonds, excluding premium and accrued interest received on such sales which are applied toward interest payments, are deposited in this account. Expenditures for construction of the State Water Resources Development System are made in part from this account.

Central Valley Water Project Construction Fund: Federal Contributions received as reimbursements for the cost of flood control facilities or open-space recreation lands, advance payments for delivery structures, and proceeds from the sales of improvements are deposited in this fund. Expenditures for construction or interest on general obligation bonds will be made in part from this fund.

NOTE B

SPECIAL FUNDS AND CURRENT ASSETS (cont.)

Bond Fund-Replacement Account: Payments received for replacement costs are deposited in this fund. Expenditures are limited to the acquisition of replacements.

Central Valley Water Project Revenue Fund: Revenue from sales of Oroville Power will be deposited in this fund. Property rental income accrued prior to the effective date of the Bond Act, November 8, 1960, was deposited in this fund. Expenditures for interest on revenue bonds and Oroville Power operating expenses will be made from this fund.

NOTE C

BONDS

The Burns-Porter Act authorized the issue of State General Obligation Bonds in the amount of $1,750,000,000 for the State Water Resources Development System which included $130,000,000 for financing of local projects as defined in the Davis-Grunsky Act. The use of the continuing appropriation of the California Water Fund pursuant to the Burns-Porter Act supplements the bond authorization. As California Water Fund money is used for construction of the State Water Facilities as defined in the Burns-Porter Act in lieu of bond proceeds, an equal amount of bond authorization is set aside to be used only for the construction of facilities additional to the State Water Facilities.

As a result of bonds issued and California Water Fund expenditures, the status of bond authorization, by purpose, as of December 31, 1965, is summarized below:

	Water Facilities	Davis-Grunsky Projects	Additional Facilities	Total
Bonds Authorized	$1,620,000,000	$130,000,000		$1,750,000,000
Less:				
Bonds Issued	448,821,375		$ 1,178,625	450,000,000
Calif. Water Fund Advances	132,336,568	18,604,560	-150,941,128	
Balance Available	$1,038,842,057	$111,395,440	$149,762,503	$1,300,000,000

NOTE C

BONDS (cont.)

The General Obligation Bonds outstanding as of December 31, 1965, with their net interest rates and maturity dates are shown below:

Date Issued	Series	Amount	Net Interest Rates	Maturity Dates
3/1/64	A	$100,000,000	3.520%	9/1/1973-2013
5/1/64	B	50,000,000	3.533%	5/1/1974-2014
11/1/64	C	100,000,000	3.585%	11/1/1974-2014
3/1/65	D	100,000,000	3.499%	3/1/1975-2015
12/1/65	E	100,000,000	3.717%	12/1/1975-2015
	Total	$450,000,000	3.573%	

NOTE D

ADVANCES FROM CALIFORNIA WATER FUND

Advances from California Water Fund represent expenditures financed from this fund pursuant to the Burns-Porter Act Appropriation which excludes amounts covered by prior appropriations. Such advances will be repaid from the third priority of system revenues, as shown in Note B. Repayments are not expected to begin until the latter part of the presently programmed construction period.

NOTE E

GRANTS IN AID OF CONSTRUCTION

Grants in aid of construction consist of the following:

1. Construction expenditures financed from the California Water Fund and General Fund from special appropriations made prior to the effective date of the Burns-Porter Act (November 8, 1960).

2. Interest computed on State advances and grants, consisting of the reimbursable portion of (1) above and interest computed on advances from the California Water Fund, as described in Note D.

3. Federal flood control contributions received.

NOTE F

ACCUMULATED DEFERRED NET INCOME

The rate structure for the State Water Project generally provides for reimbursement of project costs, with interest, by beneficiaries of the various project purposes. Project revenues, therefore, will ultimately equal project costs. Due to provisions for recovering such costs, there will normally be differences

NOTE F

ACCUMULATED DEFERRED NET INCOME (cont.)

between revenues and costs at any one time during the life of the project; this amount is designated in these financial statements as "Accumulated Deferred Net Income."

NOTE G

PAYMENTS BY PROJECT CONTRACTORS

The State has entered into long-term contracts with thirty-one water service agencies for a water supply. These contracts provide for payments by the agencies calculated to reimburse the State over the project repayment period for all reimbursable capital costs with interest thereon. Annual operation and maintenance costs of the system are recovered generally as incurred; annual charges also include provision for future plant replacements.

A summary of reimbursable capital costs incurred including interest through December 31, 1965, less payments thereon as of December 31, 1965, is presented below:

	Capital Costs	Interest	Total
Reimbursable Costs			
Conservation (Including Oroville Power)	$276,168,102	$26,065,483	$302,233,585
Transportation	167,318,307	11,910,123	179,228,430
Delivery Structures	759,086		759,086
Drainage	2,694,743	221,959	2,916,702
Total	$446,940,238	$38,197,565	$485,137,803
Less: Payments from Water Contractors			
Transportation	$ 1,180,063	$ 5,476,312	$ 6,656,375
Delivery Structures	759,086		759,086
Total Payments	$ 1,939,149	$ 5,476,312	$ 7,415,461
Balance	$445,001,089	$32,721,253	$477,722,342

In addition to the above, payments received in advance of due dates totaled $198,027 for transportation and $32,344 for delivery structures.

NOTE H

CONTRACT COMMITMENTS

The Department of Water Resources has entered into contract commitments in connection with construction of the State Water Facilities, of which the uncompleted portion was approximately $259,000,000 as of December 31, 1965. In addition, the Department is committed to pay 55% of the San Luis Joint-Use Facilities which are under construction by the Federal Bureau of Reclamation. The State's share of these facilities is estimated at $169,000,000 of which $69,000,000 was uncompleted as of December 31, 1965.

APPENDIX B

DISTRIBUTION OF COSTS OF THE PROJECT TRANSPORTATION FACILITIES AMONG WATER SUPPLY CONTRACTORS

Introduction

Article 29 of the "Standard Provisions for Water Supply Contract", in describing the annual statements of charges, provides in part that:

> ". . .All such statements shall be accompanied by the latest revised copies of the document amendatory to Article 22 and of Tables B, C, D, E, F, and G of this contract, together with such other data and computations used by the State in determining the amounts of the above charges as the State deems appropriate."

Compliance with this article requires a comprehensive annual review of the water supply aspects of the Project as the basis for the substantiating data. This annual reanalysis is provided for in Article 28 of the standard contract provisions with regard to the project transportation facilities and in Article 22(f) for the project conservation facilities.

This appendix constitutes such an analysis for the purpose of substantiating estimated water charges for 1967. It reflects the State Water Project described in the main text of this bulletin.

Scope of Analysis

The analysis described herein pertains to the project transportation facilities and not to the project conservation facilities. It is contemplated that deliveries of project water, to which the Delta Water Charge applies, will commence in 1967. In accordance with Article 22(f) of the standard contract provisions, the unit Delta Water Charge is fixed at $3.50 per acre-foot through December 31, 1969. Therefore, a document amendatory to Article 22 is not required until July 1, 1969. Based upon the estimated costs of the project conservation facilities presented in the main text of this bulletin, and upon the computations summarized in Chapter XI thereof, it is indicated that the unit Delta Water Charge would be adjusted upwards to $6.39 per acre-foot, effective January 1, 1970. This rate would apply to all annual entitlements to project water for the remainder of the project repayment period, under current projections.

The analysis in this appendix reflects the allocations of the costs of multiple-purpose features of the project transportation facilities among project purposes developed as described

in the main text of this bulletin on the basis of Department of Water Resources' Bulletin No. 153-66, "Allocations of Costs Among Purposes of the California State Water Project", dated January 1966. These allocations involve the capital and minimum operation, maintenance, power and replacement components. In this appendix, only the costs of these two components allocated to the purpose of water supply are analyzed.

The main text does not allocate among project purposes costs included in the variable operation and maintenance category. Therefore, this appendix considers the total costs in this category for each reach. These costs are allocated among purposes based upon the annual amounts of water conveyed through each electro-mechanical plant and delivered for each respective project purpose, in accordance with the criteria set forth on page 34 of Bulletin No. 153-66.

The analysis herein does not cover the adjustments, for overpayments or underpayments by contractors, required by Article 28 of the standard contract provisions. These adjustments must be determined for each of the contractors individually. Consequently, they are set forth in separate attachments to the statements of charges for each contractor.

This appendix contains the following information concerning the project transportation facilities, reflecting conditions as of about April 1, 1966:

1. The estimated capacity and maximum annual conveyance capability of each aqueduct reach and the proportionate use thereof by each water supply contractor.

2. The annual conveyance through each aqueduct reach during the period annual entitlements are building up to their maxima and the proportionate share thereof for each water supply contractor.

3. The actual and estimated annual expenditures allocated to the project purpose of water supply for each aqueduct reach and for each category of cost.

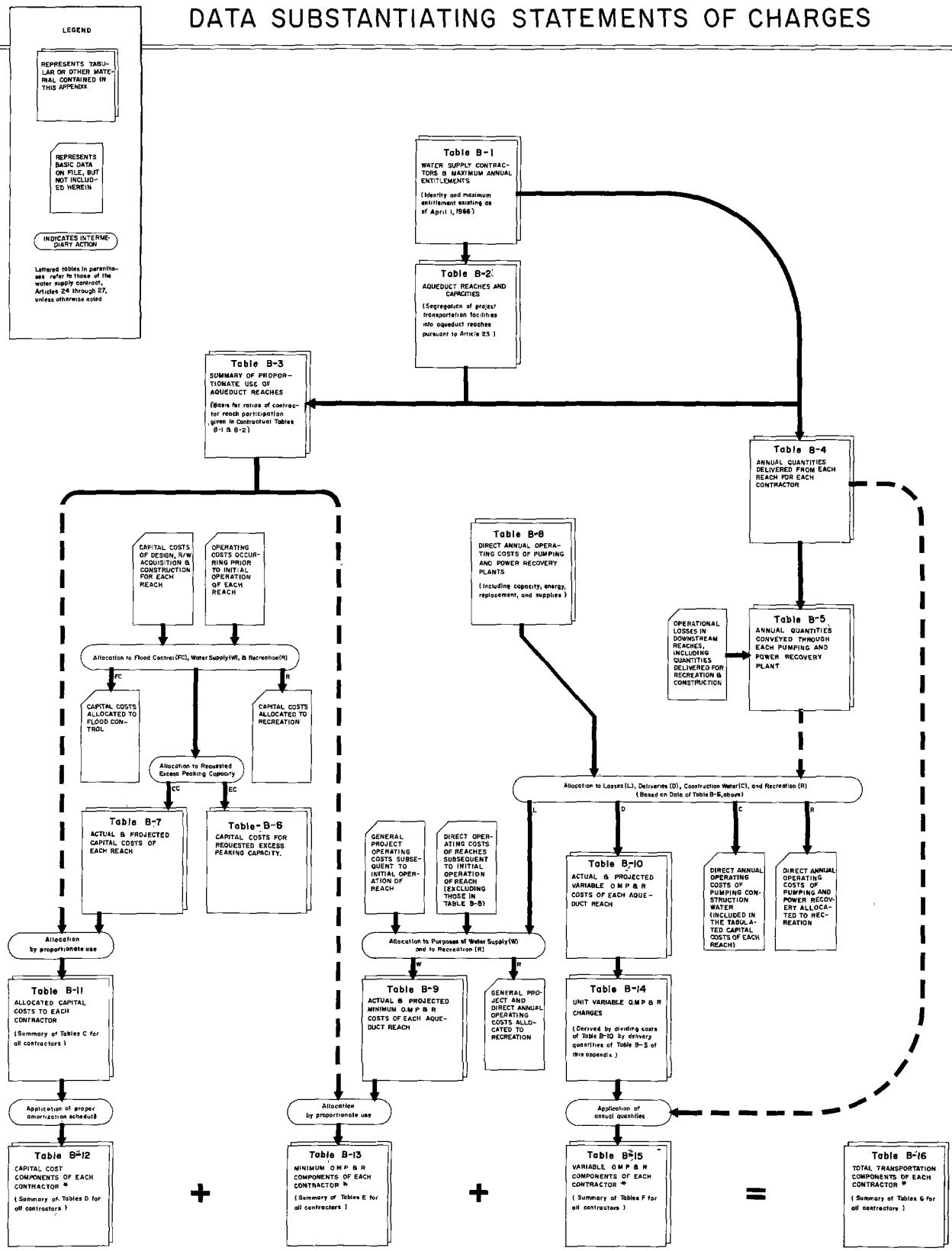
4. The proportionate share of such costs to be borne by each contractor.

5. The schedules of annual payments by each contractor over the entire project repayment period based on the above data, without regard to prior payments made.

The basic tabular material contained in this appendix, and the inter-relationships among the various data contained in the tables, are schematically portrayed in Figure B-1. All tables are included at the end of this appendix.

Figure B-1

SCHEMATIC RELATIONSHIP OF DATA SUBSTANTIATING STATEMENTS OF CHARGES



*Unadjusted for prior payments, if any

Basis for Maximum Use of Facilities

The major items considered in the determination of maximum use of the project transportation facilities by each water supply contractor include:

1. The maximum annual entitlements of each contractor.

2. The separation of the facilities into aqueduct reaches.

3. Operational considerations, including the use of aqueduct reaches for project purposes other than water supply, allowances to compensate for water losses and aqueduct outages incidental to operation, and the use of reservoir storage in conjunction with aqueduct capacity in meeting the delivery requirements provided in the water supply contracts.

4. The maximum annual entitlements diverted from or conveyed through each aqueduct reach for each contractor, together with (a) appropriate use of aqueduct and reservoir capacities to provide the specified delivery capabilities, and (b) an appropriate share of allowances for the operational considerations in (3) above.

Maximum Annual Entitlements

A summary of the maximum annual entitlements for each water supply contractor, as of April 1, 1966, is shown on Table B-1. The corresponding annual entitlements for each contractor are discussed in Chapter VI, "Entitlements to Project Water". These maximum annual entitlements also include those under the contracts currently being negotiated with the Big Bear Municipal Water District (4,600 acre-feet) and Kings County (4,000 acre-feet), so as to aggregate the minimum project yield of 4,230,000 acre-feet.

Aqueduct Reaches

The designation of aqueduct reaches for purposes of the analyses in this bulletin are presented in Table B-2 and are generally shown on Table B-3. The differences between these reaches and those shown in Articles 23 of some of the contracts,

reflect modifications required under subsequently executed contracts and changes in the locations of major delivery structures requested pursuant to Article 10(a) of the water supply contracts. Reach nomenclature has been revised in certain instances to describe reach termini more accurately and to reflect route modifications under continuing engineering studies.

Reach termini have been selected as those points at which the physical use of project transportation facilities significantly changes for any of the contractors. These points are generally at the locations of (1) aqueduct branch junctions, (2) aqueduct regulatory reservoirs, and (3) major delivery structures for contractors.

Operational Considerations

Table B-2 also identifies the contractors to be served directly from each reach, together with the maximum annual entitlements and the maximum monthly delivery capabilities so provided for each contractor; summarizes the total capacity provided in the reach for all water supply contractors; indicates the additional capacity to be included in each reach for project purposes other than water supply and for practical design considerations; and, concludes with the total capacity to be included in each reach.

The additional capacity provided in each reach of the project transportation facilities, over-and-above that required for all water supply contractors, is made up of the following components:

1. Capacity required to convey water consumed in specific recreation and fish and wildlife enhancement developments located adjacent to the project transportation facilities. Recreation and fish and wildlife enhancement are the only project purposes, other than water supply, considered in this analysis. The following reach capacities have been provided for the conveyance of water for specific recreation and fish and wildlife enhancement developments adjacent to the California Aqueduct:

	(cubic feet per second)
Delta to Tupman Road	74
Tupman Road to Junction, West Branch	28
Junction, West Branch to Pearblossom Pumping Plant	21
Pearblossom Pumping Plant to Cedar Springs reservoir	15
Cedar Springs reservoir to Perris reservoir	8
Junction, West Branch to Castaic reservoir	7

2. Capacity included due to practial design considerations. The total capacities of California Aqueduct reaches south of Kettleman City have been increased generally above the theoretical required capacity to the nearest multiple of 50 cubic feet per second upstream from the junction of the West Branch, and of 20 cubic feet per second downstream from that point. This additional allowance recognizes the practical limitations in estimating accurately coefficients and efficiencies inherently involved in the design procedure.

The total reach capacities developed in Table B-2 for the California Aqueduct conform with those presented in the final edition of the Department's report entitled, "Design Capacities of the California Aqueduct-Kettleman City to: 1. Junction, East and West Branches, 2. Devil's Den Pumping Plant", dated April 1965; and in the preliminary edition of the Department's report entitled, "Design Capacities of the California Aqueduct-Junction, West Branch to: 1. Perris Reservoir. 2. Castaic Reservoir", dated December 1965.

The total capacities provided in each reach for water supply contractors include those contemplated for agencies with which the State has not executed contracts as of this date; include sufficient capacity to compensate for required operational losses, aqueduct outages, and downstream regulation; and also include capacity requested by certain contractors which would permit maximum monthly deliveries in excess of those provided under the standard contract provisions. The capacity so provided in each reach for each contractor is shown in detail in Table B-3. Each of these considerations is further described in the following sections.

Future Contractors. In addition to the Big Bear Municipal Water District and Kings County, which agencies are currently negotiating for a project water supply, three instances of excess capacity are included in this analysis for the purpose of making project water available, in the future, to agencies which currently do not have a contract with the State. These instances occur:

1. In the reaches of the South Bay Aqueduct, to and including Del Valle reservoir, where an agency could obtain a supply of 22,000 acre-feet annually, and in varying amounts in reaches downstream therefrom.

2. In the reaches of the California Aqueduct, from the Delta to the Tehachpi Pumping Plant, where capacity has been provided in final designs to make available 35,000 acre-feet annually to a possible nuclear powerplant.

3. In Cedar Springs reservoir, where about 7,100 acre-feet of the total usable capacity of the reservoir considered in this analysis, 177,000 acre-feet, would not be required for the regulation of annual entitlements considered herein.

The costs of the project transportation facilities associated with the above instances are determined under Article 24(b)(2) of the standard contract provisions.

Capacity Provided for Delivery of Entitlements. Under the general plan of project operation, annual entitlements destined for delivery in the respective project service areas will be conveyed through the aqueduct reaches within the San Joaquin Valley on the following bases:

1. For contractors within the San Joaquin Valley, on a varied monthly schedule corresponding to the monthly demand for project water.

2. For contractors within the South Bay, Central Coastal, and Southern California areas, on a uniform flow, regulated to the monthly demand in storage capacity located within the respective service areas.

Compensating Capacity for Operational Losses. The additional capacity provided in each aqueduct reach to compensate for water losses due to evaporation, leakage, seepage, or other causes also includes the additional capacity required to compensate for losses occurring in downstream reaches. The estimated magnitude of these operational losses are described in Chapter VII, "Project Water Yield".

Compensating Capacity for Scheduled Outages. The additional capacity for scheduled outages for purposes of necessary investigation, inspection, maintenance, repair, and replacement is provided only in those reaches wherein the project entitlements will be conveyed at uniform flow to contractors in the Central Coastal and Southern California areas, in the amount of seven and one-half percent ($7\frac{1}{2}\%$) of such uniform flow. Emergency storage in these two service areas could sustain the use of project water during outages and this storage could be replenished through the additional conveyance capacity provided. However, this type of additional capacity would not benefit contractors

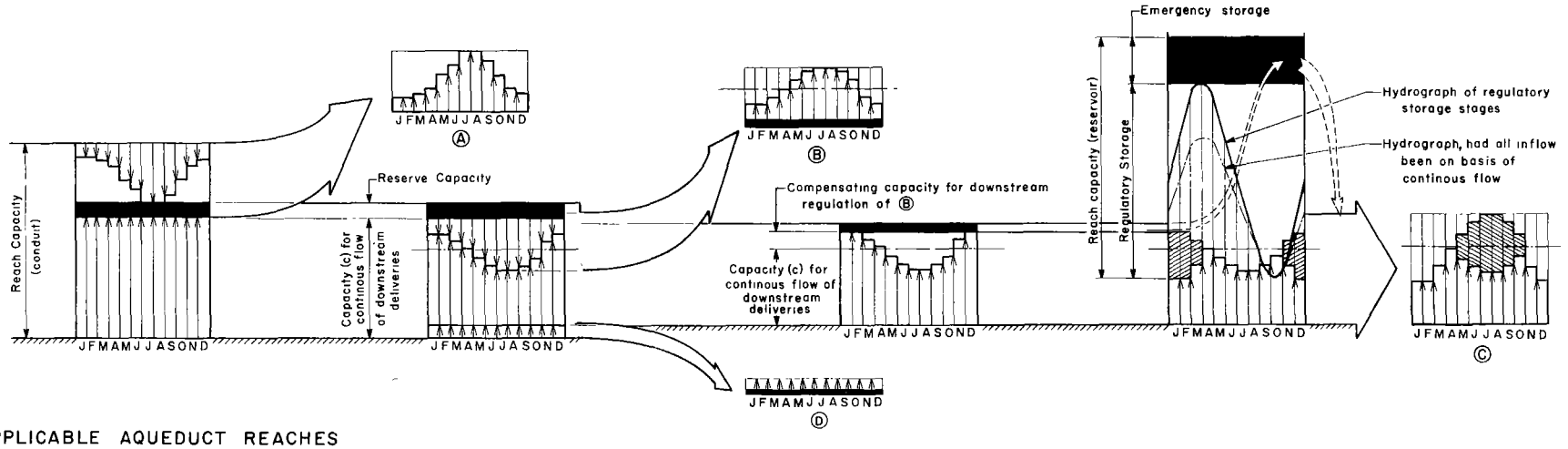
located in the South Bay area and in the San Joaquin Valley, since emergency storage capacity is not associated with the use of project water therein.

Compensating Capacity for Downstream Regulation. The situation exists in the South Bay and Southern California areas whereby a contractor's point of delivery from the aqueduct may be located upstream from regulation reservoirs. The varied monthly quantities desired by the contractor may be physically obtained from the uniform flow in the aqueduct, provided that the total flow is at least equal to the contractor's desired maximum rate of delivery. At such times, the contractor would be permitted to appropriate all, or a portion of, the uniform flow destined for downstream contractors, and the demands of downstream contractors would be simultaneously met by downstream reservoir releases. The appropriated flow would be returned during months of minimum delivery to the contractor, and would be conveyed to the downstream reservoir in additional capacity provided for this purpose.

Figure B-2 graphically illustrates the use of reservoir storage in conjunction with aqueduct capacity to provide maximum delivery rates, and the extent that additional capacity for scheduled outages (reserve capacity) is included in the project transportation facilities.

Capacity Provided for Requested Excess Peaking. Pursuant to Amendment No. 2 to its contract, The Metropolitan Water District of Southern California has requested excess capacity in the amount of 238 cubic feet per second in the reaches from Kettleman City to the junction of the West Branch and 809 cubic feet per second in the reaches of the West Branch, exclusive of reservoirs. It is assumed herein that the District will not make a future request which would extend the 238 cubic feet per second of excess capacity to the reaches of the project transportation facilities upstream from Kettleman City. The analysis contained in last year's bulletin was based upon the assumption that the District would eventually make such a request.

At the time this analysis was initiated, the requests by the Antelope Valley-East Kern Water Agency, for delivery capabilities to be provided in aqueduct reaches upstream from its delivery structures, would have resulted in 40 cubic feet per second of excess capacity for the Agency. Such capacity is herein assumed to be located in the first reach of the West Branch only. The Agency has since revised its request, which would reduce the amount of excess to five cubic feet per second.



APPLICABLE AQUEDUCT REACHES

REACHES OF THE CALIFORNIA AQUEDUCT THROUGH THE SAN JOAQUIN VALLEY AND NORTH BAY AQUEDUCT.	INTER-BASIN REACHES, SUCH AS THOSE IMMEDIATELY BELOW THE TEHACHAPI, SOUTH BAY,* & DEVIL'S DEN PUMPING PLANTS.	SUBSEQUENT REACHES ABOVE AQUEDUCT REGULATION RESERVOIRS.	REGULATION RESERVOIRS, SUCH AS CEDAR SPRINGS, PYRAMID, CASTAIC, DEL VALLE, AND PERRIS.	SUBSEQUENT REACHES BELOW AQUEDUCT REGULATION RESERVOIRS.

TYPE OF DELIVERY	APPLICABLE CONTRACTORS
Ⓐ	ALL SAN JOAQUIN VALLEY & NORTH BAY AQUEDUCT CONTRACTORS
Ⓑ	ALAMEDA COUNTY F. C. & W. C. D. (a portion of) * COACHELLA VALLEY COUNTY W. D. DESERT WATER AGENCY
Ⓒ	ALAMEDA COUNTY W. D * ALAMEDA COUNTY F. C & W. C. D. (a portion of)* CRESTLINE-LAKE ARROWHEAD W. A. SAN BERNARDINO VALLEY M. W. D. SAN GABRIEL VALLEY M. W D. SAN GORGONIO PASS W. A. SANTA CLARA COUNTY F C & W. C. D * THE METROPOLITAN W. D OF S. C. UPPER SANTA CLARA VALLEY W. A. VENTURA COUNTY F. C. D.
Ⓓ	ANTELOPE VALLEY, EAST KERN W. A LITTLEROCK CREEK I. D. MOJAVE WATER AGENCY PALMDALE I. D. SAN LUIS OBISPO COUNTY F C. & W. C. D. SANTA BARBARA COUNTY F. C. & W. C D.

WATER QUANTITY LEGEND

- MAXIMUM ANNUAL ENTITLEMENT SHOWN BY APPROXIMATE MONTHLY DISTRIBUTION AS REACH CONVEYANCE OR AS TURNOUT DELIVERY.
- DELIVERY CAPABILITY OF RESERVE CAPACITY, TO REPLENISH EMERGENCY STORAGE IN THE AQUEDUCT, OR IN THE CONTRACTOR'S DISTRIBUTION SYSTEM
- WATER QUANTITIES ENTERING REGULATORY STORAGE
- WATER QUANTITIES RELEASED FROM REGULATORY STORAGE

Note Water quantities lost due to evaporation and seepage, and additional capacity to compensate for such losses, are not presented. However, their characteristics would correspond with delivery types Ⓐ, Ⓑ, and Ⓒ for the appropriate reaches

* With the exception that emergency storage is not considered for the reaches of the South Bay Aqueduct.

SCHEMATIC DIAGRAM

OPERATIONAL CONSIDERATIONS ASSOCIATED WITH PROPORTIONATE USE OF PROJECT TRANSPORTATION FACILITIES

FIGURE B-2

Maximum Use of Aqueduct Reaches by Contractors

The data and computations determining the proportionate use by each water supply contractor under full project development of each aqueduct reach are summarized in Table B-3.

The proportionate use of certain aqueduct reaches for distributing capital costs among contractors are different from those for distributing minimum operation, maintenance, power, and replacement costs. These dual allocation criteria pertain to those reaches in which requested excess capacity will be included.

Pursuant to Article 24(d) of the standard contract provisions, the capital costs borne by a contractor for requested excess capacity will be the additional capital costs of the aqueduct reaches caused by including such capacity, commonly referred to as the "incremental costs". Therefore, such capacities are excluded from capacities used to determine the proportionate use of the various reaches by the contractors. In other words, the inclusion of excess capacity does not affect the allocation of capital costs among water supply contractors other than those agencies requesting excess capacity.

Amendment No. 2 of the Metropolitan Water District's contract provides that all of the minimum operation, maintenance, power, and replacement costs of aqueduct reaches containing requested excess capacity shall be allocated among contractors by the proportionate use of facilities method specified in Article 25 of the contracts, based upon total reach capacities, including such excess capacity, and upon the maximum annual entitlements conveyed thereby.

The maximum use of aqueduct reaches for distributing capital costs among contractors is shown in Column 8 of Table B-3, and for distributing minimum operation, maintenance, power, and replacement costs, in Column 12; the latter being increased by the amount of requested excess capacity included in each respective reach.

Water losses incidental to aqueduct operation occurring within each reach (Column 5) have been prorated among users of the reach. This has been done, both with regard to the maximum annual quantity of the loss and to the reach capacity required to compensate for the loss, in proportion to the quantities diverted from or flowing out of the reach for each contractor. Therefore, the computations to account for losses were initiated at the farthest downstream reach in the aqueduct system and were

performed progressively upstream. This was done in order that the true gross requirements of each contractor, for maximum water quantities and maximum aqueduct capacities, might be reflected in the proportionate use factors for each reach of the project transportaion facilities constructed to serve that contractor.

Reserve capacity to compensate for scheduled aqueduct outages (Column 6), and the maximum annual quantity to be conveyed through such capacity, are likewise associated with the specific requirements for each water supply contractor and are reflected in the contractor's gross requirements in upstream reaches.

Basis for Variable Annual Use of Facilities

The annual water quantities conveyed through each electro-mechanical plant of the project transportation facilities form the basis for cost allocations involving the annual use of facilities, including:

1. The allocations of the annual operating costs of electro-mechanical plants (exclusive of salaries of operation and maintenance personnel) between those associated with the conveyance of operational losses (included in the minimum operation and maintenance category) and those associated with the conveyance of water delivered (included in the variable operation and maintenance category).

2. The allocation of operating costs included in the variable category among project purposes.

3. The distribution of the variable operating costs allocated to water supply among water supply contractors and, in certain instances, to the capital costs of facilities.

The annual water quantities estimated to be conveyed through the project transportation facilities include actual deliveries to, and future entitlements for, water supply contractors; deliveries to specific recreation and enhancement developments adjacent to the facilities; water losses incidental to the operation of facilities; and water utilized for construction purposes. These items are discussed in Chapter VII, "Project Yield".

Annual Reach Deliveries for Each Water Supply Contractor

The annual deliveries at each major delivery structure are used to estimate charges under the variable operation, maintenance, power and replacement components for future years of the project repayment period. These estimated charges are set forth in Tables F of the water supply contracts in compliance with Article 26(c) of the contracts. Long-term requests by the contractors for the annual quantities to be delivered through each turnout are not specifically required by the standard provisions. It has therefore been necessary for the Department to assume the annual quantities to be desired at each location for those contractors served by more than one such structure. Table B-4 presents these assumed annual deliveries for each contractor from each aqueduct reach.

Table B-5 presents a summary of the annual quantities conveyed through each pumping or power recovery plant of the project transportation facilities. The values shown are divided into the following four categories with respect to usage in downstream reaches:

1. Water utilized for construction purposes, including the initial filling of reservoir storage.

2. Water delivered to water supply contractors.

3. Water delivered to recreation and fish and wildlife enhancement developments.

4. Water losses incidental to the operation of downstream facilities.

The deliveries to water supply contractors conveyed through each plant represent the cumulative values of Table B-4 proceeding upstream from the end of each aqueduct or branch of an aqueduct.

Reach Costs by Category

Chapter X, "Project Costs", develops the actual and projected costs of the project transportation facilities allocated to water supply, which are included in State Utility Programs. Tables 17 and 18 summarize these annual capital and operating costs, respectively. This section describes the distribution of these costs among aqueduct reaches and the further subdivision of annual operating costs into the minimum and variable categories.

Capital Costs

The capital costs of the project transportation facilities which are reimbursable by water supply contractors are of two types: (1) those associated with requested excess capacity and borne by the contractors requesting such capacity; and, (2) those proportionately distributed among all water supply contractors.

The estimated annual amounts of capital costs allocated to excess capacity, together with the gross annual amounts of advances required, are developed in Table B-6 for each aqueduct reach between Kettleman City and Castaic reservoir.

The remaining annual capital costs which are proportionately borne by all water supply contractors are shown for each aqueduct reach in Table B-7.

Annual Operation and Maintenance Costs

The annual operation and maintenance costs of project transportation facilities are divided into two categories:

1. Minimum Costs, including those items which are incurred irrespective of the actual amount of water delivered during a particular year.

2. Variable Costs, including those items which vary with, or are dependent upon, annual water deliveries.

The annual operating costs of pumping and power recovery plants constitute the major portion of the annual operation and maintenance costs of the project transportation facilities and warrant special discussion. Furthermore, these particular costs are allocated annually between the minimum and variable categories. Estimated direct operating costs associated with pumping and power recovery plants, exclusive of salaries of operating and maintenance personnel, are presented in Table B-8. These costs are allocated between the minimum and variable categories in proportion to annual amounts conveyed through each plant for downstream losses or deliveries, respectively, as shown by the data in Table B-5.

The costs included in the minimum operation and maintenance category, which are allocated to water supply, are summarized in Table B-9 for each reach of the project transportation facilities. In addition to the operating costs associated with the conveyance of losses, these costs include:

1. Salaries of operation and maintenance personnel associated with pumping and power recovery plants.

2. Direct annual operation and maintenance costs of the remaining features of reaches of the project transportation facilities.

3. General project operation and maintenance costs, allocated among reaches in proportion to the annual values of (1) and (2) above under conditions of full project utilization.

The allocation percentages applicable to the project purpose of water supply, developed in Bulletin No. 153-66, have been applied to the totals of the above-itemized costs in determining the values of Table B-9.

The total operation and maintenance costs included in the variable category for all project purposes are shown by aqueduct reach in Table B-10.

Costs Allocated to Water Supply Contractors

The accumulation by category, of the annual reach costs allocated to each contractor forms the basis for the annual components of the Transportation Charge for the respective contractors.

Allocated Capital Costs

Table B-11 summarizes for each water supply contracting agency its total annual share of reach capital costs, as presented in Table B-7, which is allocated by the average proportionate use of facilities ratios for each reach, as presented in Table B-3.

Capital Cost Components

Table B-12 presents the repayment schedule for each water supply contractor corresponding to the allocated capital costs of Table B-11.

Criteria as to the types of repayment schedules used for each water supply contractor, under the payment provisions of its contract, are summarized in the following tabulation:

Water supply contractor	Schedule type no.	Water supply contractor	Schedule type no.
Alameda County Flood Control and Water Conservation District, Zone 7	2	Mojave Water Agency	4
Alameda County Water District	1	Napa County Flood Control and Water Conservation District	7
Antelope Valley-East Kern Water Agency	1	Oak Flat Water District	10
Big Bear Municipal Water District (assumed)	8	Palmdale Irrigation District	4
County of Butte	11	Plumas County Flood Control and Water Conservation District	11
City of Yuba City	11	San Bernardino Valley Municipal Water District	1
Coachella Valley County Water District	4	San Gabriel Valley Municipal Water District	3
Crestline-Lake Arrowhead Water Agency	4	San Gorgonio Pass Water Agency	3
Desert Water Agency	3	San Luis Obispo County Flood Control and Water Conservation District	5
Devil's Den Water District	10	Santa Barbara County Flood Control and Water Conservation District	5
Dudley Ridge Water District	10	Santa Clara County Flood Control and Water District	1
Empire West Side Irrigation District	10	Solano County Flood Control and Water Conservation District	9
Hacienda Water District	10	Tulare Lake Basin Water Storage District	10
Kern County Water Agency:		Upper Santa Clara Valley Water Agency	4
Agricultural Use	10	Ventura County Flood Control District	4
Municipal Use	6		
Kings County (assumed)	8		
Littlerock Creek Irrigation District	4		
The Metropolitan Water District of Southern California	1		

Type no.	Description
1.	Repayment of allocated capital costs in 50 equal annual installments, with initial payment due in calendar year 1963.
2.	Repayment of allocated capital costs in 50 equal annual installments, with initial payment due in calendar year 1963 and with principal payments on each annual capital cost prior to 1971 delayed until calendar year 1972, except payments for 1963.
3.	Repayment of allocated capital costs in 50 equal annual installments, with initial payment due in calendar year 1963 but deferred and added to the 1964 payment with accrued interest.
4.	Repayment of allocated capital costs in 50 equal annual installments, with initial payment due in calendar year 1964.
5.	Repayment of allocated capital costs in 50 equal annual installments, with initial payment due in calendar year 1964, except that all principal and interest payments for costs of the "Coastal Stub" are assumed deferred until 1976.
6.	Repayment of allocated capital costs in 50 equal annual installments, with initial payment due in calendar year 1965.
7.	Repayment of allocated capital costs in 50 equal annual installments, with initial payment due in calendar year 1966.
8.	Repayment of allocated capital costs in 50 equal annual installments, with initial payment due in calendar year 1967.
9.	Repayment of allocated capital costs in 50 equal annual installments, with initial payment due in calendar year 1969.
10.	Repayment of allocated capital costs on the basis of an equivalent unit rate applied to annual entitlements within the project repayment period.
11.	Payments on the Delta Water Charge only. (Plumas County Flood Control and Water Conservation District may eventually be assessed a Transportation Charge.)

The project interest rate derived in Chapter XI, "Project Revenues", is 3.573 percent per annum. The annual payments in Table B-12 reflect the application of this rate throughout the project repayment period.

Minimum Operation, Maintenance, Power and Replacement Components

Table B-13 summarizes, for each water supply contractor, its annual share of total minimum operation and maintenance costs. These values are derived from data presented in Table B-9 by application of the average proportionate use of facilities ratios for each reach presented in Table B-3.

Variable Operation, Maintenance, Power and Replacement Components

Article 26(a) of the standard contract provisions indicates the manner in which the variable operation and maintenance component is to be computed for each contractor. This is as follows:

1. An annual unit charge per acre-foot of deliveries from or through each reach is determined. This is to recover the estimated variable operation, maintenance, power and replacement costs for each year applicable to each reach.

2. The total charge to any contractor for a given reach is obtained by multiplying the unit charge associated with that reach by the quantity of water delivered from or through the reach to the contractor.

The annual unit charges referred to in (1) above are presented in Table B-14. Data in that table have been computed by dividing the annual reach costs in the variable category, shown in Table B-10, by the total annual quantities delivered from or through the reach as shown in Table B-5. The unit variable charges presented in Table B-14 have been accumulated, from the Delta through the particular pumping and power recovery plant listed in the headings of the table, to facilitate their usage.

The annual total component of each water supply contractor is obtained by multiplying the appropriate reach deliveries of Table B-4 by the unit charges of Table B-14. The resulting variable operating components are summarized in Table B-15.

Total Annual Transportation Charges

Table B-16 presents the estimated total annual Transportation Charges for the entire project repayment period for each water supply contractor. Table B-16 constitutes the sum of the computed values shown in Tables B-12, B-13, and B-15. These total charges are as calculated on the date of this bulletin. They do not include adjustments for overpayments or underpayments by water supply contractors who have made, or are under obligation to make, payments through the current calendar year. As indicated in the introduction to this appendix, these adjustments will be set forth in separate attachments to the individual statements of charges for each contractor.

TABLES TO APPENDIX B

B-1 thru B-16

TABLE B-1

MAXIMUM ANNUAL ENTITLEMENTS

Project Service Area and Water Supply Contractor	Maximum Annual Entitlement, in Acre-feet
FEATHER RIVER AREA	
City of Yuba City (CYC)	9,600
County of Butte (CB)	27,500
Plumas County Flood Control and Water Conservation District (PCFC&WCD)	2,700
Total	39,800
NORTH BAY AREA	
Napa County Flood Control and Water Conservation District (NCFC&WCD)	25,000
Solano County Flood Control and Water Conservation District (SCFC&WCD)	42,000
Total	67,000
SOUTH BAY AREA	
Alameda County Flood Control and Water Conservation District, Zone 7 (ACFC&WCD)	46,000
Alameda County Water District (ACWD)	42,000
Santa Clara County Flood Control and Water District (SCCFC&WD)	100,000
Total	188,000
SAN JOAQUIN VALLEY AREA	
Devil's Den Water District (DDWD)	12,700
Dudley Ridge Water District (DRWD)	57,700
Empire West Side Irrigation District (EWSID)	3,000
Hacienda Water District (HWD)	8,500
Kern County Water Agency (KCWA)	1,153,400
Kings County* (KC)	4,000
Oak Flat Water District (OFWD)	5,700
Tulare Lake Basin Water Storage District (TLBWSD)	110,000
Total	1,355,000
CENTRAL COASTAL AREA	
San Luis Obispo County Flood Control and Water Conservation District (SLOCFC&WCD)	25,000
Santa Barbara County Flood Control and Water Conservation District (SBCFC&WCD)	57,700
Total	82,700
SOUTHERN CALIFORNIA AREA	
Antelope Valley-East Kern Water Agency (AVEKWA)	138,400
Big Bear Municipal Water District* (BBMWD)	4,600
Coachella Valley County Water District (CVCWD)	23,100
Crestline-Lake Arrowhead Water Agency (CLAWA)	5,800
Desert Water Agency (DWA)	38,100
Littlerock Creek Irigation District (LCID)	2,300
Mojave Water Agency (MWA)	50,800
Palmdale Irrigation District (PID)	17,300
San Bernardino Valley Municipal Water District (SBVMWD)	98,000
San Gabriel Valley Municipal Water District (SGVMWD)	28,800
San Gorgonio Pass Water Agency (SGPWA)	17,300
The Metropolitan Water District of Southern California (MWD-SC)	2,011,500
Upper Santa Clara Valley Water Agency (USCVWA)	41,500
Ventura County Flood Control District (VCFCD)	20,000
Total	2,497,500
GRAND TOTAL	4,230,000

* Water supply contracts were being negotiated with these agencies for the indicated maximum annual entitlements as of April 1, 1966.

TABLE B-2

PROJECT TRANSPORTATION FACILITIES,
REACH DELIVERY CAPABILITIES AND CAPACITIES

(in cubic feet per second, unless otherwise noted)

REACH NUMBER	REACH DESCRIPTION	WATER SUPPLY CONTRACTORS SERVED FROM REACH	MAXIMUM DELIVERIES FROM REACH		TOTAL CAPACITY PROVIDED FOR WATER SUPPLY CONTRACTORS[1]	ADDITIONAL CAPACITY[2]	TOTAL REACH CAPACITY
			ANNUAL ENTITLEMENTS, IN ACRE-FEET	MONTHLY, IN PERCENT OF ANNUAL			
	NORTH BAY AQUEDUCT						
1	Lindsey Slough to Suisun City	-	-	-	117	0	117
2	Suisun City to Cordelia Pumping Plant	Solano County Flood Control and Water Conservation District	37,800	11	115	0	115
3	Cordelia Pumping Plant to Napa turnout reservoir	Napa County Flood Control and Water Conservation District	25,000	11	46	0	46
	SOUTH BAY AQUEDUCT						
1	Bethany reservoir to Altamont Turnout	-	-	-	300	0	300
2	Altamont Turnout thru Patterson Reservoir	Alameda County Flood Control and Water Conservation District, Zone 7	17,000	11	300	0	300
4	Patterson Reservoir to Del Valle Junction	-	-	-	300	0	300
5	Del Valle Junction thru Del Valle reservoir	Future Contractor - South Bay	12,000[4]	11	30,000 AF	0	30,000 AF
6	Del Valle Junction to South Livermore Turnout	Alameda County Flood Control and Water Conservation District, Zone 7	29,000	11	332	31	363
7	South Livermore Turnout to Vallecitos Turnout	Alameda County Water District	37,000	[3]	279	26	305
8	Vallecitos Turnout to Alameda-Bayside Turnout	Alameda County Water District Future Contractor - South Bay	5,000 25,000[4]	[3] 11	246	9	255
9	Alameda-Bayside Turnout to Santa Clara terminal facilities	Santa Clara County Flood Control and Water District	100,000	11	184	0	184
	CALIFORNIA AQUEDUCT						
1	Delta thru Bethany reservoir	-	-	-	8,387	74	10,300[5]
2	Bethany reservoir to San Luis Forebay	Oak Flat Water District	5,700	18	8,086	74	10,000[5]
3	San Luis Forebay to Dos Amigos Pumping Plant	-	-	-	8,019	74	8,093[6]
4	Dos Amigos Pumping Plant to Panoche Creek	-	-	-	8,007	74	8,081[6]
5	Panoche Creek to Five Points	-	-	-	7,992	74	8,066[6]
6	Five Points to Arroyo Pasajero	-	-	-	7,967	74	8,041[6]

Footnotes shown on Sheet 4.

TABLE B-2 (Continued)

PROJECT TRANSPORTATION FACILITIES,
REACH DELIVERY CAPABILITIES AND CAPACITIES

(in cubic feet per second, unless otherwise noted)

REACH NUMBER	REACH DESCRIPTION	WATER SUPPLY CONTRACTORS SERVED FROM REACH	MAXIMUM DELIVERIES FROM REACH		TOTAL CAPACITY PROVIDED FOR WATER SUPPLY CONTRACTORS 1/	ADDITIONAL CAPACITY 2/	TOTAL REACH CAPACITY
			ANNUAL ENTITLEMENTS, IN ACRE-FEET	MONTHLY, IN PERCENT OF ANNUAL			
	CALIFORNIA AQUEDUCT (Continued)						
7	Arroyo Pasajero to Kettleman City	Empire West Side Irrigation District Kings County Tulare Lake Basin Water Storage District	3,000 4,000 61,050	18 11 18	7,957	74	8,031 6/
8	Kettleman City to Avenal Gap	Dudley Ridge Water District Hacienda Water District Tulare Lake Basin Water Storage District	57,700 8,500 48,950	18 18 18	7,983	117	8,100 7/
9	Avenal Gap to Twisselman Road	Kern County Water Agency - Agriculture	47,300	18	7,193	107	7,300 7/
10A	Twisselman Road to near Lost Hills	Kern County Water Agency - Agriculture	265,700	18	7,041	109	7,150 7/
11B	Near Lost Hills to Seventh Standard Road	Kern County Water Agency - Agriculture	126,400	18	6,238	112	6,350 7/
12D	Seventh Standard Road to Elk Hills Road	Kern County Water Agency - Agriculture	3,600	18	5,855	95	5,950 7/
12E	Elk Hills Road to Tupman Road	Kern County Water Agency - Agriculture Kern County Water Agency - M. & I.	213,200 94,500	18 11	5,834	116	5,950 7/
13B	Tupman Road to Buena Vista Pumping Plant	Kern County Water Agency - Agriculture Kern County Water Agency - M. & I.	34,700 25,000	18 11	5,020	80	5,100 7/
14A	Buena Vista Pumping Plant to Santiago Creek	-	-	-	4,861	39	4,900 7/
14B	Santiago Creek to Old River Road	Kern County Water Agency - Agriculture	60,700	18	4,853	47	4,900 7/
14C	Old River Road to Wheeler Ridge Pumping Plant	Kern County Water Agency - Agriculture	32,500	18	4,666	34	4,700 7/
15	Wheeler Ridge Pumping Plant to Wind Gap Pumping Plant	Kern County Water Agency - Agriculture	70,000	18	4,564	36	4,600 7/
16	Wind Gap Pumping Plant to Tehachapi Pumping Plant	Future Contractor - Nuclear Kern County Water Agency - Agriculture Kern County Water Agency - M. & I.	35,000 67,400 17,500	8-1/3 18 11	4,354	46	4,400 7/
17C	Tehachapi Pumping Plant to South Portal Tehachapi tunnel No. 3	Kern County Water Agency - M. & I.	5,000	11	4,064	36	4,100 7/
17D	South Portal Tehachapi tunnel No. 3 to Junction, West Branch, California Aqueduct	-	-	-	4,055	45	4,100 7/

Footnotes shown on Sheet 4.

TABLE B-2 (Continued)

PROJECT TRANSPORTATION FACILITIES,
REACH DELIVERY CAPABILITIES AND CAPACITIES

(in cubic feet per second, unless otherwise noted)

REACH NUMBER	REACH DESCRIPTION	WATER SUPPLY CONTRACTORS SERVED FROM REACH	MAXIMUM DELIVERIES FROM REACH		TOTAL CAPACITY PROVIDED FOR WATER SUPPLY CONTRACTORS 1/	ADDITIONAL CAPACITY 2/	TOTAL REACH CAPACITY
			ANNUAL ENTITLEMENTS, IN ACRE-FEET	MONTHLY, IN PERCENT OF ANNUAL			
	EAST BRANCH						
18A	Junction, West Branch, California Aqueduct thru Cottonwood Powerplant	-	-	-	1,524	36	1,560 3/
19	Cottonwood Powerplant to Fairmont	Antelope Valley-East Kern Water Agency	138,400	8-1/3	1,522	38	1,560 3/
20	Fairmont to Palmdale	Palmdale Irrigation District	17,300	8-1/3	1,311	29	1,340 3/
21	Palmdale to Littlerock Creek	Littlerock Creek Irrigation District	2,300	8-1/3	1,274	26	1,300 3/
22A	Littlerock Creek to Pearblossom Pumping Plant	-	-	-	1,267	33	1,300 3/
22B	Pearblossom Pumping Plant to West Fork Mojave River	Coachella Valley County Water District Desert Water Agency Mojave Water Agency	23,100 38,100 50,800	11 11 8-1/3	1,266	34	1,300 3/
23	West Fork Mojave River to Cedar Springs reservoir	-	-	-	1,174	26	1,200 3/
24	Cedar Springs Dam and reservoir	Crestline-Lake Arrowhead Water Agency	5,800	11	177,000 AF	-	177,000 AF
25	Cedar Springs reservoir to South Portal San Bernardino tunnel	San Gorgonio Pass Water Agency	17,300	11	1,202	18	1,220 3/
26	South Portal San Bernardino tunnel thru Upper Devil Canyon Powerplant	-	-	-	1,170	10	1,180 3/
27	Upper Devil Canyon Powerplant thru Lower Devil Canyon Powerplant	The Metropolitan Water District of Southern California San Gabriel Valley Municipal Water District	284,000 28,800	11 10	1,170	10	1,180 3/
28A	Lower Devil Canyon Powerplant to Mill Street	Big Bear Municipal Water District San Bernardino Valley Municipal Water District	4,600 98,000	8-1/3 11	605	15	620 3/
28B	Mill Street to Perris reservoir	-	-	-	419	21	440 3/
28C	Perris Dam and reservoir	The Metropolitan Water District of Southern California	272,500	11	99,000 AF	-	99,000 AF
	WEST BRANCH						
29A	Junction West Branch, California Aqueduct thru Oso Pumping Plant	-	-	-	3,142	18	3,160 3/
29B	Oso Pumping Plant to State Route 138	-	-	-	3,101	19	3,120 3/
29C	State Route 138 thru Pyramid Powerplant	-	-	-	3,097	23	3,120 3/
29D	Pyramid Dam and reservoir	-	-	-	130,100 AF	-	130,100 AF
29F	Pyramid reservoir thru Castaic Powerplant	-	-	-	3,085	15	3,100 3/
30	Castaic Dam and reservoir	The Metropolitan Water District of Southern California Upper Santa Clara Valley Water Agency Ventura County Flood Control District	1,455,000 41,500 20,000	11 11 11	334,000 AF	-	334,000 AF

Footnotes shown on Sheet 4.

TABLE B-2 (Continued)

PROJECT TRANSPORTATION FACILITIES,
REACH DELIVERY CAPABILITIES AND CAPACITIES

(in cubic feet per second, unless otherwise noted)

REACH NUMBER	REACH DESCRIPTION	WATER SUPPLY CONTRACTORS SERVED FROM REACH	MAXIMUM DELIVERIES FROM REACH		TOTAL CAPACITY PROVIDED FOR WATER SUPPLY CONTRACTORS 1/	ADDITIONAL CAPACITY 2/	TOTAL REACH CAPACITY
			ANNUAL ENTITLEMENTS, IN ACRE-FEET	MONTHLY, IN PERCENT OF ANNUAL			
	COASTAL BRANCH						
31A	Avenal Gap to Devil's Den Pumping Plant	Devil's Den Water District Kern County Water Agency - Agriculture	12,700 89,900	18 18	435	15	450 7/
33A	Devil's Den Pumping Plant thru San Luis Obispo Powerplant	San Luis Obispo County Flood Control and Water Conservation District	10,000	8-1/3	126	0	126
34	San Luis Obispo Powerplant to Arroyo Grande	San Luis Obispo County Flood Control and Water Conservation District	5,000	8-1/3	110	0	110
35	Arroyo Grande to Santa Maria terminus	San Luis Obispo County Flood Control and Water Conservation District Santa Barbara County Flood Control and Water Conservation District	10,000 57,700	8-1/3 8-1/3	102	0	102

1/ For detailed break-down of capacities provided for water supply contractors, see Table B-3.

2/ Additional capacity includes that provided for practical design considerations and for project purposes other than water supply.

3/ Maximum monthly delivery in percent of annual entitlement is 11% with 16 cfs (5,000 AF) delivered in Reach No. 8 and the balance in Reach No. 7.

4/ Maximum annual entitlement of a future contractor is considered for allocation purposes to be 25,000AF in Reach No. 8; 10,000 AF in Reach Nos. 6 and 7; and 22,000 AF in Reach Nos. 1, 2, 4, and 5 of the South Bay Aqueduct.

5/ Total reach capacities for both project conservation facilities and project transportation facilities. Required capacities for project transportation facilities are 8,461 cubic feet per second in Reach No. 1 and 8,160 cubic feet per second in Reach No. 2.

6/ Total reach capacities required for the State Water Project; not the State's share of design capacities of reaches currently under construction.

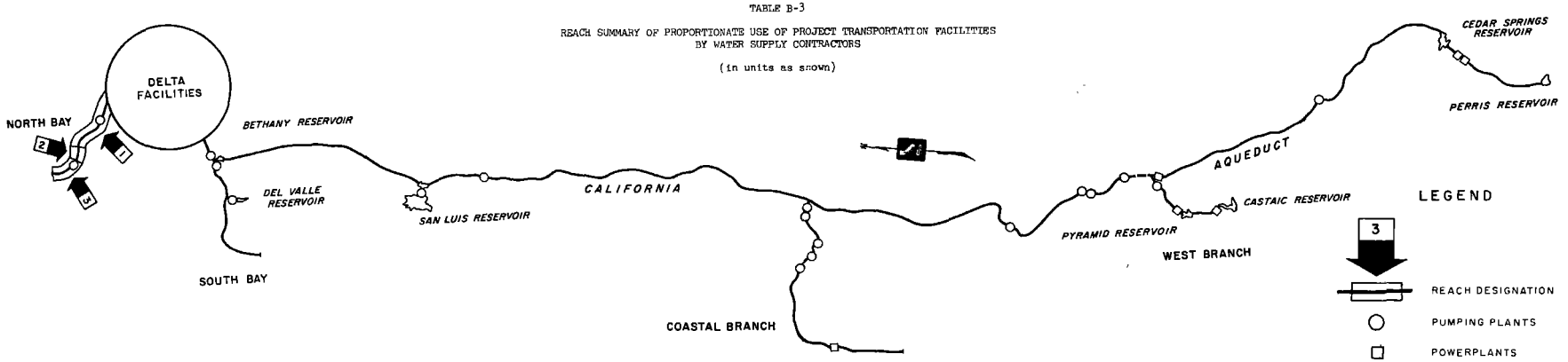
7/ Capacities established by the report "Design Capacities of the California Aqueduct, Kettleman City to: (1) Junction, East and West Branch; (2) Devil's Den Pumping Plant", dated April 1965.

8/ Capacities established by the report "Design Capacities of the California Aqueduct, Junction, West Branch to: (1) Perris reservoir; (2) Castaic reservoir", Preliminary Edition, Dated December 1965

TABLE B-3

REACH SUMMARY OF PROPORTIONATE USE OF PROJECT TRANSPORTATION FACILITIES
BY WATER SUPPLY CONTRACTORS

(in units as shown)

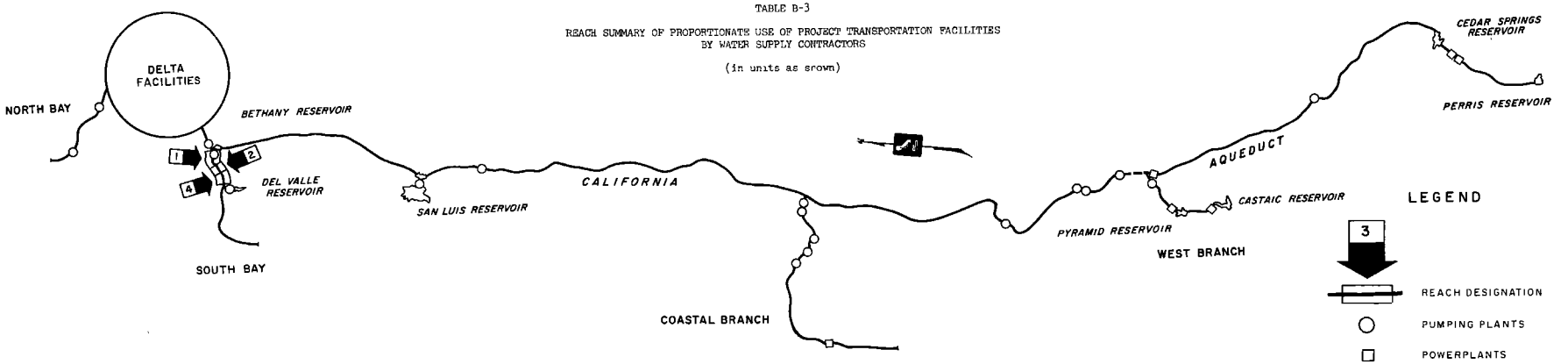


WATER SUPPLY CONTRACTOR	MEASURE OF USE	MAXIMUM ANNUAL ENTITLEMENTS DELIVERED FROM REACH	ESTIMATED OPERATIONAL LOSSES WITHIN REACH	CAPACITY PROVIDED IN REACH					PROPORTIONATE USE FOR ALLOCATION OF CAPITAL COSTS		CAPACITY PROVIDED IN REACH		PROPORTIONATE USE FOR ALLOCATION OF MINIMUM OMP&R COSTS	
				FOR DELIVERY OF ENTITLEMENTS	FOR COMPENSATION OF			SUBTOTAL	RATIOS OF TOTAL REACH USE	AVERAGE OF RATIOS	FOR REQUESTED EXCESS PEAKING	TOTAL FOR WATER SUPPLY CONTRACTORS	RATIOS OF TOTAL REACH USE	AVERAGE OF RATIOS
					OPERATIONAL LOSSES	SCHEDULED OUTAGES	DOWNSTREAM REGULATION							
REACH 1 - LINDSEY SLOUGH TO SUISUN CITY	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
NAPA COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT	QUANTITY, AF	0.0	398.1	25000.0	557.3	0.0		25557.3	.39808879			25557.3	.39808879	
	CAPACITY, CFS	0.00000	.65524	45.58219	.91727	0.00000	0.00000	46.49946	.39808874	.39808876	0.00000	46.49946	.39808874	.39808876
SOLANO COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT	QUANTITY, AF	0.0	601.9	37800.0	842.7	0.0		38642.7	.60191121			38642.7	.60191121	
	CAPACITY, CFS	0.00000	.99069	68.92028	1.38703	0.00000	0.00000	70.30731	.60191126	.60191124	0.00000	70.30731	.60191126	.60191124
TOTAL	QUANTITY, AF	0.0	1000.0	62800.0	1400.0	0.0		64200.0	1.00000000			64200.0	1.00000000	
	CAPACITY, CFS	0.00000	1.64593	114.50247	2.30430	0.00000	0.00000	116.80677	1.00000000	1.00000000	0.00000	116.80677	1.00000000	1.00000000
REACH 2 - SUISUN CITY TO CORDELIA PUMPING PLANT														
NAPA COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT	QUANTITY, AF	0.0	159.2	25000.0	159.2	0.0		25159.2	.39808861			25159.2	.39808861	
	CAPACITY, CFS	0.00000	.26203	45.58219	.26203	0.00000	0.00000	45.84422	.39808862	.39808861	0.00000	45.84422	.39808862	.39808861
SOLANO COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT	QUANTITY, AF	37800.0	240.8	37800.0	240.8	0.0		38040.8	.60191139			38040.8	.60191139	
	CAPACITY, CFS	68.92028	.39634	68.92028	.39634	0.00000	0.00000	69.31662	.60191138	.60191139	0.00000	69.31662	.60191138	.60191139
TOTAL	QUANTITY, AF	37800.0	400.0	62800.0	400.0	0.0		63200.0	1.00000000			63200.0	1.00000000	
	CAPACITY, CFS	68.92028	.65837	114.50247	.65837	0.00000	0.00000	115.16084	1.00000000	1.00000000	0.00000	115.16084	1.00000000	1.00000000
REACH 3 - CORDELIA PUMPING PLANT TO NAPA TURNOUT RESERVOIR														
NAPA COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT	QUANTITY, AF	25000.0	0.0	25000.0	0.0	0.0		25000.0	1.00000000			25000.0	1.00000000	
	CAPACITY, CFS	45.58219	0.00000	45.58219	0.00000	0.00000	0.00000	45.58219	1.00000000	1.00000000	0.00000	45.58219	1.00000000	1.00000000
TOTAL	QUANTITY, AF	25000.0	0.0	25000.0	0.0	0.0		25000.0	1.00000000			25000.0	1.00000000	
	CAPACITY, CFS	45.58219	0.00000	45.58219	0.00000	0.00000	0.00000	45.58219	1.00000000	1.00000000	0.00000	45.58219	1.00000000	1.00000000

TABLE B-3

REACH SUMMARY OF PROPORTIONATE USE OF PROJECT TRANSPORTATION FACILITIES
BY WATER SUPPLY CONTRACTORS

(in units as shown)

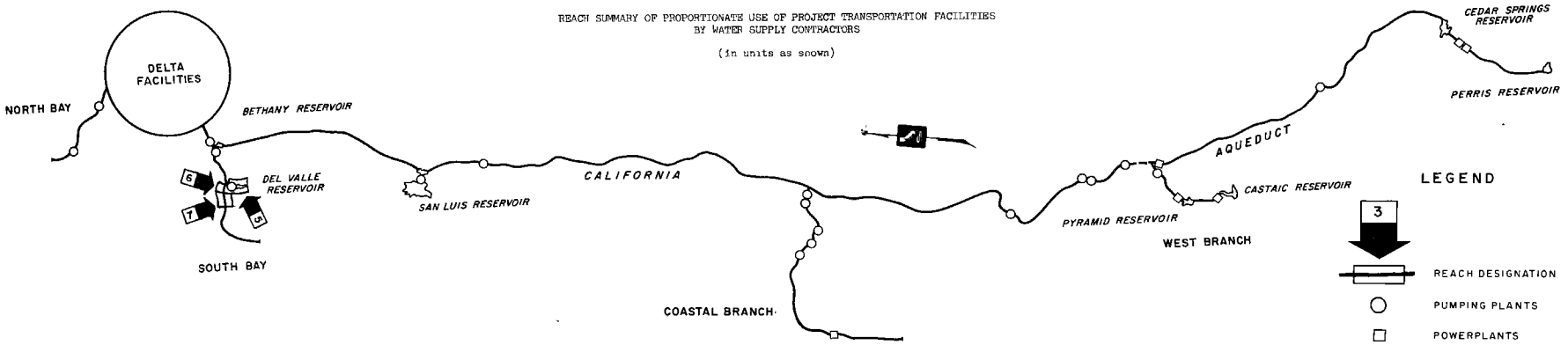


WATER SUPPLY CONTRACTOR	MEASURE OF USE	MAXIMUM ANNUAL ENTITLEMENTS DELIVERED FROM REACH	ESTIMATED OPERATIONAL LOSSES WITHIN REACH	CAPACITY PROVIDED IN REACH					PROPORTIONATE USE FOR ALLOCATION OF CAPITAL COSTS		CAPACITY PROVIDED IN REACH		PROPORTIONATE USE FOR ALLOCATION OF MINIMUM OMP&R COSTS	
				FOR DELIVERY OF ENTITLEMENTS	FOR COMPENSATION OF			SUBTOTAL	RATIOS OF TOTAL REACH USE	AVERAGE OF RATIOS	FOR REQUESTED EXCESS PEAKING	TOTAL FOR WATER SUPPLY CONTRACTORS	RATIOS OF TOTAL REACH USE	AVERAGE OF RATIOS
					OPERATIONAL LOSSES	SCHEDULED OUTAGES	DOWNSTREAM REGULATION							
REACH 1 - BETHANY RESERVOIR TO ALTAMONT TURNOUT	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
SANTA CLARA COUNTY FLOOD CONTROL AND WATER DISTRICT	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	85.8 .11851	100000.0 138.12786	2412.6 3.33248	1172.9 1.61811	0.00000	103585.5 143.07845	.47692835 .47692817	.47692826	0.00000	103585.5 143.07845	.47692835 .47692817	.47692826
ALAMEDA COUNTY WATER DISTRICT	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	35.9 .04959	42000.0 58.01370	831.1 1.14799	493.6 .67961	0.00000	43324.7 59.84130	.19947558 .19947100	.19947329	0.00000	43324.7 59.84130	.19947558 .19947100	.19947329
ALAMEDA COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT, ZONE 7	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	39.4 .05442	46000.0 63.53882	982.7 1.35738	538.5 .74455	0.00000	47521.2 65.64053	.21879711 .21880177	.21879944	0.00000	47521.2 65.64053	.21879711 .21880177	.21879944
FUTURE CONTRACTOR - SOUTH BAY	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	18.9 .02611	22000.0 30.38813	503.6 .69561	258.0 .35598	0.00000	22761.6 31.43972	.10479896 .10479908	.10479901	0.00000	22761.6 31.43972	.10479896 .10479908	.10479901
TOTAL	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	180.0 .24863	210000.0 290.06851	4730.0 6.53346	2463.0 3.39804	0.00000	217193.0 300.00000	1.00000000 1.00000000	1.00000000	0.00000	217193.0 300.00000	1.00000000 1.00000000	1.00000000
REACH 2 - ALTAMONT TURNOUT THRU PATTERSON RESERVOIR														
SANTA CLARA COUNTY FLOOD CONTROL AND WATER DISTRICT	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	114.5 .15816	100000.0 138.12786	2326.8 3.21397	1172.9 1.73651	0.00000	103499.7 143.07834	.47692857 .47692780	.47692819	0.00000	103499.7 143.07834	.47692857 .47692780	.47692819
ALAMEDA COUNTY WATER DISTRICT	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	47.9 .06616	42000.0 58.01370	795.2 1.09840	493.6 .72933	0.00000	43288.8 59.84143	.19947561 .19947143	.19947352	0.00000	43288.8 59.84143	.19947561 .19947143	.19947352
ALAMEDA COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT, ZONE 7	QUANTITY, AF CAPACITY, CFS	17000.0 23.48174	52.5 .07252	46000.0 63.53882	943.3 1.30296	538.5 .79879	0.00000	47481.8 65.64057	.21879703 .21880190	.21879946	0.00000	47481.8 65.64057	.21879703 .21880190	.21879946
FUTURE CONTRACTOR - SOUTH BAY	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	25.1 .03467	22000.0 30.38813	484.7 .66950	258.0 .38203	0.00000	22742.7 31.43966	.10479879 .10479887	.10479883	0.00000	22742.7 31.43966	.10479879 .10479887	.10479883
TOTAL	QUANTITY, AF CAPACITY, CFS	17000.0 23.48174	240.0 .33151	210000.0 290.06851	4550.0 6.28483	2463.0 3.64666	0.00000	217013.0 300.00000	1.00000000 1.00000000	1.00000000	0.00000	217013.0 300.00000	1.00000000 1.00000000	1.00000000
REACH 4 - PATTERSON RESERVOIR TO DEL VALLE JUNCTION														
SANTA CLARA COUNTY FLOOD CONTROL AND WATER DISTRICT	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	419.6 .57959	100000.0 138.12786	2212.3 3.05581	1276.2 2.06123	0.00000	103488.5 143.24490	.51803046 .47748300	.49775673	0.00000	103488.5 143.24490	.51803046 .47748300	.49775673
ALAMEDA COUNTY WATER DISTRICT	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	175.5 .24242	42000.0 58.01370	747.3 1.03224	537.0 .86571	0.00000	43284.3 59.91165	.21666742 .19970550	.20818646	0.00000	43284.3 59.91165	.21666742 .19970550	.20818646
ALAMEDA COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT, ZONE 7	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	122.7 .16948	29000.0 40.05708	890.8 1.23044	369.1 .59776	23.48174	30259.9 65.36702	.15147142 .21789007	.18468074	0.00000	30259.9 65.36702	.15147142 .21789007	.18468074
FUTURE CONTRACTOR - SOUTH BAY	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	92.2 .12735	22000.0 30.38813	450.6 .63483	280.7 .45347	0.00000	22740.3 31.47643	.11383070 .10492143	.10937607	0.00000	22740.3 31.47643	.11383070 .10492143	.10937607
TOTAL	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	810.0 1.11884	193000.0 266.58677	4310.0 5.95332	2463.0 3.97817	23.48174	199773.0 300.00000	1.00000000 1.00000000	1.00000000	0.00000	199773.0 300.00000	1.00000000 1.00000000	1.00000000

TABLE B-3

REACH SUMMARY OF PROPORTIONATE USE OF PROJECT TRANSPORTATION FACILITIES
BY WATER SUPPLY CONTRACTORS

(in units as shown)



WATER SUPPLY CONTRACTOR	MEASURE OF USE	MAXIMUM ANNUAL ENTITLEMENTS DELIVERED FROM REACH	ESTIMATED OPERATIONAL LOSSES WITHIN REACH	CAPACITY PROVIDED IN REACH					PROPORTIONATE USE FOR ALLOCATION OF CAPITAL COSTS		CAPACITY PROVIDED IN REACH		PROPORTIONATE USE FOR ALLOCATION OF MINIMUM OMP&R COSTS	
				FOR DELIVERY OF ENTITLEMENTS	FOR COMPENSATION OF			SUBTOTAL	RATIOS OF TOTAL REACH USE	AVERAGE OF RATIOS	FOR REQUESTED EXCESS PEAKING	TOTAL FOR WATER SUPPLY CONTRACTORS	RATIOS OF TOTAL REACH USE	AVERAGE OF RATIOS
					OPERATIONAL LOSSES	SCHEDULED OUTAGES	DOWNSTREAM REGULATION							
REACH 5 - DEL VALLE JUNCTION THRU DEL VALLE RESERVOIR	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
SANTA CLARA COUNTY FLOOD CONTROL AND WATER DISTRICT	QUANTITY, AF	0.0	1792.7	100000.0	1792.7									
	CAPACITY, AF	14590.0	581.0	14590.0	581.0	195.0		15366.0	.51220000	.51220000		15366.0	.51220000	.51220000
ALAMEDA COUNTY WATER DISTRICT	QUANTITY, AF	0.0	571.8	42000.0	571.8									
	CAPACITY, AF	4654.0	185.0	4654.0	185.0	63.0		4902.0	.16340000	.16340000		4902.0	.16340000	.16340000
ALAMEDA COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT, ZONE 7	QUANTITY, AF	0.0	768.1	29000.0	768.1									
	CAPACITY, AF	6751.0	249.0	6751.0	249.0	83.0		6583.0	.21943333	.21943333		6583.0	.21943333	.21943333
FUTURE CONTRACTOR - SOUTH BAY	QUANTITY, AF	12000.0	367.4	22000.0	367.4									
	CAPACITY, AF	2990.0	119.0	2990.0	119.0	40.0		3149.0	.10496667	.10496667		3149.0	.10496667	.10496667
TOTAL	QUANTITY, AF	12000.0	3500.0	193000.0	3500.0									
	CAPACITY, AF	28485.0	1134.0	28485.0	1134.0	381.0		30000.0	1.00000000	1.00000000		30000.0	1.00000000	1.00000000
REACH 6 - DEL VALLE JUNCTION TO SOUTH LIVERMORE TURNOUT														
SANTA CLARA COUNTY FLOOD CONTROL AND WATER DISTRICT	QUANTITY, AF	0.0	0.0	100000.0	0.0	0.0		100000.0	.55248619			100000.0	.55248619	
	CAPACITY, CFS	0.00000	0.00000	184.00000	0.00000	0.00000	0.00000	184.00000	.50688705	.52968662	0.00000	184.00000	.50688705	.52968662
ALAMEDA COUNTY WATER DISTRICT	QUANTITY, AF	0.0	0.0	42000.0	0.0	0.0		42000.0	.23204420			42000.0	.23204420	
	CAPACITY, CFS	0.00000	0.00000	76.57808	0.00000	0.00000	0.00000	76.57808	.21093890	.22150155	0.00000	76.57808	.21093890	.22150155
ALAMEDA COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT, ZONE 7	QUANTITY, AF	29000.0	0.0	29000.0	0.0	0.0		29000.0	.16022099			29000.0	.16022099	
	CAPACITY, CFS	52.87534	0.00000	52.87534	0.00000	0.00000	0.00000	52.87534	.14506207	.15294154	0.00000	52.87534	.14506207	.15294154
FUTURE CONTRACTOR - SOUTH BAY	QUANTITY, AF	0.0	0.0	10000.0	0.0	0.0		10000.0	.03524862			10000.0	.03524862	
	CAPACITY, CFS	0.00000	0.00000	18.23287	0.00000	0.00000	0.00000	18.23287	.05022829	.05273846	0.00000	18.23287	.05022829	.05273846
EXCESS	QUANTITY, AF	0.0	0.0	0.0	0.0	0.0		0.0	.00000000			0.0	.00000000	
	CAPACITY, CFS	5.12466	0.00000	31.31371	0.00000	0.00000	0.00000	31.31371	.08626367	.04313183	0.00000	31.31371	.08626367	.04313183
TOTAL	QUANTITY, AF	29000.0	0.0	181000.0	0.0	0.0		181000.0	1.00000000			181000.0	1.00000000	
	CAPACITY, CFS	58.00000	0.00000	363.00000	0.00000	0.00000	0.00000	363.00000	1.00000000	1.00000000	0.00000	363.00000	1.00000000	1.00000000
REACH 7 - SOUTH LIVERMORE TURNOUT TO VALLECITOS TURNOUT														
SANTA CLARA COUNTY FLOOD CONTROL AND WATER DISTRICT	QUANTITY, AF	0.0	0.0	100000.0	0.0	0.0		100000.0	.65789474			100000.0	.65789474	
	CAPACITY, CFS	0.00000	0.00000	184.00000	0.00000	0.00000	0.00000	184.00000	.60327869	.63058671	0.00000	184.00000	.60327869	.63058671
ALAMEDA COUNTY WATER DISTRICT	QUANTITY, AF	37000.0	0.0	42000.0	0.0	0.0		42000.0	.27631579			42000.0	.27631579	
	CAPACITY, CFS	67.46165	0.00000	76.57808	0.00000	0.00000	0.00000	76.57808	.25107567	.26369573	0.00000	76.57808	.25107567	.26369573
FUTURE CONTRACTOR - SOUTH BAY	QUANTITY, AF	-15000.0	0.0	10000.0	0.0	0.0		10000.0	.06578947			10000.0	.06578947	
	CAPACITY, CFS	-27.34932	0.00000	18.23287	0.00000	0.00000	0.00000	18.23287	.05977990	.06278469	0.00000	18.23287	.05977990	.06278469
EXCESS	QUANTITY, AF	0.0	0.0	0.0	0.0	0.0		0.0	.00000000			0.0	.00000000	
	CAPACITY, CFS	16.77124	0.00000	26.18905	0.00000	0.00000	0.00000	26.18905	.08586574	.04293287	0.00000	26.18905	.08586574	.04293287
TOTAL	QUANTITY, AF	22000.0	0.0	152000.0	0.0	0.0		152000.0	1.00000000			152000.0	1.00000000	
	CAPACITY, CFS	56.88357	0.00000	305.00000	0.00000	0.00000	0.00000	305.00000	1.00000000	1.00000000	0.00000	305.00000	1.00000000	1.00000000

TABLE B-3

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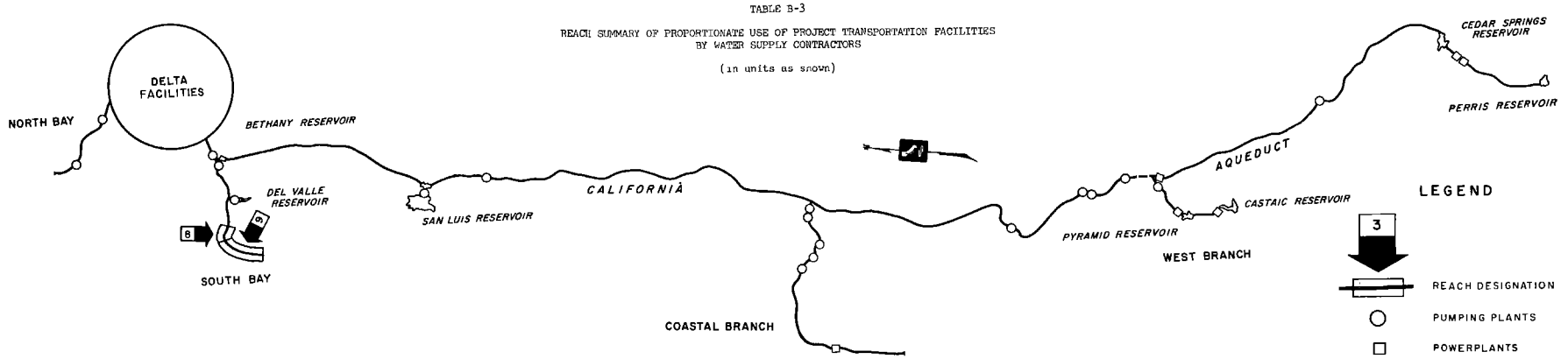
BY WATER SUPPLY CONTRACTORS

(in units as shown)



WATER SUPPLY CONTRACTOR	MEASURE OF USE	MAXIMUM ANNUAL ENTITLEMENTS DELIVERED FROM REACH	ESTIMATED OPERATIONAL LOSSES WITHIN REACH	CAPACITY PROVIDED IN REACH					PROPORTIONATE USE FOR ALLOCATION OF CAPITAL COSTS		CAPACITY PROVIDED IN REACH		PROPORTIONATE USE FOR ALLOCATION OF MINIMUM OMP&R COSTS	
				FOR DELIVERY OF ENTITLEMENTS	FOR COMPENSATION OF			SUBTOTAL	RATIOS OF TOTAL REACH USE	AVERAGE OF RATIOS	FOR REQUESTED EXCESS PEAKING	TOTAL FOR WATER SUPPLY CONTRACTORS	RATIOS OF TOTAL REACH USE	AVERAGE OF RATIOS
					OPERATIONAL LOSSES	SCHEDULED OUTAGES	DOWNSTREAM REGULATION							
REACH 8 - VALLECITOS TURNOUT TO ALAMEDA-BAYSIDE TURNOUT (1)		(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
SANTA CLARA COUNTY FLOOD CONTROL AND WATER DISTRICT	QUANTITY, AF	0.0	0.0	100000.0	0.0	0.0		100000.0	.76923077			100000.0	.76923077	
	CAPACITY, CFS	0.00000	0.00000	184.00000	0.00000	0.00000	0.00000	184.00000	.72156863	.74539970	0.00000	184.00000	.72156863	.74539970
ALAMEDA COUNTY WATER DISTRICT	QUANTITY, AF	5000.0	0.0	5000.0	0.0	0.0		5000.0	.03846154			5000.0	.03846154	
	CAPACITY, CFS	16.00000	0.00000	16.00000	0.00000	0.00000	0.00000	16.00000	.06274510	.05060332	0.00000	16.00000	.06274510	.05060332
FUTURE CONTRACTOR - SOUTH BAY	QUANTITY, AF	25000.0	0.0	25000.0	0.0	0.0		25000.0	.19230769			25000.0	.19230769	
	CAPACITY, CFS	45.58219	0.00000	45.58219	0.00000	0.00000	0.00000	45.58219	.17875368	.18553069	0.00000	45.58219	.17875368	.18553069
EXCESS	QUANTITY, AF	0.0	0.0	0.0	0.0	0.0		0.0	.00000000			0.0	.00000000	
	CAPACITY, CFS	9.41781	0.00000	9.41781	0.00000	0.00000	0.00000	9.41781	.03693259	.01846629	0.00000	9.41781	.03693259	.01846629
TOTAL	QUANTITY, AF	30000.0	0.0	130000.0	0.0	0.0		130000.0	1.00000000			130000.0	1.00000000	
	CAPACITY, CFS	71.00000	0.00000	255.00000	0.00000	0.00000	0.00000	255.00000	1.00000000	1.00000000	0.00000	255.00000	1.00000000	1.00000000
REACH 9 - ALAMEDA-BAYSIDE TURNOUT TO SANTA CLARA TERMINAL FACILITIES														
SANTA CLARA COUNTY FLOOD CONTROL AND WATER DISTRICT	QUANTITY, AF	100000.0	0.0	100000.0	0.0	0.0		100000.0	1.00000000			100000.0	1.00000000	
	CAPACITY, CFS	184.00000	0.00000	184.00000	0.00000	0.00000	0.00000	184.00000	1.00000000	1.00000000	0.00000	184.00000	1.00000000	1.00000000
TOTAL	QUANTITY, AF	100000.0	0.0	100000.0	0.0	0.0		100000.0	1.00000000			100000.0	1.00000000	
	CAPACITY, CFS	184.00000	0.00000	184.00000	0.00000	0.00000	0.00000	184.00000	1.00000000	1.00000000	0.00000	184.00000	1.00000000	1.00000000

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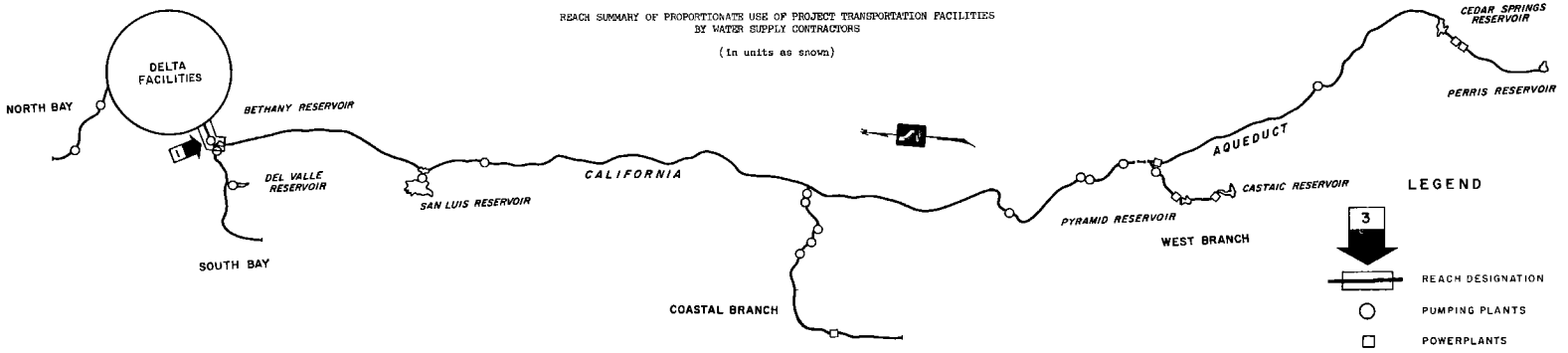
BY WATER SUPPLY CONTRACTORS

(In units as shown)

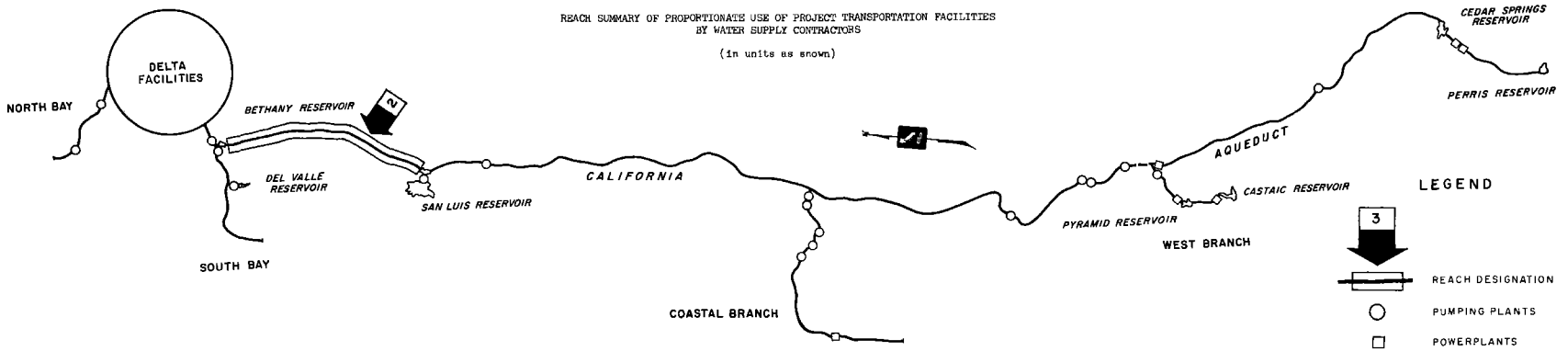


WATER SUPPLY CONTRACTOR	MEASURE OF USE	MAXIMUM ANNUAL ENTITLEMENTS DELIVERED FROM REACH	ESTIMATED OPERATIONAL LOSSES WITHIN REACH	CAPACITY PROVIDED IN REACH					PROPORTIONATE USE FOR ALLOCATION OF CAPITAL COSTS		CAPACITY PROVIDED IN REACH		PROPORTIONATE USE FOR ALLOCATION OF MINIMUM OMP&R COSTS	
				FOR DELIVERY OF ENTITLEMENTS	FOR COMPENSATION OF			SUBTOTAL	RATIOS OF TOTAL REACH USE	AVERAGE OF RATIOS	FOR REQUESTED EXCESS PEAKING	TOTAL FOR WATER SUPPLY CONTRACTORS	RATIOS OF TOTAL REACH USE	AVERAGE OF RATIOS
					OPERATIONAL LOSSES	SCHEDULED OUTAGES	DOWNSTREAM REGULATION							
REACH 1 - DELTA THRU BETHANY RESERVOIR	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	293.2 .48259	2011500.0 2778.44186	134843.3 211.72844	150862.5 212.39436	0.00000	2297225.8 3202.56466	.50072405 .38186861	.44129633	0.00000	2297225.8 3202.56466	.50072405 .38186861	.44129633
SAN BERNARDINO VALLEY MUNICIPAL WATER DISTRICT	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	14.4 .02370	98000.0 135.36930	7666.9 12.30973	7350.0 10.27353	0.00000	113016.9 157.94856	.02463418 .01883353	.02173386	0.00000	113016.9 157.94856	.02463418 .01883353	.02173386
BIG BEAR MUNICIPAL WATER DISTRICT	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	.7 .00115	4400.0 6.35388	359.9 .57783	345.0 .48223	0.00000	5304.9 7.41394	.00115630 .00088403	.00102016	0.00000	5304.9 7.41394	.00115630 .00088403	.00102016
SAN GABRIEL VALLEY MUNICIPAL WATER DISTRICT	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	4.2 .00691	28800.0 39.78082	2253.0 3.61735	2160.0 3.01916	0.00000	33213.0 46.41733	.00723940 .00553473	.00638707	0.00000	33213.0 46.41733	.00723940 .00553473	.00638707
SAN GORGONIO PASS WATER AGENCY	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	2.5 .00412	17300.0 23.89612	1353.5 2.17316	1297.5 1.81359	0.00000	19951.0 27.88287	.00434870 .00332471	.00383670	0.00000	19951.0 27.88287	.00434870 .00332471	.00383670
CRESTLINE-LAKE ARROWHEAD WATER AGENCY	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	.9 .00148	5800.0 8.01142	453.8 .72860	435.0 .60802	0.00000	6688.8 9.34804	.00145795 .00111464	.00128630	0.00000	6688.8 9.34804	.00145795 .00111464	.00128630
COACHELLA VALLEY COUNTY WATER DISTRICT	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	3.4 .00560	23100.0 31.90754	1513.4 2.49097	1732.5 2.39307	0.00000	26345.9 36.79158	.00574259 .00438697	.00506478	0.00000	26345.9 36.79158	.00574259 .00438697	.00506478
DESERT WATER AGENCY	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	5.5 .00905	38100.0 52.62671	2496.1 4.10839	2857.5 3.94700	0.00000	43453.6 60.68210	.00947154 .00723563	.00835359	0.00000	43453.6 60.68210	.00947154 .00723563	.00835359
MOJAVE WATER AGENCY	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	7.4 .01218	50800.0 70.16895	3328.6 5.47865	3810.0 5.26267	0.00000	57938.6 80.91027	.01262882 .00964761	.01113821	0.00000	57938.6 80.91027	.01262882 .00964761	.01113821
LITTLEROCK CREEK IRRIGATION DISTRICT	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	.3 .00049	2300.0 3.17694	119.1 .19601	172.5 .23827	0.00000	2591.6 3.61122	.00056489 .00043060	.00049774	0.00000	2591.6 3.61122	.00056489 .00043060	.00049774
PALMDALE IRRIGATION DISTRICT	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	2.5 .00411	17300.0 23.89612	857.4 1.41124	1297.5 1.79221	0.00000	19454.9 27.09957	.00424057 .00323131	.00373594	0.00000	19454.9 27.09957	.00424057 .00323131	.00373594
ANTELOPE VALLEY-EAST KERN WATER AGENCY	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	19.7 .03243	138400.0 191.16896	5737.3 9.44319	10380.0 14.33767	0.00000	154517.3 214.94982	.03367998 .02563027	.02965513	0.00000	154517.3 214.94982	.03367998 .02563027	.02965513
UPPER SANTA CLARA VALLEY WATER AGENCY	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	6.0 .00988	41500.0 57.32306	2305.5 3.62413	3112.5 4.36471	0.00000	46916.0 65.31190	.01022623 .00778768	.00900696	0.00000	46916.0 65.31190	.01022623 .00778768	.00900696
VENTURA COUNTY FLOOD CONTROL DISTRICT	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	2.9 .00477	20000.0 27.62557	1110.1 1.74655	1500.0 2.10347	0.00000	22610.1 31.47559	.00492830 .00375310	.00434070	0.00000	22610.1 31.47559	.00492830 .00375310	.00434070
KERN COUNTY WATER AGENCY - MUNICIPAL & INDUSTRIAL	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	20.0 .03292	142000.0 258.90686	4242.7 6.98321	0.0 0.00000	0.00000	146242.7 265.89007	.03187638 .03170430	.03179034	0.00000	146242.7 265.89007	.03187638 .03170430	.03179034
KERN COUNTY WATER AGENCY - AGRICULTURAL	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	142.0 .23372	1011400.0 3017.57433	28321.8 46.61575	0.0 0.00000	0.00000	1039721.8 3064.19008	.22662714 .36536904	.29599809	0.00000	1039721.8 3064.19008	.22662714 .36536904	.29599809
FUTURE CONTRACTOR - NUCLEAR	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	5.0 .00823	35000.0 48.34475	1282.9 2.11155	0.0 0.00000	0.00000	36282.9 50.45630	.00790855 .00601633	.00696244	0.00000	36282.9 50.45630	.00790855 .00601633	.00696244
SANTA BARBARA COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	8.3 .01366	57700.0 79.69977	3407.2 5.27733	4327.5 6.10693	0.00000	65434.7 91.08403	.01426274 .01086071	.01256172	0.00000	65434.7 91.08403	.01426274 .01086071	.01256172
SAN LUIS OBISPO COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	3.6 .00593	25000.0 34.53197	1174.7 1.84720	1875.0 2.61585	0.00000	28049.7 39.01502	.00611397 .00465209	.00538303	0.00000	28049.7 39.01502	.00611397 .00465209	.00538303
DEVIL'S DEN WATER DISTRICT	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	1.8 .00296	12700.0 17.89123	356.2 .58627	0.0 0.00000	0.00000	13056.2 38.47750	.00284585 .00458799	.00371692	0.00000	13056.2 38.47750	.00284585 .00458799	.00371692
DUDLEY RIDGE WATER DISTRICT	QUANTITY, AF CAPACITY, CFS	8.0 .01317	57700.0 172.15151	1179.2 1.94089	0.0 0.00000	0.00000	58879.2 174.09240	.01283384 .02075849	.01679617	0.00000	58879.2 174.09240	.01283384 .02075849	.01679617
TULARE LAKE BASIN WATER STORAGE DISTRICT	QUANTITY, AF CAPACITY, CFS	15.3 .02518	110000.0 328.19179	2142.9 3.52706	0.0 0.00000	0.00000	112142.9 331.71885	.02444368 .03955362	.03199865	0.00000	112142.9 331.71885	.02444368 .03955362	.03199865
HACIENDA WATER DISTRICT	QUANTITY, AF CAPACITY, CFS	1.2 .00198	8500.0 25.36027	173.8 .28606	0.0 0.00000	0.00000	8673.8 25.64633	.00189062 .00305803	.00247432	0.00000	8673.8 25.64633	.00189062 .00305803	.00247432
EMPIRE WEST SIDE IRRIGATION DISTRICT	QUANTITY, AF CAPACITY, CFS	.4 .00066	3000.0 8.95069	56.1 .09233	0.0 0.00000	0.00000	3056.1 9.04302	.00066614 .00107827	.00087221	0.00000	3056.1 9.04302	.00066614 .00107827	.00087221
KINGS COUNTY	QUANTITY, AF CAPACITY, CFS	.4 .00066	4000.0 7.29315	75.0 .17345	0.0 0.00000	0.00000	4075.0 7.41660	.00088822 .00088434	.00088628	0.00000	4075.0 7.41660	.00088822 .00088434	.00088628
OAK FLAT WATER DISTRICT	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	.8 .00132	5700.0 17.00630	42.2 .06946	0.0 0.00000	5742.2 17.07576	.00125162 .00203609	.00164385	0.00000	5742.2 17.07576	.00125162 .00203609	.00164385
SANTA CLARA COUNTY FLOOD CONTROL AND WATER DISTRICT	QUANTITY, AF CAPACITY, CFS	14.0 .02304	100000.0 138.12786	2426.6 3.99552	1172.9 1.61811	0.0 0.00000	103599.5 143.10149	.02258148 .01706319	.01982234	0.00000	103599.5 143.10149	.02258148 .01706319	.01982234
ALAMEDA COUNTY WATER DISTRICT	QUANTITY, AF CAPACITY, CFS	5.9 .00971	42000.0 58.01370	837.0 1.15770	493.6 .67961	0.0 0.00000	43330.6 59.85101	.00944473 .00713654	.00829063	0.00000	43330.6 59.85101	.00944473 .00713654	.00829063
ALAMEDA COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT, ZONE 7	QUANTITY, AF CAPACITY, CFS	6.4 .01053	46000.0 63.53682	989.1 1.36791	538.5 .74433	0.0 0.00000	47527.6 65.65108	.01035954 .00782812	.00909383	0.00000	47527.6 65.65108	.01035954 .00782812	.00909383
FUTURE CONTRACTOR - SOUTH BAY	QUANTITY, AF CAPACITY, CFS	3.1 .00510	22000.0 30.38813	506.7 .70071	258.0 .35598	0.0 0.00000	22764.7 31.44482	.00496200 .00374943	.00435571	0.00000	22764.7 31.44482	.00496200 .00374943	.00435571
TOTAL	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	600.0 .98756	4180200.0 7775.71438	211630.0 335.69664	195978.0 275.15077	0.00000	4587808.0 8386.56179	1.00000000 1.00000000	1.00000000	0.00000	4587808.0 8386.56179	1.00000000 1.00000000	1.00000000

TABLE B-3

REACH SUMMARY OF PROPORTIONATE USE OF PROJECT TRANSPORTATION FACILITIES
BY WATER SUPPLY CONTRACTORS

(In units as shown)

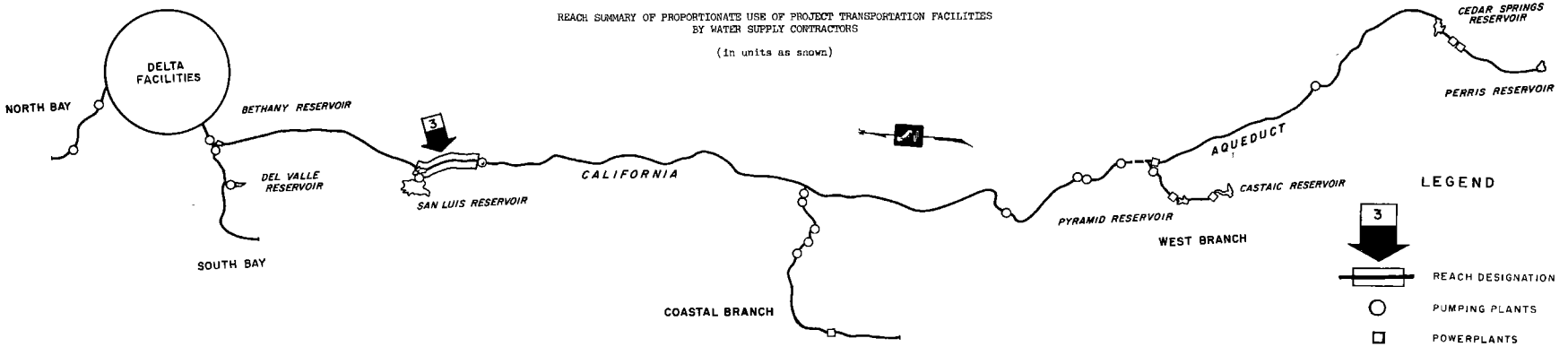


WATER SUPPLY CONTRACTOR	MEASURE OF USE	MAXIMUM ANNUAL ENTITLEMENTS DELIVERED FROM REACH	ESTIMATED OPERATIONAL LOSSES WITHIN REACH	CAPACITY PROVIDED IN REACH					PROPORTIONATE USE FOR ALLOCATION OF CAPITAL COSTS		CAPACITY PROVIDED IN REACH		PROPORTIONATE USE FOR ALLOCATION OF MINIMUM OMP&R COSTS	
				FOR DELIVERY OF ENTITLEMENTS	FOR COMPENSATION OF			SUBTOTAL	RATIOS OF TOTAL REACH USE	AVERAGE OF RATIOS	FOR REQUESTED EXCESS PEAKING	TOTAL FOR WATER SUPPLY CONTRACTORS	RATIOS OF TOTAL REACH USE	AVERAGE OF RATIOS
					OPERATIONAL LOSSES	SCHEDULED OUTAGES	DOWNSTREAM REGULATION							
REACH 2 - BETHANY RESERVOIR TO SAN LUIS FOREBAY	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA	QUANTITY, AF	0.0	15466.7	2011500.0	134570.1	150862.5	0.00000	2296932.6	.52561206	.46081807	0.00000	2296932.6	.52561206	.46081807
	CAPACITY, CFS	0.00000	25.45713	2778.44186	211.24585	212.39436		3202.08207	.39602408			3202.08207	.39602408	
SAN BERNARDINO VALLEY MUNICIPAL WATER DISTRICT	QUANTITY, AF	0.0	761.4	98000.0	7652.5	7350.0	0.00000	113002.5	.02585861	.02269514	0.00000	113002.5	.02585861	.02269514
	CAPACITY, CFS	0.00000	1.25321	135.36530	12.28603	10.27353		157.92486	.01953168			157.92486	.01953168	
BIG BEAR MUNICIPAL WATER DISTRICT	QUANTITY, AF	0.0	35.7	4600.0	359.2	345.0	0.00000	5304.2	.00121377	.00106528	0.00000	5304.2	.00121377	.00106528
	CAPACITY, CFS	0.00000	.05876	6.35388	.57668	.48223		7.41279	.00091679			7.41279	.00091679	
SAN GABRIEL VALLEY MUNICIPAL WATER DISTRICT	QUANTITY, AF	0.0	223.8	28800.0	2248.8	2160.0	0.00000	33208.8	.00759924	.00666957	0.00000	33208.8	.00759924	.00666957
	CAPACITY, CFS	0.00000	.36836	39.78082	3.61044	3.01916		46.41042	.00573990			46.41042	.00573990	
SAN GORGONIO PASS WATER AGENCY	QUANTITY, AF	0.0	134.4	17300.0	1351.0	1297.5	0.00000	19948.5	.00456486	.00400641	0.00000	19948.5	.00456486	.00400641
	CAPACITY, CFS	0.00000	.22121	23.89612	2.16904	1.81359		27.87875	.00344796			27.87875	.00344796	
CRESTLINE-LAKE ARROWHEAD WATER AGENCY	QUANTITY, AF	0.0	45.1	5800.0	452.9	435.0	0.00000	6687.9	.00153041	.00134318	0.00000	6687.9	.00153041	.00134318
	CAPACITY, CFS	0.00000	.07423	8.01142	.72712	.60802		9.34656	.00115595			9.34656	.00115595	
COACHELLA VALLEY COUNTY WATER DISTRICT	QUANTITY, AF	0.0	177.4	23100.0	1810.0	1732.5	0.00000	26342.5	.00602801	.00528880	0.00000	26342.5	.00602801	.00528880
	CAPACITY, CFS	0.00000	.29199	31.90754	2.48537	2.39307		36.78598	.00454958			36.78598	.00454958	
DESERT WATER AGENCY	QUANTITY, AF	0.0	292.5	38100.0	2490.6	2857.5	0.00000	43448.1	.00994232	.00872309	0.00000	43448.1	.00994232	.00872309
	CAPACITY, CFS	0.00000	.48144	52.62671	4.09934	3.84700		60.67305	.00750386			60.67305	.00750386	
MOJAVE WATER AGENCY	QUANTITY, AF	0.0	390.1	50800.0	3321.2	3810.0	0.00000	57931.2	.01325652	.01163088	0.00000	57931.2	.01325652	.01163088
	CAPACITY, CFS	0.00000	.64208	70.16895	5.46647	5.26267		80.89809	.01000524			80.89809	.01000524	
LITTLEROCK CREEK IRRIGATION DISTRICT	QUANTITY, AF	0.0	17.4	2300.0	118.8	172.5	0.00000	2591.3	.00059297	.00051977	0.00000	2591.3	.00059297	.00051977
	CAPACITY, CFS	0.00000	.02864	3.17694	.19552	.23827		3.61073	.00044656			3.61073	.00044656	
PALMDALE IRRIGATION DISTRICT	QUANTITY, AF	0.0	130.8	17300.0	854.9	1297.5	0.00000	19452.4	.00445134	.00390121	0.00000	19452.4	.00445134	.00390121
	CAPACITY, CFS	0.00000	.21529	23.89612	1.40713	1.79221		27.09546	.00335109			27.09546	.00335109	
ANTELOPE VALLEY-EAST KERN WATER AGENCY	QUANTITY, AF	0.0	1038.7	138400.0	5717.6	10480.0	0.00000	154497.6	.03535402	.03096718	0.00000	154497.6	.03535402	.03096718
	CAPACITY, CFS	0.00000	1.70963	191.16896	9.41076	14.33767		214.91739	.02658035			214.91739	.02658035	
UPPER SANTA CLARA VALLEY WATER AGENCY	QUANTITY, AF	0.0	315.7	41500.0	2297.5	3112.5	0.00000	46910.0	.01073452	.00940544	0.00000	46910.0	.01073452	.00940544
	CAPACITY, CFS	0.00000	.51962	57.32306	3.61425	4.36471		65.30202	.00807636			65.30202	.00807636	
VENTURA COUNTY FLOOD CONTROL DISTRICT	QUANTITY, AF	0.0	162.1	20000.0	1107.2	1500.0	0.00000	22607.2	.00517325	.00453274	0.00000	22607.2	.00517325	.00453274
	CAPACITY, CFS	0.00000	.25035	27.62557	1.74178	2.10347		31.47082	.00389222			31.47082	.00389222	
KERN COUNTY WATER AGENCY - MUNICIPAL & INDUSTRIAL	QUANTITY, AF	0.0	1053.8	142000.0	4222.7	0.0	0.00000	146222.7	.03346046	.03317044	0.00000	146222.7	.03346046	.03317044
	CAPACITY, CFS	0.00000	1.73448	258.90686	6.95029	0.00000		265.85715	.03288043			265.85715	.03288043	
KERN COUNTY WATER AGENCY - AGRICULTURAL	QUANTITY, AF	0.0	7492.2	1011400.0	28179.8	0.0	0.00000	1039579.8	.23788930	.30841520	0.00000	1039579.8	.23788930	.30841520
	CAPACITY, CFS	0.00000	12.33165	3017.57433	46.38203	0.00000		3063.95636	.37894110			3063.95636	.37894110	
FUTURE CONTRACTOR - NUCLEAR	QUANTITY, AF	0.0	261.5	35000.0	1277.9	0.0	0.00000	36277.9	.00830155	.00727041	0.00000	36277.9	.00830155	.00727041
	CAPACITY, CFS	0.00000	.43041	48.34475	2.10332	0.00000		50.44807	.00623927			50.44807	.00623927	
SANTA BARBARA COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT	QUANTITY, AF	0.0	440.3	57700.0	3398.4	4327.5	0.00000	65426.4	.01497167	.01311749	0.00000	65426.4	.01497167	.01311749
	CAPACITY, CFS	0.00000	.72470	79.69977	5.26367	6.10693		91.07037	.01126331			91.07037	.01126331	
SAN LUIS OBISPO COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT	QUANTITY, AF	0.0	188.6	25000.0	1171.1	1875.0	0.00000	28046.1	.00641785	.00562119	0.00000	28046.1	.00641785	.00562119
	CAPACITY, CFS	0.00000	.31042	34.53197	1.86127	2.61585		39.00909	.00482453			39.00909	.00482453	
DEVIL'S DEN WATER DISTRICT	QUANTITY, AF	0.0	94.1	12700.0	354.4	0.0	0.00000	13054.4	.00298727	.00387284	0.00000	13054.4	.00298727	.00387284
	CAPACITY, CFS	0.00000	.15488	17.89123	.58331	0.00000		18.47454	.00475842			18.47454	.00475842	
DUDLEY RIDGE WATER DISTRICT	QUANTITY, AF	0.0	424.3	57700.0	1171.2	0.0	0.00000	58871.2	.01347162	.01750062	0.00000	58871.2	.01347162	.01750062
	CAPACITY, CFS	0.00000	.69837	172.15151	1.92772	0.00000		174.07923	.02152961			174.07923	.02152961	
TULARE LAKE BASIN WATER STORAGE DISTRICT	QUANTITY, AF	0.0	808.1	110000.0	2127.6	0.0	0.00000	112127.6	.02565840	.03334065	0.00000	112127.6	.02565840	.03334065
	CAPACITY, CFS	0.00000	1.33008	328.19179	3.50188	0.00000		331.69367	.04102290			331.69367	.04102290	
HACIENDA WATER DISTRICT	QUANTITY, AF	0.0	62.5	8500.0	172.6	0.0	0.00000	8672.6	.00198457	.00257809	0.00000	8672.6	.00198457	.00257809
	CAPACITY, CFS	0.00000	.10287	25.36027	.28408	0.00000		25.64435	.00317162			25.64435	.00317162	
EMPIRE WEST SIDE IRRIGATION DISTRICT	QUANTITY, AF	0.0	22.0	3000.0	55.7	0.0	0.00000	3055.7	.00069924	.00090879	0.00000	3055.7	.00069924	.00090879
	CAPACITY, CFS	0.00000	.03621	8.95069	.09167	0.00000		9.04236	.00111833			9.04236	.00111833	
KINGS COUNTY	QUANTITY, AF	0.0	29.4	4000.0	74.4	0.0	0.00000	4074.4	.00093235	.00092475	0.00000	4074.4	.00093235	.00092475
	CAPACITY, CFS	0.00000	.04839	7.29315	.12246	0.00000		7.41561	.00091714			7.41561	.00091714	
OAK FLAT WATER DISTRICT	QUANTITY, AF	5700.0	41.4	5700.0	41.4	0.0	0.00000	5741.4	.00131382	.00171277	0.00000	5741.4	.00131382	.00171277
	CAPACITY, CFS	17.00630	.06814	17.00630	.06814	0.00000		17.07444	.00211172			17.07444	.00211172	
TOTAL	QUANTITY, AF	5700.0	30100.0	3970200.0	206300.0	193515.0	0.00000	4370015.0	1.00000000	1.00000000	0.00000	4370015.0	1.00000000	1.00000000
	CAPACITY, CFS	17.00630	49.54254	7485.64587	328.17562	271.75274		8085.57423	1.00000000			8085.57423	1.00000000	

TABLE B-3

REACH SUMMARY OF PROPORTIONATE USE OF PROJECT TRANSPORTATION FACILITIES
BY WATER SUPPLY CONTRACTORS

(in units as shown)

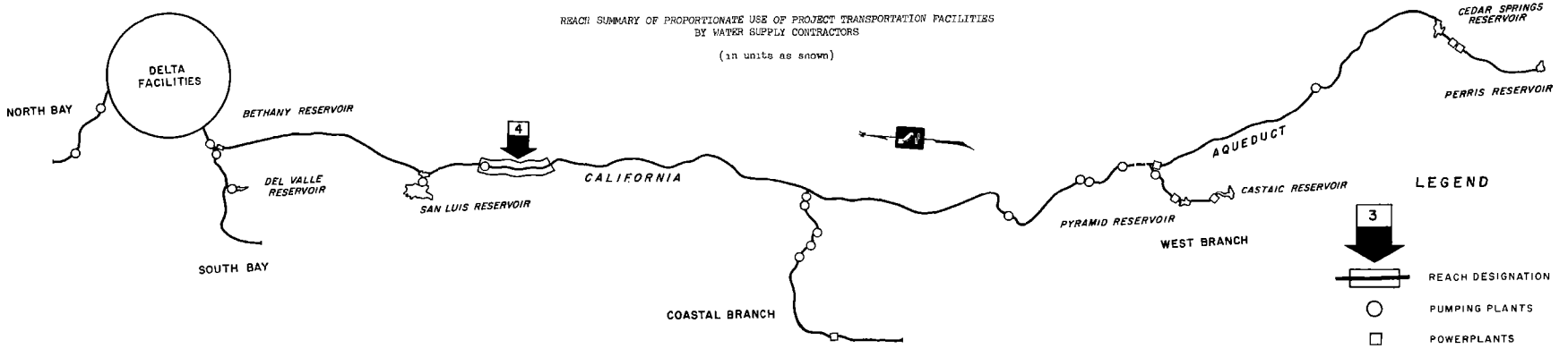


WATER SUPPLY CONTRACTOR	MEASURE OF USE	MAXIMUM ANNUAL ENTITLEMENTS DELIVERED FROM REACH	ESTIMATED OPERATIONAL LOSSES WITHIN REACH	CAPACITY PROVIDED IN REACH					PROPORTIONATE USE FOR ALLOCATION OF CAPITAL COSTS		CAPACITY PROVIDED IN REACH		PROPORTIONATE USE FOR ALLOCATION OF MINIMUM OMP&R COSTS	
				FOR DELIVERY OF ENTITLEMENTS	FOR COMPENSATION OF			SUBTOTAL	RATIOS OF TOTAL REACH USE	AVERAGE OF RATIOS	FOR REQUESTED EXCESS PEAKING	TOTAL FOR WATER SUPPLY CONTRACTORS	RATIOS OF TOTAL REACH USE	AVERAGE OF RATIOS
					OPERATIONAL LOSSES	SCHEDULED OUTAGES	DOWNSTREAM REGULATION							
REACH 3 - SAN LUIS FOREBAY TO DOS AMIGOS PUMPING PLANT	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	3704.8 6.09785	2011500.0 2778.44186	119103.4 185.78872	150862.5 212.39436	0.00000	2281465.9 3176.62494	.52638503 .39613604	.46126053	0.00000	2281465.9 3176.62494	.52638503 .39613604	.46126053
SAN BERNARDINO VALLEY MUNICIPAL WATER DISTRICT	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	182.4 .30022	98000.0 135.36530	6891.1 11.03282	7350.0 10.27353	0.00000	112241.1 156.67165	.02589652 .01953749	.02271701	0.00000	112241.1 156.67165	.02589652 .01953749	.02271701
BIG BEAR MUNICIPAL WATER DISTRICT	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	8.6 .01415	4600.0 6.35388	323.5 .51792	345.0 .48223	0.00000	5268.5 7.35403	.00121556 .00091707	.00106632	0.00000	5268.5 7.35403	.00121556 .00091707	.00106632
SAN GABRIEL VALLEY MUNICIPAL WATER DISTRICT	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	53.6 .08822	28800.0 39.78082	2025.0 3.24208	2160.0 3.01916	0.00000	32985.0 46.04206	.00761038 .00574160	.00667599	0.00000	32985.0 46.04206	.00761038 .00574160	.00667599
SAN GORGONIO PASS WATER AGENCY	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	32.2 .05300	17300.0 23.89612	1216.6 1.94783	1297.5 1.81359	0.00000	19814.1 27.65754	.00457156 .00344899	.00401027	0.00000	19814.1 27.65754	.00457156 .00344899	.00401027
CRESTLINE-LAKE ARROWHEAD WATER AGENCY	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	10.8 .01778	5800.0 8.01142	407.8 .65289	435.0 .60802	0.00000	6642.8 9.27233	.00153264 .00115629	.00134447	0.00000	6642.8 9.27233	.00153264 .00115629	.00134447
COACHELLA VALLEY COUNTY WATER DISTRICT	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	42.5 .06995	23100.0 31.90754	1332.6 2.19338	1732.5 2.39307	0.00000	26165.1 36.49399	.00603687 .00455093	.00529390	0.00000	26165.1 36.49399	.00603687 .00455093	.00529390
DESERT WATER AGENCY	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	70.1 .11538	38100.0 52.62671	2198.1 3.61790	2857.5 3.94700	0.00000	43155.6 60.19161	.00995696 .00750610	.00873153	0.00000	43155.6 60.19161	.00995696 .00750610	.00873153
MOJAVE WATER AGENCY	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	93.4 .15373	50800.0 70.16895	2931.1 4.82439	3810.0 5.26267	0.00000	57541.1 80.25601	.01327602 .01000820	.01164211	0.00000	57541.1 80.25601	.01327602 .01000820	.01164211
LITTLEROCK CREEK IRRIGATION DISTRICT	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	4.2 .00691	2300.0 3.17694	101.4 .16688	172.5 .23827	0.00000	2573.9 3.58209	.00059386 .00044670	.00052028	0.00000	2573.9 3.58209	.00059386 .00044670	.00052028
PALMDALE IRRIGATION DISTRICT	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	31.3 .03152	17300.0 23.89612	724.1 1.19184	1297.5 1.79221	0.00000	19321.6 26.88017	.00445792 .00335205	.00390499	0.00000	19321.6 26.88017	.00445792 .00335205	.00390499
ANTELOPE VALLEY-EAST KERN WATER AGENCY	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	248.8 .40951	138400.0 191.16896	4678.9 7.70113	10380.0 14.33767	0.00000	153458.9 213.20776	.03540639 .02658774	.03099706	0.00000	153458.9 213.20776	.03540639 .02658774	.03099706
UPPER SANTA CLARA VALLEY WATER AGENCY	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	75.6 .12443	41500.0 57.32306	1981.8 3.09463	3112.5 4.36471	0.00000	46594.3 64.78240	.01075034 .00807859	.00941447	0.00000	46594.3 64.78240	.01075034 .00807859	.00941447
VENTURA COUNTY FLOOD CONTROL DISTRICT	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	36.4 .05991	20000.0 27.62557	955.1 1.49143	1500.0 2.10347	0.00000	22455.1 31.22047	.00518089 .00389330	.00453710	0.00000	22455.1 31.22047	.00518089 .00389330	.00453710
KERN COUNTY WATER AGENCY - MUNICIPAL & INDUSTRIAL	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	252.4 .41543	142000.0 258.90686	3168.9 5.21581	0.0 0.00000	0.00000	145168.9 264.12267	.03349370 .03293700	.03321535	0.00000	145168.9 264.12267	.03349370 .03293700	.03321535
KERN COUNTY WATER AGENCY - AGRICULTURAL	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	1794.6 2.95379	1011400.0 3017.57433	20687.6 34.05038	0.0 0.00000	0.00000	1032087.6 3051.62471	.23812561 .38054808	.30933684	0.00000	1032087.6 3051.62471	.23812561 .38054808	.30933684
FUTURE CONTRACTOR - NUCLEAR	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	62.6 .10304	35000.0 48.34475	1016.4 1.67291	0.0 0.00000	0.00000	36016.4 50.01766	.00830979 .00623737	.00727358	0.00000	36016.4 50.01766	.00830979 .00623737	.00727358
SANTA BARBARA COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	105.5 .17365	57700.0 79.69977	2958.6 4.53897	4327.5 6.10693	0.00000	64986.1 90.34567	.01499374 .01126642	.01313008	0.00000	64986.1 90.34567	.01499374 .01126642	.01313008
SAN LUIS OBISPO COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	45.2 .07440	25000.0 34.53197	982.5 1.55085	1875.0 2.61585	0.00000	27857.5 38.69867	.00642735 .00482586	.00562660	0.00000	27857.5 38.69867	.00642735 .00482586	.00562660
DEVIL'S DEN WATER DISTRICT	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	22.5 .03703	12700.0 37.89123	260.3 .42843	0.0 0.00000	0.00000	12960.3 38.31966	.00299023 .00477859	.00388441	0.00000	12960.3 38.31966	.00299023 .00477859	.00388441
DUDLEY RIDGE WATER DISTRICT	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	101.6 .16723	57700.0 172.15151	746.9 1.72935	0.0 0.00000	0.00000	58446.9 173.38086	.01348500 .02162119	.01755309	0.00000	58446.9 173.38086	.01348500 .02162119	.01755309
TULARE LAKE BASIN WATER STORAGE DISTRICT	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	193.6 .31865	110000.0 328.19179	1319.5 2.17180	0.0 0.00000	0.00000	111319.5 330.36359	.02568389 .04119747	.03344068	0.00000	111319.5 330.36359	.02568389 .04119747	.03344068
HACIENDA WATER DISTRICT	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	15.0 .02469	8500.0 25.36027	110.1 .18121	0.0 0.00000	0.00000	8610.1 25.54148	.00198654 .00318511	.00258583	0.00000	8610.1 25.54148	.00198654 .00318511	.00258583
EMPIRE WEST SIDE IRRIGATION DISTRICT	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	5.3 .00872	3000.0 8.95069	33.7 .05546	0.0 0.00000	0.00000	3033.7 9.00615	.00069994 .00112310	.00091152	0.00000	3033.7 9.00615	.00069994 .00112310	.00091152
KINGS COUNTY	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	7.0 .01152	4000.0 7.29315	45.0 .07407	0.0 0.00000	0.00000	4045.0 7.36722	.00093327 .00091872	.00092599	0.00000	4045.0 7.36722	.00093327 .00091872	.00092599
TOTAL	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	7200.0 11.85071	3964500.0 7468.63957	176200.0 278.63308	193515.0 271.75274	0.00000	4334215.0 8019.02539	1.00000000 1.00000000	1.00000000	0.00000	4334215.0 8019.02539	1.00000000 1.00000000	1.00000000

TABLE B-3

REACH SUMMARY OF PROPORTIONATE USE OF PROJECT TRANSPORTATION FACILITIES
BY WATER SUPPLY CONTRACTORS

(in units as shown)

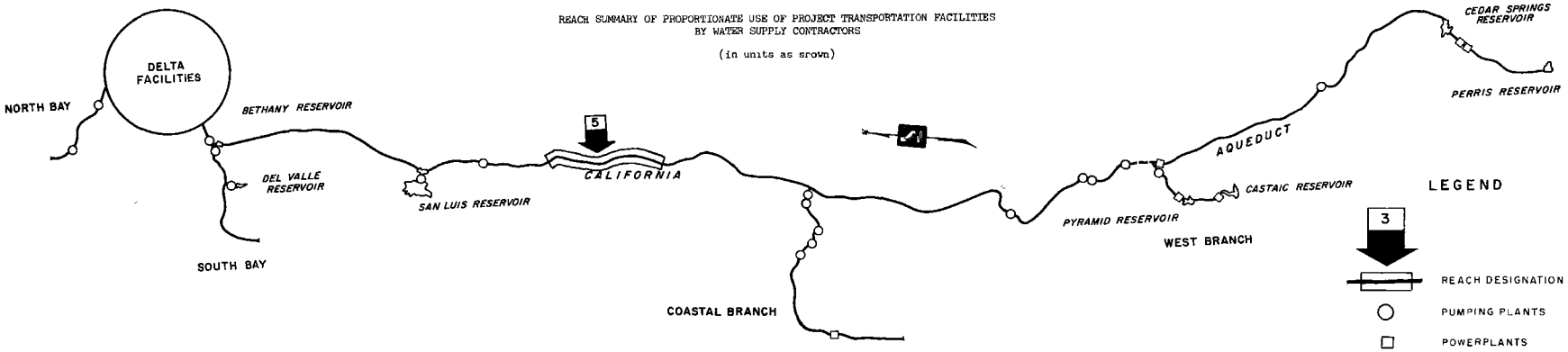


WATER SUPPLY CONTRACTOR	MEASURE OF USE	MAXIMUM ANNUAL ENTITLEMENTS DELIVERED FROM REACH	ESTIMATED OPERATIONAL LOSSES WITHIN REACH	CAPACITY PROVIDED IN REACH					PROPORTIONATE USE FOR ALLOCATION OF CAPITAL COSTS		CAPACITY PROVIDED IN REACH		PROPORTIONATE USE FOR ALLOCATION OF MINIMUM OMP&R COSTS	
				FOR DELIVERY OF ENTITLEMENTS	FOR COMPENSATION OF			SUBTOTAL	RATIOS OF TOTAL REACH USE	AVERAGE OF RATIOS	FOR REQUESTED EXCESS PEAKING	TOTAL FOR WATER SUPPLY CONTRACTORS	RATIOS OF TOTAL REACH USE	AVERAGE OF RATIOS
					OPERATIONAL LOSSES	SCHEDULED OUTAGES	DOWNSTREAM REGULATION							
REACH 4 - DOS AMIGOS PUMPING PLANT TO PANOCHE CREEK	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA	QUANTITY, AF	0.0	4888.2	2011500.0	115398.6	150862.5		2277761.1	.52640472		0.00000	2277761.1	.52640472	
	CAPACITY, CFS	0.00000	8.04584	2778.44186	179.69087	212.39436	0.00000	3170.52709	.39596077	.46118274		3170.52709	.39596077	.46118274
SAN BERNARDINO VALLEY MUNICIPAL WATER DISTRICT	QUANTITY, AF	0.0	240.6	98000.0	6708.7	7350.0		112058.7	.02589746		0.00000	112058.7	.02589746	
	CAPACITY, CFS	0.00000	.39601	135.36530	10.79260	10.27353	0.00000	156.37143	.01952892	.02271319		156.37143	.01952892	.02271319
BIG BEAR MUNICIPAL WATER DISTRICT	QUANTITY, AF	0.0	11.3	4600.0	314.9	345.0		5259.9	.00121560		0.00000	5259.9	.00121560	
	CAPACITY, CFS	0.00000	.01860	6.35388	.50377	.48223	0.00000	7.33988	.00091666	.00106613		7.33988	.00091666	.00106613
SAN GABRIEL VALLEY MUNICIPAL WATER DISTRICT	QUANTITY, AF	0.0	70.7	28800.0	1971.4	2160.0		32931.4	.00761065		0.00000	32931.4	.00761065	
	CAPACITY, CFS	0.00000	.11637	39.78082	3.15386	3.01916	0.00000	45.95384	.00573908	.00667487		45.95384	.00573908	.00667487
SAN GORGONIO PASS WATER AGENCY	QUANTITY, AF	0.0	42.5	17300.0	1184.4	1297.5		19781.9	.00457172		0.00000	19781.9	.00457172	
	CAPACITY, CFS	0.00000	.06995	23.89612	1.89483	1.81359	0.00000	27.60454	.00344748	.00400960		27.60454	.00344748	.00400960
CRESTLINE-LAKE ARROWHEAD WATER AGENCY	QUANTITY, AF	0.0	14.2	5800.0	397.0	435.0		6632.0	.00153270		0.00000	6632.0	.00153270	
	CAPACITY, CFS	0.00000	.02337	8.01142	.63511	.60802	0.00000	9.25455	.00115578	.00134424		9.25455	.00115578	.00134424
COACHELLA VALLEY COUNTY WATER DISTRICT	QUANTITY, AF	0.0	56.1	23100.0	1290.1	1732.5		26122.6	.00603709		0.00000	26122.6	.00603709	
	CAPACITY, CFS	0.00000	.09234	31.90754	2.12343	2.39307	0.00000	36.42404	.00454893	.00529301		36.42404	.00454893	.00529301
DESERT WATER AGENCY	QUANTITY, AF	0.0	92.5	38100.0	2128.0	2857.5		43085.5	.00995733		0.00000	43085.5	.00995733	
	CAPACITY, CFS	0.00000	.15225	52.62671	3.50252	3.94700	0.00000	60.07623	.00750280	.00873006		60.07623	.00750280	.00873006
MOJAVE WATER AGENCY	QUANTITY, AF	0.0	123.3	50800.0	2837.7	3810.0		57447.7	.01327652		0.00000	57447.7	.01327652	
	CAPACITY, CFS	0.00000	.20294	70.16895	4.67066	5.26267	0.00000	80.10228	.01000381	.01164017		80.10228	.01000381	.01164017
LITTLEROCK CREEK IRRIGATION DISTRICT	QUANTITY, AF	0.0	5.5	2300.0	97.2	172.5		2569.7	.00059387		0.00000	2569.7	.00059387	
	CAPACITY, CFS	0.00000	.00905	3.17694	.15997	.23827	0.00000	3.57518	.00044650	.00052019		3.57518	.00044650	.00052019
PALMDALE IRRIGATION DISTRICT	QUANTITY, AF	0.0	41.3	17300.0	692.8	1297.5		19290.3	.00445811		0.00000	19290.3	.00445811	
	CAPACITY, CFS	0.00000	.06798	23.89612	1.14032	1.79221	0.00000	26.82865	.00335058	.00390434		26.82865	.00335058	.00390434
ANTELOPE VALLEY-EAST KERN WATER AGENCY	QUANTITY, AF	0.0	328.3	138400.0	4430.1	10380.0		153210.1	.03540780		0.00000	153210.1	.03540780	
	CAPACITY, CFS	0.00000	.54036	191.16896	7.29162	14.33767	0.00000	212.79825	.02657595	.03099188		212.79825	.02657595	.03099188
UPPER SANTA CLARA VALLEY WATER AGENCY	QUANTITY, AF	0.0	99.8	41500.0	1906.2	3112.5		46518.7	.01075076		0.00000	46518.7	.01075076	
	CAPACITY, CFS	0.00000	.16426	57.32306	2.97020	4.36471	0.00000	64.65797	.00807500	.00941288		64.65797	.00807500	.00941288
VENTURA COUNTY FLOOD CONTROL DISTRICT	QUANTITY, AF	0.0	48.1	20000.0	918.7	1500.0		22418.7	.00518110		0.00000	22418.7	.00518110	
	CAPACITY, CFS	0.00000	.07917	27.62557	1.43152	2.10347	0.00000	31.16056	.00389158	.00453634		31.16056	.00389158	.00453634
KERN COUNTY WATER AGENCY - MUNICIPAL & INDUSTRIAL	QUANTITY, AF	0.0	333.1	142000.0	2916.5	0.0		144916.5	.03349110		0.00000	144916.5	.03349110	
	CAPACITY, CFS	0.00000	.54826	196.90686	4.80038	0.00000	0.00000	263.70724	.03293387	.03321248		263.70724	.03293387	.03321248
KERN COUNTY WATER AGENCY - AGRICULTURAL	QUANTITY, AF	0.0	2367.9	1011400.0	18893.0	0.0		1030293.0	.23810710		0.00000	1030293.0	.23810710	
	CAPACITY, CFS	0.00000	3.89740	3017.57433	31.09659	0.00000	0.00000	3048.67092	.38074240	.30942475		3048.67092	.38074240	.30942475
FUTURE CONTRACTOR - NUCLEAR	QUANTITY, AF	0.0	82.6	35000.0	953.8	0.0		35953.8	.00830915		0.00000	35953.8	.00830915	
	CAPACITY, CFS	0.00000	.13595	48.34475	1.56987	0.00000	0.00000	49.91462	.00623374	.00727144		49.91462	.00623374	.00727144
SANTA BARBARA COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT	QUANTITY, AF	0.0	139.2	57700.0	2853.1	4327.5		64880.6	.01499431		0.00000	64880.6	.01499431	
	CAPACITY, CFS	0.00000	.22911	79.69977	4.36532	6.10693	0.00000	90.17202	.01126140	.01312786		90.17202	.01126140	.01312786
SAN LUIS OBISPO COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT	QUANTITY, AF	0.0	59.6	25000.0	937.3	1875.0		27812.3	.00642759		0.00000	27812.3	.00642759	
	CAPACITY, CFS	0.00000	.09810	34.53197	1.47645	2.61585	0.00000	38.62427	.00482371	.00562565		38.62427	.00482371	.00562565
DEVIL'S DEN WATER DISTRICT	QUANTITY, AF	0.0	29.7	12700.0	237.8	0.0		12937.8	.00299001		0.00000	12937.8	.00299001	
	CAPACITY, CFS	0.00000	.04889	17.69123	.39140	0.00000	0.00000	18.28263	.00478104	.00388552		18.28263	.00478104	.00388552
DUDLEY RIDGE WATER DISTRICT	QUANTITY, AF	0.0	134.1	57700.0	645.3	0.0		58345.3	.01348396		0.00000	58345.3	.01348396	
	CAPACITY, CFS	0.00000	.22072	172.15151	1.06212	0.00000	0.00000	173.21363	.02163230	.01755813		173.21363	.02163230	.01755813
TULARE LAKE BASIN WATER STORAGE DISTRICT	QUANTITY, AF	0.0	255.4	110000.0	1125.9	0.0		111125.9	.02568188		0.00000	111125.9	.02568188	
	CAPACITY, CFS	0.00000	.42037	328.19179	1.85315	0.00000	0.00000	330.04494	.04121865	.03345027		330.04494	.04121865	.03345027
HACIENDA WATER DISTRICT	QUANTITY, AF	0.0	19.7	8500.0	95.1	0.0		8595.1	.00198638		0.00000	8595.1	.00198638	
	CAPACITY, CFS	0.00000	.03243	25.36027	.15652	0.00000	0.00000	25.51679	.00318674	.00258656		25.51679	.00318674	.00258656
EMPIRE WEST SIDE IRRIGATION DISTRICT	QUANTITY, AF	0.0	7.0	3000.0	28.4	0.0		3028.4	.00069988		0.00000	3028.4	.00069988	
	CAPACITY, CFS	0.00000	.01152	8.95069	.04674	0.00000	0.00000	8.99743	.00112367	.00091178		8.99743	.00112367	.00091178
KINGS COUNTY	QUANTITY, AF	0.0	9.3	4000.0	38.0	0.0		4038.0	.00093321		0.00000	4038.0	.00093321	
	CAPACITY, CFS	0.00000	.01531	7.29315	.06255	0.00000	0.00000	7.35570	.00091864	.00092592		7.35570	.00091864	.00092592
TOTAL	QUANTITY, AF	0.0	9500.0	3964500.0	169000.0	193516.0		4327015.0	1.00000000		0.00000	4327015.0	1.00000000	
	CAPACITY, CFS	0.00000	15.63635	7468.63957	266.78237	271.75274	0.00000	8007.17468	1.00000000	1.00000000		8007.17468	1.00000000	1.00000000

TABLE B-3

REACH SUMMARY OF PROPORTIONATE USE OF PROJECT TRANSPORTATION FACILITIES
BY WATER SUPPLY CONTRACTORS

(in units as shown)

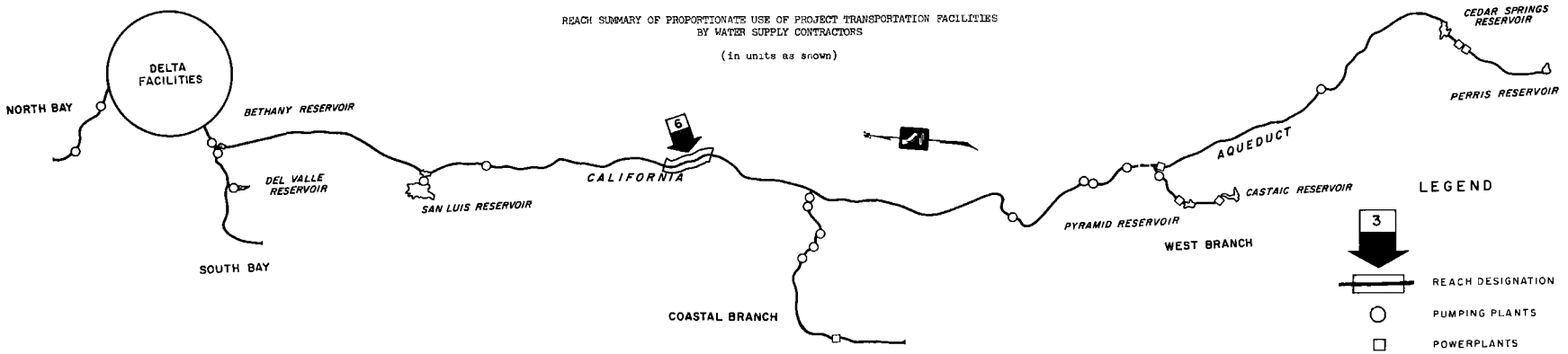


WATER SUPPLY CONTRACTOR	MEASURE OF USE	MAXIMUM ANNUAL ENTITLEMENTS DELIVERED FROM REACH	ESTIMATED OPERATIONAL LOSSES WITHIN REACH	CAPACITY PROVIDED IN REACH					PROPORTIONATE USE FOR ALLOCATION OF CAPITAL COSTS		CAPACITY PROVIDED IN REACH		PROPORTIONATE USE FOR ALLOCATION OF MINIMUM OMP&R COSTS	
				FOR DELIVERY OF ENTITLEMENTS	FOR COMPENSATION OF			SUBTOTAL	RATIOS OF TOTAL REACH USE	AVERAGE OF RATIOS	FOR REQUESTED EXCESS PEAKING	TOTAL FOR WATER SUPPLY CONTRACTORS	RATIOS OF TOTAL REACH USE	AVERAGE OF RATIOS
					OPERATIONAL LOSSES	SCHEDULED OUTAGES	DOWNSTREAM REGULATION							
REACH 5 - PANOCHE CREEK TO FIVE POINTS	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA	QUANTITY, AF	0.0	7666.8	2011500.0	110510.4	150862.5	0.00000	2272872.9	.52643081	.46107978	0.00000	2272872.9	.52643081	.46107978
	CAPACITY, CFS	0.00000	12.61903	2778.44186	171.64523	212.39436		3162.48145	.39572875			3162.48145	.39572875	
SAN BERNARDINO VALLEY MUNICIPAL WATER DISTRICT	QUANTITY, AF	0.0	377.4	98000.0	6468.1	7350.0	0.00000	111818.1	.02589872	.02270814	0.00000	111818.1	.02589872	.02270814
	CAPACITY, CFS	0.00000	.62117	135.36530	10.33659	10.27353		155.97542	.01951757			155.97542	.01951757	
BIG BEAR MUNICIPAL WATER DISTRICT	QUANTITY, AF	0.0	17.7	4600.0	303.6	345.0	0.00000	5248.6	.00121565	.00106589	0.00000	5248.6	.00121565	.00106589
	CAPACITY, CFS	0.00000	.02913	6.35388	.48517	.48223		7.32128	.00091613			7.32128	.00091613	
SAN GABRIEL VALLEY MUNICIPAL WATER DISTRICT	QUANTITY, AF	0.0	110.9	28800.0	1900.7	2160.0	0.00000	32860.7	.00761102	.00667339	0.00000	32860.7	.00761102	.00667339
	CAPACITY, CFS	0.00000	.18253	39.78082	3.03749	3.01916		45.83747	.00573575			45.83747	.00573575	
SAN GORGONIO PASS WATER AGENCY	QUANTITY, AF	0.0	66.6	17300.0	1141.9	1297.5	0.00000	19739.4	.00457194	.00400870	0.00000	19739.4	.00457194	.00400870
	CAPACITY, CFS	0.00000	.10962	23.89612	1.82488	1.81359		27.53459	.00344547			27.53459	.00344547	
CRESTLINE-LAKE ARROWHEAD WATER AGENCY	QUANTITY, AF	0.0	22.3	5800.0	382.8	435.0	0.00000	6617.8	.00153278	.00134395	0.00000	6617.8	.00153278	.00134395
	CAPACITY, CFS	0.00000	.03670	8.01142	.61174	.60802		9.23118	.00115512			9.23118	.00115512	
COACHELLA VALLEY COUNTY WATER DISTRICT	QUANTITY, AF	0.0	87.9	23100.0	1234.0	1732.5	0.00000	26066.5	.00603738	.00529183	0.00000	26066.5	.00603738	.00529183
	CAPACITY, CFS	0.00000	.14468	31.90754	2.03109	2.39307		36.33170	.00454627			36.33170	.00454627	
DESERT WATER AGENCY	QUANTITY, AF	0.0	145.0	38100.0	2035.5	2857.5	0.00000	42993.0	.00995781	.00872812	0.00000	42993.0	.00995781	.00872812
	CAPACITY, CFS	0.00000	.23866	52.62671	3.35027	3.94700		59.92398	.00749843			59.92398	.00749843	
MOJAVE WATER AGENCY	QUANTITY, AF	0.0	193.4	50800.0	2714.4	3810.0	0.00000	57324.4	.01327717	.01163758	0.00000	57324.4	.01327717	.01163758
	CAPACITY, CFS	0.00000	.31832	70.16895	4.46772	5.26267		79.89934	.00999799			79.89934	.00999799	
LITTLEROCK CREEK IRRIGATION DISTRICT	QUANTITY, AF	0.0	8.6	2300.0	91.7	172.5	0.00000	2564.2	.00059391	.00052007	0.00000	2564.2	.00059391	.00052007
	CAPACITY, CFS	0.00000	.01416	3.17694	.15092	.23827		3.56613	.00044624			3.56613	.00044624	
PALMDALE IRRIGATION DISTRICT	QUANTITY, AF	0.0	64.9	17300.0	651.5	1297.5	0.00000	19249.0	.00445835	.00390349	0.00000	19249.0	.00445835	.00390349
	CAPACITY, CFS	0.00000	.10682	23.89612	1.07234	1.79221		26.76067	.00334862			26.76067	.00334862	
ANTELOPE VALLEY-EAST KERN WATER AGENCY	QUANTITY, AF	0.0	514.9	138400.0	4101.8	10380.0	0.00000	152881.8	.03540967	.03098500	0.00000	152881.8	.03540967	.03098500
	CAPACITY, CFS	0.00000	.84749	191.16896	6.75126	14.33767		212.25789	.02656033			212.25789	.02656033	
UPPER SANTA CLARA VALLEY WATER AGENCY	QUANTITY, AF	0.0	156.5	41500.0	1806.4	3112.5	0.00000	46418.9	.01075130	.00941078	0.00000	46418.9	.01075130	.00941078
	CAPACITY, CFS	0.00000	.25759	57.32306	2.80594	4.36471		64.49371	.00807025			64.49371	.00807025	
VENTURA COUNTY FLOOD CONTROL DISTRICT	QUANTITY, AF	0.0	75.4	20000.0	870.6	1500.0	0.00000	22370.6	.00518136	.00453532	0.00000	22370.6	.00518136	.00453532
	CAPACITY, CFS	0.00000	.12410	27.62557	1.35235	2.10347		31.08139	.00388929			31.08139	.00388929	
KERN COUNTY WATER AGENCY - MUNICIPAL & INDUSTRIAL	QUANTITY, AF	0.0	522.4	142000.0	2583.4	0.0	0.00000	144583.4	.03348764	.03320867	0.00000	144583.4	.03348764	.03320867
	CAPACITY, CFS	0.00000	.85984	258.90686	4.25212	0.00000		263.15898	.03292970			263.15898	.03292970	
KERN COUNTY WATER AGENCY - AGRICULTURAL	QUANTITY, AF	0.0	3713.9	1011400.0	16525.1	0.0	0.00000	1027925.1	.23808258	.30954113	0.00000	1027925.1	.23808258	.30954113
	CAPACITY, CFS	0.00000	6.11283	3017.57433	27.19919	0.00000		3044.77352	.38099967			3044.77352	.38099967	
FUTURE CONTRACTOR - NUCLEAR	QUANTITY, AF	0.0	129.6	35000.0	871.2	0.0	0.00000	35871.2	.00830830	.00726861	0.00000	35871.2	.00830830	.00726861
	CAPACITY, CFS	0.00000	.21331	48.34475	1.43392	0.00000		49.77867	.00622892			49.77867	.00622892	
SANTA BARBARA COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT	QUANTITY, AF	0.0	218.3	57700.0	2713.9	4327.5	0.00000	64741.4	.01499506	.01312492	0.00000	64741.4	.01499506	.01312492
	CAPACITY, CFS	0.00000	.35931	79.69977	4.13621	6.10693		89.94291	.01125477			89.94291	.01125477	
SAN LUIS OBISPO COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT	QUANTITY, AF	0.0	93.5	25000.0	877.7	1875.0	0.00000	27752.7	.00642793	.00562440	0.00000	27752.7	.00642793	.00562440
	CAPACITY, CFS	0.00000	.15390	34.53197	1.37835	2.61585		38.52617	.00482087			38.52617	.00482087	
DEVIL'S DEN WATER DISTRICT	QUANTITY, AF	0.0	46.6	12700.0	208.1	0.0	0.00000	12908.1	.00298971	.00388699	0.00000	12908.1	.00298971	.00388699
	CAPACITY, CFS	0.00000	.07670	17.89123	.34251	0.00000		18.23374	.00478428			18.23374	.00478428	
DUDLEY RIDGE WATER DISTRICT	QUANTITY, AF	0.0	210.3	57700.0	511.2	0.0	0.00000	58211.2	.01348257	.01756479	0.00000	58211.2	.01348257	.01756479
	CAPACITY, CFS	0.00000	.34614	172.15151	.84140	0.00000		172.99291	.02164701			172.99291	.02164701	
TULARE LAKE BASIN WATER STORAGE DISTRICT	QUANTITY, AF	0.0	400.6	110000.0	870.5	0.0	0.00000	110870.5	.02567924	.03346297	0.00000	110870.5	.02567924	.03346297
	CAPACITY, CFS	0.00000	.65936	328.19179	1.43278	0.00000		329.62457	.04124670			329.62457	.04124670	
HACIENDA WATER DISTRICT	QUANTITY, AF	0.0	31.0	8500.0	75.4	0.0	0.00000	8575.4	.00198619	.00258755	0.00000	8575.4	.00198619	.00258755
	CAPACITY, CFS	0.00000	.05102	25.36027	.12409	0.00000		25.48436	.00318892			25.48436	.00318892	
EMPIRE WEST SIDE IRRIGATION DISTRICT	QUANTITY, AF	0.0	10.9	3000.0	21.4	0.0	0.00000	3021.4	.00069980	.00091212	0.00000	3021.4	.00069980	.00091212
	CAPACITY, CFS	0.00000	.01794	8.95069	.03522	0.00000		8.98591	.00112443			8.98591	.00112443	
KINGS COUNTY	QUANTITY, AF	0.0	14.6	4000.0	28.7	0.0	0.00000	4028.7	.00093311	.00092581	0.00000	4028.7	.00093311	.00092581
	CAPACITY, CFS	0.00000	.02403	7.29315	.04724	0.00000		7.34039	.00091852			7.34039	.00091852	
TOTAL	QUANTITY, AF	0.0	14900.0	3964500.0	159500.0	193515.0	0.00000	4317515.0	1.00000000	1.00000000	0.00000	4317515.0	1.00000000	1.00000000
	CAPACITY, CFS	0.00000	24.52438	7468.63957	251.14602	271.75274		7991.53833	1.00000000			7991.53833	1.00000000	

TABLE B-3

REACH SUMMARY OF PROPORTIONATE USE OF PROJECT TRANSPORTATION FACILITIES
BY WATER SUPPLY CONTRACTORS

(in units as shown)

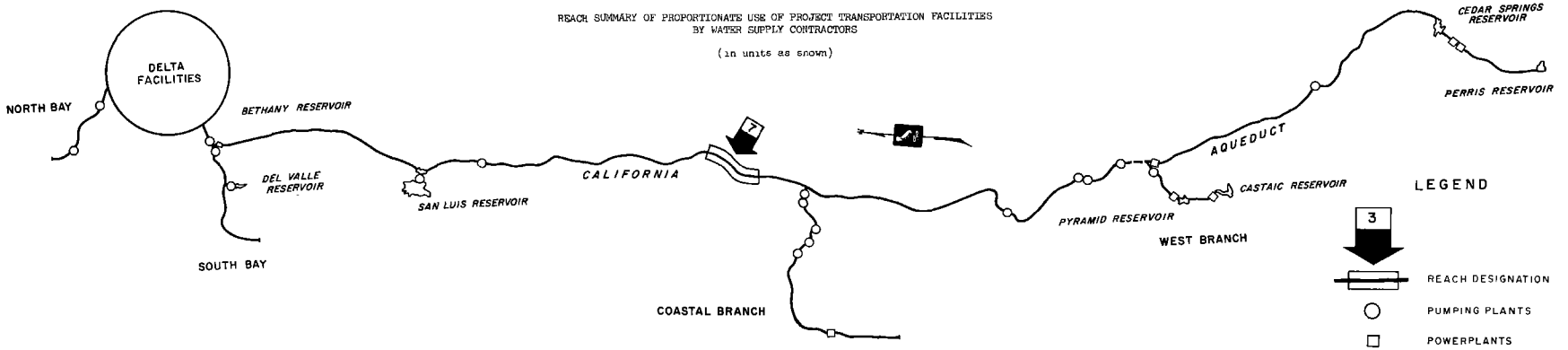


WATER SUPPLY CONTRACTOR	MEASURE OF USE	MAXIMUM ANNUAL ENTITLEMENTS DELIVERED FROM REACH	ESTIMATED OPERATIONAL LOSSES WITHIN REACH	CAPACITY PROVIDED IN REACH					PROPORTIONATE USE FOR ALLOCATION OF CAPITAL COSTS		CAPACITY PROVIDED IN REACH		PROPORTIONATE USE FOR ALLOCATION OF MINIMUM OMP&R COSTS	
				FOR DELIVERY OF ENTITLEMENTS	FOR COMPENSATION OF			SUBTOTAL	RATIOS OF TOTAL REACH USE	AVERAGE OF RATIOS	FOR REQUESTED EXCESS PEAKING	TOTAL FOR WATER SUPPLY CONTRACTORS	RATIOS OF TOTAL REACH USE	AVERAGE OF RATIOS
					OPERATIONAL LOSSES	SCHEDULED OUTAGES	DOWNSTREAM REGULATION							
REACH 6 - FIVE POINTS TO ARROYO PASAJERO	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	3087.3 5.08149	2011500.0 2778.44186	102843.6 159.02620	150862.5 212.39436	0.00000	2265206.1 3149.86242	.52647195 .39536299	.46091747	0.00000	2265206.1 3149.86242	.52647195 .39536299	.46091747
SAN BERNARDINO VALLEY MUNICIPAL WATER DISTRICT	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	152.0 .25018	98000.0 135.36530	6090.7 9.71547	7350.0 10.27353	0.00000	111440.7 155.35425	.02590069 .01949968	.02270019	0.00000	111440.7 155.35425	.02590069 .01949968	.02270019
BIG BEAR MUNICIPAL WATER DISTRICT	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	7.1 .01169	4600.0 6.35388	285.9 .45604	345.0 .48223	0.00000	5230.9 7.29215	.00121575 .00091529	.00106552	0.00000	5230.9 7.29215	.00121575 .00091529	.00106552
SAN GABRIEL VALLEY MUNICIPAL WATER DISTRICT	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	44.7 .07357	28800.0 39.78082	1789.8 2.85496	2160.0 3.01916	0.00000	32749.8 45.65494	.00761160 .00573050	.00667105	0.00000	32749.8 45.65494	.00761160 .00573050	.00667105
SAN GORGONIO PASS WATER AGENCY	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	26.8 .04411	17300.0 23.89612	1075.3 1.71526	1297.5 1.81359	0.00000	19672.8 27.42497	.00457229 .00344232	.00400730	0.00000	19672.8 27.42497	.00457229 .00344232	.00400730
CRESTLINE-LAKE ARROWHEAD WATER AGENCY	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	9.0 .01481	5800.0 8.01142	360.5 .57504	435.0 .60802	0.00000	6595.5 9.19448	.00153291 .00115407	.00134349	0.00000	6595.5 9.19448	.00153291 .00115407	.00134349
COACHELLA VALLEY COUNTY WATER DISTRICT	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	35.4 .05827	23100.0 31.90754	1146.1 1.88641	1732.5 2.39307	0.00000	25978.6 36.18702	.00603786 .00454211	.00528998	0.00000	25978.6 36.18702	.00603786 .00454211	.00528998
DESERT WATER AGENCY	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	58.4 .09612	38100.0 52.62671	1890.5 3.11161	2857.5 3.94700	0.00000	42848.0 59.68532	.00995860 .00749156	.00872507	0.00000	42848.0 59.68532	.00995860 .00749156	.00872507
MOJAVE WATER AGENCY	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	77.9 .12822	50800.0 70.16899	2521.0 4.14940	3810.0 5.26267	0.00000	57131.0 79.58102	.01327820 .00998681	.01163351	0.00000	57131.0 79.58102	.01327820 .00998681	.01163351
LITTLEROCK CREEK IRRIGATION DISTRICT	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	3.5 .00576	2300.0 3.17694	83.1 .13676	172.5 .23827	0.00000	2555.6 3.55197	.00059396 .00044583	.00051990	0.00000	2555.6 3.55197	.00059396 .00044583	.00051990
PALMDALE IRRIGATION DISTRICT	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	26.1 .04296	17300.0 23.89612	586.6 .96552	1297.5 1.79221	0.00000	19184.1 26.65385	.00445871 .00334553	.00390212	0.00000	19184.1 26.65385	.00445871 .00334553	.00390212
ANTELOPE VALLEY-EAST KERN WATER AGENCY	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	207.3 .34120	138400.0 191.16896	3586.9 5.90377	10380.0 14.33767	0.00000	152366.9 211.41040	.03541263 .02653571	.03097417	0.00000	152366.9 211.41040	.03541263 .02653571	.03097417
UPPER SANTA CLARA VALLEY WATER AGENCY	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	63.0 .10369	41500.0 57.32306	1649.9 2.54835	3112.5 4.36411	0.00000	46262.4 64.23612	.01075216 .00806276	.00940746	0.00000	46262.4 64.23612	.01075216 .00806276	.00940746
VENTURA COUNTY FLOOD CONTROL DISTRICT	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	30.4 .05004	20000.0 27.62557	795.2 1.22825	1500.0 2.10347	0.00000	22295.2 30.95729	.00518178 .00388568	.00453375	0.00000	22295.2 30.95729	.00518178 .00388568	.00453375
KERN COUNTY WATER AGENCY - MUNICIPAL & INDUSTRIAL	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	210.3 .34614	142000.0 258.90686	2061.0 3.39228	0.0 0.00000	0.00000	144061.0 262.29914	.03348220 .03292314	.03320267	0.00000	144061.0 262.29914	.03348220 .03292314	.03320267
KERN COUNTY WATER AGENCY - AGRICULTURAL	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	1495.5 2.46149	1011400.0 3017.57433	12811.2 21.08636	0.0 0.00000	0.00000	1024211.2 3038.66069	.23804389 .38140522	.30972455	0.00000	1024211.2 3038.66069	.23804389 .38140522	.30972455
FUTURE CONTRACTOR - NUCLEAR	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	52.2 .08592	35000.0 48.34475	741.6 1.22061	0.0 0.00000	0.00000	35741.6 49.56536	.00830695 .00622132	.00726414	0.00000	35741.6 49.56536	.00830695 .00622132	.00726414
SANTA BARBARA COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	87.9 .14468	57700.0 79.69977	2495.6 3.77690	4327.5 6.10693	0.00000	64523.1 89.58360	.01499625 .01124431	.01312028	0.00000	64523.1 89.58360	.01499625 .01124431	.01312028
SAN LUIS OBISPO COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	37.6 .06189	25000.0 34.53197	784.2 1.22445	1875.0 2.61585	0.00000	27659.2 38.37227	.00642846 .00481639	.00562243	0.00000	27659.2 38.37227	.00642846 .00481639	.00562243
DEVIL'S DEN WATER DISTRICT	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	18.8 .03094	12700.0 37.89123	161.5 .76581	0.0 0.00000	0.00000	12861.5 38.15704	.00298923 .00478938	.00388930	0.00000	12861.5 38.15704	.00298923 .00478938	.00388930
DUDLEY RIDGE WATER DISTRICT	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	84.7 .13941	57700.0 172.15151	300.9 .49526	0.0 0.00000	0.00000	58000.9 172.64677	.01348038 .02167020	.01757529	0.00000	58000.9 172.64677	.01348038 .02167020	.01757529
TULARE LAKE BASIN WATER STORAGE DISTRICT	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	161.3 .26549	110000.0 328.19179	469.9 .77342	0.0 0.00000	0.00000	110469.9 328.96521	.02567506 .04129090	.03348298	0.00000	110469.9 328.96521	.02567506 .04129090	.03348298
HACIENDA WATER DISTRICT	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	12.5 .02057	8500.0 25.36027	44.4 .07307	0.0 0.00000	0.00000	8544.4 25.43334	.00198586 .00319233	.00258910	0.00000	8544.4 25.43334	.00198586 .00319233	.00258910
EMPIRE WEST SIDE IRRIGATION DISTRICT	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	4.4 .00724	3000.0 8.95069	10.5 .01728	0.0 0.00000	0.00000	3010.5 8.96797	.00069969 .00112564	.00091266	0.00000	3010.5 8.96797	.00069969 .00112564	.00091266
KINGS COUNTY	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	5.9 .00971	4000.0 7.29315	14.1 .02321	0.0 0.00000	0.00000	4014.1 7.31636	.00093294 .00091833	.00092564	0.00000	4014.1 7.31636	.00093294 .00091833	.00092564
TOTAL	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	6000.0 9.87559	3964500.0 7468.63957	144600.0 226.62164	193215.0 271.75274	0.00000	4302815.0 7967.01395	1.00000000 1.00000000	1.00000000	0.00000	4302815.0 7967.01395	1.00000000 1.00000000	1.00000000

TABLE B-3

REACH SUMMARY OF PROPORTIONATE USE OF PROJECT TRANSPORTATION FACILITIES
BY WATER SUPPLY CONTRACTORS

(in units as shown)

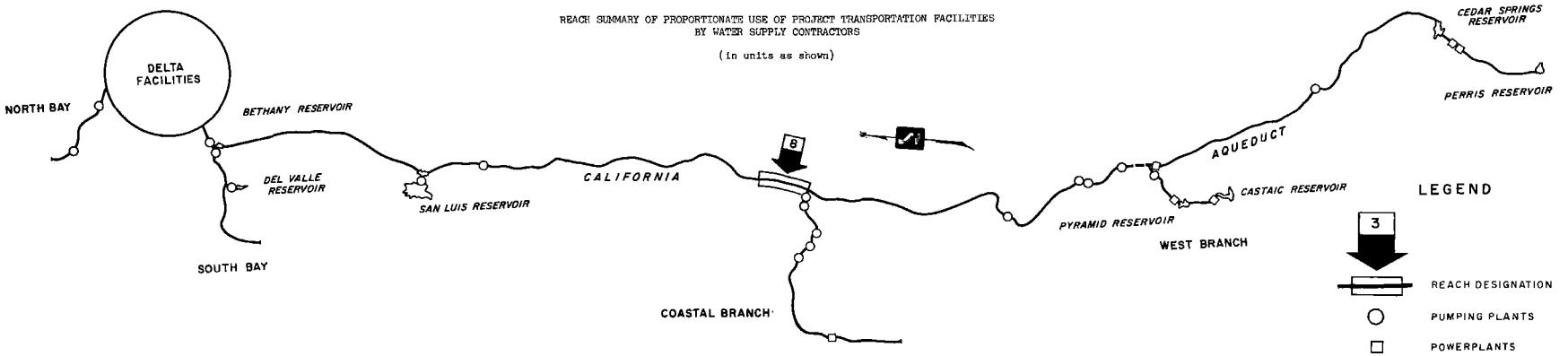


WATER SUPPLY CONTRACTOR	MEASURE OF USE	MAXIMUM ANNUAL ENTITLEMENTS DELIVERED FROM REACH	ESTIMATED OPERATIONAL LOSSES WITHIN REACH	CAPACITY PROVIDED IN REACH					PROPORTIONATE USE FOR ALLOCATION OF CAPITAL COSTS		CAPACITY PROVIDED IN REACH		PROPORTIONATE USE FOR ALLOCATION OF MINIMUM OMP&R COSTS	
				FOR DELIVERY OF ENTITLEMENTS	FOR COMPENSATION OF: OPERATIONAL LOSSES	FOR COMPENSATION OF: SCHEDULED OUTAGES	FOR COMPENSATION OF: DOWNSTREAM REGULATION	SUBTOTAL	RATIOS OF TOTAL REACH USE	AVERAGE OF RATIOS	FOR REQUESTED EXCESS PEAKING	TOTAL FOR WATER SUPPLY CONTRACTORS	RATIOS OF TOTAL REACH USE	AVERAGE OF RATIOS
REACH 7 - ARROYO PASAJERO TO KETTLEMAN CITY	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA	QUANTITY, AF	0.0	4322.2	2011500.0	99756.3	150862.5	0.00000	2262118.8	.52648860	.46085183	0.00000	2262118.8	.52648860	.46085183
	CAPACITY, CFS	0.00000	7.11405	2778.44186	153.94471	212.39436		3144.78093	.39521506			3144.78093	.39521506	
SAN BERNARDINO VALLEY MUNICIPAL WATER DISTRICT	QUANTITY, AF	0.0	212.8	98000.0	5938.7	7350.0	0.00000	111288.7	.02590148	.02269696	0.00000	111288.7	.02590148	.02269696
	CAPACITY, CFS	0.00000	.35025	135.36530	9.46524	10.27353		155.10407	.01949244			155.10407	.01949244	
BIG BEAR MUNICIPAL WATER DISTRICT	QUANTITY, AF	0.0	10.0	4600.0	278.8	345.0	0.00000	5223.8	.00121579	.00106538	0.00000	5223.8	.00121579	.00106538
	CAPACITY, CFS	0.00000	.01646	6.35388	.44435	.48223		7.28046	.00091496			7.28046	.00091496	
SAN GABRIEL VALLEY MUNICIPAL WATER DISTRICT	QUANTITY, AF	0.0	62.5	28800.0	1745.1	2160.0	0.00000	32705.1	.00761183	.00667010	0.00000	32705.1	.00761183	.00667010
	CAPACITY, CFS	0.00000	.10287	39.78062	2.78139	3.01916		45.58137	.00572836			45.58137	.00572836	
SAN GORGONIO PASS WATER AGENCY	QUANTITY, AF	0.0	37.6	17300.0	1048.5	1297.5	0.00000	19646.0	.00457244	.00400674	0.00000	19646.0	.00457244	.00400674
	CAPACITY, CFS	0.00000	.06189	23.89612	1.67115	1.81359		27.38086	.00344104			27.38086	.00344104	
CRESTLINE-LAKE ARROWHEAD WATER AGENCY	QUANTITY, AF	0.0	12.6	5800.0	351.5	435.0	0.00000	6586.5	.00153295	.00134330	0.00000	6586.5	.00153295	.00134330
	CAPACITY, CFS	0.00000	.02074	8.01142	.56023	.60802		9.17967	.00115364			9.17967	.00115364	
COACHELLA VALLEY COUNTY WATER DISTRICT	QUANTITY, AF	0.0	49.6	23100.0	1110.7	1732.5	0.00000	25943.2	.00603805	.00528924	0.00000	25943.2	.00603805	.00528924
	CAPACITY, CFS	0.00000	.08164	31.90754	1.82814	2.39307		36.12875	.00454042			36.12875	.00454042	
DESERT WATER AGENCY	QUANTITY, AF	0.0	81.7	38100.0	1832.1	2857.5	0.00000	42789.6	.00995891	.00872384	0.00000	42789.6	.00995891	.00872384
	CAPACITY, CFS	0.00000	.13447	52.62671	3.01549	3.94700		59.58920	.00748877			59.58920	.00748877	
MOJAVE WATER AGENCY	QUANTITY, AF	0.0	109.0	50800.0	2443.1	3810.0	0.00000	57053.1	.01327862	.01163186	0.00000	57053.1	.01327862	.01163186
	CAPACITY, CFS	0.00000	.17941	70.16895	4.02118	5.26267		79.45280	.00998510			79.45280	.00998510	
LITTLEROCK CREEK IRRIGATION DISTRICT	QUANTITY, AF	0.0	4.9	2300.0	79.6	172.5	0.00000	2552.1	.00059398	.00051982	0.00000	2552.1	.00059398	.00051982
	CAPACITY, CFS	0.00000	.00806	3.17694	.13100	.23827		3.54621	.00044566			3.54621	.00044566	
PALMDALE IRRIGATION DISTRICT	QUANTITY, AF	0.0	36.6	17300.0	560.5	1297.5	0.00000	19158.0	.00445886	.00390157	0.00000	19158.0	.00445886	.00390157
	CAPACITY, CFS	0.00000	.06024	23.89612	.92256	1.79221		26.61089	.00334428			26.61089	.00334428	
ANTELOPE VALLEY-EAST KERN WATER AGENCY	QUANTITY, AF	0.0	290.3	138400.0	3379.6	10380.0	0.00000	152159.6	.03541383	.03096980	0.00000	152159.6	.03541383	.03096980
	CAPACITY, CFS	0.00000	.47781	191.16896	5.66757	14.33767		211.06920	.02652577			211.06920	.02652577	
UPPER SANTA CLARA VALLEY WATER AGENCY	QUANTITY, AF	0.0	88.2	41500.0	1586.9	3112.5	0.00000	46199.4	.01075251	.00940612	0.00000	46199.4	.01075251	.00940612
	CAPACITY, CFS	0.00000	.14517	57.32306	2.44466	4.36471		64.13243	.00805974			64.13243	.00805974	
VENTURA COUNTY FLOOD CONTROL DISTRICT	QUANTITY, AF	0.0	42.5	20000.0	764.8	1500.0	0.00000	22264.8	.00518194	.00453308	0.00000	22264.8	.00518194	.00453308
	CAPACITY, CFS	0.00000	.06995	27.62557	1.17821	2.10347		30.90725	.00388422			30.90725	.00388422	
KERN COUNTY WATER AGENCY - MUNICIPAL & INDUSTRIAL	QUANTITY, AF	0.0	294.5	142000.0	1850.7	0.0	0.00000	143850.7	.03348001	.03320025	0.00000	143850.7	.03348001	.03320025
	CAPACITY, CFS	0.00000	.48473	196.90686	3.06614	0.00000		261.95300	.03292050			261.95300	.03292050	
KERN COUNTY WATER AGENCY - AGRICULTURAL	QUANTITY, AF	0.0	2093.7	1011600.0	11315.7	0.0	0.00000	1022715.7	.23802824	.30979874	0.00000	1022715.7	.23802824	.30979874
	CAPACITY, CFS	0.00000	3.44609	3017.57433	18.62487	0.00000		3036.19920	.38156924			3036.19920	.38156924	
FUTURE CONTRACTOR - NUCLEAR	QUANTITY, AF	0.0	73.1	35000.0	689.4	0.0	0.00000	35689.4	.00830640	.00726232	0.00000	35689.4	.00830640	.00726232
	CAPACITY, CFS	0.00000	.12032	48.34475	1.13469	0.00000		49.47944	.00621825			49.47944	.00621825	
SANTA BARBARA COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT	QUANTITY, AF	0.0	123.0	57700.0	2407.7	4327.5	0.00000	64435.2	.01499674	.01311841	0.00000	64435.2	.01499674	.01311841
	CAPACITY, CFS	0.00000	.20245	79.69977	3.63222	6.10693		89.43892	.01124009			89.43892	.01124009	
SAN LUIS OBISPO COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT	QUANTITY, AF	0.0	52.7	25000.0	746.6	1875.0	0.00000	27621.6	.00642869	.00562164	0.00000	27621.6	.00642869	.00562164
	CAPACITY, CFS	0.00000	.08674	34.53197	1.16256	2.61585		38.31038	.00481459			38.31038	.00481459	
DEVIL'S DEN WATER DISTRICT	QUANTITY, AF	0.0	26.3	12700.0	142.7	0.0	0.00000	12842.7	.00298903	.00389023	0.00000	12842.7	.00298903	.00389023
	CAPACITY, CFS	0.00000	.04329	17.89123	.23487	0.00000		18.12610	.00479143			18.12610	.00479143	
DUDLEY RIDGE WATER DISTRICT	QUANTITY, AF	0.0	118.6	57700.0	216.2	0.0	0.00000	57916.2	.01347949	.01757953	0.00000	57916.2	.01347949	.01757953
	CAPACITY, CFS	0.00000	.19521	172.15151	.35585	0.00000		172.50736	.02167957			172.50736	.02167957	
TULARE LAKE BASIN WATER STORAGE DISTRICT	QUANTITY, AF	61050.0	225.8	110000.0	308.6	0.0	0.00000	110308.6	.02567337	.03349108	0.00000	110308.6	.02567337	.03349108
	CAPACITY, CFS	182.14644	.37165	328.19179	.50793	0.00000		328.69972	.04130879			328.69972	.04130879	
HACIENDA WATER DISTRICT	QUANTITY, AF	0.0	17.5	8500.0	31.9	0.0	0.00000	8531.9	.00198573	.00258972	0.00000	8531.9	.00198573	.00258972
	CAPACITY, CFS	0.00000	.02880	25.36027	.05250	0.00000		25.41277	.00319371			25.41277	.00319371	
EMPIRE WEST SIDE IRRIGATION DISTRICT	QUANTITY, AF	3000.0	6.1	3000.0	6.1	0.0	0.00000	3006.1	.00069964	.00091288	0.00000	3006.1	.00069964	.00091288
	CAPACITY, CFS	8.95069	.01004	8.95069	.01004	0.00000		8.96073	.00112612			8.96073	.00112612	
KINGS COUNTY	QUANTITY, AF	4000.0	8.2	4000.0	8.2	0.0	0.00000	4008.2	.00093287	.00092556	0.00000	4008.2	.00093287	.00092556
	CAPACITY, CFS	7.29315	.01350	7.29315	.01350	0.00000		7.30665	.00091825			7.30665	.00091825	
TOTAL	QUANTITY, AF	68050.0	8400.0	3964500.0	138600.0	103515.0	0.00000	4296615.0	1.00000000	1.00000000	0.00000	4296615.0	1.00000000	1.00000000
	CAPACITY, CFS	198.39028	13.82583	7468.63957	216.74605	271.75274		7957.13836	1.00000000			7957.13836	1.00000000	

TABLE B-3

REACH SUMMARY OF PROPORTIONATE USE OF PROJECT TRANSPORTATION FACILITIES
BY WATER SUPPLY CONTRACTORS

(In units as shown)

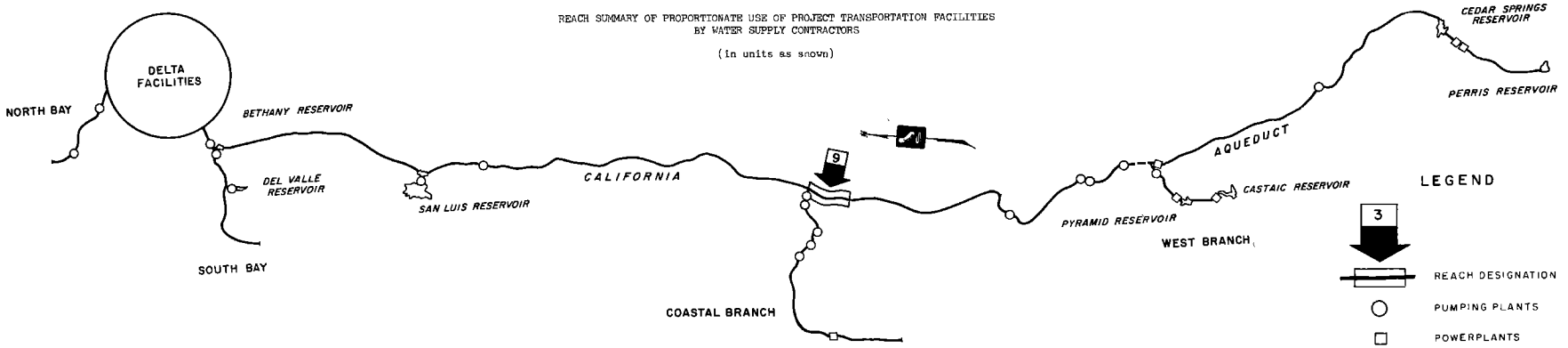


WATER SUPPLY CONTRACTOR	MEASURE OF USE	MAXIMUM ANNUAL ENTITLEMENTS DELIVERED FROM REACH	ESTIMATED OPERATIONAL LOSSES WITHIN REACH	CAPACITY PROVIDED IN REACH					PROPORTIONATE USE FOR ALLOCATION OF CAPITAL COSTS		CAPACITY PROVIDED IN REACH		PROPORTIONATE USE FOR ALLOCATION OF MINIMUM OMP&R COSTS	
				FOR DELIVERY OF ENTITLEMENTS	FOR COMPENSATION OF			SUBTOTAL	RATIOS OF TOTAL REACH USE	AVERAGE OF RATIOS	FOR REQUESTED EXCESS PEAKING	TOTAL FOR WATER SUPPLY CONTRACTORS	RATIOS OF TOTAL REACH USE	AVERAGE OF RATIOS
					OPERATIONAL LOSSES	SCHEDULED OUTAGES	DOWNSTREAM REGULATION							
REACH 8 - KETTLEMAN CITY TO AVENAL GAP	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA	QUANTITY, AF	0.0	3558.1	2011500.0	95434.1	150662.5	0.00000	2257796.6	.53500197	.47006382	237.57992	2257796.6	.53500197	.47891632
	CAPACITY, CFS	0.00000	5.85639	2778.44186	146.83066	212.39436		3137.66688	.40512568			3375.24680	.42283068	
SAN BERNARDINO VALLEY MUNICIPAL WATER DISTRICT	QUANTITY, AF	0.0	175.2	98000.0	5725.9	7350.0	0.00000	111075.9	.02632027	.02315080	0.00000	111075.9	.02632027	.02285345
	CAPACITY, CFS	0.00000	.28837	135.36530	9.11499	10.27353		154.75382	.01998133			154.75382	.01928063	
BIG BEAR MUNICIPAL WATER DISTRICT	QUANTITY, AF	0.0	8.2	4600.0	268.8	345.0	0.00000	5213.8	.00123545	.00108668	0.00000	5213.8	.00123545	.00107272
	CAPACITY, CFS	0.00000	.01350	6.35388	.42789	.48223		7.26400	.00093791			7.26400	.00090999	
SAN GABRIEL VALLEY MUNICIPAL WATER DISTRICT	QUANTITY, AF	0.0	51.5	28800.0	1682.6	2160.0	0.00000	32642.6	.00773491	.00680348	0.00000	32642.6	.00773491	.00671609
	CAPACITY, CFS	0.00000	.08477	39.78082	2.67852	3.01916		45.47850	.00587204			45.47850	.00569727	
SAN GORGONIO PASS WATER AGENCY	QUANTITY, AF	0.0	30.9	17300.0	1010.9	1297.5	0.00000	19608.4	.00464636	.00408685	0.00000	19608.4	.00464636	.00403436
	CAPACITY, CFS	0.00000	.05086	23.89612	1.60926	1.81359		27.31897	.00352734			27.31897	.00342236	
CRESTLINE-LAKE ARROWHEAD WATER AGENCY	QUANTITY, AF	0.0	10.4	5800.0	338.9	435.0	0.00000	6573.9	.00155774	.00137015	0.00000	6573.9	.00155774	.00135256
	CAPACITY, CFS	0.00000	.01712	8.01142	.53949	.60802		9.15893	.00118257			9.15893	.00114736	
COACHELLA VALLEY COUNTY WATER DISTRICT	QUANTITY, AF	0.0	40.8	23100.0	1061.1	1732.5	0.00000	25893.6	.00613568	.00539499	0.00000	25893.6	.00613568	.00532573
	CAPACITY, CFS	0.00000	.06715	31.90754	1.74650	2.39307		36.04711	.00465429			36.04711	.00451576	
DESERT WATER AGENCY	QUANTITY, AF	0.0	67.3	38100.0	1750.4	2857.5	0.00000	42707.9	.01011996	.00889828	0.00000	42707.9	.01011996	.00878405
	CAPACITY, CFS	0.00000	.11077	52.62671	2.88102	3.94700		59.45473	.00767661			59.45473	.00744813	
MOJAVE WATER AGENCY	QUANTITY, AF	0.0	89.7	50800.0	2334.1	3810.0	0.00000	56944.1	.01349334	.01186443	0.00000	56944.1	.01349334	.01171211
	CAPACITY, CFS	0.00000	.14764	70.16895	3.84177	5.26267		79.27339	.01023553			79.27339	.00993089	
LITTLEROCK CREEK IRRIGATION DISTRICT	QUANTITY, AF	0.0	4.0	2300.0	74.7	172.5	0.00000	2547.2	.00060358	.00053021	0.00000	2547.2	.00060358	.00052341
	CAPACITY, CFS	0.00000	.00658	3.17694	.12294	.23827		3.53815	.00045683			3.53815	.00044324	
PALMDALE IRRIGATION DISTRICT	QUANTITY, AF	0.0	30.1	17300.0	523.9	1297.5	0.00000	19121.4	.00453096	.00397955	0.00000	19121.4	.00453096	.00392853
	CAPACITY, CFS	0.00000	.04954	23.89612	.86232	1.79221		26.55065	.00342814			26.55065	.00332611	
ANTELOPE VALLEY-EAST KERN WATER AGENCY	QUANTITY, AF	0.0	238.9	138400.0	3089.3	10380.0	0.00000	151869.3	.03598658	.03158874	0.00000	151869.3	.03598658	.03118410
	CAPACITY, CFS	0.00000	.39321	191.16896	5.08476	14.33767		210.59139	.02719090			210.59139	.02638163	
UPPER SANTA CLARA VALLEY WATER AGENCY	QUANTITY, AF	0.0	72.6	41500.0	1498.7	3112.5	0.00000	46111.2	.01092640	.00959412	0.00000	46111.2	.01092640	.00947117
	CAPACITY, CFS	0.00000	.11950	57.32306	2.29949	4.36471		63.98726	.00826183			63.98726	.00801594	
VENTURA COUNTY FLOOD CONTROL DISTRICT	QUANTITY, AF	0.0	35.0	20000.0	722.3	1500.0	0.00000	22222.3	.00526574	.00462368	0.00000	22222.3	.00526574	.00456443
	CAPACITY, CFS	0.00000	.05761	27.62557	1.10826	2.10347		30.83730	.00398162			30.83730	.00386311	
KERN COUNTY WATER AGENCY - MUNICIPAL & INDUSTRIAL	QUANTITY, AF	0.0	242.4	142000.0	1556.2	0.0	0.00000	143556.2	.03401673	.03388834	0.00000	143556.2	.03401673	.03338595
	CAPACITY, CFS	0.00000	.39897	256.90686	2.56141			261.46827	.03375996			261.46827	.03275518	
KERN COUNTY WATER AGENCY - AGRICULTURAL	QUANTITY, AF	0.0	1722.6	1011400.0	9722.0	0.0	0.00000	1020622.0	.24184410	.31671182	0.00000	1020622.0	.24184410	.31088461
	CAPACITY, CFS	0.00000	2.83693	3011.57433	15.17878			3032.75311	.39157954			3032.75311	.37992512	
FUTURE CONTRACTOR - NUCLEAR	QUANTITY, AF	0.0	60.2	35000.0	616.3	0.0	0.00000	35616.3	.00843955	.00740632	0.00000	35616.3	.00843955	.00731148
	CAPACITY, CFS	0.00000	.09909	48.34475	1.01437			49.35912	.00637309			49.35912	.00618341	
SANTA BARBARA COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT	QUANTITY, AF	0.0	101.3	57700.0	2284.7	4327.5	0.00000	64312.2	.01523926	.01338060	0.00000	64312.2	.01523926	.01320914
	CAPACITY, CFS	0.00000	.16673	79.69977	3.47977	6.10693		89.23647	.01152193			89.23647	.01117901	
SAN LUIS OBISPO COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT	QUANTITY, AF	0.0	43.4	25000.0	693.9	1875.0	0.00000	27568.9	.00653266	.00573399	0.00000	27568.9	.00653266	.00566054
	CAPACITY, CFS	0.00000	.07143	34.53197	1.07582	2.61585		38.22364	.00493532			38.22364	.00476843	
DEVIL'S DEN WATER DISTRICT	QUANTITY, AF	0.0	21.6	12700.0	116.4	0.0	0.00000	12816.4	.00303694	.00397704	0.00000	12816.4	.00303694	.00390386
	CAPACITY, CFS	0.00000	.03555	17.89123	.19158			18.08281	.00491713			18.08281	.00477079	
DUDLEY RIDGE WATER DISTRICT	QUANTITY, AF	57700.0	97.6	57700.0	97.6	0.0	0.00000	57797.6	.01369558	.01797199	0.00000	57797.6	.01369558	.01764091
	CAPACITY, CFS	172.19151	.16064	172.19151	.16064			172.31215	.02224840			172.31215	.02156623	
TULARE LAKE BASIN WATER STORAGE DISTRICT	QUANTITY, AF	48950.0	82.8	48950.0	82.8	0.0	0.00000	49032.8	.01161969	.01524660	0.00000	49032.8	.01161969	.01496573
	CAPACITY, CFS	146.04535	.13628	146.04535	.13628			146.18163	.01887451			146.18163	.01831276	
HACIENDA WATER DISTRICT	QUANTITY, AF	8500.0	14.4	8500.0	14.4	0.0	0.00000	8514.4	.00201755	.00264752	0.00000	8514.4	.00201755	.00259875
	CAPACITY, CFS	25.36027	.02370	25.36027	.02370			25.38397	.00327750			25.38397	.00317995	
TOTAL	QUANTITY, AF	115150.0	6800.0	3896450.0	130200.0	193515.0	0.00000	4220165.0	1.00000000	1.00000000	237.57992	4220165.0	1.00000000	1.00000000
	CAPACITY, CFS	343.55713	11.19233	7270.24929	262.92022	271.75974		7744.92225	1.00000000			7982.90217	1.00000000	

TABLE B-3

REACH SUMMARY OF PROPORTIONATE USE OF PROJECT TRANSPORTATION FACILITIES
BY WATER SUPPLY CONTRACTORS

(In units as shown)

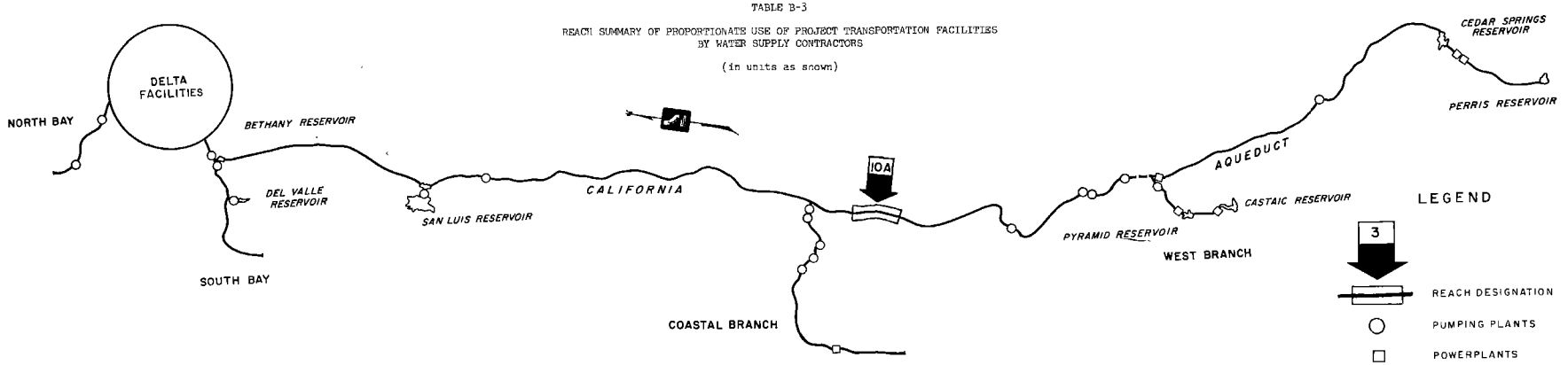


WATER SUPPLY CONTRACTOR	MEASURE OF USE	MAXIMUM ANNUAL ENTITLEMENTS DELIVERED FROM REACH	ESTIMATED OPERATIONAL LOSSES WITHIN REACH	CAPACITY PROVIDED IN REACH					PROPORTIONATE USE FOR ALLOCATION OF CAPITAL COSTS		CAPACITY PROVIDED IN REACH		PROPORTIONATE USE FOR ALLOCATION OF MINIMUM OMP&R COSTS	
				FOR DELIVERY OF ENTITLEMENTS	FOR COMPENSATION OF			SUBTOTAL	RATIOS OF TOTAL REACH USE	AVERAGE OF RATIOS	FOR REQUESTED EXCESS PEAKING	TOTAL FOR WATER SUPPLY CONTRACTORS	RATIOS OF TOTAL REACH USE	AVERAGE OF RATIOS
					OPERATIONAL LOSSES	SCHEDULED OUTAGES	DOWNSTREAM REGULATION							
REACH 9 - AVENAL GAP TO TWISSELMAN ROAD	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA	QUANTITY, AF	0.0	3622.8	2011500.0	91876.0	150862.5	0.00000	2254238.5	.57754894	.51390394	237.57992	2254238.5	.57754894	.52298253
	CAPACITY, CFS	0.00000	5.96288	2778.44186	140.97427	212.39436		3131.81049	.45025894			3369.39041	.46841612	
SAN BERNARDINO VALLEY MUNICIPAL WATER DISTRICT	QUANTITY, AF	0.0	178.4	98000.0	5550.7	7350.0	0.00000	110900.7	.02841340	.02531041	0.00000	110900.7	.02841340	.02494367
	CAPACITY, CFS	0.00000	.29363	135.36530	8.82662	10.27353		154.46545	.02220743			154.46545	.02147395	
BIG BEAR MUNICIPAL WATER DISTRICT	QUANTITY, AF	0.0	8.4	4600.0	260.6	345.0	0.00000	5205.6	.00133370	.00118805	0.00000	5205.6	.00133370	.00117084
	CAPACITY, CFS	0.00000	.01362	6.35388	.41439	.48223		7.25050	.00104240			7.25050	.00100797	
SAN GABRIEL VALLEY MUNICIPAL WATER DISTRICT	QUANTITY, AF	0.0	52.4	28800.0	1631.1	2160.0	0.00000	32591.1	.00835003	.00743813	0.00000	32591.1	.00835003	.00733036
	CAPACITY, CFS	0.00000	.08625	39.78082	2.59375	3.01916		45.39373	.00652624			45.39373	.00631068	
SAN GORGONIO PASS WATER AGENCY	QUANTITY, AF	0.0	31.5	17300.0	980.0	1297.5	0.00000	19577.5	.00501587	.00446810	0.00000	19577.5	.00501587	.00440336
	CAPACITY, CFS	0.00000	.05185	23.89612	1.55840	1.81359		27.26811	.00392032			27.26811	.00379084	
CRESTLINE-LAKE ARROWHEAD WATER AGENCY	QUANTITY, AF	0.0	10.6	5800.0	328.5	435.0	0.00000	6563.5	.00168161	.00149796	0.00000	6563.5	.00168161	.00147626
	CAPACITY, CFS	0.00000	.01745	8.01142	.52237	.60802		9.14181	.00131432			9.14181	.00127091	
COACHELLA VALLEY COUNTY WATER DISTRICT	QUANTITY, AF	0.0	41.5	23100.0	1020.3	1732.5	0.00000	25852.8	.00662364	.00589823	0.00000	25852.8	.00662364	.00581280
	CAPACITY, CFS	0.00000	.06831	31.90754	1.67935	2.39307		35.97996	.00517282			35.97996	.00500197	
DESERT WATER AGENCY	QUANTITY, AF	0.0	68.5	38100.0	1683.1	2857.5	0.00000	42640.6	.01092477	.00972831	0.00000	42640.6	.01092477	.00958741
	CAPACITY, CFS	0.00000	.11275	52.62671	2.77025	3.94700		59.34396	.00853185			59.34396	.00825006	
MOJAVE WATER AGENCY	QUANTITY, AF	0.0	91.4	50800.0	2244.4	3810.0	0.00000	56854.4	.01456643	.01297115	0.00000	56854.4	.01456643	.01278328
	CAPACITY, CFS	0.00000	.15044	70.16895	3.69413	5.26267		79.12575	.01137587			79.12575	.01100014	
LITTLEROCK CREEK IRRIGATION DISTRICT	QUANTITY, AF	0.0	4.1	2300.0	70.7	172.5	0.00000	2543.2	.00065158	.00057966	0.00000	2543.2	.00065158	.00057127
	CAPACITY, CFS	0.00000	.00675	3.17694	.11636	.23827		3.53157	.00050773			3.53157	.00049096	
PALMDALE IRRIGATION DISTRICT	QUANTITY, AF	0.0	30.7	17300.0	493.8	1297.5	0.00000	19091.3	.00489130	.00435068	0.00000	19091.3	.00489130	.00428776
	CAPACITY, CFS	0.00000	.05053	23.89612	.81278	1.79221		26.50111	.00381005			26.50111	.00368421	
ANTELOPE VALLEY-EAST KERN WATER AGENCY	QUANTITY, AF	0.0	243.3	138400.0	2850.4	10380.0	0.00000	151630.4	.03884859	.03453434	0.00000	151630.4	.03884859	.03403528
	CAPACITY, CFS	0.00000	.40045	191.16896	4.69155	14.33767		210.19818	.03022010			210.19818	.02922197	
UPPER SANTA CLARA VALLEY WATER AGENCY	QUANTITY, AF	0.0	73.9	41500.0	1426.1	3112.5	0.00000	46038.6	.01179536	.01048880	0.00000	46038.6	.01179536	.01033716
	CAPACITY, CFS	0.00000	.12163	57.32306	2.17999	4.36471		63.86776	.00918224			63.86776	.00847896	
VENTURA COUNTY FLOOD CONTROL DISTRICT	QUANTITY, AF	0.0	35.6	20000.0	687.3	1500.0	0.00000	22187.3	.00568451	.00505485	0.00000	22187.3	.00568451	.00498177
	CAPACITY, CFS	0.00000	.05859	27.62557	1.05065	2.10347		30.77969	.00442518			30.77969	.00427903	
KERN COUNTY WATER AGENCY - MUNICIPAL & INDUSTRIAL	QUANTITY, AF	0.0	246.8	142000.0	1313.8	0.0	0.00000	143313.8	.03671782	.03712582	0.00000	143313.8	.03671782	.03650597
	CAPACITY, CFS	0.00000	.40622	258.90686	2.16244	0.00000		261.06930	.03753381			261.06930	.03629412	
KERN COUNTY WATER AGENCY - AGRICULTURAL	QUANTITY, AF	47300.0	1598.9	921500.0	6827.1	0.0	0.00000	928327.1	.23784277	.31736569	0.00000	928327.1	.23784277	.31081135
	CAPACITY, CFS	141.12247	2.63168	2749.35213	11.23694	0.00000		2760.58907	.39688861			2760.58907	.38377993	
FUTURE CONTRACTOR - NUCLEAR	QUANTITY, AF	0.0	61.2	35000.0	556.1	0.0	0.00000	35556.1	.00910968	.00909588	0.00000	35556.1	.00910968	.00797893
	CAPACITY, CFS	0.00000	.10073	48.34475	.91528	0.00000		49.26003	.00708209			49.26003	.00684818	
TOTAL	QUANTITY, AF	47300.0	6400.0	3596000.0	119900.0	187312.5	0.00000	3903112.5	1.00000000	1.00000000	237.57992	3903112.5	1.00000000	1.00000000
	CAPACITY, CFS	141.12247	10.53396	6506.34699	186.10952	263.02996		6955.57647	1.00000000			7193.10639	1.00000000	

TABLE B-3

REACH SUMMARY OF PROPORTIONATE USE OF PROJECT TRANSPORTATION FACILITIES
BY WATER SUPPLY CONTRACTORS

(In units as shown)

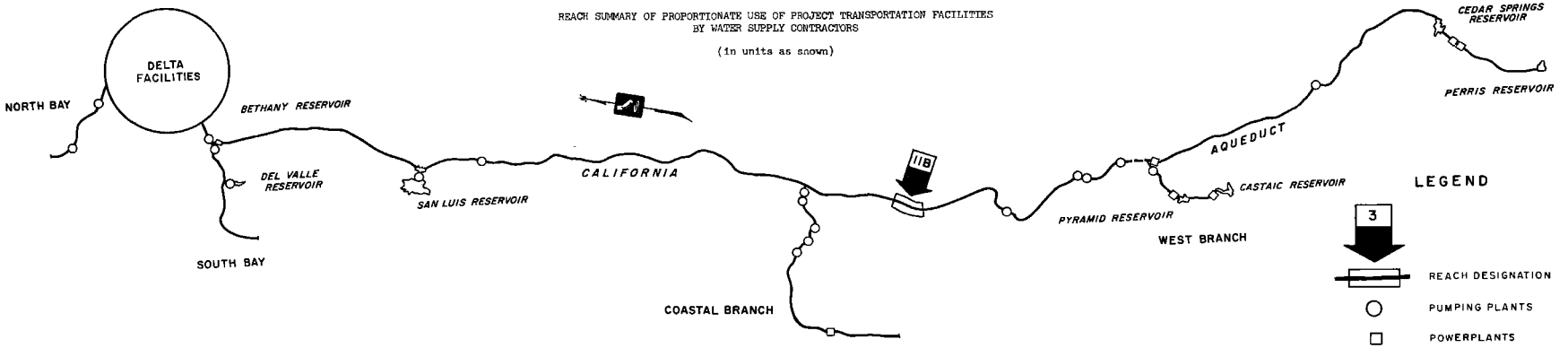


WATER SUPPLY CONTRACTOR	MEASURE OF USE	MAXIMUM ANNUAL ENTITLEMENTS DELIVERED FROM REACH	ESTIMATED OPERATIONAL LOSSES WITHIN REACH	CAPACITY PROVIDED IN REACH					PROPORTIONATE USE FOR ALLOCATION OF CAPITAL COSTS		CAPACITY PROVIDED IN REACH		PROPORTIONATE USE FOR ALLOCATION OF MINIMUM OMP&R COSTS	
				FOR DELIVERY OF ENTITLEMENTS	FOR COMPENSATION OF			SUBTOTAL	RATIOS OF TOTAL REACH USE	AVERAGE OF RATIOS	FOR REQUESTED EXCESS PEAKING	TOTAL FOR WATER SUPPLY CONTRACTORS	RATIOS OF TOTAL REACH USE	AVERAGE OF RATIOS
					OPERATIONAL LOSSES	SCHEDULED OUTAGES	DOWNSTREAM REGULATION							
REACH 10A - TWISSELMAN ROAD TO NEAR LOST HILLS	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA	QUANTITY, AF	0.0	3726.9	2011500.0	88253.2	150862.5		2250615.7	.58466472			2250615.7	.58466472	
	CAPACITY, CFS	0.00000	6.13422	2778.44186	135.01139	212.39436	0.00000	3125.84761	.45941863	.52204167	237.57992	3363.42753	.47765782	.53116127
SAN BERNARDINO VALLEY MUNICIPAL WATER DISTRICT	QUANTITY, AF	0.0	183.5	98000.0	5372.3	7350.0		110722.3	.02876343			110722.3	.02876343	
	CAPACITY, CFS	0.00000	.30203	135.36530	8.54290	10.27353	0.00000	154.17182	.02265926	.02571135	0.00000	154.17182	.02189474	.02532909
BIG BEAR MUNICIPAL WATER DISTRICT	QUANTITY, AF	0.0	8.6	4600.0	252.2	345.0		5197.2	.00135013			5197.2	.00135013	
	CAPACITY, CFS	0.00000	.01419	6.35388	.40057	.48223	0.00000	7.23668	.00106360	.00120687	0.00000	7.23668	.00102772	.00118892
SAN GABRIEL VALLEY MUNICIPAL WATER DISTRICT	QUANTITY, AF	0.0	53.9	28800.0	1578.7	2160.0		32538.7	.00845290			32538.7	.00845290	
	CAPACITY, CFS	0.00000	.08872	39.78082	2.50750	3.01916	0.00000	45.30748	.00665903	.00755596	0.00000	45.30748	.00643435	.00744363
SAN GORGONIO PASS WATER AGENCY	QUANTITY, AF	0.0	32.4	17300.0	948.5	1297.5		19546.0	.00507766			19546.0	.00507766	
	CAPACITY, CFS	0.00000	.05333	23.89612	1.50655	1.81359	0.00000	27.21626	.00400009	.00453887	0.00000	27.21626	.00386512	.00447139
CRESTLINE-LAKE ARROWHEAD WATER AGENCY	QUANTITY, AF	0.0	10.9	5800.0	317.9	435.0		6552.9	.00170231			6552.9	.00170231	
	CAPACITY, CFS	0.00000	.01794	8.01142	.50492	.60802	0.00000	9.12436	.00134104	.00152168	0.00000	9.12436	.00129580	.00149906
COACHELLA VALLEY COUNTY WATER DISTRICT	QUANTITY, AF	0.0	42.7	23100.0	978.8	1732.5		25811.3	.00670526			25811.3	.00670526	
	CAPACITY, CFS	0.00000	.07028	31.90754	1.61104	2.39307	0.00000	35.91165	.00527808	.00599167	0.00000	35.91165	.00510000	.00590263
DESERT WATER AGENCY	QUANTITY, AF	0.0	70.5	38100.0	1614.6	2857.5		42572.1	.01105937			42572.1	.01105937	
	CAPACITY, CFS	0.00000	.11604	52.62671	2.66750	3.94700	0.00000	59.23121	.00870545	.00988241	0.00000	59.23121	.00841173	.00973555
MOJAVE WATER AGENCY	QUANTITY, AF	0.0	94.0	50800.0	2153.0	3810.0		56763.0	.01474589			56763.0	.01474589	
	CAPACITY, CFS	0.00000	.15472	70.16895	3.54369	5.26267	0.00000	78.97531	.01160733	.01317661	0.00000	78.97531	.01121569	.01298079
LITTLEROCK CREEK IRRIGATION DISTRICT	QUANTITY, AF	0.0	4.2	2300.0	66.6	172.5		2539.1	.00065961			2539.1	.00065961	
	CAPACITY, CFS	0.00000	.00691	3.17694	.10961	.23827	0.00000	3.52482	.00051806	.00058883	0.00000	3.52482	.00050058	.00058009
PALMDALE IRRIGATION DISTRICT	QUANTITY, AF	0.0	31.5	17300.0	463.1	1297.5		19060.6	.00495156			19060.6	.00495156	
	CAPACITY, CFS	0.00000	.05185	23.89612	.76225	1.79221	0.00000	26.45058	.00388755	.00441955	0.00000	26.45058	.00375638	.00435397
ANTELOPE VALLEY-EAST KERN WATER AGENCY	QUANTITY, AF	0.0	250.3	138400.0	2607.1	10380.0		151387.1	.03932733			151387.1	.03932733	
	CAPACITY, CFS	0.00000	.41198	191.16896	4.29110	14.33767	0.00000	209.79773	.03083483	.03508108	0.00000	209.79773	.02979447	.03456090
UPPER SANTA CLARA VALLEY WATER AGENCY	QUANTITY, AF	0.0	76.1	41500.0	1252.2	3172.5		45964.7	.01194070			45964.7	.01194070	
	CAPACITY, CFS	0.00000	.12526	57.32306	2.05836	4.36411	0.00000	63.74613	.00936903	.01065487	0.00000	63.74613	.00909292	.01049681
VENTURA COUNTY FLOOD CONTROL DISTRICT	QUANTITY, AF	0.0	36.7	20000.0	651.7	1500.0		22151.7	.00575457			22151.7	.00575457	
	CAPACITY, CFS	0.00000	.06041	27.62557	.99206	2.10347	0.00000	30.72110	.00451521	.00513489	0.00000	30.72110	.00436286	.00505871
KERN COUNTY WATER AGENCY - MUNICIPAL & INDUSTRIAL	QUANTITY, AF	0.0	253.9	142000.0	1067.0	0.0		143067.0	.03716593			143067.0	.03716593	
	CAPACITY, CFS	0.00000	.41750	258.90686	1.75622	0.00000	0.00000	260.66308	.03831072	.03773832	0.00000	260.66308	.03701812	.03709203
KERN COUNTY WATER AGENCY - AGRICULTURAL	QUANTITY, AF	265700.0	1560.9	874200.0	5228.2	0.0		879428.2	.22845777			879428.2	.22845777	
	CAPACITY, CFS	792.73235	2.56913	2608.22986	8.60526	0.00000	0.00000	2616.83492	.38460695	.30653236	0.00000	2616.83492	.37163033	.30004405
FUTURE CONTRACTOR - NUCLEAR	QUANTITY, AF	0.0	63.0	35000.0	494.9	0.0		35494.9	.00922086			35494.9	.00922086	
	CAPACITY, CFS	0.00000	.10369	48.34475	.81455	0.00000	0.00000	49.15930	.00722514	.00822300	0.00000	49.15930	.00698137	.00810111
TOTAL	QUANTITY, AF	265700.0	6500.0	3548700.0	113400.0	187312.5		3849412.5	1.00000000			3849412.5	1.00000000	
	CAPACITY, CFS	792.73235	10.69856	6365.22452	175.66556	263.02996	0.00000	6803.92004	1.00000000	1.00000000	237.57992	7041.49996	1.00000000	1.00000000

TABLE B-3

REACH SUMMARY OF PROPORTIONATE USE OF PROJECT TRANSPORTATION FACILITIES
BY WATER SUPPLY CONTRACTORS

(In units as shown)

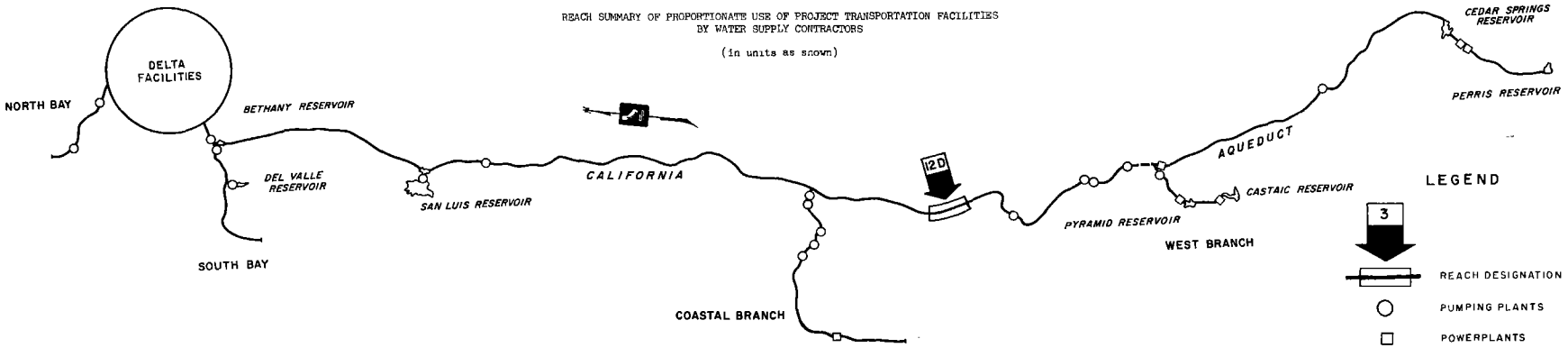


WATER SUPPLY CONTRACTOR	MEASURE OF USE	MAXIMUM ANNUAL ENTITLEMENTS DELIVERED FROM REACH	ESTIMATED OPERATIONAL LOSSES WITHIN REACH	CAPACITY PROVIDED IN REACH					PROPORTIONATE USE FOR ALLOCATION OF CAPITAL COSTS		CAPACITY PROVIDED IN REACH		PROPORTIONATE USE FOR ALLOCATION OF MINIMUM OMP&R COSTS	
				FOR DELIVERY OF ENTITLEMENTS	FOR COMPENSATION OF			SUBTOTAL	RATIOS OF TOTAL REACH USE	AVERAGE OF RATIOS	FOR REQUESTED EXCESS PEAKING	TOTAL FOR WATER SUPPLY CONTRACTORS	RATIOS OF TOTAL REACH USE	AVERAGE OF RATIOS
					OPERATIONAL LOSSES	SCHEDULED OUTAGES	DOWNSTREAM REGULATION							
REACH 11B - NEAR LOST HILLS TO SEVENTH STANDARD ROAD	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA	QUANTITY, AF	0.0	2411.4	2011500.0	84526.3	150862.5	0.00000	2246888.8	.62811164	.57401074	237.57992	2246888.8	.62811164	.58315298
	CAPACITY, CFS	0.00000	3.96900	2778.44186	128.87717	212.39436		3119.71339	.51990983			3357.29331	.93819432	
SAN BERNARDINO VALLEY MUNICIPAL WATER DISTRICT	QUANTITY, AF	0.0	118.7	98000.0	5188.8	7350.0	0.00000	110538.8	.03090082	.02827185	0.00000	110538.8	.03090082	.02778354
	CAPACITY, CFS	0.00000	.19537	135.36530	8.23096	10.27353		153.86979	.02564287			153.86979	.02466625	
BIG BEAR MUNICIPAL WATER DISTRICT	QUANTITY, AF	0.0	5.6	4600.0	243.6	345.0	0.00000	5188.6	.00145046	.00132706	0.00000	5188.6	.00145046	.00130414
	CAPACITY, CFS	0.00000	.00922	6.35388	.38642	.48223		7.22253	.00120366			7.22253	.00115781	
SAN GABRIEL VALLEY MUNICIPAL WATER DISTRICT	QUANTITY, AF	0.0	34.9	28800.0	1524.8	2160.0	0.00000	32484.8	.00908104	.00830844	0.00000	32484.8	.00908104	.00816494
	CAPACITY, CFS	0.00000	.05744	39.78082	2.41878	3.01916		45.21876	.00753585			45.21876	.00724884	
SAN GORGONIO PASS WATER AGENCY	QUANTITY, AF	0.0	21.0	17300.0	916.1	1297.5	0.00000	19513.6	.00545497	.00499088	0.00000	19513.6	.00545497	.00490468
	CAPACITY, CFS	0.00000	.03457	23.89612	1.45322	1.81359		27.16293	.00452679			27.16293	.00435438	
CRESTLINE-LAKE ARROWHEAD WATER AGENCY	QUANTITY, AF	0.0	7.0	5800.0	307.0	435.0	0.00000	6542.0	.00182880	.00167320	0.00000	6542.0	.00182880	.00164431
	CAPACITY, CFS	0.00000	.01152	8.01142	.48698	.60802		9.10642	.00151761			9.10642	.00145981	
COACHELLA VALLEY COUNTY WATER DISTRICT	QUANTITY, AF	0.0	27.7	23100.0	936.1	1732.5	0.00000	25768.6	.00720354	.00658831	0.00000	25768.6	.00720354	.00647456
	CAPACITY, CFS	0.00000	.04559	31.90754	1.54076	2.39307		35.84137	.00597307			35.84137	.00574559	
DESERT WATER AGENCY	QUANTITY, AF	0.0	45.6	38100.0	1544.1	2857.5	0.00000	42501.6	.01188121	.01086647	0.00000	42501.6	.01188121	.01067886
	CAPACITY, CFS	0.00000	.07505	52.62671	2.54146	3.94700		59.11517	.00985173			59.11517	.00947652	
MOJAVE WATER AGENCY	QUANTITY, AF	0.0	60.8	50800.0	2059.0	3810.0	0.00000	56669.0	.01584167	.01448868	0.00000	56669.0	.01584167	.01423854
	CAPACITY, CFS	0.00000	.10007	70.16895	3.38897	5.26267		78.82059	.01313569			78.82059	.01263541	
LITTLEROCK CREEK IRRIGATION DISTRICT	QUANTITY, AF	0.0	2.7	2300.0	62.4	172.5	0.00000	2534.9	.00070862	.00064745	0.00000	2534.9	.00070862	.00063628
	CAPACITY, CFS	0.00000	.00444	3.17694	.10270	.23827		3.51791	.00058627			3.51791	.00056394	
PALMDALE IRRIGATION DISTRICT	QUANTITY, AF	0.0	20.4	17300.0	431.6	1297.5	0.00000	19029.1	.00531953	.00485948	0.00000	19029.1	.00531953	.00477570
	CAPACITY, CFS	0.00000	.03358	23.89612	.71040	1.79221		26.39873	.00439943			26.39873	.00423188	
ANTELOPE VALLEY-EAST KERN WATER AGENCY	QUANTITY, AF	0.0	161.9	138400.0	2356.8	10380.0	0.00000	151136.8	.04224988	.03857233	0.00000	151136.8	.04224988	.03790784
	CAPACITY, CFS	0.00000	.26648	191.18896	3.87912	14.33767		209.38575	.03489478			209.38575	.03356580	
UPPER SANTA CLARA VALLEY WATER AGENCY	QUANTITY, AF	0.0	49.2	41500.0	1276.1	3112.5	0.00000	45888.6	.01282803	.01171532	0.00000	45888.6	.01282803	.01151342
	CAPACITY, CFS	0.00000	.08098	57.32306	1.93310	4.36471		63.62087	.01060261			63.62087	.01019881	
VENTURA COUNTY FLOOD CONTROL DISTRICT	QUANTITY, AF	0.0	23.7	20000.0	615.0	1500.0	0.00000	22115.0	.00618219	.00564594	0.00000	22115.0	.00618219	.00554864
	CAPACITY, CFS	0.00000	.03901	27.62557	.93165	2.10347		30.66069	.00510970			30.66069	.00491509	
KERN COUNTY WATER AGENCY - MUNICIPAL & INDUSTRIAL	QUANTITY, AF	0.0	164.3	142000.0	813.1	0.0	0.00000	142813.1	.03992301	.04164684	0.00000	142813.1	.03992301	.04082094
	CAPACITY, CFS	0.00000	.27043	258.90686	1.33832	0.00000		260.24518	.04337066			260.24518	.04171887	
KERN COUNTY WATER AGENCY - AGRICULTURAL	QUANTITY, AF	126400.0	704.3	608500.0	3667.3	0.0	0.00000	612167.3	.17112970	.23734693	0.00000	612167.3	.17112970	.23156623
	CAPACITY, CFS	377.12220	1.15923	1815.49731	6.03613	0.00000		1821.53344	.30356416			1821.53344	.29200277	
FUTURE CONTRACTOR - NUCLEAR	QUANTITY, AF	0.0	40.8	35000.0	431.9	0.0	0.00000	35431.9	.00990489	.00904008	0.00000	35431.9	.00990489	.00888440
	CAPACITY, CFS	0.00000	.06715	48.34475	.71086	0.00000		49.05561	.00817527			49.05561	.00786391	
TOTAL	QUANTITY, AF	126400.0	3900.0	3283000.0	106900.0	187312.5	0.00000	3577212.5	1.00000000	1.00000000	237.57992	3577212.5	1.00000000	1.00000000
	CAPACITY, CFS	377.12220	6.41913	5572.49217	164.96700	263.02996		6000.48913	1.00000000			6238.06905	1.00000000	

TABLE B-3

REACH SUMMARY OF PROPORTIONATE USE OF PROJECT TRANSPORTATION FACILITIES
BY WATER SUPPLY CONTRACTORS

(in units as shown)

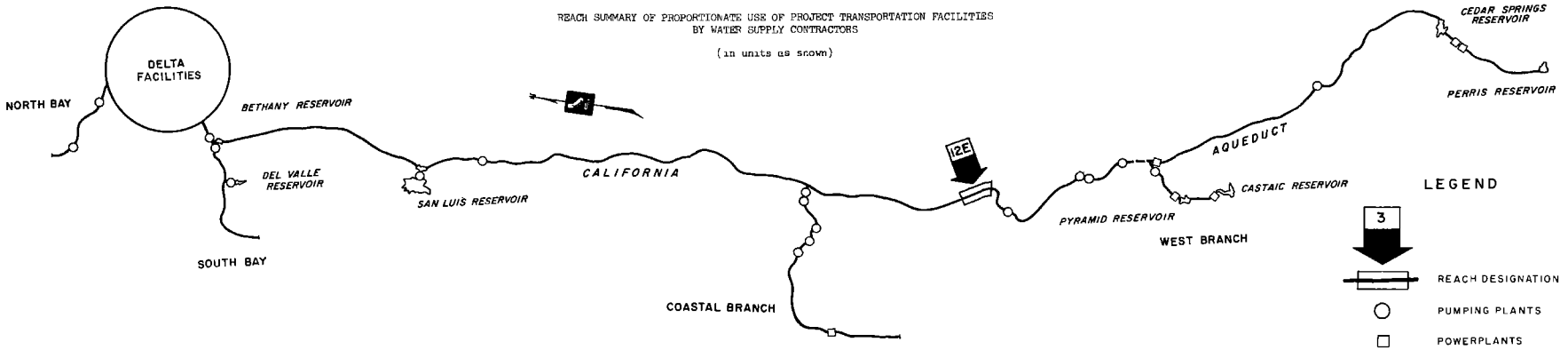


WATER SUPPLY CONTRACTOR	MEASURE OF USE	MAXIMUM ANNUAL ENTITLEMENTS DELIVERED FROM REACH	ESTIMATED OPERATIONAL LOSSES WITHIN REACH	CAPACITY PROVIDED IN REACH					PROPORTIONATE USE FOR ALLOCATION OF CAPITAL COSTS		CAPACITY PROVIDED IN REACH		PROPORTIONATE USE FOR ALLOCATION OF MINIMUM OMP&R COSTS	
				FOR DELIVERY OF ENTITLEMENTS	FOR COMPENSATION OF			SUBTOTAL	RATIOS OF TOTAL REACH USE	AVERAGE OF RATIOS	FOR REQUESTED EXCESS PEAKING[1]	TOTAL FOR WATER SUPPLY CONTRACTORS	RATIOS OF TOTAL REACH USE	AVERAGE OF RATIOS
					OPERATIONAL LOSSES	SCHEDULED OUTAGES	DOWNSTREAM REGULATION							
REACH 12D - SEVENTH STANDARD ROAD TO ELK HILLS ROAD	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA	QUANTITY, AF	0.0	3789.5	2011500.0	82114.9	150862.5	0.00000	2244477.4	.65115590	.60293004	237.57992	2244477.4	.65115590	.61196520
	CAPACITY, CFS	0.00000	6.23726	2778.44186	124.90817	212.39436		3115.74439	.55470417			3353.32431	.57277452	
SAN BERNARDINO VALLEY MUNICIPAL WATER DISTRICT	QUANTITY, AF	0.0	186.6	98000.0	5070.1	7350.0	0.00000	110420.1	.03203450	.02969678	0.00000	110420.1	.03203450	.02914166
	CAPACITY, CFS	0.00000	.30713	135.36530	8.03559	10.27353		153.67442	.02735906			153.67442	.02624882	
BIG BEAR MUNICIPAL WATER DISTRICT	QUANTITY, AF	0.0	8.7	4600.0	238.0	345.0	0.00000	5183.0	.00150367	.00139393	0.00000	5183.0	.00150367	.00136788
	CAPACITY, CFS	0.00000	.01432	6.35388	.37720	.48223		7.21331	.00128421			7.21331	.00123209	
SAN GABRIEL VALLEY MUNICIPAL WATER DISTRICT	QUANTITY, AF	0.0	54.8	28800.0	1489.9	2160.0	0.00000	32449.9	.00941419	.00872719	0.00000	32449.9	.00941419	.00856405
	CAPACITY, CFS	0.00000	.09020	39.78082	2.36134	3.01916		45.16132	.00804019			45.16132	.00771391	
SAN GORGONIO PASS WATER AGENCY	QUANTITY, AF	0.0	32.9	17300.0	895.1	1297.5	0.00000	19492.6	.00565509	.00524241	0.00000	19492.6	.00565509	.00514441
	CAPACITY, CFS	0.00000	.05415	23.89612	1.41865	1.81359		27.12836	.00482973			27.12836	.00463374	
CRESTLINE-LAKE ARROWHEAD WATER AGENCY	QUANTITY, AF	0.0	11.0	5800.0	300.0	435.0	0.00000	6535.0	.00189590	.00175754	0.00000	6535.0	.00189590	.00172469
	CAPACITY, CFS	0.00000	.01811	8.01142	.47546	.60802		9.09490	.00161919			9.09490	.00155348	
COACHELLA VALLEY COUNTY WATER DISTRICT	QUANTITY, AF	0.0	43.4	23100.0	908.4	1732.5	0.00000	25740.9	.00746781	.00692032	0.00000	25740.9	.00746781	.00679101
	CAPACITY, CFS	0.00000	.07143	31.90754	1.49517	2.39307		35.79578	.00637282			35.79578	.00611420	
DESERT WATER AGENCY	QUANTITY, AF	0.0	71.7	36100.0	1498.5	2857.5	0.00000	42456.0	.01231711	.01141409	0.00000	42456.0	.01231711	.01120082
	CAPACITY, CFS	0.00000	.11801	52.62671	2.46641	3.94700		59.04012	.01051107			59.04012	.01008452	
MOJAVE WATER AGENCY	QUANTITY, AF	0.0	95.6	50800.0	1998.2	3810.0	0.00000	56608.2	.01642287	.01521885	0.00000	56608.2	.01642287	.01493448
	CAPACITY, CFS	0.00000	.15735	70.16895	3.28890	5.26267		78.72052	.01401482			78.72052	.01344609	
LITTLEROCK CREEK IRRIGATION DISTRICT	QUANTITY, AF	0.0	4.3	2300.0	59.7	172.5	0.00000	2532.2	.00073463	.00068007	0.00000	2532.2	.00073463	.00066738
	CAPACITY, CFS	0.00000	.00708	3.17694	.09826	.23827		3.51347	.00062551			3.51347	.00060013	
PALMDALE IRRIGATION DISTRICT	QUANTITY, AF	0.0	32.1	17300.0	411.2	1297.5	0.00000	19008.7	.00551470	.00510428	0.00000	19008.7	.00551470	.00500904
	CAPACITY, CFS	0.00000	.05284	23.89612	.67682	1.79221		26.36515	.00469386			26.36515	.00450338	
ANTELOPE VALLEY-EAST KERN WATER AGENCY	QUANTITY, AF	0.0	254.5	138400.0	2194.9	10380.0	0.00000	150974.9	.04380004	.04051505	0.00000	150974.9	.04380004	.03975964
	CAPACITY, CFS	0.00000	.41889	191.16896	3.61264	14.33767		209.11927	.03723005			209.11927	.03571924	
UPPER SANTA CLARA VALLEY WATER AGENCY	QUANTITY, AF	0.0	77.3	41500.0	1226.9	3112.5	0.00000	45839.4	.01329868	.01230543	0.00000	45839.4	.01329868	.01207590
	CAPACITY, CFS	0.00000	.12723	57.32306	1.85212	4.36471		63.53989	.01131217			63.53989	.01085312	
VENTURA COUNTY FLOOD CONTROL DISTRICT	QUANTITY, AF	0.0	37.3	20000.0	591.3	1500.0	0.00000	22091.3	.00640901	.00593033	0.00000	22091.3	.00640901	.00581972
	CAPACITY, CFS	0.00000	.06139	27.62557	.89264	2.10347		30.62168	.00545166			30.62168	.00523043	
KERN COUNTY WATER AGENCY - MUNICIPAL & INDUSTRIAL	QUANTITY, AF	0.0	258.2	142000.0	648.8	0.0	0.00000	142648.8	.04138451	.04383425	0.00000	142648.8	.04138451	.04289514
	CAPACITY, CFS	0.00000	.42498	258.90686	1.06789	0.00000		259.97475	.04628399			259.97475	.04440576	
KERN COUNTY WATER AGENCY - AGRICULTURAL	QUANTITY, AF	3600.0	878.0	482100.0	2963.0	0.0	0.00000	485063.0	.14072391	.19883493	0.00000	485063.0	.14072391	.19362143
	CAPACITY, CFS	10.74082	1.44513	1438.37511	4.87690	0.00000		1443.25201	.25694595			1443.25201	.24651895	
FUTURE CONTRACTOR - NUCLEAR	QUANTITY, AF	0.0	64.1	35000.0	391.1	0.0	0.00000	35391.1	.01026748	.00949451	0.00000	35391.1	.01026748	.00931755
	CAPACITY, CFS	0.00000	.10550	48.34475	.64371	0.00000		48.98846	.00872155			48.98846	.00836762	
TOTAL	QUANTITY, AF	3600.0	5900.0	3156600.0	103000.0	187312.5	0.00000	3446912.5	1.00000000	1.00000000	237.57992	3446912.5	1.00000000	1.00000000
	CAPACITY, CFS	10.74082	9.71100	5195.36997	158.54787	263.02996		5616.94780	1.00000000			5854.52772	1.00000000	

TABLE B-3

REACH SUMMARY OF PROPORTIONATE USE OF PROJECT TRANSPORTATION FACILITIES
BY WATER SUPPLY CONTRACTORS

(in units as shown)

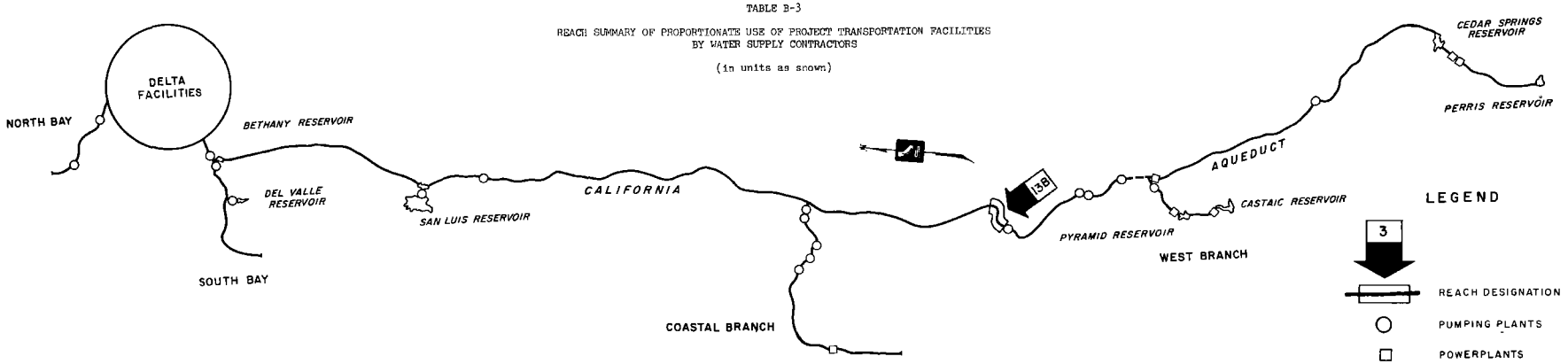


WATER SUPPLY CONTRACTOR	MEASURE OF USE	MAXIMUM ANNUAL ENTITLEMENTS DELIVERED FROM REACH	ESTIMATED OPERATIONAL LOSSES WITHIN REACH	CAPACITY PROVIDED IN REACH					PROPORTIONATE USE FOR ALLOCATION OF CAPITAL COSTS		CAPACITY PROVIDED IN REACH		PROPORTIONATE USE FOR ALLOCATION OF MINIMUM OMP&R COSTS	
				FOR DELIVERY OF ENTITLEMENTS	FOR COMPENSATION OF			SUBTOTAL	RATIOS OF TOTAL REACH USE	AVERAGE OF RATIOS	FOR REQUESTED EXCESS PEAKING	TOTAL FOR WATER SUPPLY CONTRACTORS	RATIOS OF TOTAL REACH USE	AVERAGE OF RATIOS
					OPERATIONAL LOSSES	SCHEDULED OUTAGES	DOWNSTREAM REGULATION							
REACH 12E - ELK HILLS ROAD TO TUPMAN ROAD	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	2314.8 3.81000	2011500.0 2778.44186	78325.4 118.67091	150862.5 212.39436	-0.00000	2240687.9 3109.50713	.65185307 .55561679	.60373493	237.57992	2240687.9 3347.08705	.65185307 .57571332	.61278320
SAN BERNARDINO VALLEY MUNICIPAL WATER DISTRICT	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	114.0 .18764	98000.0 135.36530	4883.5 7.72846	7350.0 10.27353	0.00000	110233.5 153.36729	.03206874 .02740416	.02973645	0.00000	110233.5 153.36729	.03206874 .02648619	.02917847
BIG BEAR MUNICIPAL WATER DISTRICT	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	5.4 .00889	4600.0 6.35388	229.3 .36288	345.0 .48223	0.00000	5174.3 7.19899	.00150529 .00128634	.00139581	0.00000	5174.3 7.19899	.00150529 .00123396	.00136962
SAN GABRIEL VALLEY MUNICIPAL WATER DISTRICT	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	33.5 .05514	28800.0 39.78082	1435.1 2.27114	2160.0 3.01916	0.00000	32395.1 45.07112	.00942427 .00805346	.00873886	0.00000	32395.1 45.07112	.00942427 .00772549	.00857488
SAN GORGONIO PASS WATER AGENCY	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	20.1 .03308	17300.0 23.89612	862.2 1.36450	1297.5 1.81359	0.00000	19459.7 27.07421	.00566115 .00483771	.00524943	0.00000	19459.7 27.07421	.00566115 .00464070	.00515093
CRESTLINE-LAKE ARROWHEAD WATER AGENCY	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	6.7 .01103	5800.0 8.01142	289.0 .45735	435.0 .60802	0.00000	6524.0 9.07679	.00189794 .00162187	.00175991	0.00000	6524.0 9.07679	.00189794 .00155582	.00172688
COACHELLA VALLEY COUNTY WATER DISTRICT	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	26.5 .04362	23100.0 31.90754	865.0 1.42374	1732.5 2.39307	0.00000	25697.5 35.72435	.00747583 .00638334	.00692959	0.00000	25697.5 35.72435	.00747583 .00612339	.00679961
DESERT WATER AGENCY	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	43.8 .07209	38100.0 52.62671	1426.8 2.34840	2857.5 3.94700	0.00000	42384.3 58.92211	.01233029 .01052859	.01142934	0.00000	42384.3 58.92211	.01233029 .01009965	.01121497
MOJAVE WATER AGENCY	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	58.4 .09612	50800.0 70.16895	1902.6 3.13155	3810.0 5.26267	0.00000	56512.6 78.56317	.01644045 .01403792	.01523916	0.00000	56512.6 78.56317	.01644045 .01346626	.01495335
LITTLEROCK CREEK IRRIGATION DISTRICT	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	2.6 .00428	2300.0 3.17694	55.4 .09118	172.5 .23827	0.00000	2527.9 3.50639	.00073541 .00062653	.00068097	0.00000	2527.9 3.50639	.00073541 .00060102	.00066821
PALMDALE IRRIGATION DISTRICT	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	19.6 .03226	17300.0 23.89612	379.1 .62398	1297.5 1.79221	0.00000	18976.6 26.31231	.00552061 .00470157	.00511109	0.00000	18976.6 26.31231	.00552061 .00451011	.00501336
ANTELOPE VALLEY-EAST KERN WATER AGENCY	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	155.5 .25594	138400.0 191.16896	1940.4 3.19375	10380.0 14.33767	0.00000	150720.4 208.70038	.04384705 .03729126	.04056916	0.00000	150720.4 208.70038	.04384705 .03577265	.03980985
UPPER SANTA CLARA VALLEY WATER AGENCY	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	47.2 .07769	41500.0 57.32306	1149.6 1.72489	3112.5 4.36471	0.00000	45762.1 63.41266	.01331295 .01133078	.01232186	0.00000	45762.1 63.41266	.01331295 .01088936	.01209115
VENTURA COUNTY FLOOD CONTROL DISTRICT	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	22.8 .03753	20000.0 27.62557	554.0 .83125	1500.0 2.10347	0.00000	22054.0 30.56029	.00641587 .00546061	.00593824	0.00000	22054.0 30.56029	.00641587 .00523824	.00582706
KERN COUNTY WATER AGENCY - MUNICIPAL & INDUSTRIAL	QUANTITY, AF CAPACITY, CFS	94500.0 172.30069	157.7 .25956	142000.0 258.90686	390.6 .64291	0.0 0.00000	0.00000	142390.6 259.54977	.04142377 .04637719	.04390048	0.00000	142390.6 259.54977	.04142377 .04448858	.04295618
KERN COUNTY WATER AGENCY - AGRICULTURAL	QUANTITY, AF CAPACITY, CFS	213200.0 636.09536	532.3 .87613	478500.0 1427.63429	2085.0 3.43177	0.0 0.00000	0.00000	480585.0 1431.06606	.13981010 .25570751	.19775881	0.00000	480585.0 1431.06606	.13981010 .24529439	.19255224
FUTURE CONTRACTOR - NUCLEAR	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	39.1 .06435	35000.0 48.34475	327.0 .53821	0.0 0.00000	0.00000	35327.0 48.88296	.01027721 .00873457	.00950589	0.00000	35327.0 48.88296	.01027721 .00837887	.00932804
TOTAL	QUANTITY, AF CAPACITY, CFS	307700.0 808.39605	3600.0 5.92535	3153000.0 5184.62915	97100.0 148.83687	187312.5 263.02996	0.00000	3437412.5 5596.49598	1.00000000 1.00000000	1.00000000	237.57992	3437412.5 5834.07590	1.00000000 1.00000000	1.00000000

TABLE B-3

REACH SUMMARY OF PROPORTIONATE USE OF PROJECT TRANSPORTATION FACILITIES
BY WATER SUPPLY CONTRACTORS

(in units as shown)

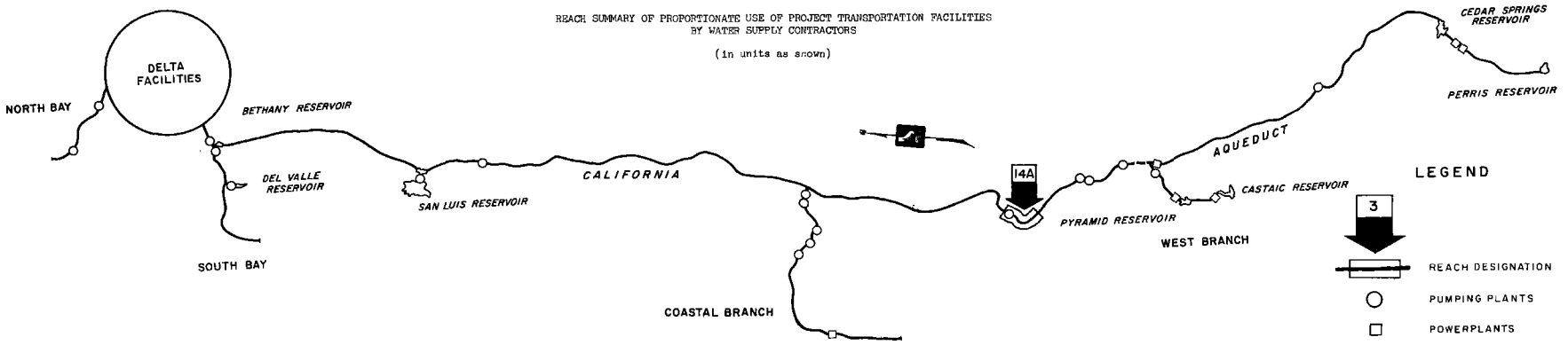


WATER SUPPLY CONTRACTOR	MEASURE OF USE	MAXIMUM ANNUAL ENTITLEMENTS DELIVERED FROM REACH	ESTIMATED OPERATIONAL LOSSES WITHIN REACH	CAPACITY PROVIDED IN REACH					PROPORTIONATE USE FOR ALLOCATION OF CAPITAL COSTS		CAPACITY PROVIDED IN REACH		PROPORTIONATE USE FOR ALLOCATION OF MINIMUM OMP&R COSTS	
				FOR DELIVERY OF ENTITLEMENTS	FOR COMPENSATION OF			SUBTOTAL	RATIOS OF TOTAL REACH USE	AVERAGE OF RATIOS	FOR REQUESTED EXCESS PEAKING	TOTAL FOR WATER SUPPLY CONTRACTORS	RATIOS OF TOTAL REACH USE	AVERAGE OF RATIOS
					OPERATIONAL LOSSES	SCHEDULED OUTAGES	DOWNSTREAM REGULATION							
REACH 13B - TUPMAN ROAD TO BUENA VISTA PUMPING PLANT	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA	QUANTITY, AF	0.0	3977.8	2011500.0	76010.6	150862.5		2238373.1	.71602449			2238373.1	.71602449	
	CAPACITY, CFS	0.00000	6.54719	2778.44186	114.86091	212.39436	0.00000	3105.69713	.64943198	.68272823	237.57992	3343.27705	.66602401	.69102425
SAN BERNARDINO VALLEY MUNICIPAL WATER DISTRICT	QUANTITY, AF	0.0	195.8	98000.0	4769.5	7350.0		110119.5	.03522570			110119.5	.03522570	
	CAPACITY, CFS	0.00000	.32227	135.36530	7.54082	10.27353	0.00000	153.17965	.03203128	.03362854	0.00000	153.17965	.03051537	.03287053
BIG BEAR MUNICIPAL WATER DISTRICT	QUANTITY, AF	0.0	9.2	4600.0	223.9	345.0		5168.9	.00165346			5168.9	.00165346	
	CAPACITY, CFS	0.00000	.01514	6.35388	.35399	.48223	0.00000	7.19010	.00150352	.00157849	0.00000	7.19010	.00143236	.00154291
SAN GABRIEL VALLEY MUNICIPAL WATER DISTRICT	QUANTITY, AF	0.0	57.6	28800.0	1401.6	2160.0		32361.6	.01035203			32361.6	.01035203	
	CAPACITY, CFS	0.00000	.09480	39.78082	2.21600	3.01916	0.00000	45.01598	.00941329	.00988266	0.00000	45.01598	.00896777	.00965990
SAN GORGONIO PASS WATER AGENCY	QUANTITY, AF	0.0	34.6	17300.0	842.1	1297.5		19439.6	.00621846			19439.6	.00621846	
	CAPACITY, CFS	0.00000	.05695	23.89612	1.33142	1.81359	0.00000	27.04113	.00565457	.00593651	0.00000	27.04113	.00538694	.00580270
CRESTLINE-LAKE ARROWHEAD WATER AGENCY	QUANTITY, AF	0.0	11.6	5800.0	282.3	435.0		6517.3	.00208479			6517.3	.00208479	
	CAPACITY, CFS	0.00000	.01909	8.01142	.44632	.60802	0.00000	9.06576	.00189574	.00199027	0.00000	9.06576	.00180602	.00194541
COACHELLA VALLEY COUNTY WATER DISTRICT	QUANTITY, AF	0.0	45.6	23100.0	838.5	1732.5		25671.0	.00821180			25671.0	.00821180	
	CAPACITY, CFS	0.00000	.07505	31.90754	1.38012	2.39307	0.00000	35.68073	.00746119	.00783649	0.00000	35.68073	.00710806	.00765993
DESERT WATER AGENCY	QUANTITY, AF	0.0	75.2	38100.0	1383.0	2857.5		42340.5	.01354414			42340.5	.01354414	
	CAPACITY, CFS	0.00000	.12377	52.62671	2.27631	3.94700	0.00000	58.85002	.01230612	.01292513	0.00000	58.85002	.01172368	.01263391
MOJAVE WATER AGENCY	QUANTITY, AF	0.0	100.3	50800.0	1844.2	3810.0		56454.2	.01805891			56454.2	.01805891	
	CAPACITY, CFS	0.00000	.16509	70.16895	3.03543	5.26267	0.00000	78.46705	.01640624	.01723358	0.00000	78.46705	.01563165	.01684528
LITTLEROCK CREEK IRRIGATION DISTRICT	QUANTITY, AF	0.0	4.5	2300.0	52.8	172.5		2525.3	.00080781			2525.3	.00080781	
	CAPACITY, CFS	0.00000	.00741	3.17694	.08690	.23827	0.00000	3.50211	.00073233	.00077007	0.00000	3.50211	.00069767	.00075274
PALMDALE IRRIGATION DISTRICT	QUANTITY, AF	0.0	33.7	17300.0	359.5	1297.5		18957.0	.00606408			18957.0	.00606408	
	CAPACITY, CFS	0.00000	.05547	23.89612	.59172	1.79221	0.00000	26.28005	.00549542	.00577975	0.00000	26.28005	.00523533	.00564970
ANTELOPE VALLEY-EAST KERN WATER AGENCY	QUANTITY, AF	0.0	267.1	138400.0	1784.9	10380.0		150264.9	.04816362			150264.9	.04816362	
	CAPACITY, CFS	0.00000	.43963	191.16896	2.93781	14.33767	0.00000	208.44444	.04358779	.04587571	0.00000	208.44444	.04152483	.04484423
UPPER SANTA CLARA VALLEY WATER AGENCY	QUANTITY, AF	0.0	81.2	41500.0	1102.4	3112.5		45714.9	.01462356			45714.9	.01462356	
	CAPACITY, CFS	0.00000	.13365	57.32306	1.64720	4.36471	0.00000	63.33497	.01324397	.01393377	0.00000	63.33497	.01261714	.01362035
VENTURA COUNTY FLOOD CONTROL DISTRICT	QUANTITY, AF	0.0	39.1	20000.0	531.2	1500.0		22031.2	.00704748			22031.2	.00704748	
	CAPACITY, CFS	0.00000	.06436	27.62557	.79372	2.10347	0.00000	30.52276	.00638261	.00671504	0.00000	30.52276	.00608053	.00656400
KERN COUNTY WATER AGENCY - MUNICIPAL & INDUSTRIAL	QUANTITY, AF	25000.0	91.0	47500.0	232.9	0.0		47732.9	.01526909			47732.9	.01526909	
	CAPACITY, CFS	45.58219	.14978	86.60617	.38935	0.00000	0.00000	86.98952	.01819037	.01672973	0.00000	86.98952	.01732644	.01629927
KERN COUNTY WATER AGENCY - AGRICULTURAL	QUANTITY, AF	34700.0	508.5	265300.0	1552.7	0.0		266852.7	.08536247			266852.7	.08536247	
	CAPACITY, CFS	103.52959	.83696	791.53893	2.55564	0.00000	0.00000	794.09457	.15850303	.12570775	0.00000	794.09457	.15819390	.12177819
FUTURE CONTRACTOR - NUCLEAR	QUANTITY, AF	0.0	67.2	35000.0	287.9	0.0		35287.9	.01128811			35287.9	.01128811	
	CAPACITY, CFS	0.00000	.11061	48.34475	.47386	0.00000	0.00000	48.81861	.01020845	.01074828	0.00000	48.81861	.00972530	.01050670
TOTAL	QUANTITY, AF	59700.0	5600.0	2845300.0	93500.0	187312.5		3126112.5	1.00000000			3126112.6	1.00000000	
	CAPACITY, CFS	149.11178	9.21722	4376.23910	142.91152	263.02996	0.00000	4782.17458	1.00000000	1.00000000	237.57992	5019.75450	1.00000000	1.00000000

TABLE B-3

REACH SUMMARY OF PROPORTIONATE USE OF PROJECT TRANSPORTATION FACILITIES
BY WATER SUPPLY CONTRACTORS

(in units as shown)

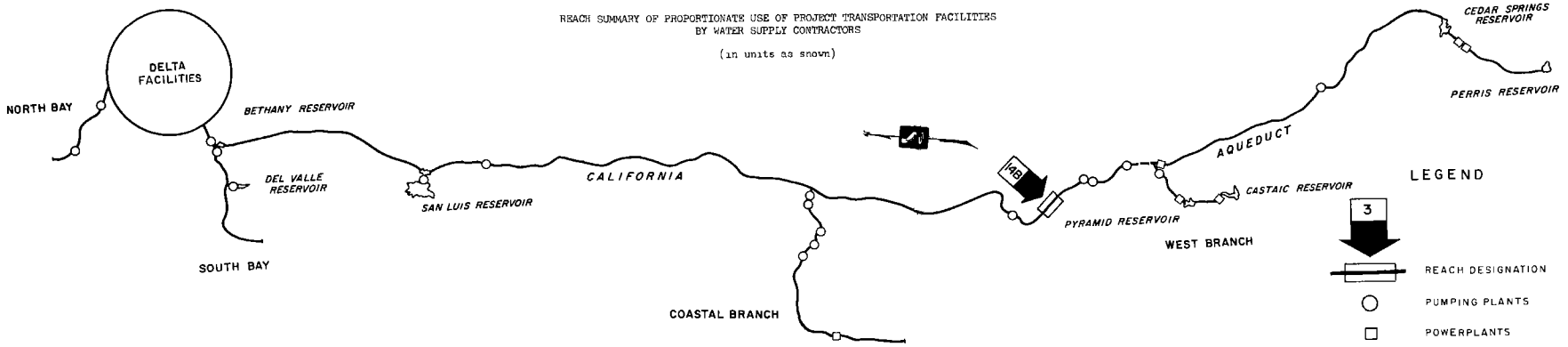


WATER SUPPLY CONTRACTOR	MEASURE OF USE	MAXIMUM ANNUAL ENTITLEMENTS DELIVERED FROM REACH	ESTIMATED OPERATIONAL LOSSES WITHIN REACH	CAPACITY PROVIDED IN REACH					PROPORTIONATE USE FOR ALLOCATION OF CAPITAL COSTS		CAPACITY PROVIDED IN REACH		PROPORTIONATE USE FOR ALLOCATION OF MINIMUM OMP&R COSTS	
				FOR DELIVERY OF ENTITLEMENTS	FOR COMPENSATION OF			SUBTOTAL	RATIOS OF TOTAL REACH USE	AVERAGE OF RATIOS	FOR REQUESTED EXCESS PEAKING	TOTAL FOR WATER SUPPLY CONTRACTORS	RATIOS OF TOTAL REACH USE	AVERAGE OF RATIOS
					OPERATIONAL LOSSES	SCHEDULED OUTAGES	DOWNSTREAM REGULATION							
REACH 14A - BUENA VISTA PUMPING PLANT TO SANTIAGO CREEK	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA	QUANTITY, AF	0.0	3697.9	2011500.0	72032.8	150862.5		2234395.3	.73000071			2234395.3	.73000071	
	CAPACITY, CFS	0.00000	6.08649	2778.44186	108.31372	212.99436	0.00000	3099.14994	.67025377	.70012724	237.57992	3336.72986	.68656861	.70818465
SAN BERNARDINO VALLEY MUNICIPAL WATER DISTRICT	QUANTITY, AF	0.0	182.1	98000.0	4573.7	7350.0		109923.7	.03591324			109923.7	.03591324	
	CAPACITY, CFS	0.00000	.29972	135.36530	7.21855	10.27353	0.00000	152.85738	.03305850	.03448587	0.00000	152.85738	.03144291	.03367808
BIG BEAR MUNICIPAL WATER DISTRICT	QUANTITY, AF	0.0	8.5	4600.0	214.7	345.0		5159.7	.00168573			5159.7	.00168573	
	CAPACITY, CFS	0.00000	.01399	6.35388	.33885	.48223	0.00000	7.17496	.00155173	.00161873	0.00000	7.17496	.00147590	.00158081
SAN GABRIEL VALLEY MUNICIPAL WATER DISTRICT	QUANTITY, AF	0.0	53.5	28800.0	1344.0	2160.0		32304.0	.01055406			32304.0	.01055406	
	CAPACITY, CFS	0.00000	.08806	39.78082	2.12120	3.01916	0.00000	44.92118	.00971511	.01013459	0.00000	44.92118	.00924033	.00989720
SAN GORGONIO PASS WATER AGENCY	QUANTITY, AF	0.0	32.1	17300.0	807.5	1297.5		19405.0	.00633982			19405.0	.00633982	
	CAPACITY, CFS	0.00000	.05283	23.89612	1.27447	1.81359	0.00000	26.98418	.00583587	.00608785	0.00000	26.98418	.00555067	.00594525
CRESTLINE-LAKE ARROWHEAD WATER AGENCY	QUANTITY, AF	0.0	10.8	5800.0	270.7	435.0		6505.7	.00212548			6505.7	.00212548	
	CAPACITY, CFS	0.00000	.01778	8.01142	.42723	.60802	0.00000	9.04667	.00195653	.00204100	0.00000	9.04667	.00186071	.00199520
COACHELLA VALLEY COUNTY WATER DISTRICT	QUANTITY, AF	0.0	42.4	23100.0	792.9	1732.5		25625.4	.00837209			25625.4	.00837209	
	CAPACITY, CFS	0.00000	.06979	31.90754	1.30607	2.39307	0.00000	35.60568	.00770045	.00803627	0.00000	35.60568	.00732412	.00784611
DESERT WATER AGENCY	QUANTITY, AF	0.0	69.9	38100.0	1307.8	2857.5		42265.3	.01380852			42265.3	.01380852	
	CAPACITY, CFS	0.00000	.11505	52.62671	2.15254	3.94700	0.00000	58.72625	.01270074	.01325463	0.00000	58.72625	.01208005	.01294429
MOJAVE WATER AGENCY	QUANTITY, AF	0.0	93.3	50800.0	1743.9	3810.0		56353.9	.01841142			56353.9	.01841142	
	CAPACITY, CFS	0.00000	.15357	70.16895	2.87034	5.26267	0.00000	78.30196	.01693438	.01767290	0.00000	78.30196	.01610679	.01725910
LITTLEROCK CREEK IRRIGATION DISTRICT	QUANTITY, AF	0.0	4.2	2300.0	48.3	172.5		2520.8	.00082357			2520.8	.00082357	
	CAPACITY, CFS	0.00000	.00691	3.17694	.07949	.23827	0.00000	3.49470	.00075580	.00078969	0.00000	3.49470	.00071886	.00077122
PALMDALE IRRIGATION DISTRICT	QUANTITY, AF	0.0	31.3	17300.0	325.8	1297.5		18923.3	.00618244			18923.3	.00618244	
	CAPACITY, CFS	0.00000	.05152	23.89612	.53625	1.79221	0.00000	26.22458	.00567160	.00592702	0.00000	26.22458	.00539442	.00578843
ANTELOPE VALLEY-EAST KERN WATER AGENCY	QUANTITY, AF	0.0	248.3	138400.0	1517.8	10380.0		150297.8	.04910388			150297.8	.04910388	
	CAPACITY, CFS	0.00000	.40868	191.16896	2.49818	14.33767	0.00000	208.00481	.04496524	.04704456	0.00000	208.00481	.04278680	.04594534
UPPER SANTA CLARA VALLEY WATER AGENCY	QUANTITY, AF	0.0	75.5	41500.0	1021.2	3112.5		45633.7	.01490902			45633.7	.01490902	
	CAPACITY, CFS	0.00000	.12427	57.32306	1.51355	4.36471	0.00000	63.20132	.01366856	.01428879	0.00000	63.20132	.01300056	.01395479
VENTURA COUNTY FLOOD CONTROL DISTRICT	QUANTITY, AF	0.0	36.4	20000.0	492.1	1500.0		21992.1	.00718505			21992.1	.00718505	
	CAPACITY, CFS	0.00000	.05991	27.62557	.72936	2.10347	0.00000	30.45840	.00658724	.00688615	0.00000	30.45840	.00626532	.00672519
KERN COUNTY WATER AGENCY - MUNICIPAL & INDUSTRIAL	QUANTITY, AF	0.0	40.2	22500.0	141.9	0.0		22641.9	.00739735			22641.9	.00739735	
	CAPACITY, CFS	0.00000	.06617	41.02398	.23357	0.00000	0.00000	41.25755	.00692278	.00816006	0.00000	41.25755	.00848672	.00794603
KERN COUNTY WATER AGENCY - AGRICULTURAL	QUANTITY, AF	0.0	411.1	230600.0	1044.2	0.0		231644.2	.07568063			231644.2	.07568063	
	CAPACITY, CFS	0.00000	.67664	688.00934	1.71868	0.00000	0.00000	689.72802	.14916761	.11242412	0.00000	689.72802	.14187773	.10877916
FUTURE CONTRACTOR - NUCLEAR	QUANTITY, AF	0.0	62.5	35000.0	220.7	0.0		35220.7	.01150698			35220.7	.01150698	
	CAPACITY, CFS	0.00000	.10287	48.34475	.36325	0.00000	0.00000	48.70800	.01053409	.01102053	0.00000	48.70800	.01001926	.01076319
TOTAL	QUANTITY, AF	0.0	5100.0	2785600.0	87900.0	187312.5		3060812.5	1.00000000			3060812.5	1.00000000	
	CAPACITY, CFS	0.00000	8.39425	4227.12132	133.69430	283.02796	0.00000	4623.84558	1.00000000	1.00000000	237.57992	4861.42550	1.00000000	1.00000000

TABLE B-3

REACH SUMMARY OF PROPORTIONATE USE OF PROJECT TRANSPORTATION FACILITIES
BY WATER SUPPLY CONTRACTORS

(in units as shown)

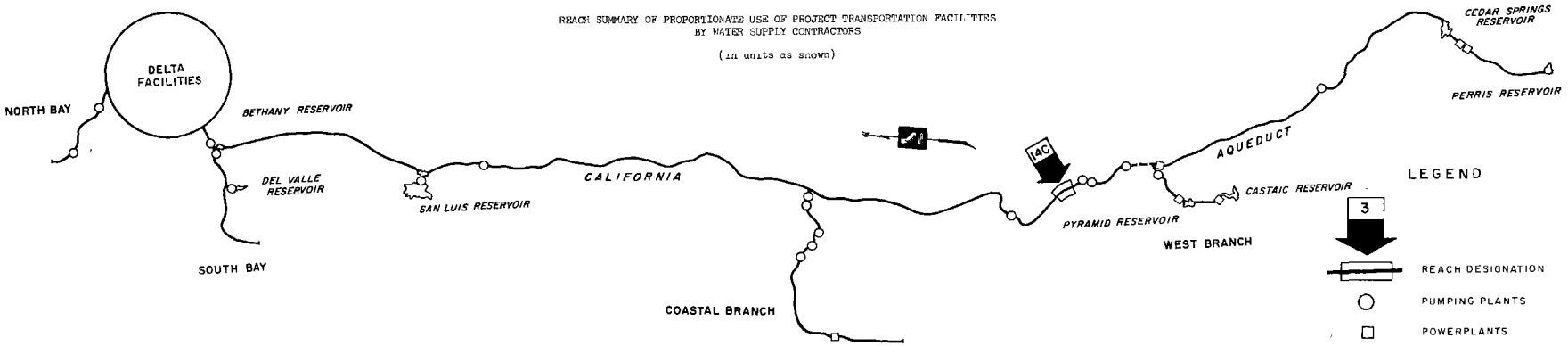


WATER SUPPLY CONTRACTOR	MEASURE OF USE	MAXIMUM ANNUAL ENTITLEMENTS DELIVERED FROM REACH	ESTIMATED OPERATIONAL LOSSES WITHIN REACH	CAPACITY PROVIDED IN REACH					PROPORTIONATE USE FOR ALLOCATION OF CAPITAL COSTS		CAPACITY PROVIDED IN REACH		PROPORTIONATE USE FOR ALLOCATION OF MINIMUM OMP&R COSTS	
				FOR DELIVERY OF ENTITLEMENTS	FOR COMPENSATION OF			SUBTOTAL	RATIOS OF TOTAL REACH USE	AVERAGE OF RATIOS	FOR REQUESTED EXCESS PEAKING	TOTAL FOR WATER SUPPLY CONTRACTORS	RATIOS OF TOTAL REACH USE	AVERAGE OF RATIOS
					OPERATIONAL LOSSES	SCHEDULED OUTAGES	DOWNSTREAM REGULATION							
REACH 14B - SANTIAGO CREEK TO OLD RIVER ROAD	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA	QUANTITY, AF	0.0	2537.8	2011500.0	68334.9	150862.5	0.00000	2230697.4	.73000843	.70008149	237.57992	2230697.4	.73000843	.70815529
	CAPACITY, CFS	0.00000	4.17704	2778.44186	102.27723	212.35436		3093.06345	.81015406			3331.84357	.82620182	
SAN BERNARDINO VALLEY MUNICIPAL WATER DISTRICT	QUANTITY, AF	0.0	124.9	98000.0	4391.6	7350.0	0.00000	109741.6	.03591355	.03448364	0.00000	109741.6	.03571358	.03367457
	CAPACITY, CFS	0.00000	.20558	135.36530	6.91883	10.27655		152.55766	.03302368			152.55766	.03145594	
BIG BEAR MUNICIPAL WATER DISTRICT	QUANTITY, AF	0.0	5.9	4600.0	206.2	345.0	0.00000	5151.2	.00168576	.00161864	0.00000	5151.2	.00168576	.00158066
	CAPACITY, CFS	0.00000	.00971	6.35388	.32486	.48225		7.16097	.00155152			7.16097	.00147557	
SAN GABRIEL VALLEY MUNICIPAL WATER DISTRICT	QUANTITY, AF	0.0	36.7	28800.0	1290.5	2160.0	0.00000	32250.5	.01055417	.01013394	0.00000	32250.5	.01055417	.00989617
	CAPACITY, CFS	0.00000	.06040	39.78082	2.03314	3.01916		44.83312	.00971570			44.83312	.00923817	
SAN GORGONIO PASS WATER AGENCY	QUANTITY, AF	0.0	22.0	17300.0	775.4	1297.5	0.00000	19372.9	.00633990	.00608747	0.00000	19372.9	.00633990	.00594464
	CAPACITY, CFS	0.00000	.03621	23.89612	1.22164	1.81359		26.93135	.00583504			26.93135	.00554939	
CRESTLINE-LAKE ARROWHEAD WATER AGENCY	QUANTITY, AF	0.0	7.4	5800.0	259.9	435.0	0.00000	6494.9	.00212549	.00204086	0.00000	6494.9	.00212549	.00199298
	CAPACITY, CFS	0.00000	.01218	8.01142	.40945	.60802		9.02889	.00195624			9.02889	.00186048	
COACHELLA VALLEY COUNTY WATER DISTRICT	QUANTITY, AF	0.0	29.1	23100.0	750.5	1732.5	0.00000	25583.0	.00837219	.00803576	0.00000	25583.0	.00837219	.00784780
	CAPACITY, CFS	0.00000	.04790	31.90754	1.23528	2.39307		35.53589	.00769933			35.53589	.00732241	
DESERT WATER AGENCY	QUANTITY, AF	0.0	48.0	38100.0	1237.9	2857.5	0.00000	42195.4	.01380869	.01325380	0.00000	42195.4	.01380869	.01294297
	CAPACITY, CFS	0.00000	.07900	52.62671	2.04749	3.94770		58.61120	.01269897			58.61120	.01207724	
MOJAVE WATER AGENCY	QUANTITY, AF	0.0	64.0	50800.0	1650.6	3810.0	0.00000	56260.6	.01841161	.01767176	0.00000	56260.6	.01841161	.01726731
	CAPACITY, CFS	0.00000	.10534	70.16895	2.71677	5.26267		78.14839	.01693191			78.14839	.01610301	
LITTLEROCK CREEK IRRIGATION DISTRICT	QUANTITY, AF	0.0	2.9	2300.0	84.1	172.5	0.00000	2516.6	.00082357	.00078963	0.00000	2516.6	.00082357	.00077113
	CAPACITY, CFS	0.00000	.00477	3.17694	.07258	.23827		3.48779	.00075568			3.48779	.00071664	
PALMDALE IRRIGATION DISTRICT	QUANTITY, AF	0.0	21.5	17300.0	294.5	1297.5	0.00000	18892.0	.00618252	.00592663	0.00000	18892.0	.00618252	.00578783
	CAPACITY, CFS	0.00000	.03539	23.89612	.48473	1.79221		26.17306	.00567075			26.17306	.00539314	
ANTELOPE VALLEY-EAST KERN WATER AGENCY	QUANTITY, AF	0.0	170.4	138400.0	1269.5	10380.0	0.00000	150049.5	.04910459	.04704155	0.00000	150049.5	.04910459	.04594059
	CAPACITY, CFS	0.00000	.28047	191.16896	2.08950	14.33767		207.59613	.04497851			207.59613	.04277635	
UPPER SANTA CLARA VALLEY WATER AGENCY	QUANTITY, AF	0.0	51.8	41500.0	945.7	3112.5	0.00000	45558.2	.01490919	.01428784	0.00000	45558.2	.01490919	.01395332
	CAPACITY, CFS	0.00000	.08526	57.32306	1.38928	4.36471		63.07705	.01366650			63.07705	.01299745	
VENTURA COUNTY FLOOD CONTROL DISTRICT	QUANTITY, AF	0.0	25.0	20000.0	455.7	1500.0	0.00000	21955.7	.00718513	.00688569	0.00000	21955.7	.00718513	.00672447
	CAPACITY, CFS	0.00000	.04115	27.62557	.66945	2.10347		30.39849	.00658524			30.39849	.00626461	
KERN COUNTY WATER AGENCY - MUNICIPAL & INDUSTRIAL	QUANTITY, AF	0.0	27.6	22500.0	101.7	0.0	0.00000	22601.7	.00739654	.00892467	0.00000	22601.7	.00739654	.00794215
	CAPACITY, CFS	0.00000	.04543	31.02398	.14740	0.00000		41.19138	.00892467			41.11138	.00864776	
KERN COUNTY WATER AGENCY - AGRICULTURAL	QUANTITY, AF	60700.0	282.1	230600.0	633.1	0.0	0.00000	231233.1	.07567240	.11248235	0.00000	231233.1	.07567240	.10482805
	CAPACITY, CFS	181.10220	.46432	688.00934	1.04204	0.00000		689.05138	.14929231			689.05138	.14195571	
FUTURE CONTRACTOR - NUCLEAR	QUANTITY, AF	0.0	42.9	35000.0	158.2	0.0	0.00000	35158.2	.01150573	.01101834	0.00000	35158.2	.01150573	.01076057
	CAPACITY, CFS	0.00000	.07061	48.34475	.26038	0.00000		48.60513	.01053096			48.60513	.01001542	
TOTAL	QUANTITY, AF	60700.0	3500.0	2785600.0	82800.0	187312.5	0.00000	3055712.5	1.00000000	1.00000000	237.57992	3055712.5	1.00000000	1.00000000
	CAPACITY, CFS	181.10220	5.76076	4227.12132	125.30005	283.02996		4615.45133	1.00000000			4853.03125	1.00000000	

TABLE B-3

REACH SUMMARY OF PROPORTIONATE USE OF PROJECT TRANSPORTATION FACILITIES BY WATER SUPPLY CONTRACTORS

(in units as shown)

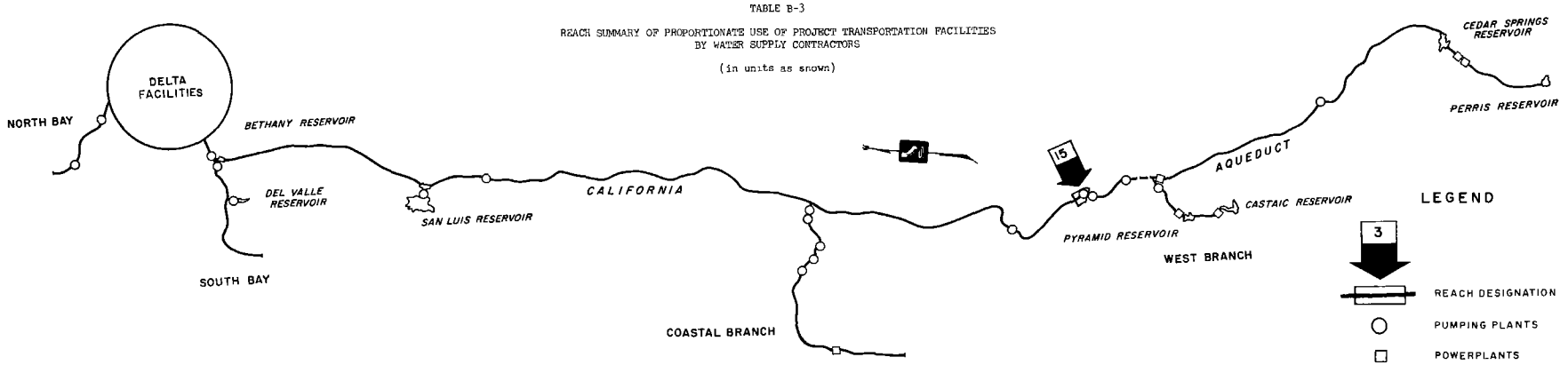


WATER SUPPLY CONTRACTOR	MEASURE OF USE	MAXIMUM ANNUAL ENTITLEMENTS DELIVERED FROM REACH	ESTIMATED OPERATIONAL LOSSES WITHIN REACH	CAPACITY PROVIDED IN REACH					PROPORTIONATE USE FOR ALLOCATION OF CAPITAL COSTS		CAPACITY PROVIDED IN REACH		PROPORTIONATE USE FOR ALLOCATION OF MINIMUM OMP&R COSTS	
				FOR DELIVERY OF ENTITLEMENTS	FOR COMPENSATION OF			SUBTOTAL	RATIOS OF TOTAL REACH USE	AVERAGE OF RATIOS	FOR REQUESTED EXCESS PEAKING	TOTAL FOR WATER SUPPLY CONTRACTORS	RATIOS OF TOTAL REACH USE	AVERAGE OF RATIOS
					OPERATIONAL LOSSES	SCHEDULED OUTAGES	DOWNSTREAM REGULATION							
REACH 14C - OLD RIVER ROAD TO WHEELER RIDGE PUMPING PLANT (1)		(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA	QUANTITY: AF CAPACITY: CFS	0.0 0.00000	2148.3 3.53595	2011500.0 2778.44186	65797.1 98.05019	150862.5 212.39436	0.00000	2228159.6 3088.88641	.74482711 .69748781	.72115745	237.57992	2228159.6 3326.46633	.74482711 .71289035	.72885872
SAN BERNARDINO VALLEY MUNICIPAL WATER DISTRICT	QUANTITY: AF CAPACITY: CFS	0.0 0.00000	105.8 .17414	98000.0 135.36530	4266.7 6.71325	7350.0 10.27353	0.00000	109616.7 152.35208	.03664257 .03440195	.03552226	0.00000	109616.7 152.35208	.03664257 .03265056	.03464646
BIG BEAR MUNICIPAL WATER DISTRICT	QUANTITY: AF CAPACITY: CFS	0.0 0.00000	5.0 .00823	4600.0 6.35388	200.3 .31515	345.0 .48223	0.00000	5145.3 7.15126	.00171997 .00161479	.00166738	0.00000	5145.3 7.15126	.00171997 .00153258	.00162627
SAN GABRIEL VALLEY MUNICIPAL WATER DISTRICT	QUANTITY: AF CAPACITY: CFS	0.0 0.00000	31.1 .05119	28800.0 39.78082	1253.8 1.97274	2160.0 3.01916	0.00000	32213.8 44.77272	.01076840 .01010993	.01043916	0.00000	32213.8 44.77272	.01076840 .00959518	.01018179
SAN GORGONIO PASS WATER AGENCY	QUANTITY: AF CAPACITY: CFS	0.0 0.00000	18.7 .03078	17300.0 23.89612	753.4 1.18543	1297.5 1.81359	0.00000	19350.9 26.89514	.00646860 .00607307	.00627084	0.00000	19350.9 26.89514	.00646860 .00576386	.00611623
CRESTLINE-LAKE ARROWHEAD WATER AGENCY	QUANTITY: AF CAPACITY: CFS	0.0 0.00000	6.2 .01020	5800.0 8.01142	252.5 .39727	435.0 .60802	0.00000	6487.5 9.01671	.00216864 .00203602	.00210233	0.00000	6487.5 9.01671	.00216864 .00193236	.00205050
COACHELLA VALLEY COUNTY WATER DISTRICT	QUANTITY: AF CAPACITY: CFS	0.0 0.00000	24.6 .04049	23100.0 31.90754	721.4 1.18738	1732.5 2.39307	0.00000	25553.9 35.48799	.00854213 .00801539	.00827776	0.00000	25553.9 35.48799	.00854213 .00760936	.00807376
DESERT WATER AGENCY	QUANTITY: AF CAPACITY: CFS	0.0 0.00000	40.6 .06682	38100.0 52.62671	1189.9 1.95849	2857.5 3.94700	0.00000	42147.4 58.53220	.01408899 .01321690	.01365295	0.00000	42147.4 58.53220	.01408899 .01254345	.01331647
MOJAVE WATER AGENCY	QUANTITY: AF CAPACITY: CFS	0.0 0.00000	54.2 .08921	50800.0 70.16895	1586.6 2.61143	3810.0 5.26267	0.00000	56196.6 78.04305	.01878535 .01762256	.01820395	0.00000	56196.6 78.04305	.01878535 .01672356	.01775952
LITTLEROCK CREEK IRRIGATION DISTRICT	QUANTITY: AF CAPACITY: CFS	0.0 0.00000	2.4 .00395	2300.0 3.17694	41.2 .06781	172.5 .23827	0.00000	2513.7 3.48302	.00084028 .00078848	.00081338	0.00000	2513.7 3.48302	.00084028 .00074844	.00079338
PALMDALE IRRIGATION DISTRICT	QUANTITY: AF CAPACITY: CFS	0.0 0.00000	18.2 .02996	17300.0 23.89612	273.0 .44934	1297.5 1.79221	0.00000	18870.5 26.13767	.00630801 .00590203	.00610502	0.00000	18870.5 26.13767	.00630801 .00560155	.00595477
ANTELOPE VALLEY-EAST KERN WATER AGENCY	QUANTITY: AF CAPACITY: CFS	0.0 0.00000	144.3 .23751	138400.0 191.16896	1099.1 1.80903	10380.0 14.33767	0.00000	149879.1 207.31566	.05010144 .04681303	.04845724	0.00000	149879.1 207.31566	.05010144 .04442933	.04726549
UPPER SANTA CLARA VALLEY WATER AGENCY	QUANTITY: AF CAPACITY: CFS	0.0 0.00000	43.8 .07209	41500.0 57.32306	893.9 1.30402	3112.5 4.36471	0.00000	45506.4 62.99179	.01521184 .01422390	.01471787	0.00000	45506.4 62.99179	.01521184 .01349966	.01435576
VENTURA COUNTY FLOOD CONTROL DISTRICT	QUANTITY: AF CAPACITY: CFS	0.0 0.00000	21.1 .03473	20000.0 27.62557	430.7 .62830	1500.0 2.10347	0.00000	21930.7 30.35734	.00733097 .00685486	.00709292	0.00000	21930.7 30.35734	.00733097 .00650584	.00691641
KERN COUNTY WATER AGENCY - MUNICIPAL & INDUSTRIAL	QUANTITY: AF CAPACITY: CFS	0.0 0.00000	23.3 .03835	22500.0 41.02398	74.1 .12197	0.0 0.00000	0.00000	22574.1 41.14595	.00754605 .00929099	.00841852	0.00000	22574.1 41.14595	.00754605 .00881793	.00818195
KERN COUNTY WATER AGENCY - AGRICULTURAL	QUANTITY: AF CAPACITY: CFS	32500.0 96.96576	176.1 .28985	169900.0 506.90714	351.0 .57772	0.0 0.00000	0.00000	170251.0 507.48486	.05691154 .11459292	.08575223	0.00000	170251.0 507.48486	.05691154 .10873037	.08243486
FUTURE CONTRACTOR - NUCLEAR	QUANTITY: AF CAPACITY: CFS	0.0 0.00000	36.3 .05975	35000.0 48.34475	115.3 .18977	0.0 0.00000	0.00000	35115.3 48.53452	.01173831 .01095937	.01134884	0.00000	35115.3 48.53452	.01173831 .01040138	.01106984
TOTAL	QUANTITY: AF CAPACITY: CFS	32500.0 96.96576	2900.0 4.77320	2724900.0 4046.01912	79300.0 119.53929	187312.5 263.02996	0.00000	2991512.5 4426.58637	1.00000000 1.00000000	1.00000000	237.57992	2991512.5 4666.16629	1.00000000 1.00000000	1.00000000

TABLE B-3

REACH SUMMARY OF PROPORTIONATE USE OF PROJECT TRANSPORTATION FACILITIES
BY WATER SUPPLY CONTRACTORS

(in units as shown)

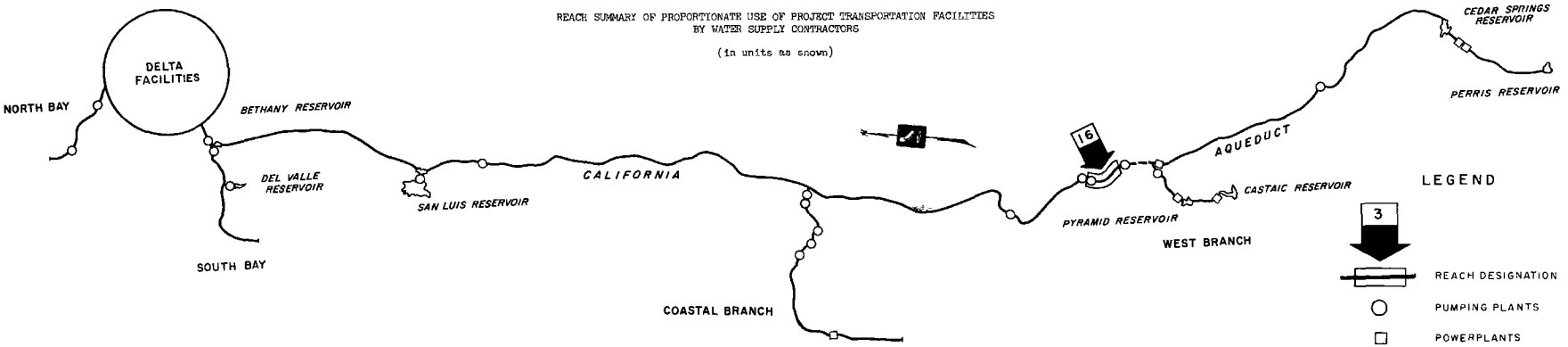


WATER SUPPLY CONTRACTOR	MEASURE OF USE	MAXIMUM ANNUAL ENTITLEMENTS DELIVERED FROM REACH	ESTIMATED OPERATIONAL LOSSES WITHIN REACH	CAPACITY PROVIDED IN REACH					PROPORTIONATE USE FOR ALLOCATION OF CAPITAL COSTS		CAPACITY PROVIDED IN REACH		PROPORTIONATE USE FOR ALLOCATION OF MINIMUM OMP&R COSTS	
				FOR DELIVERY OF ENTITLEMENTS	FOR COMPENSATION OF			SUBTOTAL	RATIOS OF TOTAL REACH USE	AVERAGE OF RATIOS	FOR REQUESTED EXCESS PEAKING	TOTAL FOR WATER SUPPLY CONTRACTORS	RATIOS OF TOTAL REACH USE	AVERAGE OF RATIOS
					OPERATIONAL LOSSES	SCHEDULED OUTAGES	DOWNSTREAM REGULATION							
REACH 15 - WHEELER RIDGE PUMPING PLANT TO WIND GAP PUMPING PLANT	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	674.5 1.11018	2011500.0 2778.44186	63648.8 94.51424	150862.5 212.39436	0.00000	2226011.3 3085.35046	.75301982 .71307091	.73304536	237.57992	2226011.3 3322.93038	.75301982 .72800566	.74051274
SAN BERNARDINO VALLEY MUNICIPAL WATER DISTRICT	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	33.2 .05465	98000.0 135.36530	4160.9 6.53911	7350.0 10.27353	0.00000	109510.9 152.17794	.03704558 .03517061	.03610810	0.00000	109510.9 152.17794	.03704558 .03333997	.03519278
BIG BEAR MUNICIPAL WATER DISTRICT	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	1.6 .00263	4600.0 6.35388	195.3 .30692	345.0 .48223	0.00000	5140.3 7.14303	.00173887 .00165086	.00169487	0.00000	5140.3 7.14303	.00173887 .00156493	.00165190
SAN GABRIEL VALLEY MUNICIPAL WATER DISTRICT	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	9.8 .01613	28800.0 39.78082	1222.7 1.92155	2160.0 3.01916	0.00000	32182.7 44.72153	.01088683 .01033582	.01061132	0.00000	32182.7 44.72153	.01088683 .00979784	.01034233
SAN GORGONIO PASS WATER AGENCY	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	5.9 .00971	17300.0 23.89612	734.7 1.15465	1297.5 1.81359	0.00000	19332.2 26.86436	.00653974 .00620876	.00637425	0.00000	19332.2 26.86436	.00653974 .00588559	.00621266
CRESTLINE-LAKE ARROWHEAD WATER AGENCY	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	2.0 .00329	5800.0 8.01142	246.3 .38707	435.0 .60802	0.00000	6481.3 9.00651	.00219251 .00208154	.00213702	0.00000	6481.3 9.00651	.00219251 .00197320	.00208285
COACHELLA VALLEY COUNTY WATER DISTRICT	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	7.7 .01268	23100.0 31.90754	696.8 1.14689	1732.5 2.39367	0.00000	25529.3 35.44750	.00863610 .00819245	.00841428	0.00000	25529.3 35.44750	.00863610 .00776603	.00820107
DESERT WATER AGENCY	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	12.7 .02090	38100.0 52.62671	1149.3 1.89167	2857.5 3.94700	0.00000	42106.8 58.46538	.01424398 .01351223	.01387810	0.00000	42106.8 58.46538	.01424398 .01280891	.01352645
MOJAVE WATER AGENCY	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	17.0 .02798	50800.0 70.16895	1532.4 2.52222	3810.0 5.26267	0.00000	56142.4 77.95384	.01899197 .01801631	.01850414	0.00000	56142.4 77.95384	.01899197 .01707855	.01803526
LITTLEROCK CREEK IRRIGATION DISTRICT	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	.8 .00132	2300.0 3.17694	38.8 .06386	172.5 .23827	0.00000	2511.3 3.47907	.00084953 .00080407	.00082680	0.00000	2511.3 3.47907	.00084953 .00076221	.00080587
PALMDALE IRRIGATION DISTRICT	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	5.7 .00938	17300.0 23.89612	254.8 .41938	1297.5 1.79221	0.00000	18852.3 26.10771	.00637740 .00603386	.00620564	0.00000	18852.3 26.10771	.00637740 .00571982	.00604861
ANTELOPE VALLEY-EAST KERN WATER AGENCY	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	45.3 .07456	138400.0 191.16896	954.8 1.57157	10380.0 14.33767	0.00000	149734.8 207.07815	.05065260 .04785888	.04925574	0.00000	149734.8 207.07815	.05065260 .04536781	.04801021
UPPER SANTA CLARA VALLEY WATER AGENCY	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	13.8 .02272	41500.0 57.32306	850.1 1.23193	3112.5 4.36471	0.00000	45462.6 62.91970	.01537918 .01454169	.01496044	0.00000	45462.6 62.91970	.01537918 .01381479	.01458199
VENTURA COUNTY FLOOD CONTROL DISTRICT	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	6.6 .01086	20000.0 27.62557	409.6 .59357	1500.0 2.10347	0.00000	21909.6 30.32261	.00741163 .00700801	.00720982	0.00000	21909.6 30.32261	.00741163 .00664324	.00702743
KERN COUNTY WATER AGENCY - MUNICIPAL & INDUSTRIAL	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	7.3 .01202	22500.0 41.02398	50.8 .08362	0.0 0.00000	0.00000	22550.8 41.10760	.00762853 .00950058	.00856456	0.00000	22550.8 41.10760	.00762853 .00900606	.00831730
KERN COUNTY WATER AGENCY - AGRICULTURAL	QUANTITY, AF CAPACITY, CFS	70000.0 208.84932	44.7 .07357	137400.0 409.94138	174.9 .28787	0.0 0.00000	0.00000	137574.9 410.22925	.04653913 .09481015	.07067464	0.00000	137574.9 410.22925	.04653913 .08987525	.06820719
FUTURE CONTRACTOR - NUCLEAR	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	11.4 .01876	35000.0 48.34475	79.0 .13002	0.0 0.00000	0.00000	35079.0 48.47477	.01186660 .01120325	.01153492	0.00000	35079.0 48.47477	.01186660 .01062012	.01124336
TOTAL	QUANTITY, AF CAPACITY, CFS	70000.0 208.84932	900.0 1.48134	2692400.0 3949.05336	76400.0 114.76609	187312.5 263.02996	0.00000	2956112.5 4326.84941	1.00000000 1.00000000	1.00000000	237.57992	2956112.5 4564.42933	1.00000000 1.00000000	1.00000000

TABLE B-3

REACH SUMMARY OF PROPORTIONATE USE OF PROJECT TRANSPORTATION FACILITIES
BY WATER SUPPLY CONTRACTORS

(in units as shown)

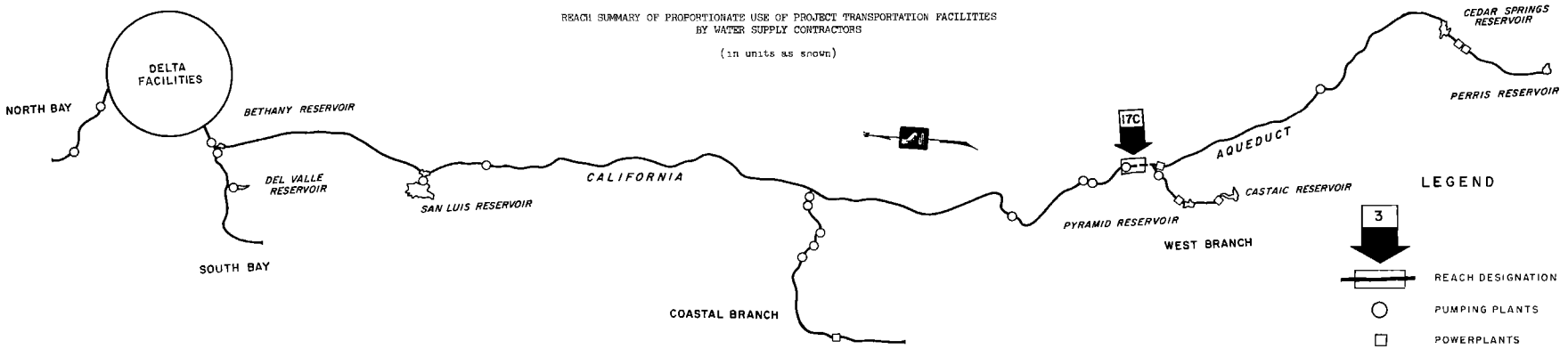


WATER SUPPLY CONTRACTOR	MEASURE OF USE	MAXIMUM ANNUAL ENTITLEMENTS DELIVERED FROM REACH	ESTIMATED OPERATIONAL LOSSES WITHIN REACH	CAPACITY PROVIDED IN REACH					PROPORTIONATE USE FOR ALLOCATION OF CAPITAL COSTS		CAPACITY PROVIDED IN REACH		PROPORTIONATE USE FOR ALLOCATION OF MINIMUM OMP&R COSTS	
				FOR DELIVERY OF ENTITLEMENTS	FOR COMPENSATION OF			SUBTOTAL	RATIOS OF TOTAL REACH USE	AVERAGE OF RATIOS	FOR REQUESTED EXCESS PEAKING	TOTAL FOR WATER SUPPLY CONTRACTORS	RATIOS OF TOTAL REACH USE	AVERAGE OF RATIOS
					OPERATIONAL LOSSES	SCHEDULED OUTAGES	DOWNSTREAM REGULATION							
REACH 16 - WIND GAP PUMPING PLANT TO TEHACHAPI PUMPING PLANT	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	3998.4 6.58109	2011500.0 2778.44186	62974.3 93.40406	150862.5 212.39436	0.00000	2225336.8 3084.24028	.77129043 .74923509	.76026275	237.57992	2225336.8 3321.82020	.77129043 .76231799	.76710421
SAN BERNARDINO VALLEY MUNICIPAL WATER DISTRICT	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	196.8 .32392	98000.0 135.36530	4127.7 6.48446	7350.0 10.27353	0.00000	109477.7 152.12329	.03794442 .03695435	.03744938	0.00000	109477.7 152.12329	.03794442 .03543792	.03644118
BIG BEAR MUNICIPAL WATER DISTRICT	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	9.2 .01514	4600.0 6.35388	193.7 .30429	345.0 .48223	0.00000	5138.7 7.14040	.00178105 .00173457	.00175781	0.00000	5138.7 7.14040	.00178105 .00163992	.00171049
SAN GABRIEL VALLEY MUNICIPAL WATER DISTRICT	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	57.8 .09513	28800.0 39.78082	1212.9 1.90542	2160.0 3.01916	0.00000	32172.9 44.70540	.01115096 .01086000	.01100548	0.00000	32172.9 44.70540	.01115096 .01026743	.01070920
SAN GORGONIO PASS WATER AGENCY	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	34.8 .05728	17300.0 23.89612	728.8 1.14494	1297.5 1.81359	0.00000	19326.3 26.85465	.00669840 .00652363	.00661101	0.00000	19326.3 26.85465	.00669840 .00616767	.00643304
CRESTLINE-LAKE ARROWHEAD WATER AGENCY	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	11.7 .01926	5800.0 8.01142	244.3 .38378	435.0 .60802	0.00000	6479.3 9.00322	.00224569 .00218710	.00221639	0.00000	6479.3 9.00322	.00224569 .00206776	.00215673
COACHELLA VALLEY COUNTY WATER DISTRICT	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	45.9 .07555	23100.0 31.90754	689.1 1.13421	1732.5 2.39307	0.00000	25521.6 35.43482	.00884566 .00860796	.00872681	0.00000	25521.6 35.43482	.00884566 .00813627	.00849196
DESERT WATER AGENCY	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	75.6 .12443	38100.0 52.62671	1136.6 1.87077	2857.5 3.94700	0.00000	42094.1 58.44448	.01458960 .01419755	.01439358	0.00000	42094.1 58.44448	.01458960 .01342266	.01400623
MOJAVE WATER AGENCY	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	100.8 .16591	50800.0 70.16895	1515.4 2.49424	3810.0 5.26267	0.00000	56125.4 77.92586	.01945278 .01893004	.01919141	0.00000	56125.4 77.92586	.01945278 .01789713	.01867495
LITTLEROCK CREEK IRRIGATION DISTRICT	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	4.5 .00741	2300.0 3.17694	38.0 .06254	172.5 .23827	0.00000	2510.5 3.47775	.00087013 .00084483	.00085748	0.00000	2510.5 3.47775	.00087013 .00079873	.00083443
PALMDALE IRRIGATION DISTRICT	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	33.8 .05563	17300.0 23.89612	249.1 .41000	1297.5 1.79221	0.00000	18846.6 26.09833	.00653214 .00633990	.00643602	0.00000	18846.6 26.09833	.00653214 .00599397	.00626305
ANTELOPE VALLEY-EAST KERN WATER AGENCY	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	268.5 .44193	138400.0 191.16896	909.5 1.49696	10380.0 14.33767	0.00000	149689.5 207.00359	.05188162 .05028608	.05108385	0.00000	149689.5 207.00359	.05188162 .04734224	.04971193
UPPER SANTA CLARA VALLEY WATER AGENCY	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	81.6 .13431	41500.0 57.32306	836.3 1.70921	3112.5 4.36471	0.00000	45448.8 62.89698	.01575232 .01527917	.01551575	0.00000	45448.8 62.89698	.01575232 .01444548	.01509885
VENTURA COUNTY FLOOD CONTROL DISTRICT	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	39.3 .06469	20000.0 27.62557	403.0 .58271	1500.0 2.10347	0.00000	21903.0 30.31175	.00759147 .00736344	.00747746	0.00000	21903.0 30.31175	.00759147 .00696166	.00727656
KERN COUNTY WATER AGENCY - MUNICIPAL & INDUSTRIAL	QUANTITY, AF CAPACITY, CFS	17500.0 31.90754	43.5 .07160	22500.0 41.02398	43.5 .07160	0.0 0.00000	0.00000	22543.5 41.09558	.00781346 .00998309	.00889829	0.00000	22543.5 41.09558	.00781346 .00943837	.00862592
KERN COUNTY WATER AGENCY - AGRICULTURAL	QUANTITY, AF CAPACITY, CFS	67400.0 201.09206	130.2 .21430	67400.0 201.09206	130.2 .21430	0.0 0.00000	0.00000	67530.2 201.30636	.02340562 .04890209	.03615386	0.00000	67530.2 201.30636	.02340562 .04623376	.03461969
FUTURE CONTRACTOR - NUCLEAR	QUANTITY, AF CAPACITY, CFS	35000.0 48.34475	67.6 .11126	35000.0 48.34475	67.6 .11126	0.0 0.00000	0.00000	35067.6 48.45601	.01215425 .01177111	.01196268	0.00000	35067.6 48.45601	.01215425 .01112883	.01164154
TOTAL	QUANTITY, AF CAPACITY, CFS	119900.0 281.34435	5200.0 8.55884	2622400.0 3740.20404	75500.0 113.28475	187312.5 269.02996	0.00000	2885212.5 4116.51875	1.00000000 1.00000000	1.00000000	237.57992	2885212.5 4354.09867	1.00000000 1.00000000	1.00000000

TABLE B-3

REACH SUMMARY OF PROPORTIONATE USE OF PROJECT TRANSPORTATION FACILITIES
BY WATER SUPPLY CONTRACTORS

(in units as shown)

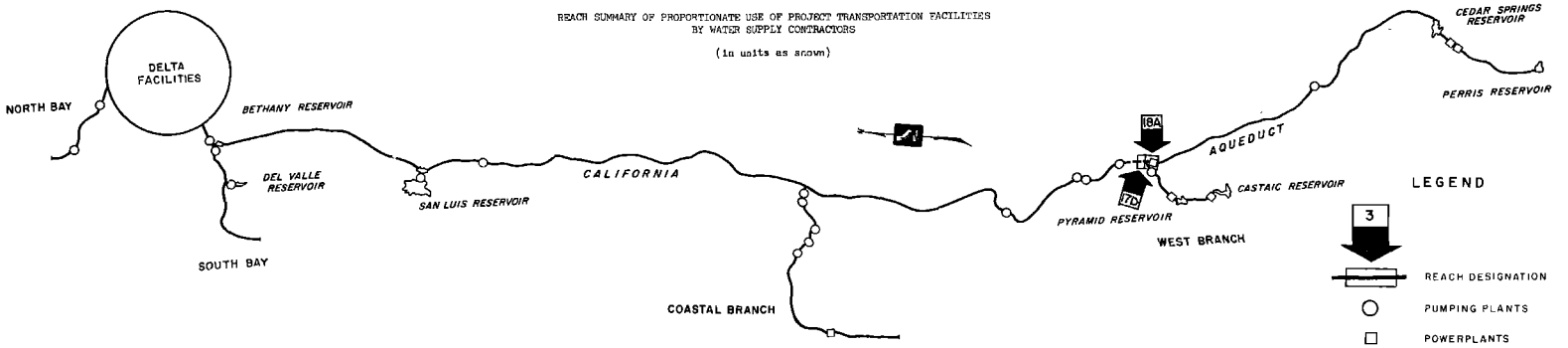


WATER SUPPLY CONTRACTOR	MEASURE OF USE	MAXIMUM ANNUAL ENTITLEMENTS DELIVERED FROM REACH	ESTIMATED OPERATIONAL LOSSES WITHIN REACH	CAPACITY PROVIDED IN REACH					PROPORTIONATE USE FOR ALLOCATION OF CAPITAL COSTS		CAPACITY PROVIDED IN REACH		PROPORTIONATE USE FOR ALLOCATION OF MINIMUM OMP&R COSTS	
				FOR DELIVERY OF ENTITLEMENTS	FOR COMPENSATION OF			SUBTOTAL	RATIOS OF TOTAL REACH USE	AVERAGE OF RATIOS	FOR REQUESTED EXCESS PEAKING	TOTAL FOR WATER SUPPLY CONTRACTORS	RATIOS OF TOTAL REACH USE	AVERAGE OF RATIOS
					OPERATIONAL LOSSES	SCHEDULED OUTAGES	DOWNSTREAM REGULATION							
REACH 17C - TEHACHAPI PUMPING PLANT TO SOUTH PORTAL TEHACHAPI TUNNEL NO. 3	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA	QUANTITY, AF	0.0	0.0	2011500.0	58975.9	150862.5		2221338.4	.80479995			2221338.4	.80479995	
	CAPACITY, CFS	0.00000	0.00000	2778.44186	86.82297	212.39436	0.00000	3877.66919	.80427708	.80453851	237.57992	3315.23911	.81571842	.81025918
SAN BERNARDINO VALLEY MUNICIPAL WATER DISTRICT	QUANTITY, AF	0.0	0.0	98000.0	3930.9	7350.0		109280.9	.03959292			109280.9	.03959292	
	CAPACITY, CFS	0.00000	0.00000	135.36530	6.16054	10.27353	0.00000	151.79937	.03966935	.03963114	0.00000	151.79937	.03725041	.03847166
BIG BEAR MUNICIPAL WATER DISTRICT	QUANTITY, AF	0.0	0.0	4600.0	184.5	345.0		5129.5	.00185844			5129.5	.00185844	
	CAPACITY, CFS	0.00000	0.00000	6.35388	.28915	.48223	0.00000	7.12526	.00186203	.00186023	0.00000	7.12526	.00175316	.00180581
SAN GABRIEL VALLEY MUNICIPAL WATER DISTRICT	QUANTITY, AF	0.0	0.0	28800.0	1155.1	2160.0		32115.1	.01163543			32115.1	.01163543	
	CAPACITY, CFS	0.00000	0.00000	39.78082	1.81029	3.01916	0.00000	44.61027	.01165789	.01164666	0.00000	44.61027	.01097641	.01130592
SAN GORGONIO PASS WATER AGENCY	QUANTITY, AF	0.0	0.0	17300.0	694.0	1297.5		19291.5	.00698939			19291.5	.00698939	
	CAPACITY, CFS	0.00000	0.00000	23.89612	1.08766	1.81359	0.00000	26.79737	.00700289	.00699614	0.00000	26.79737	.00659352	.00679146
CRESTLINE-LAKE ARROWHEAD WATER AGENCY	QUANTITY, AF	0.0	0.0	5800.0	232.6	435.0		6467.6	.00234324			6467.6	.00234324	
	CAPACITY, CFS	0.00000	0.00000	8.01142	.36452	.60802	0.00000	8.98396	.00234776	.00234550	0.00000	8.98395	.00221051	.00227888
COACHELLA VALLEY COUNTY WATER DISTRICT	QUANTITY, AF	0.0	0.0	23100.0	643.7	1732.5		25475.7	.00922995			25475.7	.00922995	
	CAPACITY, CFS	0.00000	0.00000	31.90754	1.00866	2.39807	0.00000	35.35927	.00924035	.00923515	0.00000	35.35927	.00870019	.00896507
DESERT WATER AGENCY	QUANTITY, AF	0.0	0.0	38100.0	1061.0	2857.5		42018.5	.01522347			42018.5	.01522347	
	CAPACITY, CFS	0.00000	0.00000	52.62671	1.74634	3.94700	0.00000	58.32005	.01524063	.01523205	0.00000	58.32005	.01434972	.01478659
MOJAVE WATER AGENCY	QUANTITY, AF	0.0	0.0	50600.0	1414.6	3810.0		56024.6	.02029794			56024.6	.02029794	
	CAPACITY, CFS	0.00000	0.00000	70.16895	2.32833	5.26267	0.00000	77.75995	.02032082	.02030938	0.00000	77.75995	.01913295	.01971545
LITTLEROCK CREEK IRRIGATION DISTRICT	QUANTITY, AF	0.0	0.0	2300.0	33.5	172.5		2506.0	.00090793			2506.0	.00090793	
	CAPACITY, CFS	0.00000	0.00000	3.17694	.05513	.23827	0.00000	3.47034	.00090690	.00090742	0.00000	3.47034	.00085386	.00088091
PALMDALE IRRIGATION DISTRICT	QUANTITY, AF	0.0	0.0	17300.0	215.3	1297.5		18812.8	.00681595			18812.8	.00681595	
	CAPACITY, CFS	0.00000	0.00000	23.89612	.35437	1.79221	0.00000	26.04270	.00680567	.00681081	0.00000	26.04270	.00640184	.00661189
ANTELOPE VALLEY-EAST KERN WATER AGENCY	QUANTITY, AF	0.0	0.0	138400.0	641.0	10380.0		149421.0	.05413584			149421.0	.05413584	
	CAPACITY, CFS	0.00000	0.00000	191.16896	1.05503	14.33767	0.00000	206.56166	.05398025	.05405804	0.00000	206.56166	.05082473	.05248029
UPPER SANTA CLARA VALLEY WATER AGENCY	QUANTITY, AF	0.0	0.0	41500.0	754.7	3112.5		45367.2	.01643672			45367.2	.01643672	
	CAPACITY, CFS	0.00000	0.00000	57.32308	1.07490	4.36471	0.00000	62.76267	.01640161	.01641917	0.00000	62.76267	.01544283	.01593977
VENTURA COUNTY FLOOD CONTROL DISTRICT	QUANTITY, AF	0.0	0.0	20000.0	363.7	1500.0		21863.7	.00792141			21863.7	.00792141	
	CAPACITY, CFS	0.00000	0.00000	27.62557	.51802	2.10347	0.00000	30.24706	.00790439	.00791285	0.00000	30.24706	.00744232	.00768184
KERN COUNTY WATER AGENCY - MUNICIPAL & INDUSTRIAL	QUANTITY, AF	5000.0	0.0	5000.0	0.0	0.0		5000.0	.00181152			5000.0	.00181152	
	CAPACITY, CFS	9.11644	0.00000	9.11644	0.00000	0.00000	0.00000	9.11644	.00238238	.00209695	0.00000	9.11644	.00224311	.00202742
TOTAL	QUANTITY, AF	5000.0	0.0	2502500.0	70300.0	187312.5		2760112.5	1.00000000			2760112.5	1.00000000	
	CAPACITY, CFS	9.11644	0.00000	3458.85969	104.72591	263.02996	0.00000	3826.61556	1.00000000	1.00000000	237.57992	4064.19548	1.00000000	1.00000000

TABLE B-3

REACH SUMMARY OF PROPORTIONATE USE OF PROJECT TRANSPORTATION FACILITIES
BY WATER SUPPLY CONTRACTORS

(In units as shown)

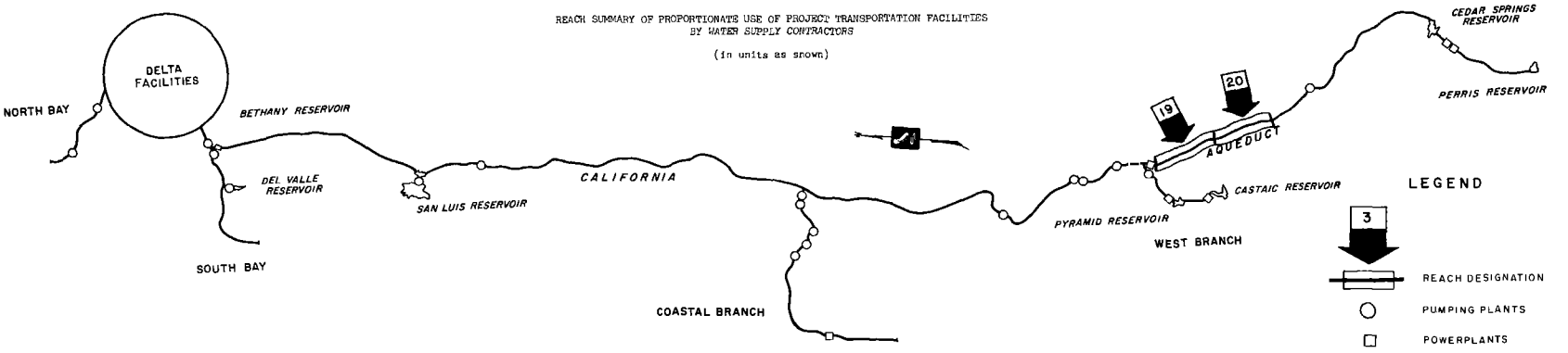


WATER SUPPLY CONTRACTOR	MEASURE OF USE	MAXIMUM ANNUAL ENTITLEMENTS DELIVERED FROM REACH	ESTIMATED OPERATIONAL LOSSES WITHIN REACH	CAPACITY PROVIDED IN REACH					PROPORTIONATE USE FOR ALLOCATION OF CAPITAL COSTS		CAPACITY PROVIDED IN REACH		PROPORTIONATE USE FOR ALLOCATION OF MINIMUM OMP&R COSTS	
				FOR DELIVERY OF ENTITLEMENTS	FOR COMPENSATION OF			SUBTOTAL	RATIOS OF TOTAL REACH USE	AVERAGE OF RATIOS	FOR REQUESTED EXCESS PEAKING	TOTAL FOR WATER SUPPLY CONTRACTORS	RATIOS OF TOTAL REACH USE	AVERAGE OF RATIOS
					OPERATIONAL LOSSES	SCHEDULED OUTAGES	DOWNSTREAM REGULATION							
REACH 17D - SOUTH PORTAL TEHACHAPI TUNNEL NO. 3 TO JUNCTION, WEST BRANCH, CALIFORNIA AQUEDUCT	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	241.9 .39815	2011500.0 2778.44186	58975.9 86.87967	150882.5 212.39436	0.00000	2221338.4 3077.69919	.80626051 .80619775	.80622912	237.57992	2221338.4 3315.29911	.80626051 .81755224	.81190639
SAN BERNARDINO VALLEY MUNICIPAL WATER DISTRICT	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	11.9 .01959	98000.0 135.36530	3930.9 6.16054	7350.0 10.27353	0.00000	109280.9 151.79937	.03966477 .03976409	.03971443	0.00000	109280.9 151.79937	.03966477 .03743438	.03854957
BIG BEAR MUNICIPAL WATER DISTRICT	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	.6 .00099	4600.0 6.35388	184.5 .28915	345.0 .48223	0.00000	5129.5 7.12526	.00186181 .00186447	.00186414	0.00000	5129.5 7.12526	.00186181 .00179712	.00180947
SAN GABRIEL VALLEY MUNICIPAL WATER DISTRICT	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	3.5 .00576	28800.0 39.78082	1155.1 1.81029	2160.0 3.01916	0.00000	32115.1 44.61027	.01165655 .01168573	.01167114	0.00000	32115.1 44.61027	.01165655 .01100108	.01132882
SAN GORGONIO PASS WATER AGENCY	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	2.1 .00346	17300.0 23.89612	694.0 1.08766	1297.5 1.81359	0.00000	19291.5 26.79737	.00700207 .00701961	.00701084	0.00000	19291.5 26.79737	.00700207 .00660835	.00680521
CRESTLINE-LAKE ARROWHEAD WATER AGENCY	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	.7 .00119	5800.0 8.01142	232.6 .36452	435.0 .60802	0.00000	6467.6 8.98396	.00234749 .00235336	.00235043	0.00000	6467.6 8.98396	.00234749 .00221548	.00228149
COACHELLA VALLEY COUNTY WATER DISTRICT	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	2.8 .00461	23100.0 31.90754	643.2 1.05866	1732.5 2.39307	0.00000	25475.7 35.35927	.00924670 .00926242	.00925456	0.00000	25475.7 35.35927	.00924670 .00871975	.00898322
DESERT WATER AGENCY	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	4.6 .00757	38100.0 52.62671	1061.0 1.74634	2857.5 3.94700	0.00000	42018.5 58.32005	.01525110 .01527703	.01526407	0.00000	42018.5 58.32005	.01525110 .01438198	.01481654
MOJAVE WATER AGENCY	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	6.1 .01004	50800.0 70.16895	1414.6 2.32833	3810.0 5.26267	0.00000	56024.6 77.75995	.02033478 .02036934	.02035206	0.00000	56024.6 77.75995	.02033478 .01917594	.01975536
LITTLEROCK CREEK IRRIGATION DISTRICT	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	.3 .00049	2300.0 3.17694	33.5 .05513	172.5 .23827	0.00000	2506.0 3.47034	.00090958 .00090906	.00090932	0.00000	2506.0 3.47034	.00090958 .00085580	.00088269
PALMDALE IRRIGATION DISTRICT	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	2.0 .00329	17300.0 23.89612	215.3 .35437	1297.5 1.79221	0.00000	18812.8 26.04270	.00682833 .00682193	.00682513	0.00000	18812.8 26.04270	.00682833 .00642224	.00662528
ANTELOPE VALLEY-EAST KERN WATER AGENCY	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	16.2 .02666	138400.0 191.16896	641.0 1.05503	10380.0 14.33767	0.00000	149421.0 206.56166	.05423408 .05410916	.05417162	0.00000	149421.0 206.56166	.05423408 .05093930	.05258654
UPPER SANTA CLARA VALLEY WATER AGENCY	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	4.9 .00807	41500.0 57.32306	754.7 1.07490	3112.5 4.36471	0.00000	45367.2 62.76267	.01646655 .01644078	.01645367	0.00000	45367.2 62.76267	.01646655 .01547754	.01597205
VENTURA COUNTY FLOOD CONTROL DISTRICT	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	2.4 .00395	20000.0 27.62557	363.7 .51802	1500.0 2.10347	0.00000	21863.7 30.24706	.00793568 .00792327	.00792947	0.00000	21863.7 30.24706	.00793568 .00745906	.00769737
TOTAL	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	300.0 .49378	2497500.0 3449.74325	70300.0 104.72591	187312.5 263.02996	0.00000	2755112.5 3817.49912	1.00000000 1.00000000	1.00000000	237.57992	2755112.5 4055.07904	1.00000000 1.00000000	1.00000000
REACH 18A - JUNCTION, WEST BRANCH, CALIFORNIA AQUEDUCT THRU COTTONWOOD POWERPLANT														
THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	460.3 .75762	556500.0 768.68153	32445.1 49.02067	41737.5 59.36631	0.00000	630682.6 877.06851	.57482407 .57557410	.57519909	0.00000	630682.6 877.06851	.57482407 .57557410	.57519909
SAN BERNARDINO VALLEY MUNICIPAL WATER DISTRICT	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	79.7 .13118	98000.0 135.36530	3919.0 6.14095	7350.0 10.27353	0.00000	109269.0 151.77978	.09959122 .09960512	.09959817	0.00000	109269.0 151.77978	.09959122 .09960512	.09959817
BIG BEAR MUNICIPAL WATER DISTRICT	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	3.7 .00609	4600.0 6.35388	183.9 .28816	345.0 .48223	0.00000	5128.9 7.12427	.00467464 .00467529	.00467496	0.00000	5128.9 7.12427	.00467464 .00467529	.00467496
SAN GABRIEL VALLEY MUNICIPAL WATER DISTRICT	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	23.4 .03852	28800.0 39.78082	1151.6 1.80453	2160.0 3.01916	0.00000	32111.6 44.60451	.02926753 .02927160	.02926957	0.00000	32111.6 44.60451	.02926753 .02927160	.02926957
SAN GORGONIO PASS WATER AGENCY	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	14.1 .02321	17300.0 23.89612	691.9 1.08420	1297.5 1.81359	0.00000	19289.4 26.79391	.01758027 .01758344	.01758220	0.00000	19289.4 26.79391	.01758027 .01758344	.01758220
CRESTLINE-LAKE ARROWHEAD WATER AGENCY	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	4.7 .00774	5800.0 8.01142	231.9 .36337	435.0 .60802	0.00000	6466.9 8.98281	.00589414 .00589495	.00589454	0.00000	6466.9 8.98281	.00589414 .00589495	.00589454
COACHELLA VALLEY COUNTY WATER DISTRICT	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	18.5 .03049	23100.0 31.90754	640.4 1.05405	1732.5 2.39307	0.00000	25472.9 35.35466	.02321681 .02320141	.02320911	0.00000	25472.9 35.35466	.02321681 .02320141	.02320911
DESERT WATER AGENCY	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	30.6 .05037	38100.0 52.62671	1056.4 1.73877	2857.5 3.94700	0.00000	42013.9 58.31248	.03829280 .03826742	.03828011	0.00000	42013.9 58.31248	.03829280 .03826742	.03828011
MOJAVE WATER AGENCY	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	40.8 .06719	50800.0 70.16895	1408.5 2.31829	3810.0 5.26267	0.00000	56018.5 77.74991	.05105703 .05102319	.05104011	0.00000	56018.5 77.74991	.05105703 .05102319	.05104011
LITTLEROCK CREEK IRRIGATION DISTRICT	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	1.8 .00296	2300.0 3.17694	33.2 .05464	172.5 .23827	0.00000	2505.7 3.46985	.00228377 .00227708	.00228043	0.00000	2505.7 3.46985	.00228377 .00227708	.00228043
PALMDALE IRRIGATION DISTRICT	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	13.7 .02255	17300.0 23.89612	213.3 .35108	1297.5 1.79221	0.00000	18810.8 26.03941	.01714476 .01708830	.01711653	0.00000	18810.8 26.03941	.01714476 .01708830	.01711653
ANTELOPE VALLEY-EAST KERN WATER AGENCY	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	108.7 .17891	138400.0 191.16896	624.8 1.02837	10380.0 14.33767	0.00000	149404.8 206.53500	.13617226 .13553810	.13585518	0.00000	149404.8 206.53500	.13617226 .13553810	.13585518
TOTAL	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	800.0 1.31675	981000.0 1355.03429	42600.0 65.94708	73575.0 103.53373	0.00000	1097175.0 1523.81510	1.00000000 1.00000000	1.00000000	0.00000	1097175.0 1523.81510	1.00000000 1.00000000	1.00000000

TABLE B-3

REACH SUMMARY OF PROPORTIONATE USE OF PROJECT TRANSPORTATION FACILITIES
BY WATER SUPPLY CONTRACTORS

(In units as shown)

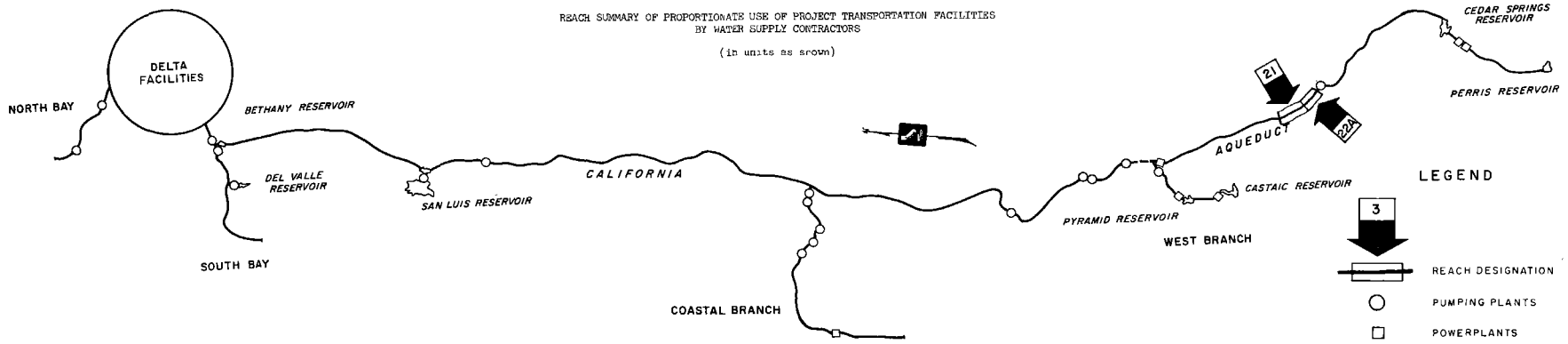


WATER SUPPLY CONTRACTOR	MEASURE OF USE	MAXIMUM ANNUAL ENTITLEMENTS DELIVERED FROM REACH	ESTIMATED OPERATIONAL LOSSES WITHIN REACH	CAPACITY PROVIDED IN REACH					PROPORTIONATE USE FOR ALLOCATION OF CAPITAL COSTS		CAPACITY PROVIDED IN REACH		PROPORTIONATE USE FOR ALLOCATION OF MINIMUM OMP&R COSTS	
				FOR DELIVERY OF ENTITLEMENTS	FOR COMPENSATION OF			SUBTOTAL	RATIOS OF TOTAL REACH USE	AVERAGE OF RATIOS	FOR REQUESTED EXCESS PEAKING	TOTAL FOR WATER SUPPLY CONTRACTORS	RATIOS OF TOTAL REACH USE	AVERAGE OF RATIOS
					OPERATIONAL LOSSES	SCHEDULED OUTAGES	DOWNSTREAM REGULATION							
REACH 19 - COTTONWOOD POWERPLANT TO FAIRMONT	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	2186.4 3.59866	556500.0 768.68153	31984.8 48.26305	41737.5 59.36631	0.00000	630222.3 876.31089	.57482367 .57557428	.57519897	0.00000	630222.3 876.31089	.57482367 .57557428	.57519897
SAN BERNARDINO VALLEY MUNICIPAL WATER DISTRICT	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	378.4 .62282	98000.0 135.36530	3839.3 6.00977	7350.0 10.27353	0.00000	109189.3 151.64860	.09959120 .09960510	.09959815	0.00000	109189.3 151.64860	.09959120 .09960510	.09959815
BIG BEAR MUNICIPAL WATER DISTRICT	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	17.7 .02913	4600.0 6.35388	180.2 .28207	345.0 .48223	0.00000	5125.2 7.11818	.00467468 .00467533	.00467500	0.00000	5125.2 7.11818	.00467468 .00467533	.00467500
SAN GABRIEL VALLEY MUNICIPAL WATER DISTRICT	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	111.2 .18303	28800.0 39.78082	1128.2 1.76601	2160.0 3.01916	0.00000	32088.2 44.56599	.02926754 .02927162	.02926958	0.00000	32088.2 44.56599	.02926754 .02927162	.02926958
SAN GORGONIO PASS WATER AGENCY	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	66.8 .10995	17300.0 23.89612	677.8 1.06099	1297.5 1.81349	0.00000	19275.3 26.77070	.01758094 .01758340	.01758217	0.00000	19275.3 26.77070	.01758094 .01758340	.01758217
CRESTLINE-LAKE ARROWHEAD WATER AGENCY	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	22.4 .03687	5800.0 8.01142	227.2 .35563	435.0 .60802	0.00000	6462.2 8.97507	.00589415 .00589496	.00589456	0.00000	6462.2 8.97507	.00589415 .00589496	.00589456
COACHELLA VALLEY COUNTY WATER DISTRICT	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	88.1 .14501	23100.0 31.90754	621.9 1.07360	1732.5 2.39307	0.00000	25454.4 35.32421	.02321687 .02320148	.02320918	0.00000	25454.4 35.32421	.02321687 .02320148	.02320918
DESERT WATER AGENCY	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	145.4 .23932	38100.0 52.62671	1025.8 1.68840	2857.5 3.94700	0.00000	41983.3 58.26211	.03829283 .03826744	.03828013	0.00000	41983.3 58.26211	.03829283 .03826744	.03828013
MOJAVE WATER AGENCY	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	193.8 .31898	50800.0 70.16895	1367.7 2.25114	3810.0 5.26267	0.00000	55977.7 77.68276	.05105707 .05102321	.05104015	0.00000	55977.7 77.68276	.05105707 .05102321	.05104015
LITTLEROCK CREEK IRRIGATION DISTRICT	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	8.7 .01432	2300.0 3.17694	91.4 .05168	172.5 .23827	0.00000	2503.9 3.46689	.00228380 .00227710	.00228045	0.00000	2503.9 3.46689	.00228380 .00227710	.00228045
PALMDALE IRRIGATION DISTRICT	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	65.0 .10699	17300.0 23.89612	199.6 .32853	1297.5 1.79221	0.00000	18797.1 26.01686	.01714477 .01708827	.01711652	0.00000	18797.1 26.01686	.01714477 .01708827	.01711652
ANTELOPE VALLEY-EAST KERN WATER AGENCY	QUANTITY, AF CAPACITY, CFS	138400.0 191.16896	516.1 .84946	138400.0 191.16896	516.1 .84946	10380.0 14.33767	0.00000	149296.1 206.35609	.13617248 .13553781	.13585514	0.00000	149296.1 206.35609	.13617248 .13553781	.13565514
TOTAL	QUANTITY, AF CAPACITY, CFS	138400.0 191.16896	3800.0 6.25454	981000.0 1355.03429	41800.0 63.93033	73575.0 103.53373	0.00000	1096375.0 1522.49835	1.00000000 1.00000000	1.00000000	0.00000	1096375.0 1522.49835	1.00000000 1.00000000	1.00000000
REACH 20 - FAIRMONT TO PALMDALE														
THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	4527.4 7.45179	556500.0 768.68153	29708.4 44.66439	41737.5 59.36631	0.00000	628035.9 872.71223	.66543677 .66581786	.66562732	0.00000	628035.9 872.71223	.66543677 .66581786	.66562732
SAN BERNARDINO VALLEY MUNICIPAL WATER DISTRICT	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	783.5 1.28959	98000.0 135.36530	3460.9 5.38695	7350.0 10.27353	0.00000	108810.9 151.02578	.11529082 .11522201	.11525642	0.00000	108810.9 151.02578	.11529082 .11522201	.11525642
BIG BEAR MUNICIPAL WATER DISTRICT	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	36.8 .06057	4600.0 6.35388	162.5 .25294	345.0 .48223	0.00000	5107.5 7.08905	.00541166 .00540844	.00541005	0.00000	5107.5 7.08905	.00541166 .00540844	.00541005
SAN GABRIEL VALLEY MUNICIPAL WATER DISTRICT	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	230.3 .37906	28800.0 39.78082	1017.0 1.58298	2160.0 3.01916	0.00000	31977.0 44.38296	.03388130 .03386107	.03387118	0.00000	31977.0 44.38296	.03388130 .03386107	.03387118
SAN GORGONIO PASS WATER AGENCY	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	138.3 .22763	17300.0 23.89612	611.0 .95104	1297.5 1.81349	0.00000	19208.5 26.66075	.02035241 .02034027	.02034634	0.00000	19208.5 26.66075	.02035241 .02034027	.02034634
CRESTLINE-LAKE ARROWHEAD WATER AGENCY	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	46.4 .07637	5800.0 8.01142	204.8 .31876	435.0 .60802	0.00000	6439.8 8.93820	.00682330 .00681922	.00682126	0.00000	6439.8 8.93820	.00682330 .00681922	.00682126
COACHELLA VALLEY COUNTY WATER DISTRICT	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	182.5 .30038	23100.0 31.90754	533.8 .87859	1732.5 2.39307	0.00000	25366.3 35.17920	.02687692 .02683925	.02685808	0.00000	25366.3 35.17920	.02687692 .02683925	.02685808
DESERT WATER AGENCY	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	301.0 .49543	38100.0 52.62671	880.4 1.44908	2857.5 3.94700	0.00000	41837.9 58.02279	.04432944 .04426730	.04429837	0.00000	41837.9 58.02279	.04432944 .04426730	.04429837
MOJAVE WATER AGENCY	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	401.3 .66051	50800.0 70.16895	1173.9 1.93216	3810.0 5.26267	0.00000	55783.9 77.36378	.05910595 .05902311	.05906453	0.00000	55783.9 77.36378	.05910595 .05902311	.05906453
LITTLEROCK CREEK IRRIGATION DISTRICT	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	17.9 .02946	2300.0 3.17694	22.7 .03736	172.5 .23827	0.00000	2495.2 3.45257	.00264379 .00263407	.00263893	0.00000	2495.2 3.45257	.00264379 .00263407	.00263893
PALMDALE IRRIGATION DISTRICT	QUANTITY, AF CAPACITY, CFS	17300.0 23.89612	134.6 .22154	17300.0 23.89612	134.6 .22154	1297.5 1.79221	0.00000	18732.1 25.90987	.01984764 .01976740	.01980752	0.00000	18732.1 25.90987	.01984764 .01976740	.01980752
TOTAL	QUANTITY, AF CAPACITY, CFS	17300.0 23.89612	6800.0 11.19233	842600.0 1163.86933	38000.0 57.67579	63195.0 89.19606	0.00000	943795.0 1310.73718	1.00000000 1.00000000	1.00000000	0.00000	943795.0 1310.73718	1.00000000 1.00000000	1.00000000

TABLE B-3

REACH SUMMARY OF PROPORTIONATE USE OF PROJECT TRANSPORTATION FACILITIES
BY WATER SUPPLY CONTRACTORS

(in units as shown)

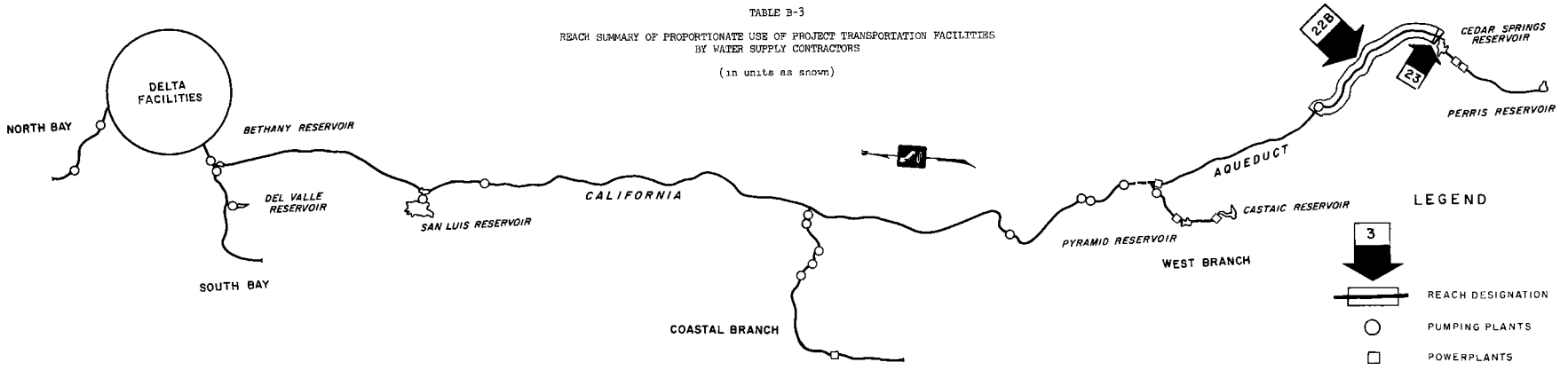


WATER SUPPLY CONTRACTOR	MEASURE OF USE	MAXIMUM ANNUAL ENTITLEMENTS DELIVERED FROM REACH	ESTIMATED OPERATIONAL LOSSES WITHIN REACH	CAPACITY PROVIDED IN REACH					PROPORTIONATE USE FOR ALLOCATION OF CAPITAL COSTS		CAPACITY PROVIDED IN REACH		PROPORTIONATE USE FOR ALLOCATION OF MINIMUM OMP&R COSTS	
				FOR DELIVERY OF ENTITLEMENTS	FOR COMPENSATION OF			SUBTOTAL	RATIOS OF TOTAL REACH USE	AVERAGE OF RATIOS	FOR REQUESTED EXCESS PEAKING	TOTAL FOR WATER SUPPLY CONTRACTORS	RATIOS OF TOTAL REACH USE	AVERAGE OF RATIOS
					OPERATIONAL LOSSES	SCHEDULED OUTAGES	DOWNSTREAM REGULATION							
REACH 21 - PALMDALE TO LITTLEROCK CREEK	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA	QUANTITY, AF	0.0	1222.6	556500.0	25271.0	41737.5	0.00000	623508.5	.67890919			623508.5	.67890919	
	CAPACITY, CFS	0.00000	2.01232	768.68153	37.21260	59.36631		865.26044	.67924482	.67907700	0.00000	865.26044	.67924482	.67907700
SAN BERNARDINO VALLEY MUNICIPAL WATER DISTRICT	QUANTITY, AF	0.0	211.6	98000.0	2677.4	7350.0	0.00000	108027.4	.11762597			108027.4	.11762597	
	CAPACITY, CFS	0.00000	.34828	135.36530	4.09736	10.27353		149.73619	.11754557	.11758577	0.00000	149.73619	.11754557	.11758577
BIG BEAR MUNICIPAL WATER DISTRICT	QUANTITY, AF	0.0	9.9	4600.0	125.7	345.0	0.00000	5070.7	.00552125			5070.7	.00552125	
	CAPACITY, CFS	0.00000	.01630	6.35388	.19237	.48223		7.02848	.00551748	.00551937	0.00000	7.02848	.00551748	.00551937
SAN GABRIEL VALLEY MUNICIPAL WATER DISTRICT	QUANTITY, AF	0.0	62.2	28800.0	786.7	2160.0	0.00000	31746.7	.03436749			31746.7	.03436749	
	CAPACITY, CFS	0.00000	.10238	39.78082	1.20392	3.01916		44.00390	.03454384	.03455567	0.00000	44.00390	.03454384	.03455567
SAN GORGONIO PASS WATER AGENCY	QUANTITY, AF	0.0	37.4	17300.0	472.7	1297.5	0.00000	19070.2	.02076465			19070.2	.02076465	
	CAPACITY, CFS	0.00000	.06156	23.89612	.72341	1.81359		26.43312	.02075047	.02075756	0.00000	26.43312	.02075047	.02075756
CRESTLINE-LAKE ARROWHEAD WATER AGENCY	QUANTITY, AF	0.0	12.5	5800.0	158.4	435.0	0.00000	6393.4	.00696147			6393.4	.00696147	
	CAPACITY, CFS	0.00000	.02057	8.01142	.24239	.60802		8.86183	.00695670	.00695908	0.00000	8.86183	.00695670	.00695908
COACHELLA VALLEY COUNTY WATER DISTRICT	QUANTITY, AF	0.0	49.3	23100.0	651.3	1732.5	0.00000	25483.8	.02742146			25483.8	.02742146	
	CAPACITY, CFS	0.00000	.08114	31.90754	.97821	2.39307		35.37882	.02738049	.02740098	0.00000	35.37882	.02738049	.02740098
DESERT WATER AGENCY	QUANTITY, AF	0.0	81.3	38100.0	979.4	2857.5	0.00000	41536.9	.04522758			41536.9	.04522758	
	CAPACITY, CFS	0.00000	.13381	52.62671	1.95365	3.94700		57.52736	.04516000	.04519379	0.00000	57.52736	.04516000	.04519379
MOJAVE WATER AGENCY	QUANTITY, AF	0.0	108.4	50800.0	772.6	3810.0	0.00000	55382.6	.06030352			55382.6	.06030352	
	CAPACITY, CFS	0.00000	.17842	70.16895	1.27165	5.26267		76.70327	.06021343	.06025847	0.00000	76.70327	.06021343	.06025847
LITTLEROCK CREEK IRRIGATION DISTRICT	QUANTITY, AF	2300.0	4.8	2300.0	4.8	172.5	0.00000	2477.3	.00269742			2477.3	.00269742	
	CAPACITY, CFS	3.17694	.00790	3.17694	.00790	.23827		3.42311	.00268720	.00269231	0.00000	3.42311	.00268720	.00269231
TOTAL	QUANTITY, AF	2300.0	1800.0	825300.0	31200.0	61897.5	0.00000	918397.5	1.00000000			918397.5	1.00000000	
	CAPACITY, CFS	3.17694	2.96268	1139.96921	46.48346	87.40385		1273.85652	1.00000000	1.00000000	0.00000	1273.85652	1.00000000	1.00000000
REACH 22A - LITTLEROCK CREEK TO PEARBLOSSOM PUMPING PLANT														
THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA	QUANTITY, AF	0.0	476.7	556500.0	24068.4	41737.5	0.00000	622285.9	.68074487			622285.9	.68074487	
	CAPACITY, CFS	0.00000	.78462	768.68153	35.20028	59.36631		863.24812	.68107509	.68090998	0.00000	863.24812	.68107509	.68090998
SAN BERNARDINO VALLEY MUNICIPAL WATER DISTRICT	QUANTITY, AF	0.0	82.5	98000.0	2465.8	7350.0	0.00000	107815.8	.11794426			107815.8	.11794426	
	CAPACITY, CFS	0.00000	.13579	135.36530	3.74908	10.27353		149.38791	.11786227	.11790327	0.00000	149.38791	.11786227	.11790327
BIG BEAR MUNICIPAL WATER DISTRICT	QUANTITY, AF	0.0	3.9	4600.0	115.8	345.0	0.00000	5060.8	.00553622			5060.8	.00553622	
	CAPACITY, CFS	0.00000	.00642	6.35388	.17607	.48223		7.01218	.00553239	.00553431	0.00000	7.01218	.00553239	.00553431
SAN GABRIEL VALLEY MUNICIPAL WATER DISTRICT	QUANTITY, AF	0.0	24.2	28800.0	724.5	2160.0	0.00000	31684.5	.03466101			31684.5	.03466101	
	CAPACITY, CFS	0.00000	.03983	39.78082	1.10154	3.01916		43.90152	.03463689	.03464895	0.00000	43.90152	.03463689	.03464895
SAN GORGONIO PASS WATER AGENCY	QUANTITY, AF	0.0	14.6	17300.0	435.3	1297.5	0.00000	19032.8	.02082079			19032.8	.02082079	
	CAPACITY, CFS	0.00000	.02403	23.89612	.66185	1.81359		26.37156	.02080632	.02081355	0.00000	26.37156	.02080632	.02081355
CRESTLINE-LAKE ARROWHEAD WATER AGENCY	QUANTITY, AF	0.0	4.9	5800.0	145.9	435.0	0.00000	6380.9	.00698034			6380.9	.00698034	
	CAPACITY, CFS	0.00000	.00806	8.01142	.22182	.60802		8.84126	.00697547	.00697790	0.00000	8.84126	.00697547	.00697790
COACHELLA VALLEY COUNTY WATER DISTRICT	QUANTITY, AF	0.0	19.2	23100.0	302.0	1732.5	0.00000	25134.5	.02749569			25134.5	.02749569	
	CAPACITY, CFS	0.00000	.03160	31.90754	.49707	2.39307		34.79768	.02745425	.02747497	0.00000	34.79768	.02745425	.02747497
DESERT WATER AGENCY	QUANTITY, AF	0.0	31.7	38100.0	498.1	2857.5	0.00000	41455.6	.04535003			41455.6	.04535003	
	CAPACITY, CFS	0.00000	.05218	52.62671	.81984	3.94700		57.39355	.04528167	.04531585	0.00000	57.39355	.04528167	.04531585
MOJAVE WATER AGENCY	QUANTITY, AF	0.0	42.3	50800.0	664.2	3810.0	0.00000	55274.2	.06046679			55274.2	.06046679	
	CAPACITY, CFS	0.00000	.06962	70.16895	1.09323	5.26267		76.52485	.06037565	.06042122	0.00000	76.52485	.06037565	.06042122
TOTAL	QUANTITY, AF	0.0	700.0	823000.0	29400.0	61725.0	0.00000	914125.0	1.00000000			914125.0	1.00000000	
	CAPACITY, CFS	0.00000	1.15215	1136.79227	43.52078	87.16558		1267.47863	1.00000000	1.00000000	0.00000	1267.47863	1.00000000	1.00000000

TABLE B-3

REACH SUMMARY OF PROPORTIONATE USE OF PROJECT TRANSPORTATION FACILITIES
BY WATER SUPPLY CONTRACTORS

(in units as shown)

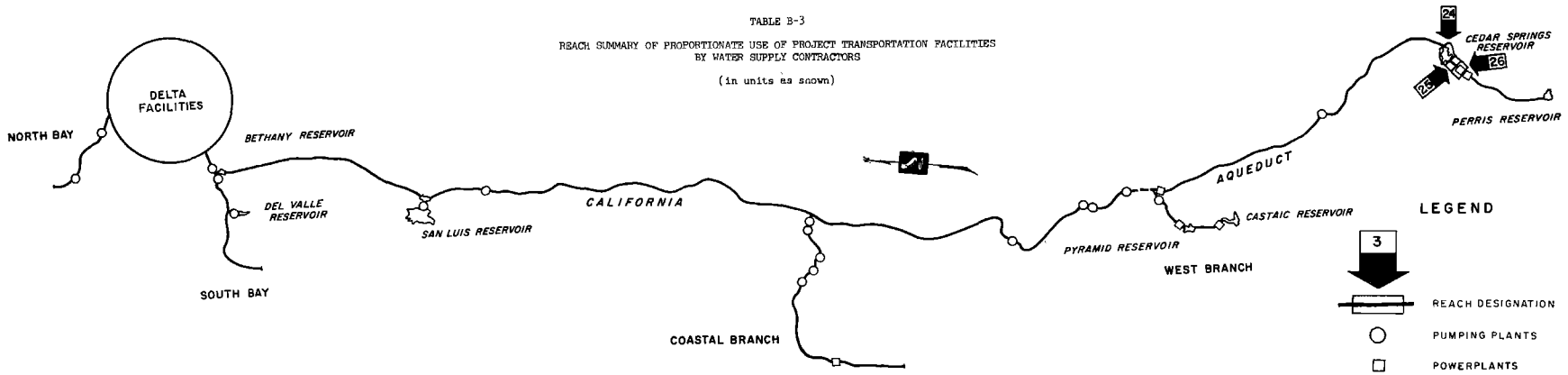


WATER SUPPLY CONTRACTOR	MEASURE OF USE	MAXIMUM ANNUAL ENTITLEMENTS DELIVERED FROM REACH	ESTIMATED OPERATIONAL LOSSES WITHIN REACH	CAPACITY PROVIDED IN REACH					PROPORTIONATE USE FOR ALLOCATION OF CAPITAL COSTS		CAPACITY PROVIDED IN REACH		PROPORTIONATE USE FOR ALLOCATION OF MINIMUM OMP&R COSTS	
				FOR DELIVERY OF ENTITLEMENTS	FOR COMPENSATION OF			SUBTOTAL	RATIOS OF TOTAL REACH USE	AVERAGE OF RATIOS	FOR REQUESTED EXCESS PEAKING	TOTAL FOR WATER SUPPLY CONTRACTORS	RATIOS OF TOTAL REACH USE	AVERAGE OF RATIOS
					OPERATIONAL LOSSES	SCHEDULED OUTAGES	DOWNSTREAM REGULATION							
REACH 22B - PEARBLOSSOM PUMPING PLANT TO WEST FORK MOJAVE RIVER	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	7015.1 11.54638	556500.0 768.68153	23871.7 34.41566	41737.5 59.36631	0.00000	621809.2 862.46350	.68074467 .68107515	.68090991	0.00000	621809.2 862.46350	.68074467 .68107515	.68090991
SAN BERNARDINO VALLEY MUNICIPAL WATER DISTRICT	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	1214.0 1.99816	98000.0 135.36530	2383.3 3.61329	7350.0 10.27353	0.00000	107733.3 149.25212	.11794433 .11786228	.11790330	0.00000	107733.3 149.25212	.11794433 .11786228	.11790330
BIG BEAR MUNICIPAL WATER DISTRICT	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	57.0 .09382	4600.0 6.35388	111.9 .16965	345.0 .48223	0.00000	5056.9 7.00576	.00553620 .00553235	.00553427	0.00000	5056.9 7.00576	.00553620 .00553235	.00553427
SAN GABRIEL VALLEY MUNICIPAL WATER DISTRICT	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	356.7 .58710	28800.0 39.78082	700.3 1.06171	2160.0 3.01916	0.00000	31660.3 43.86169	.03466108 .03463695	.03464902	0.00000	31660.3 43.86169	.03466108 .03463695	.03464902
SAN GORGONIO PASS WATER AGENCY	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	214.3 .35272	17300.0 23.89612	420.7 .63782	1297.5 1.81359	0.00000	19018.2 26.34753	.02082076 .02080627	.02081351	0.00000	19018.2 26.34753	.02082076 .02080627	.02081351
CRESTLINE-LAKE ARROWHEAD WATER AGENCY	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	71.8 .11818	5800.0 8.01142	141.0 .21376	435.0 .60802	0.00000	6376.0 8.83320	.00698032 .00697545	.00697789	0.00000	6376.0 8.83320	.00698032 .00697545	.00697789
COACHELLA VALLEY COUNTY WATER DISTRICT	QUANTITY, AF CAPACITY, CFS	23100.0 31.90754	282.8 .46547	23100.0 31.90754	282.8 .46547	1732.5 2.39307	0.00000	25115.3 34.76608	.02749574 .02745428	.02747501	0.00000	25115.3 34.76608	.02749574 .02745428	.02747501
DESERT WATER AGENCY	QUANTITY, AF CAPACITY, CFS	38100.0 52.62671	466.4 .76766	38100.0 52.62671	466.4 .76766	2857.5 3.94700	0.00000	41423.9 57.34137	.04535008 .04528166	.04531588	0.00000	41423.9 57.34137	.04535008 .04528166	.04531588
MOJAVE WATER AGENCY	QUANTITY, AF CAPACITY, CFS	50800.0 70.16895	621.9 1.02361	50800.0 70.16895	621.9 1.02361	3810.0 5.26267	0.00000	55231.9 76.45523	.06046682 .06037561	.06042121	0.00000	55231.9 76.45523	.06046682 .06037561	.06042121
TOTAL	QUANTITY, AF CAPACITY, CFS	112000.0 154.70320	10300.0 16.95310	823000.0 1136.79227	28700.0 42.36863	61725.0 87.16558	0.00000	913425.0 1266.32648	1.00000000 1.00000000	1.00000000	0.00000	913425.0 1266.32648	1.00000000 1.00000000	1.00000000
REACH 23 - WEST FORK MOJAVE RIVER TO CEDAR SPRINGS RESERVOIR														
THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	0.0 0.00000	556500.0 768.68153	16556.6 22.86928	41737.5 59.36631	0.00000	614794.1 850.91712	.78545351 .72483759	.75514555	0.00000	614794.1 850.91712	.78545351 .72483759	.75514555
SAN BERNARDINO VALLEY MUNICIPAL WATER DISTRICT	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	0.0 0.00000	98000.0 135.36530	1169.3 1.61513	7350.0 10.27353	0.00000	106519.3 147.25396	.13608777 .12543549	.13076163	0.00000	106519.3 147.25396	.13608777 .12543549	.13076163
BIG BEAR MUNICIPAL WATER DISTRICT	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	0.0 0.00000	4600.0 6.35388	54.9 .07583	345.0 .48223	0.00000	4999.9 6.91194	.00638781 .00588781	.00613781	0.00000	4999.9 6.91194	.00638781 .00588781	.00613781
SAN GABRIEL VALLEY MUNICIPAL WATER DISTRICT	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	0.0 0.00000	28800.0 39.78082	343.6 .47461	2160.0 3.01916	0.00000	31303.6 43.27459	.03999310 .03686264	.03842787	0.00000	31303.6 43.27459	.03999310 .03686264	.03842787
SAN GORGONIO PASS WATER AGENCY	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	0.0 0.00000	17300.0 23.89612	206.4 .28510	1297.5 1.81359	0.00000	18803.9 25.99481	.02402364 .02214319	.02308341	0.00000	18803.9 25.99481	.02402364 .02214319	.02308341
CRESTLINE-LAKE ARROWHEAD WATER AGENCY	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	0.0 0.00000	5800.0 8.01142	69.2 .09558	435.0 .60802	0.00000	6304.2 8.71502	.00805417 .00742372	.00773895	0.00000	6304.2 8.71502	.00805417 .00742372	.00773895
COACHELLA VALLEY COUNTY WATER DISTRICT	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	0.0 0.00000	0.0 0.00000	0.0 0.00000	0.0 2.39307	31.90754	0.0 34.30061	.00000000 .02921832	.01460916	0.00000	0.0 34.30061	.00000000 .02921832	.01460916
DESERT WATER AGENCY	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	0.0 0.00000	0.0 0.00000	0.0 0.00000	0.0 3.94700	52.62671	0.0 56.57371	.00000000 .04819124	.02409562	0.00000	0.0 56.57371	.00000000 .04819124	.02409562
TOTAL	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	0.0 0.00000	711000.0 982.08907	18400.0 25.41553	53325.0 81.90291	84.53425	782725.0 1173.94176	1.00000000 1.00000000	1.00000000	0.00000	782725.0 1173.94176	1.00000000 1.00000000	1.00000000

TABLE B-3

REACH SUMMARY OF PROPORTIONATE USE OF PROJECT TRANSPORTATION FACILITIES
BY WATER SUPPLY CONTRACTORS

(in units as shown)

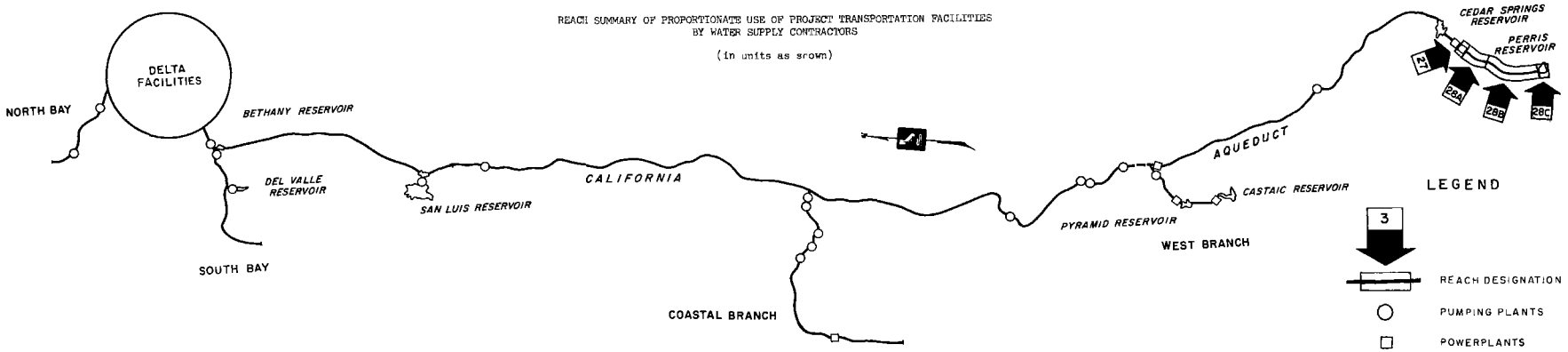


WATER SUPPLY CONTRACTOR	MEASURE OF USE	MAXIMUM ANNUAL ENTITLEMENTS DELIVERED FROM REACH	ESTIMATED OPERATIONAL LOSSES WITHIN REACH	CAPACITY PROVIDED IN REACH					PROPORTIONATE USE FOR ALLOCATION OF CAPITAL COSTS		CAPACITY PROVIDED IN REACH		PROPORTIONATE USE FOR ALLOCATION OF MINIMUM OMP&R COSTS	
				FOR DELIVERY OF ENTITLEMENTS	FOR COMPENSATION OF			SUBTOTAL	RATIOS OF TOTAL REACH USE	AVERAGE OF RATIOS	FOR REQUESTED EXCESS PEAKING	TOTAL FOR WATER SUPPLY CONTRACTORS	RATIOS OF TOTAL REACH USE	AVERAGE OF RATIOS
					OPERATIONAL LOSSES	SCHEDULED OUTAGES	DOWNSTREAM REGULATION							
REACH 24 - CEDAR SPRINGS DAM AND RESERVOIR	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA	QUANTITY, AF	0.0	6756.6	556500.0	16556.6	41737.5		614794.1	.78545351			614794.1	.78545351	
	CAPACITY, AF	118843.0	1794.0	118843.0	1794.0			120637.0	.68156497	.73350924		120637.0	.68156497	.73350924
SAN BERNARDINO VALLEY MUNICIPAL WATER DISTRICT	QUANTITY, AF	0.0	1169.3	98000.0	1169.3	7350.0		106519.3	.13608777			106519.3	.13608777	
	CAPACITY, AF	31918.0	482.0	31918.0	482.0			32400.0	.18305085	.15956931		32400.0	.18305085	.15956931
BIG BEAR MUNICIPAL WATER DISTRICT	QUANTITY, AF	0.0	54.9	4600.0	54.9	345.0		4999.9	.00638781			4999.9	.00638781	
	CAPACITY, AF	0.0	0.0	0.0	0.0			0.0	.00000000	.00319391		0.0	.00000000	.00319391
SAN GABRIEL VALLEY MUNICIPAL WATER DISTRICT	QUANTITY, AF	0.0	343.6	28800.0	343.6	2160.0		31303.6	.03999310			31303.6	.03999310	
	CAPACITY, AF	4608.0	70.0	4608.0	70.0			4678.0	.02642938	.03321124		4678.0	.02642938	.03321124
SAN GORGONIO PASS WATER AGENCY	QUANTITY, AF	0.0	206.4	17300.0	206.4	1297.5		18803.9	.02402364			18803.9	.02402364	
	CAPACITY, AF	3363.0	51.0	3363.0	51.0			3414.0	.01928814	.02165588		3414.0	.01928814	.02165588
CRESTLINE-LAKE ARROWHEAD WATER AGENCY	QUANTITY, AF	5800.0	69.2	5800.0	69.2	435.0		6304.2	.00805417			6304.2	.00805417	
	CAPACITY, AF	1875.0	28.0	1875.0	28.0			1903.0	.01075141	.00940279		1903.0	.01075141	.00940279
FUTURE CONTRACTOR - CEDAR SPRINGS	QUANTITY, AF	0.0	0.0	0.0	0.0	0.0		0.0	.00000000			0.0	.00000000	
	CAPACITY, AF	6961.0	105.0	6961.0	105.0			7066.0	.03992090	.01996045		7066.0	.03992090	.01996045
COACHELLA VALLEY COUNTY WATER DISTRICT	QUANTITY, AF	0.0	0.0	0.0	0.0	0.0		0.0	.00000000			0.0	.00000000	
	CAPACITY, AF	2566.0	39.0	2566.0	39.0			2605.0	.01471751	.00735876		2605.0	.01471751	.00735876
DESERT WATER AGENCY	QUANTITY, AF	0.0	0.0	0.0	0.0	0.0		0.0	.00000000			0.0	.00000000	
	CAPACITY, AF	4233.0	64.0	4233.0	64.0			4297.0	.02427684	.01213842		4297.0	.02427684	.01213842
TOTAL	QUANTITY, AF	5800.0	8600.0	711000.0	18400.0	53325.0		782725.0	1.00000000			782725.0	1.00000000	
	CAPACITY, AF	174367.0	2633.0	174367.0	2633.0			177000.0	1.00000000	1.00000000		177000.0	1.00000000	1.00000000
REACH 25 - CEDAR SPRINGS RESERVOIR TO SOUTH PORTAL SAN BERNARDINO TUNNEL														
THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA	QUANTITY, AF	0.0	0.0	556500.0	9800.0	20437.5		586737.5	.79743335			586737.5	.79743335	
	CAPACITY, CFS	0.00000	0.00000	894.21213	13.53653	29.24512	0.00000	936.99378	.77966757	.78855046	0.00000	936.99378	.77966757	.78855046
SAN BERNARDINO VALLEY MUNICIPAL WATER DISTRICT	QUANTITY, AF	0.0	0.0	98000.0	0.0	0.0		98000.0	.13319153			98000.0	.13319153	
	CAPACITY, CFS	0.00000	0.00000	178.68220	0.00000	0.00000	0.00000	178.68220	.14868051	.14093602	0.00000	178.68220	.14868051	.14093602
BIG BEAR MUNICIPAL WATER DISTRICT	QUANTITY, AF	0.0	0.0	4600.0	0.0	345.0		4945.0	.00672074			4945.0	.00672074	
	CAPACITY, CFS	0.00000	0.00000	6.35388	0.00000	.47654	0.00000	6.83042	.00568356	.00620215	0.00000	6.83042	.00568356	.00620215
SAN GABRIEL VALLEY MUNICIPAL WATER DISTRICT	QUANTITY, AF	0.0	0.0	28800.0	0.0	0.0		28800.0	.03914200			28800.0	.03914200	
	CAPACITY, CFS	0.00000	0.00000	47.73699	0.00000	0.00000	0.00000	47.73699	.03972170	.03943185	0.00000	47.73699	.03972170	.03943185
SAN GORGONIO PASS WATER AGENCY	QUANTITY, AF	17300.0	0.0	17300.0	0.0	0.0		17300.0	.02351238			17300.0	.02351238	
	CAPACITY, CFS	31.54288	0.00000	31.54288	0.00000	0.00000	0.00000	31.54288	.02624666	.02487952	0.00000	31.54288	.02624666	.02487952
TOTAL	QUANTITY, AF	17300.0	0.0	705200.0	9800.0	20782.5		735782.5	1.00000000			735782.5	1.00000000	
	CAPACITY, CFS	31.54288	0.00000	1158.52808	13.53653	29.72166	0.00000	1201.78627	1.00000000	1.00000000	0.00000	1201.78627	1.00000000	1.00000000
REACH 26 - SOUTH PORTAL SAN BERNARDINO TUNNEL THRU UPPER DEVIL CANYON POWERPLANT														
THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA	QUANTITY, AF	0.0	0.0	556500.0	9800.0	20437.5		586737.5	.81663437			586737.5	.81663437	
	CAPACITY, CFS	0.00000	0.00000	894.21213	13.53653	29.24512	0.00000	936.99378	.80068282	.80865859	0.00000	936.99378	.80068282	.80865859
SAN BERNARDINO VALLEY MUNICIPAL WATER DISTRICT	QUANTITY, AF	0.0	0.0	98000.0	0.0	0.0		98000.0	.13639859			98000.0	.13639859	
	CAPACITY, CFS	0.00000	0.00000	178.68220	0.00000	0.00000	0.00000	178.68220	.15268807	.14454333	0.00000	178.68220	.15268807	.14454333
BIG BEAR MUNICIPAL WATER DISTRICT	QUANTITY, AF	0.0	0.0	4600.0	0.0	345.0		4945.0	.00688256			4945.0	.00688256	
	CAPACITY, CFS	0.00000	0.00000	6.35388	0.00000	.47654	0.00000	6.83042	.00583675	.00635966	0.00000	6.83042	.00583675	.00635966
SAN GABRIEL VALLEY MUNICIPAL WATER DISTRICT	QUANTITY, AF	0.0	0.0	28800.0	0.0	0.0		28800.0	.04008448			28800.0	.04008448	
	CAPACITY, CFS	0.00000	0.00000	47.73699	0.00000	0.00000	0.00000	47.73699	.04079236	.04043842	0.00000	47.73699	.04079236	.04043842
TOTAL	QUANTITY, AF	0.0	0.0	687900.0	9800.0	20782.5		718482.5	1.00000000			718482.5	1.00000000	
	CAPACITY, CFS	0.00000	0.00000	1126.98520	13.53653	29.72166	0.00000	1170.24339	1.00000000	1.00000000	0.00000	1170.24339	1.00000000	1.00000000

TABLE B-3

REACH SUMMARY OF PROPORTIONATE USE OF PROJECT TRANSPORTATION FACILITIES
BY WATER SUPPLY CONTRACTORS

(in units as shown)

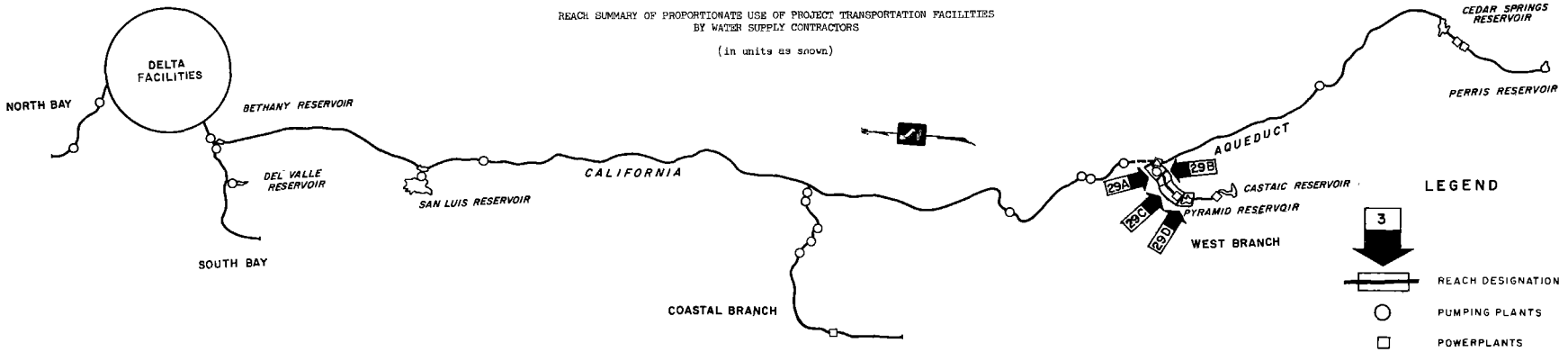


WATER SUPPLY CONTRACTOR	MEASURE OF USE	MAXIMUM ANNUAL ENTITLEMENTS DELIVERED FROM REACH	ESTIMATED OPERATIONAL LOSSES WITHIN REACH	CAPACITY PROVIDED IN REACH					PROPORTIONATE USE FOR ALLOCATION OF CAPITAL COSTS		CAPACITY PROVIDED IN REACH		PROPORTIONATE USE FOR ALLOCATION OF MINIMUM OMP&R COSTS	
				FOR DELIVERY OF ENTITLEMENTS	FOR COMPENSATION OF: OPERATIONAL LOSSES	FOR COMPENSATION OF: SCHEDULED OUTAGES	FOR COMPENSATION OF: DOWNSTREAM REGULATION	SUBTOTAL	RATIOS OF TOTAL REACH USE	AVERAGE OF RATIOS	FOR REQUESTED EXCESS PEAKING	TOTAL FOR WATER SUPPLY CONTRACTORS	RATIOS OF TOTAL REACH USE	AVERAGE OF RATIOS
REACH 27 - UPPER DEVIL CANYON POWERPLANT THRU LOWER DEVIL CANYON POWERPLANT	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA	QUANTITY: AF CAPACITY: CFS	284000.0 517.81372	0.0 0.00000	556500.0 894.21213	9800.0 13.53653	20437.5 29.24512	0.00000	586737.5 936.99378	.81663437 .80068282	.80865859	0.00000	586737.5 936.99378	.81663437 .80068282	.80865859
SAN BERNARDINO VALLEY MUNICIPAL WATER DISTRICT	QUANTITY: AF CAPACITY: CFS	0.0 0.00000	0.0 0.00000	98000.0 178.68220	0.0 0.00000	0.0 0.00000	0.00000	98000.0 178.68220	.13639859 .15268807	.14454333	0.00000	98000.0 178.68220	.13639859 .15268807	.14454333
BIG BEAR MUNICIPAL WATER DISTRICT	QUANTITY: AF CAPACITY: CFS	0.0 0.00000	0.0 0.00000	4600.0 6.35388	0.0 0.00000	345.0 .47654	0.00000	4945.0 6.83042	.00688256 .00583675	.00635966	0.00000	4945.0 6.83042	.00688256 .00583675	.00635966
SAN GABRIEL VALLEY MUNICIPAL WATER DISTRICT	QUANTITY: AF CAPACITY: CFS	28800.0 47.73699	0.0 0.00000	28800.0 47.73699	0.0 0.00000	0.0 0.00000	0.00000	28800.0 47.73699	.04008448 .04079236	.04043842	0.00000	28800.0 47.73699	.04008448 .04079236	.04043842
TOTAL	QUANTITY: AF CAPACITY: CFS	312800.0 565.55071	0.0 0.00000	687900.0 1126.98820	9800.0 13.53653	20782.5 29.72166	0.00000	718482.5 1170.24339	1.00000000 1.00000000	1.00000000	0.00000	718482.5 1170.24339	1.00000000 1.00000000	1.00000000
REACH 28A - LOWER DEVIL CANYON POWERPLANT TO MILL STREET														
THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA	QUANTITY: AF CAPACITY: CFS	0.0 0.00000	0.0 0.00000	272500.0 376.39841	9800.0 13.53653	20437.5 29.24512	0.00000	302737.5 419.18006	.74624244 .69321173	.71972709	0.00000	302737.5 419.18006	.74624244 .69321173	.71972709
SAN BERNARDINO VALLEY MUNICIPAL WATER DISTRICT	QUANTITY: AF CAPACITY: CFS	98000.0 178.68220	0.0 0.00000	98000.0 178.68220	0.0 0.00000	0.0 0.00000	0.00000	98000.0 178.68220	.24156822 .29549258	.26853040	0.00000	98000.0 178.68220	.24156822 .29549258	.26853040
BIG BEAR MUNICIPAL WATER DISTRICT	QUANTITY: AF CAPACITY: CFS	4600.0 6.35388	0.0 0.00000	4600.0 6.35388	0.0 0.00000	345.0 .47654	0.00000	4945.0 6.83042	.01218934 .01129569	.01174251	0.00000	4945.0 6.83042	.01218934 .01129569	.01174251
TOTAL	QUANTITY: AF CAPACITY: CFS	102600.0 185.03608	0.0 0.00000	375100.0 561.43449	9800.0 13.53653	20782.5 29.72166	0.00000	405682.5 604.69268	1.00000000 1.00000000	1.00000000	0.00000	405682.5 604.69268	1.00000000 1.00000000	1.00000000
REACH 28B - MILL STREET TO PERRIS RESERVOIR														
THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA	QUANTITY: AF CAPACITY: CFS	0.0 0.00000	0.0 0.00000	272500.0 376.39841	9800.0 13.53653	20437.5 29.24512	0.00000	302737.5 419.18006	1.00000000 1.00000000	1.00000000	0.00000	302737.5 419.18006	1.00000000 1.00000000	1.00000000
TOTAL	QUANTITY: AF CAPACITY: CFS	0.0 0.00000	0.0 0.00000	272500.0 376.39841	9800.0 13.53653	20437.5 29.24512	0.00000	302737.5 419.18006	1.00000000 1.00000000	1.00000000	0.00000	302737.5 419.18006	1.00000000 1.00000000	1.00000000
REACH 28C - PERRIS DAM AND RESERVOIR														
THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA	QUANTITY: AF CAPACITY: AF	272500.0 95999.0	9800.0 3001.0	272500.0 95999.0	9800.0 3001.0	20437.5		302737.5 99000.0	1.00000000 1.00000000	1.00000000		302737.5 99000.0	1.00000000 1.00000000	1.00000000
TOTAL	QUANTITY: AF CAPACITY: AF	272500.0 95999.0	9800.0 3001.0	272500.0 95999.0	9800.0 3001.0	20437.5		302737.5 99000.0	1.00000000 1.00000000	1.00000000		302737.5 99000.0	1.00000000 1.00000000	1.00000000

TABLE B-3

REACH SUMMARY OF PROPORTIONATE USE OF PROJECT TRANSPORTATION FACILITIES
BY WATER SUPPLY CONTRACTORS

(in units as shown)

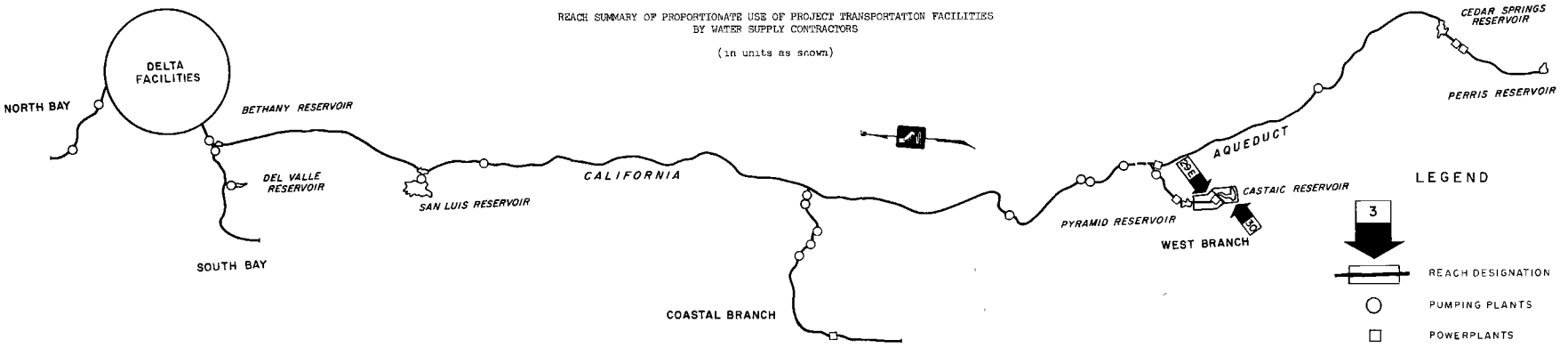


WATER SUPPLY CONTRACTOR	MEASURE OF USE	MAXIMUM ANNUAL ENTITLEMENTS DELIVERED FROM REACH	ESTIMATED OPERATIONAL LOSSES WITHIN REACH	CAPACITY PROVIDED IN REACH					PROPORTIONATE USE FOR ALLOCATION OF CAPITAL COSTS		CAPACITY PROVIDED IN REACH		PROPORTIONATE USE FOR ALLOCATION OF MINIMUM OMP&R COSTS	
				FOR DELIVERY OF ENTITLEMENTS	FOR COMPENSATION OF: OPERATIONAL LOSSES	FOR COMPENSATION OF: SCHEDULED OUTAGES	FOR COMPENSATION OF: DOWNSTREAM REGULATION	SUBTOTAL	RATIOS OF TOTAL REACH USE	AVERAGE OF RATIOS	FOR REQUESTED EXCESS PEAKING	TOTAL FOR WATER SUPPLY CONTRACTORS	RATIOS OF TOTAL REACH USE	AVERAGE OF RATIOS
REACH 29A - JUNCTION, WEST BRANCH, CALIFORNIA AQUEDUCT THRU OSO PUMPING PLANT	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA	QUANTITY, AF	0.0	479.7	1455000.0	26288.9	109125.0		1590413.9	.95944614			1590413.9	.95944614	
	CAPACITY, CFS	0.00000	.78956	2009.76033	37.40415	153.02805	0.00000	2200.19253	.95944614	.95944614	808.95961	3009.15214	.95767302	.95855958
ANTELOPE VALLEY-EAST KERN WATER AGENCY	QUANTITY, AF	0.0	0.0	0.0	0.0	0.0		0.0	.00000000			0.0	.00000000	
	CAPACITY, CFS	0.00000	.00000	0.00000	0.00000	0.00000	0.00000	0.00000	.00000000	.00000000	40.00000	40.00000	.01273014	.00636507
UPPER SANTA CLARA VALLEY WATER AGENCY	QUANTITY, AF	0.0	13.7	41500.0	749.8	3112.5		45362.3	.02736563			45362.3	.02736563	
	CAPACITY, CFS	0.00000	.02255	57.32306	1.06683	4.36471	0.00000	62.75460	.02736563	.02736563	0.00000	62.75460	.01997187	.02366875
VENTURA COUNTY FLOOD CONTROL DISTRICT	QUANTITY, AF	0.0	6.6	20000.0	361.3	1500.0		21861.3	.01318823			21861.3	.01318823	
	CAPACITY, CFS	0.00000	.01086	27.62557	.51407	2.10347	0.00000	30.24311	.01318823	.01318823	0.00000	30.24311	.00962497	.01140660
TOTAL	QUANTITY, AF	0.0	500.0	1516500.0	27400.0	113737.5		1657637.5	1.00000000			1657637.5	1.00000000	
	CAPACITY, CFS	0.00000	.82297	2094.70896	38.98505	159.49623	0.00000	2293.19024	1.00000000	1.00000000	848.95961	3142.14985	1.00000000	1.00000000
REACH 29B - OSO PUMPING PLANT TO STATE ROUTE 138														
THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA	QUANTITY, AF	0.0	2398.6	1455000.0	25809.2	109125.0		1589934.2	.95944615			1589934.2	.95944615	
	CAPACITY, CFS	0.00000	3.94793	2009.76033	36.61459	153.02805	0.00000	2199.40297	.95944616	.95944616	808.95961	3008.36258	.97002434	.96473525
UPPER SANTA CLARA VALLEY WATER AGENCY	QUANTITY, AF	0.0	68.4	41500.0	736.1	3112.5		45348.6	.02736562			45348.6	.02736562	
	CAPACITY, CFS	0.00000	.11258	57.32306	1.04428	4.36471	0.00000	62.73205	.02736562	.02736562	0.00000	62.73205	.02022749	.02379656
VENTURA COUNTY FLOOD CONTROL DISTRICT	QUANTITY, AF	0.0	33.0	20000.0	354.7	1500.0		21854.7	.01318823			21854.7	.01318823	
	CAPACITY, CFS	0.00000	.05432	27.62557	.50321	2.10347	0.00000	30.23225	.01318822	.01318822	0.00000	30.23225	.00974817	.01146819
TOTAL	QUANTITY, AF	0.0	2500.0	1516500.0	26900.0	113737.5		1657137.5	1.00000000			1657137.5	1.00000000	
	CAPACITY, CFS	0.00000	4.11483	2094.70896	38.16208	159.49623	0.00000	2292.36727	1.00000000	1.00000000	808.95961	3101.32688	1.00000000	1.00000000
REACH 29C - STATE ROUTE 138 THRU PYRAMID POWERPLANT														
THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA	QUANTITY, AF	0.0	1247.3	1455000.0	23410.6	109125.0		1587535.6	.95944616			1587535.6	.95944616	
	CAPACITY, CFS	0.00000	2.05297	2009.76033	32.66666	153.02805	0.00000	2195.45504	.95944617	.95944617	808.95961	3004.41465	.97003841	.96474229
UPPER SANTA CLARA VALLEY WATER AGENCY	QUANTITY, AF	0.0	35.6	41500.0	667.7	3112.5		45280.2	.02736563			45280.2	.02736563	
	CAPACITY, CFS	0.00000	.05859	57.32306	.93170	4.36471	0.00000	62.61947	.02736563	.02736563	0.00000	62.61947	.02021801	.02379182
VENTURA COUNTY FLOOD CONTROL DISTRICT	QUANTITY, AF	0.0	17.1	20000.0	321.7	1500.0		21821.7	.01318821			21821.7	.01318821	
	CAPACITY, CFS	0.00000	.02815	27.62557	.44889	2.10347	0.00000	30.17793	.01318820	.01318820	0.00000	30.17793	.00974356	.01146589
TOTAL	QUANTITY, AF	0.0	1300.0	1516500.0	24400.0	113737.5		1654637.5	1.00000000			1654637.5	1.00000000	
	CAPACITY, CFS	0.00000	2.13971	2094.70896	34.04725	159.49623	0.00000	2288.25244	1.00000000	1.00000000	808.95961	3097.21205	1.00000000	1.00000000
REACH 29D - PYRAMID DAM AND RESERVOIR														
THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA	QUANTITY, AF	0.0	6620.2	1455000.0	22163.3	109125.0		1586288.3	.95944615			1586288.3	.95944615	
	CAPACITY, AF	123295.0	2036.0	123295.0	2036.0			125331.0	.96334358	.96139486		125331.0	.96334358	.96139486
UPPER SANTA CLARA VALLEY WATER AGENCY	QUANTITY, AF	0.0	188.8	41500.0	632.1	3112.5		45244.6	.02736562			45244.6	.02736562	
	CAPACITY, AF	3603.0	59.0	3603.0	59.0			3662.0	.02814758	.02775660		3662.0	.02814758	.02775660
VENTURA COUNTY FLOOD CONTROL DISTRICT	QUANTITY, AF	0.0	91.0	20000.0	304.6	1500.0		21804.6	.01318823			21804.6	.01318823	
	CAPACITY, AF	1089.0	18.0	1089.0	18.0			1107.0	.00850884	.01084854		1107.0	.00850884	.01084854
TOTAL	QUANTITY, AF	0.0	6900.0	1516500.0	23100.0	113737.5		1653337.5	1.00000000			1653337.5	1.00000000	
	CAPACITY, AF	127987.0	2113.0	127987.0	2113.0			130100.0	1.00000000	1.00000000		130100.0	1.00000000	1.00000000

TABLE B-3

REACH SUMMARY OF PROPORTIONATE USE OF PROJECT TRANSPORTATION FACILITIES
BY WATER SUPPLY CONTRACTORS

(in units as shown)



WATER SUPPLY CONTRACTOR	MEASURE OF USE	MAXIMUM ANNUAL ENTITLEMENTS DELIVERED FROM REACH	ESTIMATED OPERATIONAL LOSSES WITHIN REACH	CAPACITY PROVIDED IN REACH					PROPORTIONATE USE FOR ALLOCATION OF CAPITAL COSTS		CAPACITY PROVIDED IN REACH		PROPORTIONATE USE FOR ALLOCATION OF MINIMUM OMP&R COSTS	
				FOR DELIVERY OF ENTITLEMENTS	FOR COMPENSATION OF			SUBTOTAL	RATIOS OF TOTAL REACH USE	AVERAGE OF RATIOS	FOR REQUESTED EXCESS PEAKING	TOTAL FOR WATER SUPPLY CONTRACTORS	RATIOS OF TOTAL REACH USE	AVERAGE OF RATIOS
					OPERATIONAL LOSSES	SCHEDULED OUTAGES	DOWNSTREAM REGULATION							
REACH 29E - PYRAMID RESERVOIR THRU CASTAIC POWERPLANT	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	96.0 .15801	1455000.0 2009.76033	15543.1 21.49476	109125.0 152.33228	0.00000	1579668.1 2183.58737	.95944819 .95944819	.95944819	0.00000	1579668.1 2183.58737	.95944819 .95944819	.95944819
UPPER SANTA CLARA VALLEY WATER AGENCY	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	2.7 .00444	41500.0 57.32306	443.3 .61303	3112.5 4.34487	0.00000	45055.8 62.28096	.02736563 .02736563	.02736563	0.00000	45055.8 62.28096	.02736563 .02736563	.02736563
VENTURA COUNTY FLOOD CONTROL DISTRICT	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	1.3 .00214	20000.0 27.62557	213.6 .29539	1500.0 2.09391	0.00000	21713.6 30.01487	.01318823 .01318823	.01318823	0.00000	21713.6 30.01487	.01318823 .01318823	.01318823
TOTAL	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	100.0 .16459	1516500.0 2094.70896	16200.0 22.40318	113737.5 158.77106	0.00000	1646437.5 2275.88420	1.00000000 1.00000000	1.00000000	658.95961	1646437.5 3604.84291	1.00000000 1.00000000	1.00000000
REACH 30 - CASTAIC DAM AND RESERVOIR														
THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA	QUANTITY, AF CAPACITY, AF	1455000.0 317009.0	15447.1 4749.0	1455000.0 317009.0	15447.1 4749.0	109125.0		1579572.1 321758.0	.95944610 .98534750	.96139870		1579572.1 321758.0	.95944610 .98534750	.96139870
UPPER SANTA CLARA VALLEY WATER AGENCY	QUANTITY, AF CAPACITY, AF	41500.0 9262.0	440.6 139.0	41500.0 9262.0	440.6 139.0	3112.5		45053.1 9401.0	.02736565 .02814671	.02775618		45053.1 9401.0	.02736565 .02814671	.02775618
VENTURA COUNTY FLOOD CONTROL DISTRICT	QUANTITY, AF CAPACITY, AF	20000.0 2799.0	212.3 42.0	20000.0 2799.0	212.3 42.0	1500.0		21712.3 2841.0	.01318825 .00850599	.01084712		21712.3 2841.0	.01318825 .00850599	.01084712
TOTAL	QUANTITY, AF CAPACITY, AF	1516500.0 329070.0	16100.0 4930.0	1516500.0 329070.0	16100.0 4930.0	113737.5		1646337.5 334000.0	1.00000000 1.00000000	1.00000000		1646337.5 334000.0	1.00000000 1.00000000	1.00000000

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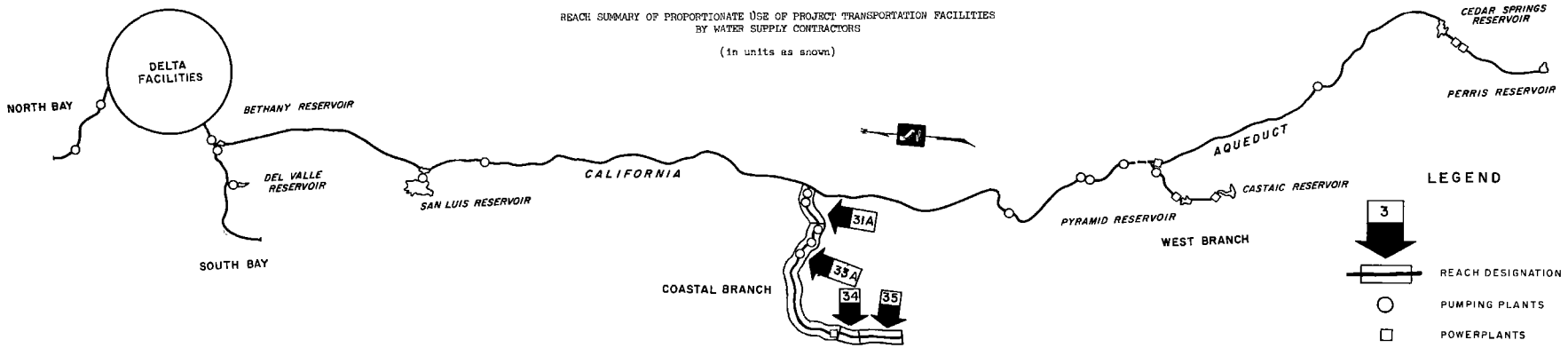
BY WATER SUPPLY CONTRACTORS

(in units as shown)



WATER SUPPLY CONTRACTOR	MEASURE OF USE	MAXIMUM ANNUAL ENTITLEMENTS DELIVERED FROM REACH	ESTIMATED OPERATIONAL LOSSES WITHIN REACH	CAPACITY PROVIDED IN REACH					PROPORTIONATE USE FOR ALLOCATION OF CAPITAL COSTS		CAPACITY PROVIDED IN REACH		PROPORTIONATE USE FOR ALLOCATION OF MINIMUM OMP&R COSTS	
				FOR DELIVERY OF ENTITLEMENTS	FOR COMPENSATION OF			SUBTOTAL	RATIOS OF TOTAL REACH USE	AVERAGE OF RATIOS	FOR REQUESTED EXCESS PEAKING	TOTAL FOR WATER SUPPLY CONTRACTORS	RATIOS OF TOTAL REACH USE	AVERAGE OF RATIOS
					OPERATIONAL LOSSES	SCHEDULED OUTAGES	DOWNSTREAM REGULATION							
REACH 31A - AVENAL GAP TO DEVIL'S DEN PUMPING PLANT	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
KERN COUNTY WATER AGENCY - AGRICULTURAL	QUANTITY, AF CAPACITY, CFS	89900.0 268.22220	671.3 1.10491	89900.0 268.22220	671.3 1.10491	0.0 0.00000	0.00000	90571.3 269.32711	.46422419 .61971788	.54197103	0.00000	90571.3 269.32711	.46422419 .61971788	.54197103
SANTA BARBARA COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	443.8 .73047	57700.0 79.69977	2183.4 3.26304	4327.5 6.10693	0.00000	64210.9 89.06974	.32911367 .20494821	.26703094	0.00000	64210.9 89.06974	.32911367 .20494821	.26703094
SAN LUIS OBISPO COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	190.1 .31269	25000.0 34.53197	650.5 1.00439	1875.0 2.61585	0.00000	27525.5 38.15221	.14108225 .08778770	.11443498	0.00000	27525.5 38.15221	.14108225 .08778770	.11443498
DEVIL'S DEN WATER DISTRICT	QUANTITY, AF CAPACITY, CFS	12700.0 37.89123	94.8 .15603	12700.0 37.89123	94.8 .15603	0.0 0.00000	0.00000	12794.8 38.04726	.06557989 .08754621	.07656305	0.00000	12794.8 38.04726	.06557989 .08754621	.07656305
TOTAL	QUANTITY, AF CAPACITY, CFS	102600.0 306.11343	1400.0 2.30430	185300.0 420.34517	3600.0 5.52837	6202.5 8.72278	0.00000	195102.5 434.59632	1.00000000 1.00000000	1.00000000	0.00000	195102.5 434.59632	1.00000000 1.00000000	1.00000000
REACH 33A - DEVIL'S DEN PUMPING PLANT THRU SAN LUIS OBISPO POWERPLANT														
SANTA BARBARA COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	490.1 .80667	57700.0 79.69977	1739.6 2.53257	4327.5 6.10693	0.00000	63767.1 88.33927	.69994896 .70011299	.70003097	0.00000	63767.1 88.33927	.69994896 .70011299	.70003097
SAN LUIS OBISPO COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT	QUANTITY, AF CAPACITY, CFS	10000.0 13.81279	209.9 .34548	25000.0 34.53197	460.4 .69150	1875.0 2.61585	0.00000	27335.4 37.83932	.30005104 .29988701	.29996903	0.00000	27335.4 37.83932	.30005104 .29988701	.29996903
TOTAL	QUANTITY, AF CAPACITY, CFS	10000.0 13.81279	700.0 1.15215	82700.0 114.23174	2200.0 3.22407	6202.5 8.72278	0.00000	91102.5 126.17859	1.00000000 1.00000000	1.00000000	0.00000	91102.5 126.17859	1.00000000 1.00000000	1.00000000
REACH 34 - SAN LUIS OBISPO POWERPLANT TO ARROYO GRANDE														
SANTA BARBARA COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT	QUANTITY, AF CAPACITY, CFS	0.0 0.00000	397.2 .54864	57700.0 79.69977	1949.5 1.72590	4327.5 6.10693	0.00000	63277.0 87.53260	.79441323 .79446756	.79444039	0.00000	63277.0 87.53260	.79441323 .79446756	.79444039
SAN LUIS OBISPO COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT	QUANTITY, AF CAPACITY, CFS	5000.0 6.90639	102.8 .14200	15000.0 20.71918	250.5 .34602	1125.0 1.57989	0.00000	16375.5 22.64509	.20558677 .20553244	.20555961	0.00000	16375.5 22.64509	.20558677 .20553244	.20555961
TOTAL	QUANTITY, AF CAPACITY, CFS	5000.0 6.90639	500.0 .69064	72700.0 100.41895	2200.0 3.07192	5452.5 7.68682	0.00000	79652.5 110.17769	1.00000000 1.00000000	1.00000000	0.00000	79652.5 110.17769	1.00000000 1.00000000	1.00000000
REACH 35 - ARROYO GRANDE TO SANTA MARIA TERMINUS														
SANTA BARBARA COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT	QUANTITY, AF CAPACITY, CFS	57700.0 79.69977	852.3 1.17726	57700.0 79.69977	852.3 1.17726	4327.5 6.06578	0.00000	62879.8 86.94281	.85228965 .85228958	.85228962	0.00000	62879.8 86.94281	.85228965 .85228958	.85228962
SAN LUIS OBISPO COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT	QUANTITY, AF CAPACITY, CFS	10000.0 13.81279	147.7 .20402	10000.0 13.81279	147.7 .20402	750.0 1.05126	0.00000	10897.7 15.06807	.14771035 .14771042	.14771038	0.00000	10897.7 15.06807	.14771035 .14771042	.14771038
TOTAL	QUANTITY, AF CAPACITY, CFS	67700.0 93.51256	1000.0 1.38128	67700.0 93.51256	1000.0 1.38128	5077.5 7.11704	0.00000	73777.5 102.01088	1.00000000 1.00000000	1.00000000	0.00000	73777.5 102.01088	1.00000000 1.00000000	1.00000000

TABLE B-4

ANNUAL QUANTITIES DELIVERED FROM EACH REACH FOR EACH CONTRACTOR

(in acre-feet)

CALENDAR YEAR	NORTH BAY AQUEDUCT		TOTAL NORTH BAY AQUEDUCT 1/	SOUTH BAY AQUEDUCT								TOTAL SOUTH BAY AQUEDUCT
	Reach 2	Reach 3		Reach 1		Reach 2	Reach 4	Reach 6	Reach 7	Reach 8	Reach 9	
	SC FC & WCD	NC FC & WCD 1/		AC FC & WCD	ACWD	AC FC & WCD	AC FC & WCD	AC FC & WCD	ACWD	ACWD	SCC FC & WD	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
1962	0	0	0	141	8,412	353	0	0	0	0	0	8,906
63	0	0	0	814	10,914	917	0	0	0	0	0	12,645
64	0	0	0	248	19,238	1,425	0	0	0	0	0	20,911
65	0	0	0	637	15,280	1,830	138	0	1,127	0	15,014	34,026
66	0	0	0	2,000	0	1,920	280	0	19,120	0	37,610	60,930
67	0	0	0	1,394	0	2,106	500	0	14,300	0	50,600	68,900
68	0	900	900	2,100	0	4,900	500	0	15,000	0	88,000	110,500
69	0	1,900	1,900	2,600	0	5,700	500	0	15,500	0	88,000	112,300
1970	0	2,800	2,800	3,300	0	6,200	0	500	15,700	500	88,000	114,200
71	0	3,800	3,800	3,400	0	6,300	0	1,500	16,000	1,000	88,000	116,200
72	0	4,800	4,800	3,500	0	6,400	0	2,500	16,400	1,500	88,000	118,300
73	0	5,800	5,800	3,500	0	6,600	0	3,500	16,800	2,000	88,000	120,400
74	0	6,700	6,700	0	0	10,300	0	4,500	17,100	2,500	88,000	122,400
75	0	7,700	7,700	0	0	10,500	0	5,500	17,500	3,000	88,000	124,500
76	0	8,600	8,600	0	0	10,700	0	6,500	17,800	3,500	88,000	126,500
77	0	9,600	9,600	0	0	10,900	0	7,500	18,200	4,000	88,000	128,600
78	0	10,500	10,500	0	0	11,200	0	8,400	18,600	4,500	88,000	130,700
79	0	11,500	11,500	0	0	11,500	0	9,300	18,900	5,000	88,000	132,700
1980	6,750	12,500	19,250	0	0	11,900	0	10,100	19,800	5,000	88,000	134,800
81	8,000	13,750	21,750	0	0	12,200	0	10,800	21,000	5,000	88,000	137,000
82	9,400	15,000	24,400	0	0	12,400	0	11,600	22,200	5,000	88,000	139,200
83	10,800	16,250	27,050	0	0	12,600	0	12,400	23,400	5,000	88,000	141,400
84	12,100	17,500	29,600	0	0	12,800	0	13,200	24,600	5,000	88,000	143,600
85	14,000	18,750	32,750	0	0	13,000	0	14,000	25,800	5,000	88,000	145,800
86	16,500	20,000	36,500	0	0	13,200	0	14,800	27,100	5,000	88,000	148,100
87	20,000	21,250	41,250	0	0	13,400	0	15,600	28,300	5,000	88,000	150,300
88	27,000	22,500	49,500	0	0	13,600	0	16,400	29,500	5,000	88,000	152,500
89	34,500	23,750	58,250	0	0	13,800	0	17,200	30,700	5,000	90,000	156,700
1990	37,800 2/	25,000	62,800	0	0	14,000	0	18,000	31,900	5,000	92,000	160,900
91	37,800	25,000	62,800	0	0	14,200	0	19,800	33,400	5,000	94,000	166,400
92	37,800	25,000	62,800	0	0	14,400	0	21,600	34,900	5,000	96,000	171,900
93	37,800	25,000	62,800	0	0	14,700	0	23,300	36,400	5,000	98,000	177,400
94	37,800	25,000	62,800	0	0	15,000	0	25,000	37,000	5,000	100,000	182,000
95	37,800	25,000	62,800	0	0	15,300	0	26,700	37,000	5,000	100,000	184,000
96	37,800	25,000	62,800	0	0	16,000	0	28,000	37,000	5,000	100,000	186,000
97	37,800	25,000	62,800	0	0	17,000	0	29,000	37,000	5,000	100,000	188,000
98	37,800	25,000	62,800	0	0	17,000	0	29,000	37,000	5,000	100,000	188,000
99	37,800	25,000	62,800	0	0	17,000	0	29,000	37,000	5,000	100,000	188,000
2000 3/	37,800	25,000	62,800	0	0	17,000	0	29,000	37,000	5,000	100,000	188,000

1/ Between 1968 and 1979 inclusive, annual quantities delivered are nonproject water pumped thru an interim facility.
2/ Solano County Flood Control and Water Conservation District (SCFC&WCD) has contracted for 42,000 acre-feet per year. The District will take 4,200 acre-feet from the Delta thru their own facilities.
3/ And thereafter for the remainder of the project repayment period.

Note: Abbreviations for titles of contractors are shown in Table B-1.

TABLE B-4 (Continued)

ANNUAL QUANTITIES DELIVERED FROM EACH REACH FOR EACH CONTRACTOR

(in acre-feet)

CALENDAR YEAR	CALIFORNIA AQUEDUCT										
	NORTH SAN JOAQUIN DIVISION	SAN LUIS DIVISION			SOUTH SAN JOAQUIN DIVISION						
	Reach 2	Reach 7			Reach 8			Reach 9	Reach 10A	Reach 11B	Reach 12D
	OFWD	EWSID	KC	TLBWSD	TLBWSD	HWD	DRWD	KCWA (Ag.)	KCWA (Ag.)	KCWA (Ag.)	KCWA (Ag.)
	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)
1962	0	0	0	0	0	0	0	0	0	0	0
63	0	0	0	0	0	0	0	0	0	0	0
64	0	0	0	0	0	0	0	0	0	0	0
65	0	0	0	0	0	0	0	0	0	0	0
66	0	0	0	0	0	0	0	0	0	0	0
67	0	0	0	0	0	0	0	0	0	0	0
68	2,300	3,000	1,600	14,930	11,970	1,300	11,500	20,100	16,300	22,600	0
69	2,500	3,000	1,800	16,262	13,038	1,600	13,600	21,400	20,400	24,900	0
1970	2,600	3,000	2,100	17,649	14,151	2,000	15,700	21,400	29,200	34,000	0
71	2,800	3,000	2,300	18,981	15,219	2,300	17,900	21,400	48,600	34,100	0
72	2,900	3,000	2,600	20,368	16,332	2,600	20,000	22,300	69,700	39,200	0
73	3,100	3,000	2,800	21,700	17,400	2,900	22,000	22,300	56,900	44,300	0
74	3,200	3,000	3,000	23,865	19,135	3,300	24,100	22,300	30,200	49,600	0
75	3,400	3,000	3,300	26,030	20,870	3,600	26,200	25,900	43,900	54,700	0
76	3,500	3,000	3,500	28,194	22,606	3,900	28,300	29,900	55,300	58,800	1,700
77	3,700	3,000	3,800	30,414	24,386	4,200	30,400	31,600	72,400	67,000	1,900
78	3,900	3,000	4,000	32,578	26,122	4,600	32,500	33,400	87,600	74,300	2,100
79	4,000	3,000	4,000	34,743	27,857	4,900	34,600	35,200	97,800	81,700	2,300
1980	4,200	3,000	4,000	36,908	29,592	5,200	36,700	35,200	118,700	89,000	2,600
81	4,300	3,000	4,000	39,072	31,328	5,600	38,800	35,200	134,900	93,600	2,700
82	4,500	3,000	4,000	41,236	33,064	5,900	41,000	35,200	150,000	96,800	2,800
83	4,600	3,000	4,000	43,401	34,799	6,200	42,900	37,200	213,800	102,900	3,000
84	4,800	3,000	4,000	45,566	36,534	6,500	45,100	39,500	226,100	107,100	3,100
85	4,900	3,000	4,000	47,730	38,270	6,900	47,200	41,900	237,900	112,400	3,200
86	5,100	3,000	4,000	49,950	40,050	7,200	49,300	44,200	220,200	115,200	3,300
87	5,200	3,000	4,000	52,114	41,786	7,500	51,400	46,500	235,900	118,000	3,400
88	5,400	3,000	4,000	54,279	43,521	7,800	53,500	46,500	246,800	120,800	3,500
89	5,600	3,000	4,000	56,444	45,256	8,200	55,600	46,800	246,800	123,600	3,500
1990	5,700	3,000	4,000	61,050	48,950	8,500	57,700	47,300	265,700	126,400	3,600
91	5,700	3,000	4,000	61,050	48,950	8,500	57,700	47,300	265,700	126,400	3,600
92	5,700	3,000	4,000	61,050	48,950	8,500	57,700	47,300	265,700	126,400	3,600
93	5,700	3,000	4,000	61,050	48,950	8,500	57,700	47,300	265,700	126,400	3,600
94	5,700	3,000	4,000	61,050	48,950	8,500	57,700	47,300	265,700	126,400	3,600
95	5,700	3,000	4,000	61,050	48,950	8,500	57,700	47,300	265,700	126,400	3,600
96	5,700	3,000	4,000	61,050	48,950	8,500	57,700	47,300	265,700	126,400	3,600
97	5,700	3,000	4,000	61,050	48,950	8,500	57,700	47,300	265,700	126,400	3,600
98	5,700	3,000	4,000	61,050	48,950	8,500	57,700	47,300	265,700	126,400	3,600
99	5,700	3,000	4,000	61,050	48,950	8,500	57,700	47,300	265,700	126,400	3,600
2000 1/	5,700	3,000	4,000	61,050	48,950	8,500	57,700	47,300	265,700	126,400	3,600

1/ And thereafter for the remainder of the project repayment period.

TABLE B-4 (Continued)

ANNUAL QUANTITIES DELIVERED FROM EACH REACH FOR EACH CONTRACTOR

(in acre-feet)

CALENDAR YEAR	CALIFORNIA AQUEDUCT (Continued)											
	SOUTH SAN JOAQUIN DIVISION (Continued)											TEHACHAPI DIVISION
	Reach 12E		Reach 13B		Reach 14A	Reach 14B	Reach 14C	Reach 15	Reach 16			Reach 17C
	KCWA (Ag.)	KCWA (M&I)	KCWA (Ag.)	KCWA (M&I)	KCWA (Ag.)	KCWA (Ag.)	KCWA (Ag.)	KCWA (Ag.)	KCWA (Ag.)	KCWA (M&I)	Nuclear[1]	KCWA (M&I)
	(24)	(25)	(26)	(27)	(28)	(29)	(30)	(31)	(32)	(33)	(34)	(35)
1962	0	0	0	0	0	0	0	0	0	0	0	0
63	0	0	0	0	0	0	0	0	0	0	0	0
64	0	0	0	0	0	0	0	0	0	0	0	0
65	0	0	0	0	0	0	0	0	0	0	0	0
66	0	0	0	0	0	0	0	0	0	0	0	0
67	0	0	0	0	0	0	0	0	0	0	0	0
68	0	0	0	0	0	0	0	0	0	0	0	0
69	0	0	0	0	0	0	0	0	0	0	0	0
1970	3,200	14,000	0	14,300	0	0	0	0	0	0	0	0
71	6,000	14,000	2,400	14,800	1,000	3,000	4,000	6,000	6,000	0	0	0
72	29,100	21,000	5,500	15,300	2,700	5,500	4,400	9,500	13,000	0	0	2,500
73	65,900	24,000	12,300	15,900	3,000	4,300	3,400	6,700	16,000	0	17,500	2,500
74	103,600	25,000	18,300	16,400	3,100	6,200	5,000	10,800	19,000	0	17,500	2,500
75	105,700	28,000	17,800	16,900	4,200	7,000	6,000	12,400	20,000	3,500	17,500	2,500
76	111,200	29,000	17,800	17,000	4,200	8,000	6,500	16,400	30,000	3,500	17,500	2,500
77	116,800	30,000	17,800	18,000	5,500	9,000	7,000	18,900	34,200	7,000	17,500	2,500
78	121,100	33,000	17,800	18,500	6,900	11,000	10,000	23,100	35,000	8,000	17,500	2,500
79	125,800	36,000	17,600	19,100	7,300	14,500	11,600	25,000	35,000	9,000	17,500	2,500
1980	136,700	38,000	19,900	19,600	8,000	15,800	12,600	27,200	35,000	10,000	17,500	2,500
81	154,400	45,000	23,200	20,100	8,600	17,000	13,600	28,200	37,700	11,000	17,500	2,500
82	164,700	53,000	26,400	20,700	9,500	19,000	15,200	32,700	41,100	12,000	17,500	2,500
83	141,000	59,000	20,800	21,200	10,300	20,500	16,400	35,300	44,500	13,000	35,000	2,500
84	152,000	65,000	22,400	21,700	11,100	22,100	17,700	38,100	50,000	14,000	35,000	2,500
85	156,600	70,000	23,600	22,300	12,900	25,900	20,700	44,500	53,000	15,000	35,000	2,500
86	189,400	76,000	29,400	22,800	14,000	27,900	22,300	48,000	60,000	16,000	35,000	2,500
87	201,000	81,000	30,900	23,300	14,900	29,700	23,800	51,200	63,000	17,000	35,000	2,500
88	206,800	93,000	32,300	23,900	15,600	31,000	26,000	55,500	66,500	18,000	35,000	2,500
89	208,300	94,500	33,300	24,400	17,300	40,000	30,100	66,200	67,400	19,000	35,000	2,500
1990	213,200	94,500	34,700	25,000	20,000	40,700	32,500	70,000	67,400	20,000	35,000	2,500
91	213,200	94,500	34,700	25,000	20,000	40,700	32,500	70,000	67,400	20,000	35,000	2,500
92	213,200	94,500	34,700	25,000	20,000	40,700	32,500	70,000	67,400	20,000	35,000	2,500
93	213,200	94,500	34,700	25,000	20,000	40,700	32,500	70,000	67,400	20,000	35,000	2,500
94	213,200	94,500	34,700	25,000	20,000	40,700	32,500	70,000	67,400	20,000	35,000	2,500
95	213,200	94,500	34,700	25,000	20,000	40,700	32,500	70,000	67,400	20,000	35,000	2,500
96	213,200	94,500	34,700	25,000	20,000	40,700	32,500	70,000	67,400	20,000	35,000	2,500
97	213,200	94,500	34,700	25,000	20,000	40,700	32,500	70,000	67,400	20,000	35,000	2,500
98	213,200	94,500	34,700	25,000	20,000	40,700	32,500	70,000	67,400	20,000	35,000	2,500
99	213,200	94,500	34,700	25,000	20,000	40,700	32,500	70,000	67,400	20,000	35,000	2,500
2000[2]	213,200	94,500	34,700	25,000	20,000	40,700	32,500	70,000	67,400	20,000	35,000	2,500

1/ For use on a nuclear powerplant of the pressurized or boiling water type, such as now commercially available.
2/ And thereafter for the remainder of the project repayment period.

TABLE B-4 (Continued)

ANNUAL QUANTITIES DELIVERED FROM EACH REACH FOR EACH CONTRACTOR

(in acre-feet)

Calendar Year	CALIFORNIA AQUEDUCT (Continued)												
	MOJAVE DIVISION (Continued)							SANTA ANA DIVISION					
	Reach 19	Reach 20	Reach 21	Reach 22B			Reach 24	Reach 25	Reach 27		Reach 28A		Reach 28C
	AVEKWA	PID	LCID	MWA	CVCWD	DWA	CLAWA	SGPWA	SGVMWD	MWD-SC	BBMWD	SBVMWD	MWD-SC
	(36)	(37)	(38)	(39)	(40)	(41)	(42)	(43)	(44)	(45)	(46)	(47)	(48)
1962	0	0	0	0	0	0	0	0	0	0	0	0	0
63	0	0	0	0	0	0	0	0	0	0	0	0	0
64	0	0	0	0	0	0	0	0	0	0	0	0	0
65	0	0	0	0	0	0	0	0	0	0	0	0	0
66	0	0	0	0	0	0	0	0	0	0	0	0	0
67	0	0	0	0	0	0	0	0	0	0	0	0	0
68	0	0	0	0	0	0	0	0	0	0	0	0	0
69	0	0	0	0	0	0	0	0	0	0	0	0	0
1970	0	0	0	0	0	0	0	0	0	0	0	0	0
71	0	0	0	0	0	0	0	0	0	0	0	0	0
72	20,000	1,620	170	8,400	5,200	8,000	580	1,000	10,600	39,600	4,600	45,541	35,000
73	25,000	2,940	290	10,700	5,800	9,000	870	1,700	11,500	49,900	4,600	47,559	45,000
74	30,000	4,260	400	13,100	6,400	10,000	1,160	2,400	12,300	55,200	4,600	49,806	50,000
75	35,000	5,580	520	15,400	7,000	11,000	1,450	3,100	13,100	68,100	4,600	51,826	62,500
76	44,000	6,900	640	17,800	7,600	12,000	1,740	3,800	14,000	80,900	4,600	53,842	75,000
77	50,000	8,220	730	20,200	8,421	13,000	2,030	4,500	14,800	93,800	4,600	55,860	87,500
78	57,000	9,340	920	22,500	9,242	14,000	2,320	5,200	15,700	106,600	4,600	57,878	100,000
79	63,000	10,260	1,040	24,900	10,063	15,000	2,610	5,900	16,600	119,500	4,600	60,010	112,500
1980	69,200	11,180	1,150	27,200	10,884	17,000	2,900	6,800	17,400	132,300	4,600	61,913	125,000
81	75,000	11,700	1,270	29,600	12,105	19,000	3,190	7,800	18,300	157,600	4,600	64,161	150,000
82	81,300	12,320	1,380	31,900	13,326	21,000	3,480	8,800	19,100	183,000	4,600	64,161	175,000
83	87,700	12,940	1,500	34,300	14,547	23,000	3,770	9,800	19,900	208,300	4,600	64,161	200,000
84	94,000	13,560	1,610	36,700	15,768	25,000	4,060	10,800	20,700	233,700	4,600	64,161	225,000
85	100,400	14,180	1,730	39,000	16,989	27,000	4,350	11,800	21,800	259,300	4,600	64,161	250,000
86	106,700	14,800	1,840	41,400	18,210	29,000	4,640	12,900	23,200	282,300	4,600	66,179	272,500
87	113,000	15,420	1,960	43,700	19,431	31,500	4,930	14,000	24,600	282,900	4,600	72,462	272,500
88	119,400	16.040	2,070	46,000	20,652	34,000	5,220	15,100	26,000	283,500	4,600	78,745	272,500
89	125,700	16,660	2,190	48,500	21,873	36,500	5,510	16,200	27,400	284,000	4,600	84,915	272,500
1990	132,100	17,300	2,300	50,800	23,100	38,100	5,800	17,300	28,800	284,000	4,600	91,198	272,500
91	138,400	17,300	2,300	50,800	23,100	38,100	5,800	17,300	28,800	284,000	4,600	98,000	272,500
92	138,400	17,300	2,300	50,800	23,100	38,100	5,800	17,300	28,800	284,000	4,600	98,000	272,500
93	138,400	17,300	2,300	50,800	23,100	38,100	5,800	17,300	28,800	284,000	4,600	98,000	272,500
94	138,400	17,300	2,300	50,800	23,100	38,100	5,800	17,300	28,800	284,000	4,600	98,000	272,500
95	138,400	17,300	2,300	50,800	23,100	38,100	5,800	17,300	28,800	284,000	4,600	98,000	272,500
96	138,400	17,300	2,300	50,800	23,100	38,100	5,800	17,300	28,800	284,000	4,600	98,000	272,500
97	138,400	17,300	2,300	50,800	23,100	38,100	5,800	17,300	28,800	284,000	4,600	98,000	272,500
98	138,400	17,300	2,300	50,800	23,100	38,100	5,800	17,300	28,800	284,000	4,600	98,000	272,500
99	138,400	17,300	2,300	50,800	23,100	38,100	5,800	17,300	28,800	284,000	4,600	98,000	272,500
2000[1/]	138,400	17,300	2,300	50,800	23,100	38,100	5,800	17,300	28,800	284,000	4,600	98,000	272,500

1/ And thereafter for the remainder of the project repayment period.

TABLE B-4 (Continued)

ANNUAL QUANTITIES DELIVERED FROM EACH REACH FOR EACH CONTRACTOR

(in acre-feet)

Calendar Year	CALIFORNIA AQUEDUCT (continued)									
	WEST BRANCH, CALIFORNIA AQUEDUCT			COASTAL BRANCH, CALIFORNIA AQUEDUCT						TOTAL CALIFORNIA AQUEDUCT
	Reach 30			Reach 31A		Reach 33A	Reach 34	Reach 35		
	USCVWA	VCFCD	MWD-SC	DDWD	KCWA (Ag.)	SLOC FC&WCD	SLOC FC&WCD	SLOC FC&WCD	SBC FC&WCD	
	(49)	(50)	(51)	(52)	(53)	(54)	(55)	(56)	(57)	(58)
1962	0	0	0	0	0	0	0	0	0	0
63	0	0	0	0	0	0	0	0	0	0
64	0	0	0	0	0	0	0	0	0	0
65	0	0	0	0	0	0	0	0	0	0
66	0	0	0	0	0	0	0	0	0	0
67	0	0	0	0	0	0	0	0	0	0
68	0	0	0	3,700	28,000	0	0	0	0	137,300
69	0	0	0	4,700	29,000	0	0	0	0	152,200
1970	0	0	0	5,700	29,000	0	0	0	0	208,000
71	1,600	0	254,200	6,700	29,000	0	0	0	0	515,300
72	3,700	0	280,000	7,700	31,000	0	0	0	0	810,211
73	5,700	0	360,000	8,700	33,000	0	0	0	0	990,159
74	7,500	0	450,000	9,700	35,000	0	0	0	0	1,150,926
75	9,500	0	525,000	10,700	37,000	0	0	0	0	1,313,776
76	11,400	0	600,000	11,700	41,000	0	0	0	0	1,489,222
77	13,400	0	675,000	12,700	44,000	0	0	0	0	1,665,761
78	15,300	0	750,000	12,700	50,000	0	0	0	0	1,841,800
79	17,700	0	825,000	12,700	63,500	0	0	0	0	2,015,883
1980	20,100	1,000	900,000	12,700	63,700	400	200	400	1,200	2,195,127
81	22,100	2,000	950,000	12,700	63,700	400	200	400	2,300	2,379,426
82	24,600	3,000	1,000,000	12,700	63,700	800	400	800	4,600	2,561,767
83	26,900	4,000	1,050,000	12,700	63,700	1,200	600	1,200	6,900	2,767,018
84	29,100	5,000	1,100,000	12,700	68,200	1,800	900	1,800	10,400	2,952,459
85	30,900	6,000	1,150,000	12,700	72,600	3,000	1,500	3,000	17,300	3,141,710
86	32,900	8,000	1,205,000	12,700	77,000	4,000	2,000	4,000	23,100	3,331,769
87	35,300	10,000	1,305,000	12,700	81,400	5,000	2,500	5,000	28,800	3,528,803
88	37,400	13,000	1,405,000	12,700	85,900	6,200	3,100	6,200	35,800	3,724,327
89	39,300	16,000	1,455,000	12,700	88,600	8,000	4,000	8,000	46,100	3,861,048
1990	41,500	20,000	1,455,000	12,700	89,900	10,000	5,000	10,000	57,700	3,957,098
91	41,500	20,000	1,455,000	12,700	89,900	10,000	5,000	10,000	57,700	3,970,200
92	41,500	20,000	1,455,000	12,700	89,900	10,000	5,000	10,000	57,700	3,970,200
93	41,500	20,000	1,455,000	12,700	89,900	10,000	5,000	10,000	57,700	3,970,200
94	41,500	20,000	1,455,000	12,700	89,900	10,000	5,000	10,000	57,700	3,970,200
95	41,500	20,000	1,455,000	12,700	89,900	10,000	5,000	10,000	57,700	3,970,200
96	41,500	20,000	1,455,000	12,700	89,900	10,000	5,000	10,000	57,700	3,970,200
97	41,500	20,000	1,455,000	12,700	89,900	10,000	5,000	10,000	57,700	3,970,200
98	41,500	20,000	1,455,000	12,700	89,900	10,000	5,000	10,000	57,700	3,970,200
99	41,500	20,000	1,455,000	12,700	89,900	10,000	5,000	10,000	57,700	3,970,200
2000 1/	41,500	20,000	1,455,000	12,700	89,900	10,000	5,000	10,000	57,700	3,970,200

1/ And thereafter for the remainder of the project repayment period.

TABLE B-5

ANNUAL QUANTITIES CONVEYED
THROUGH EACH PUMPING AND POWER RECOVERY PLANT

(in acre-feet)

CALENDAR YEAR	NORTH BAY AQUEDUCT										SOUTH BAY AQUEDUCT				
	CALHOUN PUMPING PLANT					CORDELIA PUMPING PLANT					SOUTH BAY PUMPING PLANT				
	Const. water	Operat'l losses	Deliveries: Water supply	Deliveries: Recreation	Total	Const. water	Operat'l losses	Deliveries: Water supply[1]	Deliveries: Recreation	Total[1]	Const. water	Operat'l losses	Deliveries: Water supply	Deliveries: Recreation	Total
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
1962	0	0	0	0	0	0	0	0	0	0	9	272	8,906	0	9,187
63	0	0	0	0	0	0	0	0	0	0	71	185	12,645	0	12,901
64	0	0	0	0	0	0	0	0	0	0	171	152	20,911	0	21,234
65	0	0	0	0	0	0	0	0	0	0	93	729	33,944	0	34,766
66	0	0	0	0	0	0	0	0	0	0	0	1,230	60,930	0	62,160
67	0	0	0	0	0	0	0	0	0	0	0	1,230	68,900	0	70,130
68	0	0	0	0	0	7	0	900	0	907	0	1,230	110,500	0	111,730
69	0	0	0	0	0	0	0	1,900	0	1,900	10,000	4,730	112,300	0	127,030
1970	0	0	0	0	0	0	0	2,800	0	2,800	0	4,730	114,200	0	118,930
71	0	0	0	0	0	0	0	3,800	0	3,800	0	4,730	116,200	0	120,930
72	0	0	0	0	0	0	0	4,800	0	4,800	0	4,730	118,300	0	123,030
73	0	0	0	0	0	0	0	5,800	0	5,800	0	4,730	120,400	0	125,130
74	0	0	0	0	0	0	0	6,700	0	6,700	0	4,730	122,400	0	127,130
75	0	0	0	0	0	0	0	7,700	0	7,700	0	4,730	124,500	0	129,230
76	0	0	0	0	0	0	0	8,600	0	8,600	0	4,730	126,500	0	131,230
77	0	0	0	0	0	0	0	9,600	0	9,600	0	4,730	128,600	0	133,330
78	0	0	0	0	0	0	0	10,500	0	10,500	0	4,730	130,700	0	135,430
79	0	0	0	0	0	0	0	11,500	0	11,500	0	4,730	132,700	0	137,430
1980	120	1,400	19,250	0	20,770	0	0	12,500	0	12,500	0	4,730	134,800	0	139,530
81	0	1,400	21,750	0	23,150	0	0	13,750	0	13,750	0	4,730	137,000	0	141,730
82	0	1,400	24,400	0	25,800	0	0	15,000	0	15,000	0	4,730	139,200	0	143,930
83	0	1,400	27,050	0	28,450	0	0	16,250	0	16,250	0	4,730	141,400	0	146,130
84	0	1,400	29,600	0	31,000	0	0	17,500	0	17,500	0	4,730	143,600	0	148,330
85	0	1,400	32,750	0	34,150	0	0	18,750	0	18,750	0	4,730	145,800	0	150,530
86	0	1,400	36,500	0	37,900	0	0	20,000	0	20,000	0	4,730	148,100	0	152,830
87	0	1,400	41,250	0	42,650	0	0	21,250	0	21,250	0	4,730	150,300	0	155,030
88	0	1,400	49,500	0	50,900	0	0	22,500	0	22,500	0	4,730	152,500	0	157,230
89	0	1,400	58,250	0	59,650	0	0	23,750	0	23,750	0	4,730	156,700	0	161,430
1990	0	1,400	62,800	0	64,200	0	0	25,000	0	25,000	0	4,730	160,900	0	165,630
91	0	1,400	62,800	0	64,200	0	0	25,000	0	25,000	0	4,730	166,400	0	171,130
92	0	1,400	62,800	0	64,200	0	0	25,000	0	25,000	0	4,730	171,900	0	176,630
93	0	1,400	62,800	0	64,200	0	0	25,000	0	25,000	0	4,730	177,400	0	182,130
94	0	1,400	62,800	0	64,200	0	0	25,000	0	25,000	0	4,730	182,000	0	186,730
95	0	1,400	62,800	0	64,200	0	0	25,000	0	25,000	0	4,730	184,000	0	188,730
96	0	1,400	62,800	0	64,200	0	0	25,000	0	25,000	0	4,730	186,000	0	190,730
97	0	1,400	62,800	0	64,200	0	0	25,000	0	25,000	0	4,730	188,000	0	192,730
98	0	1,400	62,800	0	64,200	0	0	25,000	0	25,000	0	4,730	188,000	0	192,730
99	0	1,400	62,800	0	64,200	0	0	25,000	0	25,000	0	4,730	188,000	0	192,730
2000[2]	0	1,400	62,800	0	64,200	0	0	25,000	0	25,000	0	4,730	188,000	0	192,730

1/ Between 1968 and 1979 inclusive, annual quantities delivered are nonproject water pumped thru an interim facility.
2/ And thereafter for the remainder of the project repayment period.

TABLE B-5 (Continued)

ANNUAL QUANTITIES CONVEYED
THROUGH EACH PUMPING AND POWER RECOVERY PLANT

(in acre-feet)

CALENDAR YEAR	CALIFORNIA AQUEDUCT													
	NORTH SAN JOAQUIN DIVISION					SAN LUIS DIVISION					SOUTH SAN JOAQUIN DIVISION			
	DELTA PUMPING PLANT					DOS AMIGOS PUMPING PLANT					BUENA VISTA PUMPING PLANT			
	Const. water	Operat'l losses	Deliveries		Total	Const. water	Operat'l losses	Deliveries		Total	Const. water	Operat'l losses	Deliveries		Total
			Water supply	Recreation				Water supply	Recreation				Water supply	Recreation	
	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)
1962	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
63	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
64	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
65	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
66	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
67	300	1,930	68,900	0	71,130	0	0	0	0	0	0	0	0	0	0
68	388,800	150,230	247,800	0	786,830	16,200	63,800	135,000	0	215,000	0	0	0	0	0
69	766,600	153,730	264,500	0	1,184,830	6,600	63,800	149,700	0	220,100	0	0	0	0	0
1970	44,200	176,430	322,200	0	542,830	44,200	86,500	205,400	0	336,100	44,200	7,600	0	0	51,800
71	106,000	221,030	631,500	9,500	968,030	106,000	131,100	512,500	9,500	759,100	106,000	52,200	275,800	0	434,000
72	270,000	239,830	928,511	29,500	1,467,841	270,000	149,900	807,311	29,500	1,256,711	270,000	71,000	501,611	20,000	862,611
73	238,800	248,730	1,110,559	29,500	1,627,589	238,800	158,800	987,059	29,500	1,414,159	238,800	79,900	633,959	20,000	972,659
74	116,100	254,830	1,273,326	29,500	1,673,756	116,100	164,900	1,147,726	29,500	1,458,226	116,100	86,000	761,226	20,000	983,326
75	0	256,730	1,438,276	29,500	1,724,506	0	166,800	1,310,376	29,500	1,506,676	0	87,900	886,776	20,000	994,676
76	0	256,730	1,615,722	29,500	1,901,952	0	166,800	1,485,722	29,500	1,682,022	0	87,900	1,022,822	20,000	1,130,722
77	0	256,730	1,794,361	29,500	2,080,591	0	166,800	1,662,061	29,500	1,858,361	0	87,900	1,153,661	20,000	1,261,561
78	0	256,730	1,972,500	29,500	2,258,730	0	166,800	1,837,900	29,500	2,034,200	0	87,900	1,284,600	20,000	1,392,500
79	0	256,730	2,148,583	29,500	2,434,813	0	166,800	2,011,883	29,500	2,208,183	0	87,900	1,411,083	20,000	1,518,983
1980	200	258,930	2,329,927	45,500	2,634,557	200	169,000	2,190,927	45,500	2,405,627	0	87,900	1,537,227	20,000	1,645,127
81	0	258,930	2,516,426	45,500	2,802,856	0	169,000	2,375,126	45,500	2,589,626	0	87,900	1,664,526	20,000	1,772,426
82	0	258,930	2,700,967	45,500	3,005,397	0	169,000	2,557,267	45,500	2,771,767	0	87,900	1,796,467	20,000	1,904,367
83	0	258,930	2,908,418	45,500	3,212,848	0	169,000	2,762,418	45,500	2,976,918	0	87,900	1,942,918	20,000	2,050,818
84	0	258,930	3,096,059	45,500	3,400,489	0	169,000	2,947,659	45,500	3,162,159	0	87,900	2,074,259	20,000	2,182,159
85	0	258,930	3,287,510	45,500	3,591,940	0	169,000	3,136,810	45,500	3,351,310	0	87,900	2,211,710	20,000	2,319,610
86	0	258,930	3,479,869	45,500	3,784,299	0	169,000	3,326,669	45,500	3,541,169	0	87,900	2,349,869	20,000	2,457,769
87	0	258,930	3,679,103	45,500	3,983,533	0	169,000	3,523,603	45,500	3,738,103	0	87,900	2,488,403	20,000	2,596,303
88	0	258,930	3,876,827	45,500	4,181,257	0	169,000	3,718,927	45,500	3,933,427	0	87,900	2,629,327	20,000	2,737,227
89	0	258,930	4,017,748	45,500	4,322,178	0	169,000	3,855,448	45,500	4,069,948	0	87,900	2,734,348	20,000	2,842,248
1990	0	258,930	4,117,998	45,500	4,422,428	0	169,000	3,951,398	45,500	4,165,898	0	87,900	2,772,498	20,000	2,880,398
91	0	258,930	4,136,600	45,500	4,441,030	0	169,000	3,964,500	45,500	4,179,000	0	87,900	2,785,600	20,000	2,893,500
92	0	258,930	4,142,100	45,500	4,446,530	0	169,000	3,964,500	45,500	4,179,000	0	87,900	2,785,600	20,000	2,893,500
93	0	258,930	4,147,600	45,500	4,452,030	0	169,000	3,964,500	45,500	4,179,000	0	87,900	2,785,600	20,000	2,893,500
94	0	258,930	4,152,200	45,500	4,456,630	0	169,000	3,964,500	45,500	4,179,000	0	87,900	2,785,600	20,000	2,893,500
95	0	258,930	4,154,200	45,500	4,458,630	0	169,000	3,964,500	45,500	4,179,000	0	87,900	2,785,600	20,000	2,893,500
96	0	258,930	4,516,200	45,500	4,460,630	0	169,000	3,964,500	45,500	4,179,000	0	87,900	2,785,600	20,000	2,893,500
97	0	258,930	4,158,200	45,500	4,462,630	0	169,000	3,964,500	45,500	4,179,000	0	87,900	2,785,600	20,000	2,893,500
98	0	258,930	4,158,200	45,500	4,462,630	0	169,000	3,964,500	45,500	4,179,000	0	87,900	2,785,600	20,000	2,893,500
99	0	258,930	4,158,200	45,500	4,462,630	0	169,000	3,964,500	45,500	4,179,000	0	87,900	2,785,600	20,000	2,893,500
2000[1]/	0	258,930	4,158,200	45,500	4,462,630	0	169,000	3,964,500	45,500	4,179,000	0	87,900	2,785,600	20,000	2,893,500

1/ And thereafter for the remainder of the project repayment period.

TABLE B-5 (Continued)

ANNUAL QUANTITIES CONVEYED
THROUGH EACH PUMPING AND POWER RECOVERY PLANT

(in acre-feet)

CALENDAR YEAR	CALIFORNIA AQUEDUCT (Continued)														
	SOUTH SAN JOAQUIN DIVISION (Continued)										TEHACHAPI DIVISION				
	WHEELER RIDGE PUMPING PLANT					WIND GAP PUMPING PLANT					TEHACHAPI PUMPING PLANT				
	Const. water	Operat'l losses	Deliveries		Total	Const. water	Operat'l losses	Deliveries		Total	Const. water	Operat'l losses	Deliveries		Total
			Water supply	Recreation				Water supply	Recreation				Water supply	Recreation	
	(31)	(32)	(33)	(34)	(35)	(36)	(37)	(38)	(39)	(40)	(41)	(42)	(43)	(44)	(45)
1962	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
63	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
64	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
65	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
66	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
67	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
68	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
69	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1970	39,500	3,900	0	0	43,400	39,100	3,600	0	0	42,700	37,000	1,900	0	0	38,900
71	106,000	40,700	267,800	0	414,500	106,000	39,800	261,800	0	407,600	106,000	34,600	255,800	0	396,400
72	270,000	59,500	489,011	20,000	838,511	270,000	58,600	479,511	20,000	828,111	270,000	53,400	466,511	20,000	809,911
73	238,800	68,400	623,259	20,000	950,459	238,800	67,500	616,559	20,000	942,859	238,800	62,300	583,059	20,000	904,159
74	116,100	74,500	746,926	20,000	957,526	116,100	73,600	736,126	20,000	945,826	116,100	68,400	699,626	20,000	904,126
75	0	76,400	869,576	20,000	965,976	0	75,500	857,176	20,000	952,676	0	70,300	816,176	20,000	906,476
76	0	76,400	1,004,122	20,000	1,100,522	0	75,500	987,722	20,000	1,083,222	0	70,300	936,722	20,000	1,027,022
77	0	76,400	1,132,161	20,000	1,228,561	0	75,500	1,113,261	20,000	1,208,761	0	70,300	1,054,561	20,000	1,144,861
78	0	76,400	1,256,700	20,000	1,353,100	0	75,500	1,233,600	20,000	1,329,100	0	70,300	1,173,100	20,000	1,263,400
79	0	76,400	1,377,683	20,000	1,474,083	0	75,500	1,352,683	20,000	1,448,183	0	70,300	1,291,183	20,000	1,381,483
1980	0	76,400	1,500,827	20,000	1,597,227	0	75,500	1,473,627	20,000	1,569,127	0	70,300	1,411,127	20,000	1,501,427
81	0	76,400	1,625,326	20,000	1,721,726	0	75,500	1,597,126	20,000	1,692,626	0	70,300	1,530,926	20,000	1,621,226
82	0	76,400	1,752,767	20,000	1,849,167	0	75,500	1,720,067	20,000	1,815,567	0	70,300	1,649,467	20,000	1,739,767
83	0	76,400	1,895,718	20,000	1,992,118	0	75,500	1,860,418	20,000	1,955,918	0	70,300	1,767,918	20,000	1,858,218
84	0	76,400	2,023,359	20,000	2,119,759	0	75,500	1,985,259	20,000	2,080,759	0	70,300	1,886,259	20,000	1,976,559
85	0	76,400	2,152,210	20,000	2,248,610	0	75,500	2,107,710	20,000	2,203,210	0	70,300	2,004,710	20,000	2,095,010
86	0	76,400	2,285,669	20,000	2,382,069	0	75,500	2,237,669	20,000	2,333,169	0	70,300	2,126,669	20,000	2,216,969
87	0	76,400	2,420,003	20,000	2,516,403	0	75,500	2,368,803	20,000	2,464,303	0	70,300	2,253,803	20,000	2,344,103
88	0	76,400	2,556,727	20,000	2,653,127	0	75,500	2,501,227	20,000	2,596,727	0	70,300	2,381,727	20,000	2,472,027
89	0	76,400	2,646,948	20,000	2,743,348	0	75,500	2,580,748	20,000	2,676,248	0	70,300	2,459,348	20,000	2,549,648
1990	0	76,400	2,679,298	20,000	2,775,698	0	75,500	2,609,298	20,000	2,704,798	0	70,300	2,486,898	20,000	2,577,198
91	0	76,400	2,692,400	20,000	2,788,800	0	75,500	2,622,400	20,000	2,717,900	0	70,300	2,500,000	20,000	2,590,300
92	0	76,400	2,692,400	20,000	2,788,800	0	75,500	2,622,400	20,000	2,717,900	0	70,300	2,500,000	20,000	2,590,300
93	0	76,400	2,692,400	20,000	2,788,800	0	75,500	2,622,400	20,000	2,717,900	0	70,300	2,500,000	20,000	2,590,300
94	0	76,400	2,692,400	20,000	2,788,800	0	75,500	2,622,400	20,000	2,717,900	0	70,300	2,500,000	20,000	2,590,300
95	0	76,400	2,692,400	20,000	2,788,800	0	75,500	2,622,400	20,000	2,717,900	0	70,300	2,500,000	20,000	2,590,300
96	0	76,400	2,692,400	20,000	2,788,800	0	75,500	2,622,400	20,000	2,717,900	0	70,300	2,500,000	20,000	2,590,300
97	0	76,400	2,692,400	20,000	2,788,800	0	75,500	2,622,400	20,000	2,717,900	0	70,300	2,500,000	20,000	2,590,300
98	0	76,400	2,692,400	20,000	2,788,800	0	75,500	2,622,400	20,000	2,717,900	0	70,300	2,500,000	20,000	2,590,300
99	0	76,400	2,692,400	20,000	2,788,800	0	75,500	2,622,400	20,000	2,717,900	0	70,300	2,500,000	20,000	2,590,300
2000 1/	0	76,400	2,692,400	20,000	2,788,800	0	75,500	2,622,400	20,000	2,717,900	0	70,300	2,500,000	20,000	2,590,300

1/ And thereafter for the remainder of the project repayment period.

TABLE B-5 (Continued)

ANNUAL QUANTITIES CONVEYED
THROUGH EACH PUMPING AND POWER RECOVERY PLANT

(in acre-feet)

CALENDAR YEAR	CALIFORNIA AQUEDUCT (Continued)														
	MOJAVE DIVISION										SANTA ANA DIVISION				
	COTTONWOOD POWERPLANT					PEARBLOSSOM PUMPING PLANT					UPPER AND LOWER DEVIL CANYON POWERPLANTS				
	Const. water	Operat'l losses	Deliveries		Total	Const. water	Operat'l losses	Deliveries		Total	Const. water	Operat'l losses	Deliveries		Total
			Water supply	Recreation				Water supply	Recreation				Water supply	Recreation	
	(46)	(47)	(48)	(49)	(50)	(51)	(52)	(53)	(54)	(55)	(56)	(57)	(58)	(59)	(60)
1962	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
63	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
64	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
65	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
66	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
67	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
68	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
69	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1970	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
71	38,800	21,200	0	0	60,000	36,000	13,200	0	0	49,200	6,000	0	0	0	6,000
72	128,000	36,400	180,311	15,000	359,711	128,000	23,300	158,521	11,000	320,821	65,000	8,500	135,341	6,000	214,841
73	74,300	39,100	214,859	15,000	343,259	74,300	26,000	186,629	11,000	297,929	28,000	9,800	158,559	6,000	202,359
74	48,700	39,900	239,626	15,000	343,226	48,700	26,800	204,966	11,000	291,466	0	9,800	171,906	6,000	187,706
75	0	41,800	279,176	15,000	335,976	0	28,700	238,076	11,000	277,776	0	9,800	200,126	6,000	215,926
76	0	41,800	322,822	15,000	379,622	0	28,700	271,282	11,000	310,982	0	9,800	228,342	6,000	244,142
77	0	41,800	363,661	15,000	420,461	0	28,700	304,711	11,000	344,411	0	9,800	256,560	6,000	272,360
78	0	41,800	405,300	15,000	462,100	0	28,700	338,040	11,000	377,740	0	9,800	284,778	6,000	300,578
79	0	41,800	445,983	15,000	502,783	0	28,700	371,683	11,000	411,383	0	9,800	313,210	6,000	329,010
1980	0	41,800	487,527	15,000	544,327	0	28,700	405,997	11,000	445,697	0	9,800	341,213	6,000	357,013
81	0	41,800	554,326	15,000	611,126	0	28,700	466,356	11,000	506,056	0	9,800	394,661	6,000	410,461
82	0	41,800	619,367	15,000	676,167	0	28,700	524,367	11,000	564,067	0	9,800	445,861	6,000	461,661
83	0	41,800	684,518	15,000	741,318	0	28,700	582,378	11,000	622,078	0	9,800	496,961	6,000	512,761
84	0	41,800	749,659	15,000	806,459	0	28,700	640,489	11,000	680,189	0	9,800	548,161	6,000	563,961
85	0	41,800	815,310	15,000	872,110	0	28,700	699,000	11,000	738,700	0	9,800	599,861	6,000	615,661
86	0	41,800	878,269	15,000	935,069	0	28,700	754,929	11,000	794,629	0	9,800	648,779	6,000	664,579
87	0	41,800	901,003	15,000	957,803	0	28,700	770,623	11,000	810,323	0	9,800	657,062	6,000	672,862
88	0	41,800	923,827	15,000	980,627	0	28,700	786,317	11,000	826,017	0	9,800	665,345	6,000	681,145
89	0	41,800	946,548	15,000	1,003,348	0	28,700	801,998	11,000	841,698	0	9,800	673,415	6,000	689,215
1990	0	41,800	967,898	15,000	1,024,698	0	28,700	816,198	11,000	855,898	0	9,800	681,098	6,000	696,898
91	0	41,800	981,000	15,000	1,037,800	0	28,700	823,000	11,000	862,700	0	9,800	687,900	6,000	703,700
92	0	41,800	981,000	15,000	1,037,800	0	28,700	823,000	11,000	862,700	0	9,800	687,900	6,000	703,700
93	0	41,800	981,000	15,000	1,037,800	0	28,700	823,000	11,000	862,700	0	9,800	687,900	6,000	703,700
94	0	41,800	981,000	15,000	1,037,800	0	28,700	823,000	11,000	862,700	0	9,800	687,900	6,000	703,700
95	0	41,800	981,000	15,000	1,037,800	0	28,700	823,000	11,000	862,700	0	9,800	687,900	6,000	703,700
96	0	41,800	981,000	15,000	1,037,800	0	28,700	823,000	11,000	862,700	0	9,800	687,900	6,000	703,700
97	0	41,800	981,000	15,000	1,037,800	0	28,700	823,000	11,000	862,700	0	9,800	687,900	6,000	703,700
98	0	41,800	981,000	15,000	1,037,800	0	28,700	823,000	11,000	862,700	0	9,800	687,900	6,000	703,700
99	0	41,800	981,000	15,000	1,037,800	0	28,700	823,000	11,000	862,700	0	9,800	687,900	6,000	703,700
2000[1/]	0	41,800	981,000	15,000	1,037,800	0	28,700	823,000	11,000	862,700	0	9,800	687,900	6,000	703,700

1/ And thereafter for the remainder of the project repayment period.

TABLE B-5 (Continued)

ANNUAL QUANTITIES CONVEYED
THROUGH EACH PUMPING AND POWER RECOVERY PLANT

(in acre-feet)

CALENDAR YEAR	CALIFORNIA AQUEDUCT (Continued)														
	WEST BRANCH, CALIFORNIA AQUEDUCT														
	OSO PUMPING PLANT					PYRAMID POWERPLANT					CASTAIC POWERPLANT				
	Const. water	Operat'l losses	Deliveries		Total	Const. water	Operat'l losses	Deliveries		Total	Const. water	Operat'l losses	Deliveries		Total
			Water supply	Recreation				Water supply	Recreation				Water supply	Recreation	
	(61)	(62)	(63)	(64)	(65)	(66)	(67)	(68)	(69)	(70)	(71)	(72)	(73)	(74)	(75)
1962	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
63	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
64	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
65	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
66	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
67	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
68	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
69	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1970	36,500	1,900	0	0	38,400	36,000	1,400	0	0	37,400	19,200	300	0	0	19,500
71	67,200	10,900	255,800	0	333,900	67,200	7,100	255,800	0	330,100	67,200	7,100	255,800	0	330,100
72	142,000	15,400	283,700	5,000	446,100	142,000	11,600	283,700	5,000	442,300	142,000	11,600	283,700	5,000	442,300
73	164,500	21,600	365,700	5,000	556,800	164,500	17,800	365,700	5,000	553,000	50,800	12,500	365,700	5,000	434,000
74	67,400	26,900	457,500	5,000	556,800	67,400	23,100	457,500	5,000	553,000	40,100	16,200	457,500	5,000	518,800
75	0	26,900	534,500	5,000	566,400	0	23,100	534,500	5,000	562,600	0	16,200	534,500	5,000	555,700
76	0	26,900	611,400	5,000	643,300	0	23,100	611,400	5,000	639,500	0	16,200	611,400	5,000	632,600
77	0	26,900	688,400	5,000	720,300	0	23,100	688,400	5,000	716,500	0	16,200	688,400	5,000	709,600
78	0	26,900	765,300	5,000	797,200	0	23,100	765,300	5,000	793,400	0	16,200	765,300	5,000	786,500
79	0	26,900	842,700	5,000	874,600	0	23,100	842,700	5,000	870,800	0	16,200	842,700	5,000	863,900
1980	0	26,900	921,100	5,000	953,000	0	23,100	921,100	5,000	949,200	0	16,200	921,100	5,000	942,300
81	0	26,900	974,100	5,000	1,006,000	0	23,100	974,100	5,000	1,002,200	0	16,200	974,100	5,000	995,300
82	0	26,900	1,027,600	5,000	1,059,500	0	23,100	1,027,600	5,000	1,055,700	0	16,200	1,027,600	5,000	1,048,800
83	0	26,900	1,080,900	5,000	1,112,800	0	23,100	1,080,900	5,000	1,109,000	0	16,200	1,080,900	5,000	1,102,100
84	0	26,900	1,134,100	5,000	1,166,000	0	23,100	1,134,100	5,000	1,162,200	0	16,200	1,134,100	5,000	1,155,300
85	0	26,900	1,186,900	5,000	1,218,800	0	23,100	1,186,900	5,000	1,215,000	0	16,200	1,186,900	5,000	1,208,100
86	0	26,900	1,245,900	5,000	1,277,800	0	23,100	1,245,900	5,000	1,274,000	0	16,200	1,245,900	5,000	1,267,100
87	0	26,900	1,350,300	5,000	1,382,200	0	23,100	1,350,300	5,000	1,378,400	0	16,200	1,350,300	5,000	1,371,500
88	0	26,900	1,455,400	5,000	1,487,300	0	23,100	1,455,400	5,000	1,483,500	0	16,200	1,455,400	5,000	1,476,600
89	0	26,900	1,510,300	5,000	1,542,200	0	23,100	1,510,300	5,000	1,538,400	0	16,200	1,510,300	5,000	1,531,500
1990	0	26,900	1,516,500	5,000	1,548,400	0	23,100	1,516,500	5,000	1,544,600	0	16,200	1,516,500	5,000	1,537,700
91	0	26,900	1,516,500	5,000	1,548,400	0	23,100	1,516,500	5,000	1,544,600	0	16,200	1,516,500	5,000	1,537,700
92	0	26,900	1,516,500	5,000	1,548,400	0	23,100	1,516,500	5,000	1,544,600	0	16,200	1,516,500	5,000	1,537,700
93	0	26,900	1,516,500	5,000	1,548,400	0	23,100	1,516,500	5,000	1,544,600	0	16,200	1,516,500	5,000	1,537,700
94	0	26,900	1,516,500	5,000	1,548,400	0	23,100	1,516,500	5,000	1,544,600	0	16,200	1,516,500	5,000	1,537,700
95	0	26,900	1,516,500	5,000	1,548,400	0	23,100	1,516,500	5,000	1,544,600	0	16,200	1,516,500	5,000	1,537,700
96	0	26,900	1,516,500	5,000	1,548,400	0	23,100	1,516,500	5,000	1,544,600	0	16,200	1,516,500	5,000	1,537,700
97	0	26,900	1,516,500	5,000	1,548,400	0	23,100	1,516,500	5,000	1,544,600	0	16,200	1,516,500	5,000	1,537,700
98	0	26,900	1,516,500	5,000	1,548,400	0	23,100	1,516,500	5,000	1,544,600	0	16,200	1,516,500	5,000	1,537,700
99	0	26,900	1,516,500	5,000	1,548,400	0	23,100	1,516,500	5,000	1,544,600	0	16,200	1,516,500	5,000	1,537,700
2000 1/	0	26,900	1,516,500	5,000	1,548,400	0	23,100	1,516,500	5,000	1,544,600	0	16,200	1,516,500	5,000	1,537,700

1/ And thereafter for the remainder of the project repayment period.

TABLE B-5 (Continued)

ANNUAL QUANTITIES CONVEYED
THROUGH EACH PUMPING AND POWER RECOVERY PLANT

(in acre-feet)

CALENDAR YEAR	CALIFORNIA AQUEDUCT (Continued)														
	COASTAL BRANCH, CALIFORNIA AQUEDUCT														
	LAS PERILLAS AND BADGER HILL PUMPING PLANTS					DEVIL'S DEN AND SAWTOOTH PUMPING PLANTS					POLONIO PUMPING PLANT AND SAN LUIS OBISPO POWERPLANT				
	Const. water	Operat'l losses	Deliveries		Total	Const. water	Operat'l losses	Deliveries		Total	Const. water	Operat'l losses	Deliveries		Total
			Water supply	Recreation				Water supply	Recreation				Water supply	Recreation	
	(76)	(77)	(78)	(79)	(80)	(81)	(82)	(83)	(84)	(85)	(86)	(87)	(88)	(89)	(90)
1962	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
63	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
64	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
65	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
66	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
67	300	0	0	0	300	0	0	0	0	0	0	0	0	0	0
68	0	1,400	31,700	0	33,100	0	0	0	0	0	0	0	0	0	0
69	0	1,400	33,700	0	35,100	0	0	0	0	0	0	0	0	0	0
1970	0	1,400	34,700	0	36,100	0	0	0	0	0	0	0	0	0	0
71	0	1,400	35,700	0	37,100	0	0	0	0	0	0	0	0	0	0
72	0	1,400	38,700	0	40,100	0	0	0	0	0	0	0	0	0	0
73	0	1,400	41,700	0	43,100	0	0	0	0	0	0	0	0	0	0
74	0	1,400	44,700	0	46,100	0	0	0	0	0	0	0	0	0	0
75	0	1,400	47,700	0	49,100	0	0	0	0	0	0	0	0	0	0
76	0	1,400	52,700	0	54,100	0	0	0	0	0	0	0	0	0	0
77	0	1,400	56,700	0	58,100	0	0	0	0	0	0	0	0	0	0
78	0	1,400	62,700	0	64,100	0	0	0	0	0	0	0	0	0	0
79	0	1,400	76,200	0	77,600	0	0	0	0	0	0	0	0	0	0
1980	200	3,600	78,600	0	82,400	200	2,200	2,200	0	4,604	200	1,500	2,200	0	3,900
81	0	3,600	79,700	0	83,300	0	2,200	3,300	0	5,500	0	1,500	3,300	0	4,800
82	0	3,600	83,000	0	86,600	0	2,200	6,600	0	8,800	0	1,500	6,600	0	8,100
83	0	3,600	86,300	0	89,900	0	2,200	9,900	0	12,100	0	1,500	9,900	0	11,400
84	0	3,600	95,800	0	99,400	0	2,200	14,900	0	17,100	0	1,500	14,900	0	16,400
85	0	3,600	110,100	0	113,700	0	2,200	24,800	0	27,000	0	1,500	24,800	0	26,300
86	0	3,600	122,800	0	126,400	0	2,200	33,100	0	35,300	0	1,500	33,100	0	34,600
87	0	3,600	135,400	0	139,000	0	2,200	41,300	0	43,500	0	1,500	41,300	0	42,800
88	0	3,600	149,900	0	153,500	0	2,200	51,300	0	53,500	0	1,500	51,300	0	52,800
89	0	3,600	167,400	0	171,000	0	2,200	66,100	0	68,300	0	1,500	66,100	0	67,600
1990	0	3,600	185,300	0	188,900	0	2,200	82,700	0	84,900	0	1,500	82,700	0	84,200
91	0	3,600	185,300	0	188,900	0	2,200	82,700	0	84,900	0	1,500	82,700	0	84,200
92	0	3,600	185,300	0	188,900	0	2,200	82,700	0	84,900	0	1,500	82,700	0	84,200
93	0	3,600	185,300	0	188,900	0	2,200	82,700	0	84,900	0	1,500	82,700	0	84,200
94	0	3,600	185,300	0	188,900	0	2,200	82,700	0	84,900	0	1,500	82,700	0	84,200
95	0	3,600	185,300	0	188,900	0	2,200	82,700	0	84,900	0	1,500	82,700	0	84,200
96	0	3,600	185,300	0	188,900	0	2,200	82,700	0	84,900	0	1,500	82,700	0	84,200
97	0	3,600	185,300	0	188,900	0	2,200	82,700	0	84,900	0	1,500	82,700	0	84,200
98	0	3,600	185,300	0	188,900	0	2,200	82,700	0	84,900	0	1,500	82,700	0	84,200
99	0	3,600	185,300	0	188,900	0	2,200	82,700	0	84,900	0	1,500	82,700	0	84,200
2000 1/	0	3,600	185,300	0	188,900	0	2,200	82,700	0	84,900	0	1,500	82,700	0	84,200

1/ And thereafter for the remainder of the project repayment period.

TABLE B-6

ANNUAL REQUIRED ADVANCE OF FUNDS
FOR EXCESS CAPACITY IN THE CALIFORNIA AQUEDUCT

REACH NUMBER AND DESCRIPTION	ITEM	ESTIMATED COSTS BY CALENDAR YEAR (IN DOLLARS)							TOTAL REACH VALUES
		1952-1965[1]	1966	1967	1968	1969	1970	1971	
	THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA								
8 Kettleman City to Avenal Gap Excess Capacity: 238 cfs Total Reach Capacity: 7982 50217 cfs Ratio. 0.02976259 Completion Date: 1967	1. Total Reach Cost[2] 2. Incremental Cost[2] 3. Computed Advance Payment 4. Advance Payment Credit[3] 5. Interest Credit[4]	1,290,397 3,000 8,976 (-5,976) (-650)	4,853,000 50,000 149,607 (-99,607) (-7,095)	8,434,000 92,000 275,278 (-183,278) (-6,415)	- 288,861 - 14,160				14,577,397 145,000 433,861 - 288,861 - 14,160
9 Avenal Gap to Twisselman Road Excess Capacity: 238 cfs Total Reach Capacity. 7193 15639 cfs Ratio 0.03302860 Completion Date. 1968	1 Total Reach Cost[2] 2. Incremental Cost[2] 3. Computed Advance Payment 4. Advance Payment Credit[3] 5. Interest Credit[4]	1,128,985 5,000 20,933 (-15,933) (-2,350)	3,264,000 28,000 117,224 (-89,224) (-9,700)	5,124,000 43,000 180,021 (-137,021) (-9,759)	1,891,000 14,000 58,612 (-44,612) (-1,561)	- 286,790 - 23,370			11,407,985 90,000 376,790 - 286,790 - 23,370
10A Twisselman Road to near Lost Hills Excess Capacity: 238 cfs Total Reach Capacity 7041.49996 cfs Ratio: 0.03373996 Completion Date: 1968	1. Total Reach Cost[2] 2. Incremental Cost[2] 3. Computed Advance Payment 4. Advance Payment Credit[3] 5 Interest Credit[4]	1,141,408 7,000 23,704 (-16,704) (-2,464)	3,420,000 37,000 125,290 (-88,290) (-9,599)	5,244,000 54,000 182,856 (-128,856) (-9,178)	1,937,000 19,000 64,338 (-45,338) (-1,587)	- 279,188 - 22,828			11,742,408 117,000 396,188 - 279,188 - 22,828
11B Near Lost Hills to Seventh Standard Road Excess Capacity: 238 cfs Total Reach Capacity: 6238.06905 cfs Ratio 0.03808549 Completion Date: 1968	1. Total Reach Cost[2] 2. Incremental Cost[2] 3. Computed Advance Payment 4 Advance Payment Credit[3] 5. Interest Credit[4]	2,169,007 7,000 21,406 (-14,406) (-2,125)	2,865,000 44,000 134,550 (-90,550) (-9,844)	4,329,000 64,000 195,710 (-131,710) (-9,381)	1,637,000 22,000 67,275 (-45,275) (-1,585)	- 281,941 - 22,935			11,000,007 137,000 418,941 - 281,941 - 22,935
12D Seventh Standard Road to Elk Hills Road Excess Capacity: 238 cfs Total Reach Capacity: 5854.52772 cfs Ratio 0.04058054 Completion Date: 1969	1. Total Reach Cost[2] 2. Incremental Cost[2] 3. Computed Advance Payment 4 Advance Payment Credit[3] 5. Interest Credit[4]	2,878,721 28,000 73,390 (-45,390) (-8,519)	1,896,000 33,000 86,496 (-53,496) (-7,892)	5 323,000 96,000 251,623 (-155,623) (-16,919)	2,450,000 40,000 104,843 (-64,843) (-4,618)	241,000 1,000 2,621 (-1,621) (-57)	- 320,973 - 38,005		12,788,721 198,000 518,973 - 320,973 - 38,005
12E Elk Hills Road to Tupman Road Excess Capacity: 238 cfs Total Reach Capacity 5834 07590 cfs Ratio: 0.04072280 Completion Date: 1969	1. Total Reach Cost[2] 2. Incremental Cost[2] 3. Computed Advance Payment 4. Advance Payment Credit[3] 5. Interest Credit[4]	1,087,357 18,000 39,306 (-21,306) (-3,999)	1,244,000 25,000 54,591 (-29,591) (-4,365)	3,833,000 75,000 163,774 (-88,774) (-9,651)	1,729,000 31,000 67,693 (-36,693) (-2,613)	150,000 1,000 2,184 (-1,184) (-41)	- 177,548 - 20,669		8,043,357 150,000 327,548 - 177,548 - 20,669
13B Tupman Road to Buena Vista Pumping Plant Excess Capacity: 238 cfs Total Reach Capacity 5019 75450 cfs Ratio: 0 04732899 Completion Date: 1969	1. Total Reach Cost[2] 2. Incremental Cost[2] 3 Computed Advance Payment 4. Advance Payment Credit[3] 5. Interest Credit[4]	1,419,840 1,000 4,794 (-3,794) (-712)	299,000 2,000 9,587 (-7,587) (-1,119)	2,716,000 19,000 91,079 (-72,079) (-7,836)	8,388,000 96,000 460,188 (-364,188) (-25,939)	5,003,000 58,000 278,031 (-220,031) (-7,701)	- 667,679 - 43,307		17,825,840 176,000 843,679 - 667,679 - 43,307
14A Buena Vista Pumping Plant to Santiago Creek Excess Capacity: 238 cfs Total Reach Capacity: 4861 42550 cfs Ratio: 0.04887042 Completion Date: 1970	1 Total Reach Cost[2] 2. Incremental Cost[2] 3. Computed Advance Payment 4. Advance Payment Credit[3] 5 Interest Credit[4]	5,197,079 58,000 200,376 (-142,376) (-32,640)	5,343,000 75,000 259,107 (-184,107) (-34,554)	4,693,000 58,000 200,376 (-142,376) (-21,004)	14,668,000 216,000 745,228 (-530,228) (-57,645)	13,956,000 212,000 732,408 (-520,408) (-37,066)	6,243,000 89,000 307,473 (-218,473) (-7,647)	-1,737,968 - 190,565	50,050,079 708,000 2,445,968 - 1,737,968 - 190,565
14B Santiago Creek to Old River Road Excess Capacity: 238 cfs Total Reach Capacity: 4853.03125 cfs Ratio: 0.04895495 Completion Date: 1970	1 Total Reach Cost[2] 2. Incremental Cost[2] 3. Computed Advance Payment 4 Advance Payment Credit[3] 5. Interest Credit[4]	2,701,801 37,000 105,990 (-68,990) (-15,816)	911,000 17,000 48,698 (-31,698) (-5,949)	1,263,000 11,000 31,511 (-20,511) (-3,026)	2,602,000 48,000 137,501 (-89,501) (-9,730)	4,762,000 97,000 277,865 (-180,865) (-12,882)	692,000 11,000 31,511 (-20,511) (-718)	- 412,076 - 48,121	12,931,801 221,000 633,076 - 412,076 - 48,121
14C Old River Road to Wheeler Ridge Pumping Plant Excess Capacity: 238 cfs Total Reach Capacity: 4666.16829 cfs Ratio: 0.05091542 Completion Date: 1970	1 Total Reach Cost[2] 2. Incremental Cost[2] 3. Computed Advance Payment 4. Advance Payment Credit[3] 5. Interest Credit[4]	2,432,550 47,000 93,680 (-46,680) (-10,702)	849,000 23,000 45,844 (-22,844) (-4,288)	1,093,000 16,000 31,891 (-15,891) (-2,344)	2,114,000 59,000 117,599 (-58,599) (-6,371)	3,976,000 123,000 245,164 (-122,164) (-8,701)	575,000 14,000 27,905 (-13,905) (-487)	- 280,083 - 32,893	11,039,550 282,000 562,083 - 280,083 - 32,893
15 Wheeler Ridge Pumping Plant to Wind Gap Pumping Plant Excess Capacity: 238 cfs Total Reach Capacity 4564.42933 cfs Ratio: 0.05205030 Completion Date: 1970	1. Total Reach Cost[2] 2. Incremental Cost[2] 3 Computed Advance Payment 4. Advance Payment Credit[3] 5. Interest Credit[4]	3,214,245 4,000 10,294 (-6,294) (-1,443)	630,000 10,000 25,736 (-15,736) (-2,953)	1,741,000 27,000 69,486 (-42,486) (-6,268)	11,214,000 251,000 645,964 (-394,964) (-42,940)	14,077,000 322,000 828,686 (-506,686) (-36,089)	6,256,000 137,000 352,578 (-215,578) (-7,545)	-1,181,744 - 97,238	37,132,245 751,000 1,932,744 - 1,181,744 - 97,238
16 Wind Gap Pumping Plant to Tehachapi Pumping Plant Excess Capacity: 238 cfs Total Reach Capacity. 4354.09867 cfs Ratio: 0 05456466 Completion Date: 1970	1 Total Reach Cost[2] 2. Incremental Cost[2] 3. Computed Advance Payment 4. Advance Payment Credit[3] 5. Interest Credit[4]	4,309,951 18,000 42,971 (-24,971) (-5,725)	973,000 15,000 35,809 (-20,809) (-3,906)	3,050,000 35,000 83,555 (-48,555) (-7,163)	14,971,000 376,000 897,620 (-521,620) (-56,709)	23,095,000 605,000 1,444,310 (-839,310) (-59,780)	8,728,000 211,000 503,718 (-292,718) (-10,245)	-1,747,983 - 143,528	55,126,951 1,260,000 3,007,983 - 1,747,983 - 143,528
17C Tehachapi Pumping Plant to South Portal Tehachapi Tunnel No 3 Excess Capacity: 238 cfs Total Reach Capacity: 4064.19548 cfs Ratio. 0.05845681 Completion Date: 1970	1. Total Reach Cost[2] 2. Incremental Cost[2] 3. Computed Advance Payment 4. Advance Payment Credit[3] 5. Interest Credit[4]	6,863,212 31,000 46,196 (-15,196) (-3,484	7,864,000 289,000 430,665 (-141,665) (-26,589)	35,577,000 1,445,000 2,153,325 (-708,325) (-104,494	54,909,000 2,245,000 3,345,476 (-1,100,476) (-119,641)	47,761,000 1,965,000 2,928,224 (-963,224) (-68,606)	33,195,000 1,328,000 1,978,972 (-650,972) (-22,784)	-3,579,858 - 345,598	186,169,212 7,303,000 10,882,858 - 3,579,858 - 345,598
17D South Portal Tehachapi Tunnel No 3 to Junction, West Branch, California Aqueduct Excess Capacity: 238 cfs Total Reach Capacity: 4055 07904 cfs Ratio: 0.05858823 Completion Date: 1970	1. Total Reach Cost[2] 2. Incremental Cost[2] 3. Computed Advance Payment 4. Advance Payment Credit[3] 5 Interest Credit[4]	4,745,691 98,000 155,499 (-57,499) (-13,182)	6,633,000 257,000 407,790 (-150,790) (-28,301)	12,939,000 501,000 794,952 (-293,952) (-43,365)	17,091,000 662,000 1,050,414 (-388,414) (-42,228)	6,616,000 254,000 403,029 (-149,029) (-10,615)	1,273,000 49,000 77,750 (-20,750) (-1,006)	-1,068,434 - 138,697	49,317,691 1,821,000 2,889,434 - 1,068,434 - 138,697

TABLE B-6 (CONTINUED)

ANNUAL REQUIRED ADVANCE OF FUNDS
FOR EXCESS CAPACITY IN THE CALIFORNIA AQUEDUCT

REACH NUMBER AND DESCRIPTION	ITEM	ESTIMATED COSTS BY CALENDAR YEAR (IN DOLLARS)							TOTAL REACH VALUES
		1952-1965 1/	1966	1967	1968	1969	1970	1971	
	THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA (Continued)								
29A Junction, West Branch, California Aqueduct thru Oso Pumping Plant Excess Capacity 809 cfs Total Reach Capacity: 3142.14935 Ratio: 0.25745418 Completion Date: 1970	1. Total Reach Cost 2/	572,615	605,000	1,962,000	4,180,000	6,559,000	3,081,000		16,959,615
	2. Incremental Cost 2/	15,000	51,000	195,000	462,000	724,000	326,000		1,773,000
	3. Computed Advance Payment	36,940	125,596	480,222	1,137,756	1,782,978	802,832		4,366,324
	4. Advance Payment Credit 3/	(-21,940)	(-74,596)	(-285,222)	(-675,756)	(-1,058,978)	(-476,832)	-2,593,324	- 2,593,324
	5. Interest Credit 4/	(-5,030)	(-14,001)	(-42,075)	(-73,467)	(-75,426)	(-16,689)	- 228,142	- 228,142
29B Oso Pumping Plant to State Route 138 Excess Capacity: 809 cfs Total Reach Capacity: 3101.32688 cfs Ratio: 0.26084306 Completion Date: 1970	1. Total Reach Cost 2/	379,941	169,000	297,000	1,014,000	3,669,000	69,000		5,597,941
	2. Incremental Cost 2/	2,000	20,000	52,000	92,000	337,000	2,000		505,000
	3. Computed Advance Payment	5,782	57,829	150,356	266,014	974,419	5,783		1,460,183
	4. Advance Payment Credit 3/	(-3,782)	(-37,829)	(-98,356)	(-174,014)	(-637,419)	(-3,783)	- 955,183	- 955,183
	5. Interest Credit 4/	(-867)	(-7,100)	(-14,510)	(-18,918)	(-45,400)	(-132)	- 87,302	- 87,302
29C State Route 138 thru Pyramid Powerplant Excess Capacity: 809 cfs Total Reach Capacity: 3097.21205 cfs Ratio: 0.26118961 Completion Date: 1970	1. Total Reach Cost 2/	1,542,101	1,520,000	10,321,000	19,476,000	20,031,000	4,731,000		57,621,101
	2. Incremental Cost 2/	11,000	106,000	2,139,000	2,386,000	2,284,000	562,000		7,488,000
	3. Computed Advance Payment	22,109	213,048	4,299,148	4,795,590	4,590,581	1,129,557		15,050,033
	4. Advance Payment Credit 3/	(-11,109)	(-107,048)	(-2,160,148)	(-2,409,590)	(-2,306,581)	(-567,557)	-7,562,033	- 7,562,033
	5. Interest Credit 4/	(-2,547)	(-20,091)	(-318,672)	(-267,966)	(-164,286)	(-19,864)	- 792,616	- 792,616
29E Pyramid reservoir thru Castaic Powerplant Excess Capacity: 809 cfs Total Reach Capacity: 3084.84281 cfs Ratio 0.26223690 Completion Date: 1970	1 Total Reach Cost 2/	2,413,223	2,420,000	14,073,000	22,535,000	21,942,000	8,588,000		71,971,223
	2. Incremental Cost 2/	63,000	301,000	2,040,000	3,393,000	3,303,000	1,244,000		10,344,000
	3. Computed Advance Payment	114,949	549,200	3,722,154	6,190,818	6,026,605	2,269,784		18,873,510
	4. Advance Payment Credit 3/	(-51,949)	(-248,200)	(-1,682,154)	(-2,797,818)	(-2,723,605)	(-1,025,784)	-8,529,510	- 8,529,510
	5. Interest Credit 4/	(-1,910)	(-46,584)	(-248,156)	(-304,173)	(-193,989)	(-35,902)	- 846,741	- 846,741
TOTALS	1. Total Reach Cost 2/	45,488,124	45,778,000	122,012,000	182,756,000	171,838,000	73,431,000		641,303,124
	2. Incremental Cost 2/	453,000	1,383,000	6,962,000	10,412,000	10,286,000	3,973,000		33,469,000
	3. Computed Advance Payment	1,027,295	2,876,667	13,357,317	20,153,929	20,517,105	7,487,863		65,420,176
	4. Advance Payment Credits Applied 3/	0	0	0	-288,861	-847,919	-1,166,200	-29,648,196	-31,951,176
	5. Interest Credits Applied 4/	0	0	0	- 14,160	- 69,133	- 101,981	- 2,951,441	- 3,136,715
	6. Interest Charge 5/	36,705							36,705
	7. Adjusted Advance Payment	-	3,940,667	13,357,317	19,850,908	19,600,053	6,219,682	-32,599,637	30,368,990
	8. Advance Payments Received	-	8,055,981						8,055,981
	9. Current Underpayment or Overpayment	-	-4,115,314						- 4,115,314
	10. Annual Difference Capalitized to 1967	-	- 147,040						- 147,040
	11. Net Required Advance of Funds	-	-	9,094,963	19,850,908	19,600,053	6,219,682	-32,599,637	22,165,969
	ANTELOPE VALLEY - EAST KERN WATER AGENCY								
29A Junction, West Branch, California Aqueduct thru Oso Pumping Plant Excess Capacity: 40 cfs Total Reach Capacity: 3142.14985 cfs Ratio: 0.01273014 Completion Date: 1970	1. Total Reach Cost 2/	572,615	550,000	1,782,000	3,797,000	5,958,000	4,300,000		16,959,615
	2. Incremental Cost 2/	1,000	2,000	10,000	23,000	36,000	16,000		88,000
	3. Computed Advance Payment	2,453	4,907	24,534	56,428	88,322	39,254		215,898
	4. Advance Payment Credit 3/	(-1,453)	(-2,907)	(-14,534)	(-33,428)	(-52,322)	(-23,254)	- 127,898	- 127,898
	5. Interest Credit 4/	(-333)	(-546)	(-2,144)	(-3,634)	(-3,727)	(-814)	- 11,198	- 11,198
TOTALS	1. Total Reach Cost 2/	572,615	550,000	1,782,000	3,797,000	5,958,000	4,300,000		16,959,615
	2. Incremental Cost 2/	1,000	2,000	10,000	23,000	36,000	16,000		88,000
	3. Computed Advance Payment	2,453	4,907	24,534	56,428	88,322	39,254		215,898
	4. Advance Payment Credits Applied 3/	0	0	0	0	0	0	- 127,898	- 127,898
	5. Interest Credits Applied 4/	0	0	0	0	0	0	- 11,198	- 11,198
	6. Interest Charge 5/	88							88
	7. Adjusted Advance Payment	-	7,448	24,534	56,428	88,322	39,254	- 139,096	76,890
	8 Advance Payments Received	-	0						0
	9. Current Underpayment or Overpayment	-	7,448						7,448
	10. Annual Difference Capalitized to 1967	-	266						266
	11. Net Required Advance of funds	-	-	32,248	56,428	88,322	39,254	- 139,096	77,156
TOTAL REQUIRED ADVANCE OF FUNDS		-	-	9,127,211	19,907,336	19,688,375	6,258,936	-32,738,733	22,243,125

1/ Reach Costs during the period 1952 - 1965 are compounded to 1965 at 3.573 project interest rate.

2/ Reach Costs and Incremental Costs occurring after completion date are prorated for the period 1966 to the year of completion.

3/ The annual advance payment less the annual incremental cost. Values shown in parenthesis are not applied in year shown, but are applied in year following year of completion.

4/ Interest Credit on the Advance Payment Credit compounded to the year in which credits are applied (year after year of completion) at 3.5% per annum.

5/ Interest charge on 1952 - 1965 Advance Payment due, but not made in 1965. Interest is computed at the project interest rate, 3.573 percent.

TABLE B-7

ACTUAL AND PROJECTED CAPITAL COSTS
ALLOCATED TO TRANSPORTATION FOR EACH AQUEDUCT REACH

(in dollars)

CALENDAR YEAR	NORTH BAY AQUEDUCT				SOUTH BAY AQUEDUCT						
	Reach 1	Reach 2	Reach 3	Total	Reach 1	Reach 2	Reach 4	Reach 5	Reach 6	Reach 7	Reach 8
1952	0	0	0	0	62	22	18	59	5	43	41
1953	0	0	0	0	311	108	92	293	27	214	205
1954	0	0	0	0	1,016	352	300	955	88	698	671
1955	0	0	0	0	1,393	495	392	1,269	118	930	894
1956	0	0	0	0	18,221	6,332	4,972	15,875	1,465	11,589	11,137
1957	10,348	3,019	7,513	20,880	41,489	14,388	11,332	36,140	3,334	26,376	25,346
1958	15,183	4,429	21,269	40,881	161,331	70,567	6,660	21,231	1,959	15,500	14,895
1959	6,051	1,764	14,732	22,547	423,639	118,842	22,488	24,384	599	5,639	6,238
1960	11,140	3,247	4,571	18,958	1,163,362	57,455	70,464	100,235	1,273	11,985	13,269
1961	9,938	2,899	3,032	15,869	3,128,755	514,225	305,109	121,677	2,185	20,571	24,219
1962	3,406	993	1,664	6,063	1,438,076	180,814	876,065	61,568	19,221	180,996	161,094
1963	8,575	2,491	3,865	14,931	427,973	74,061	1,714,301	266,307	55,086	2,705,603	270,222
1964	19,004	9,393	53,263	81,660	2,524,753	45,499	153,852	410,415	52,379	944,760	3,003,158
1965	22,181	11,726	185,554	219,461	559,550	103,636	107,262	629,165	38,729	277,642	707,882
1966	84,000	53,000	587,000	724,000	144,000	0	140,000	6,109,000	22,000	60,000	92,000
1967	74,000	95,000	1,448,000	1,617,000	85,000	0	0	3,592,000	24,000	16,000	25,000
1968	131,000	135,000	25,000	291,000	97,000	0	0	1,674,000	0	0	0
1969	24,000	211,000	3,000	238,000	5,000	0	0	58,000	0	0	0
1970	22,000	10,000	2,000	34,000	4,000	0	0	0	0	0	0
1971	22,000	11,000	1,000	34,000	342,000	0	0	0	0	0	0
1972	21,000	10,000	1,000	32,000	342,000	0	0	0	0	0	0
1973	203,000	10,000	184,000	397,000	0	0	0	0	0	0	0
1974	199,000	10,000	180,000	389,000	0	0	0	0	0	0	0
1975	19,000	10,000	0	29,000	0	0	0	0	0	0	0
1976	74,000	57,000	35,000	166,000	0	0	0	0	0	0	0
1977	87,000	58,000	75,000	220,000	0	0	0	0	0	0	0
1978	990,000	880,000	400,000	2,270,000	0	0	0	0	0	0	0
1979	1,475,000	1,316,000	796,000	3,587,000	0	0	0	0	0	0	0
1980	0	0	0	0	0	0	0	0	0	0	0
1981	0	0	0	0	0	0	0	0	0	0	0
1982	0	0	0	0	0	0	0	0	0	0	0
1983	0	0	0	0	0	0	0	0	0	0	0
1984	0	0	0	0	0	0	0	0	0	0	0
1985	0	0	0	0	0	0	0	0	0	0	0
1986	0	0	0	0	0	0	0	0	0	0	0
1987	0	0	0	0	12,000	0	0	0	0	0	0
1988	0	0	0	0	100,000	0	0	0	0	0	0
1989	0	0	0	0	160,000	0	0	0	0	0	0
1990	0	0	0	0	0	0	0	0	0	0	0
1991	0	0	0	0	0	0	0	0	0	0	0
1992	0	0	0	0	0	0	0	0	0	0	0
1993	0	0	0	0	0	0	0	0	0	0	0
1994	0	0	0	0	0	0	0	0	0	0	0
1995	0	0	0	0	0	0	0	0	0	0	0
1996	0	0	0	0	0	0	0	0	0	0	0
1997	0	0	0	0	0	0	0	0	0	0	0
1998	0	0	0	0	0	0	0	0	0	0	0
1999	0	0	0	0	0	0	0	0	0	0	0
2000	0	0	0	0	0	0	0	0	0	0	0
TOTAL	3,530,826	2,905,961	4,032,463	10,469,250	11,180,931	1,186,796	3,413,307	13,122,573	222,468	4,278,546	4,356,271

TABLE B-7 (Continued)

ACTUAL AND PROJECTED CAPITAL COSTS
ALLOCATED TO TRANSPORTATION FOR EACH AQUEDUCT REACH

(in dollars)

CALENDAR YEAR	SOUTH BAY AQUEDUCT (Continued)		CALIFORNIA AQUEDUCT								
			NORTH SAN JOAQUIN DIVISION			SAN LUIS DIVISION					
	Reach 9	Total	Reach 1	Reach 2	Subtotal	Reach 3	Reach 4	Reach 5	Reach 6	Reach 7	Subtotal
1952	83	333	4,132	4,964	9,096	1,339	3,200	3,630	923	1,139	10,231
1953	411	1,661	10,171	12,198	22,369	3,560	8,507	9,652	2,454	3,026	27,199
1954	1,345	5,425	12,680	15,123	27,803	4,240	10,131	11,494	2,922	3,604	32,391
1955	1,796	7,287	6,781	8,058	14,839	2,063	4,931	5,595	1,422	1,754	15,765
1956	29,570	99,161	10,052	8,079	18,131	2,663	5,113	5,800	1,475	1,818	16,869
1957	560,181	718,586	11,896	8,643	20,539	2,864	5,475	6,212	1,579	1,948	18,078
1958	549,512	841,655	22,633	26,309	48,942	10,559	23,321	26,654	6,721	8,521	75,776
1959	128,649	730,478	142,945	159,155	302,100	24,765	53,565	61,138	15,388	19,599	174,455
1960	261,586	1,679,629	175,656	204,038	379,694	29,553	56,502	61,633	16,025	24,964	188,677
1961	20,993	4,137,734	204,504	211,753	416,257	108,081	257,678	197,278	61,897	91,363	716,297
1962	270,386	3,188,220	388,420	763,125	1,151,545	429,505	587,511	448,135	141,882	203,770	1,810,803
1963	257,126	5,770,679	3,291,373	2,343,568	5,634,941	1,763,983	2,901,285	2,623,115	5,965	-65,069	7,229,279
1964	2,966,594	10,101,410	5,537,286	3,367,938	8,905,224	2,512,397	4,942,062	2,396,341	576,165	1,131,305	11,558,270
1965	1,867,866	4,291,732	7,133,923	11,582,612	18,716,535	2,908,520	5,715,928	2,842,489	689,757	1,349,521	13,506,215
1966	432,000	6,999,000	10,075,056	28,118,406	38,193,462	5,938,478	4,487,218	3,710,940	1,380,158	2,201,240	17,718,034
1967	195,000	3,937,000	12,753,556	15,749,580	28,503,136	4,334,300	3,443,090	4,222,290	1,097,698	4,180,408	17,277,786
1968	0	1,771,000	2,889,858	595,114	3,484,972	2,659,994	359,406	2,309,354	19,480	30,194	5,378,428
1969	0	63,000	167,528	228,890	396,418	67,206	8,766	6,818	2,922	3,896	89,608
1970	0	4,000	10,714	7,792	18,506	1,948	5,844	4,870	1,948	2,922	17,532
1971	0	342,000	4,870	2,922	7,792	974	2,922	1,948	974	974	7,792
1972	0	342,000	5,844	3,896	9,740	974	2,922	2,922	974	974	8,766
1973	0	0	0	0	0	0	0	0	0	0	0
1974	0	0	0	0	0	0	0	0	0	0	0
1975	0	0	0	0	0	0	0	0	0	0	0
1976	0	0	0	0	0	0	0	0	0	0	0
1977	0	0	0	0	0	0	0	0	0	0	0
1978	0	0	0	0	0	0	0	0	0	0	0
1979	0	0	0	0	0	0	0	0	0	0	0
1980	0	0	0	0	0	0	0	0	0	0	0
1981	0	0	0	0	0	278,564	302,914	245,448	54,544	122,724	1,004,194
1982	0	0	0	0	0	556,154	605,828	491,870	108,114	244,474	2,006,440
1983	0	0	0	0	0	1,112,308	1,211,656	982,766	217,202	489,922	4,013,854
1984	0	0	0	0	0	834,718	907,768	737,318	162,658	367,198	3,009,660
1985	0	0	0	0	0	0	0	0	0	0	0
1986	0	0	0	0	0	0	0	0	0	0	0
1987	0	12,000	0	0	0	0	0	0	0	0	0
1988	0	100,000	0	0	0	0	0	0	0	0	0
1989	0	160,000	0	0	0	0	0	0	0	0	0
1990	0	0	0	0	0	0	0	0	0	0	0
1991	0	0	0	0	0	0	0	0	0	0	0
1992	0	0	0	0	0	0	0	0	0	0	0
1993	0	0	0	0	0	0	0	0	0	0	0
1994	0	0	0	0	0	0	0	0	0	0	0
1995	0	0	0	0	0	0	0	0	0	0	0
1996	0	0	0	0	0	0	0	0	0	0	0
1997	0	0	0	0	0	0	0	0	0	0	0
1998	0	0	0	0	0	0	0	0	0	0	0
1999	0	0	0	0	0	0	0	0	0	0	0
2000	0	0	0	0	0	0	0	0	0	0	0
TOTAL	7,543,098	45,303,990	42,859,878	63,422,163	106,282,041	23,589,710	25,913,543	21,415,710	4,571,247	10,422,189	85,912,399

TABLE B-7 (Continued)

ACTUAL AND PROJECTED CAPITAL COSTS
ALLOCATED TO TRANSPORTATION FOR EACH AQUEDUCT REACH

(in dollars)

CALENDAR YEAR	CALIFORNIA AQUEDUCT (Continued) SOUTH SAN JOAQUIN DIVISION										
	Reach 8	Reach 9	Reach 10A	Reach 11B	Reach 12D	Reach 12E	Reach 13B	Reach 14A	Reach 14B	Reach 14C	Reach 15
1952	625	812	812	1,154	1,837	912	1,506	568	193	203	1,099
1953	2,301	2,990	2,990	4,248	6,757	3,353	5,542	2,090	708	744	4,043
1954	2,973	3,865	3,875	5,489	8,732	4,334	7,162	2,701	916	961	5,226
1955	1,383	1,799	1,799	2,555	4,065	2,017	3,333	1,257	427	447	2,432
1956	3,353	4,359	4,359	6,192	9,848	4,888	8,077	3,113	1,056	1,108	5,894
1957	9,333	12,132	12,132	17,234	27,414	13,606	22,484	9,456	3,205	3,365	16,405
1958	15,647	20,360	20,360	39,109	62,209	30,875	51,022	29,224	9,907	10,401	51,403
1959	17,661	22,716	22,716	59,214	94,191	46,748	77,252	53,753	18,168	19,077	94,647
1960	46,813	38,732	59,782	52,235	83,088	41,237	68,146	59,140	18,368	19,286	111,538
1961	77,949	40,280	76,765	79,480	126,427	62,747	103,691	116,010	40,541	42,568	186,260
1962	169,553	67,047	59,554	69,482	110,524	54,855	90,648	104,691	35,489	41,817	175,333
1963	179,820	88,102	60,679	101,047	160,731	80,394	132,852	260,367	107,021	112,552	426,562
1964	113,575	149,212	146,061	228,217	363,017	122,501	203,272	1,119,982	576,135	520,042	1,092,701
1965	538,574	587,446	571,271	1,354,505	1,581,112	507,186	498,775	3,111,611	1,729,474	1,496,655	760,776
1966	4,453,802	3,111,202	3,253,172	2,733,848	1,767,926	1,161,332	285,330	4,905,140	862,522	796,134	573,426
1967	7,737,090	4,886,440	4,991,320	4,133,966	4,960,034	3,578,474	2,594,242	4,315,312	1,207,474	1,038,842	1,584,996
1968	590,140	1,804,458	1,844,262	1,564,646	2,287,860	1,617,008	7,972,616	13,410,494	2,462,972	1,981,530	10,139,944
1969	14,610	120,750	122,724	36,012	227,890	142,178	4,754,534	12,796,952	4,498,332	3,713,586	12,722,224
1970	1,948	1,948	1,948	974	94,478	57,466	78,894	5,729,754	657,164	541,180	5,659,456
1971	974	974	974	974	93,504	56,492	76,946	1,786,588	59,414	49,674	1,558,438
1972	974	974	974	974	50,648	30,194	41,882	90,582	33,116	27,272	50,648
1973	0	0	0	0	0	0	0	0	0	0	0
1974	0	0	0	0	0	0	0	0	0	0	0
1975	0	0	0	0	0	0	0	0	0	0	0
1976	0	0	0	0	0	0	0	0	0	0	0
1977	0	0	0	0	0	0	0	0	0	0	0
1978	0	0	0	0	0	0	0	0	0	0	0
1979	0	0	0	0	0	0	0	0	0	0	0
1980	0	0	0	0	0	0	0	0	0	0	0
1981	0	0	0	0	0	0	0	0	0	0	0
1982	0	0	0	0	0	0	0	0	0	0	0
1983	0	0	0	0	0	0	0	0	0	0	0
1984	0	0	0	0	0	0	0	0	0	0	0
1985	0	0	0	0	0	0	0	0	0	0	0
1986	0	0	0	0	0	0	0	0	0	0	0
1987	0	0	0	0	0	0	0	0	0	0	0
1988	0	0	0	0	0	0	0	0	0	0	0
1989	0	0	0	0	0	0	0	0	0	0	0
1990	0	0	0	0	0	0	0	0	0	0	0
1991	0	0	0	0	0	0	0	0	0	0	0
1992	0	0	0	0	0	0	0	0	0	0	0
1993	0	0	0	0	0	0	0	0	0	0	0
1994	0	0	0	0	0	0	0	0	0	0	0
1995	0	0	0	0	0	0	0	0	0	0	0
1996	0	0	0	0	0	0	0	0	0	0	0
1997	0	0	0	0	0	0	0	0	0	0	0
1998	0	0	0	0	0	0	0	0	0	0	0
1999	0	0	0	0	0	0	0	0	0	0	0
2000	0	0	0	0	0	0	0	0	0	0	0
TOTAL	13,979,098	10,966,598	11,258,529	10,491,555	12,122,292	7,618,797	17,078,206	47,908,785	12,322,602	10,417,444	35,223,451

TABLE B-7 (Continued)

ACTUAL AND PROJECTED CAPITAL COSTS
ALLOCATED TO TRANSPORTATION FOR EACH AQUEDUCT REACH

(in dollars)

CALENDAR YEAR	CALIFORNIA AQUEDUCT (Continued)										
	SOUTH SAN JOAQUIN DIVISION		TEHACHAPI DIVISION			MOJAVE DIVISION					
	Reach 16	Subtotal	Reach 17C	Reach 17D	Subtotal	Reach 18A	Reach 19	Reach 20	Reach 21	Reach 22A	Reach 22B
1952	4,173	13,894	7,879	3,656	11,535	4,477	1,664	3,779	6,334	160	2,381
1953	15,351	51,117	24,943	11,577	36,520	15,003	5,575	12,667	21,231	537	7,983
1954	19,838	66,072	45,907	21,306	67,213	16,617	6,174	14,032	23,520	594	8,843
1955	9,233	30,747	29,791	13,827	43,618	6,416	2,383	5,418	9,083	229	3,415
1956	22,374	74,621	36,806	17,083	53,889	5,647	2,098	4,767	7,990	202	3,004
1957	62,280	209,046	98,018	45,493	143,511	19,932	7,406	16,824	28,199	713	10,602
1958	128,396	468,913	137,310	63,729	201,039	32,795	12,186	27,680	46,396	1,173	17,443
1959	177,014	703,157	114,175	52,992	167,167	36,218	20,564	37,743	53,776	1,390	20,671
1960	147,578	745,943	132,799	61,636	194,435	34,046	27,556	84,323	127,367	3,692	54,914
1961	220,644	1,173,362	334,586	155,142	489,728	44,167	44,080	200,536	330,776	10,485	187,813
1962	206,533	1,185,526	320,539	148,763	469,302	79,610	43,152	78,680	119,710	6,543	167,426
1963	439,243	2,149,370	943,333	437,828	1,381,161	56,616	82,663	289,380	462,210	19,547	288,008
1964	1,523,419	6,158,134	1,295,413	1,177,847	2,473,260	453,449	210,449	221,044	269,546	97,020	251,805
1965	904,406	13,641,791	2,746,383	2,112,441	4,858,824	49,685	590,716	311,118	127,769	80,073	787,187
1966	867,470	24,771,304	6,207,412	6,219,126	12,426,538	1,045,102	997,376	1,272,044	205,514	177,268	1,048,024
1967	2,729,264	43,757,454	27,962,194	12,092,820	40,055,014	1,961,636	1,890,534	1,939,234	716,864	231,812	4,320,664
1968	13,210,028	58,885,958	43,143,926	15,972,946	59,116,872	1,238,928	4,456,050	8,286,792	2,898,624	1,241,850	3,322,314
1969	20,355,598	59,505,390	37,516,784	6,186,088	43,702,872	4,934,284	6,022,242	12,739,920	4,273,912	2,161,306	15,688,218
1970	7,709,958	20,535,168	26,107,480	1,189,928	27,297,408	1,439,572	1,159,060	447,066	125,646	106,166	28,580,082
1971	3,227,548	6,912,500	12,973,210	19,480	12,992,690	752,902	696,410	799,654	218,176	191,878	8,623,796
1972	152,892	481,130	4,886,838	9,740	4,896,578	15,584	122,724	141,230	38,960	34,090	1,347,042
1973	0	0	0	0	0	0	0	0	0	0	0
1974	0	0	0	0	0	0	0	0	0	0	0
1975	0	0	97,400	0	97,400	0	0	0	0	0	0
1976	0	0	2,240,200	0	2,240,200	0	0	0	0	0	0
1977	0	0	3,896,000	0	3,896,000	0	0	0	0	0	0
1978	0	0	2,337,600	0	2,337,600	0	0	0	0	0	0
1979	0	0	0	0	0	0	0	0	0	0	0
1980	0	0	0	0	0	0	0	0	0	0	0
1981	0	0	0	0	0	0	0	0	0	0	0
1982	0	0	0	0	0	0	0	0	0	0	0
1983	0	0	0	0	0	0	0	0	0	0	0
1984	0	0	0	0	0	0	0	0	0	0	0
1985	0	0	0	0	0	0	0	0	0	0	0
1986	0	0	0	0	0	0	0	0	0	0	0
1987	0	0	0	0	0	0	0	0	0	0	0
1988	0	0	0	0	0	0	0	0	0	0	0
1989	0	0	0	0	0	0	0	0	0	0	0
1990	0	0	0	0	0	0	0	0	0	0	0
1991	0	0	0	0	0	0	0	0	0	0	0
1992	0	0	0	0	0	0	0	0	0	0	0
1993	0	0	0	0	0	0	0	0	0	0	0
1994	0	0	0	0	0	0	0	0	0	0	0
1995	0	0	0	0	0	0	0	0	0	0	0
1996	0	0	0	0	0	0	0	0	0	0	0
1997	0	0	0	0	0	0	0	0	0	0	0
1998	0	0	0	0	0	0	0	0	0	0	0
1999	0	0	0	0	0	0	0	0	0	0	0
2000	0	0	0	0	0	0	0	0	0	0	0
TOTAL	52,133,240	241,520,597	173,636,926	46,013,448	219,650,374	12,242,686	16,401,082	26,933,931	10,111,603	4,366,728	64,741,635

TABLE B-7 (Continued)

ACTUAL AND PROJECTED CAPITAL COSTS
ALLOCATED TO TRANSPORTATION FOR EACH AQUEDUCT REACH

(in dollars)

CALENDAR YEAR	CALIFORNIA AQUEDUCT (Continued)												
	MOJAVE DIVISION (Continued)			SANTA ANA DIVISION							WEST BRANCH	
	Reach 23	Reach 24	Subtotal	Reach 25	Reach 26	Reach 27	Reach 28A	Reach 28B	Reach 28C	Subtotal	Reach 29A	Reach 29B
1952	1,969	2,640	23,404	3,648	3,239	2,889	2,337	7,321	3,322	22,756	362	325
1953	6,601	8,849	78,446	12,226	10,856	9,684	7,831	24,538	11,138	76,273	1,216	1,091
1954	7,313	9,803	86,896	13,543	12,026	10,728	8,675	27,182	12,339	84,493	1,349	1,211
1955	2,824	3,786	33,554	5,229	4,644	4,133	3,350	10,497	4,765	32,618	518	465
1956	2,484	3,330	29,522	4,600	4,085	3,644	2,947	9,234	4,191	28,701	454	407
1957	8,767	11,753	104,196	16,238	14,418	12,862	10,401	32,590	14,792	101,301	1,614	1,448
1958	14,425	19,338	171,436	26,716	23,723	21,161	17,113	53,622	24,339	166,674	2,655	2,382
1959	17,273	45,647	233,282	35,527	27,637	24,671	20,487	64,192	37,682	210,196	5,047	4,530
1960	29,727	98,306	459,931	74,320	52,527	47,326	45,922	143,890	74,105	438,090	7,648	6,863
1961	83,398	212,470	1,113,725	161,433	116,110	112,241	38,783	121,519	64,716	614,802	7,769	6,972
1962	63,826	103,082	662,029	59,580	58,488	71,545	39,104	122,528	60,651	411,896	31,992	28,711
1963	113,940	422,858	1,735,222	234,336	198,714	212,108	134,128	420,261	661,835	1,861,382	57,972	52,026
1964	40,148	320,002	1,863,463	69,994	174,366	174,760	100,363	147,888	121,814	789,185	105,960	95,128
1965	46,600	645,138	2,638,286	317,606	105,559	110,727	96,918	150,574	244,027	1,025,411	297,560	146,622
1966	36,038	1,786,316	6,567,682	335,056	298,044	352,588	76,946	143,178	273,694	1,479,506	486,700	140,710
1967	76,946	1,929,494	13,067,184	3,312,574	598,036	707,124	110,062	178,242	1,734,694	6,640,732	1,547,668	230,460
1968	74,998	5,594,656	27,114,212	9,689,352	2,587,918	3,028,166	764,590	5,695,952	3,050,568	24,816,546	3,252,278	874,208
1969	1,335,354	16,991,430	64,146,666	8,548,798	3,085,632	3,587,242	285,382	501,610	5,145,642	21,154,306	5,104,092	3,157,712
1970	5,386,220	14,659,674	51,903,486	3,500,556	3,301,860	3,834,638	10,492,902	8,905,282	11,855,528	41,890,766	2,411,226	64,232
1971	963,286	719,786	12,965,888	262,006	1,632,424	1,730,798	3,013,556	20,014,726	10,051,680	36,705,190	1,218,522	76,946
1972	1,948	1,072,374	2,773,952	7,792	95,452	69,154	12,662	58,440	927,248	1,170,748	94,452	35,064
1973	0	813,290	813,290	0	0	0	0	0	407,132	407,132	0	0
1974	0	760,694	760,694	0	0	0	0	0	0	0	0	0
1975	0	0	0	0	0	0	0	0	0	0	0	0
1976	0	0	0	0	0	0	0	0	0	0	0	0
1977	0	0	0	0	0	0	0	0	0	0	0	0
1978	0	0	0	0	0	0	0	0	0	0	0	0
1979	0	0	0	0	0	0	0	0	0	0	0	0
1980	0	0	0	0	0	0	0	0	0	0	0	0
1981	0	0	0	0	0	0	0	0	0	0	0	0
1982	0	0	0	0	0	0	0	0	0	0	0	0
1983	0	0	0	0	0	0	0	0	0	0	0	0
1984	0	0	0	0	0	0	0	0	0	0	0	0
1985	0	0	0	0	0	0	0	0	0	0	0	0
1986	0	0	0	0	0	0	0	0	0	0	0	0
1987	0	0	0	0	0	0	0	0	0	0	0	0
1988	0	0	0	0	0	0	0	0	0	0	0	0
1989	0	0	0	0	0	0	0	0	0	0	0	0
1990	0	0	0	0	0	0	0	0	0	0	0	0
1991	0	0	0	0	0	0	0	0	0	0	0	0
1992	0	0	0	0	0	0	0	0	0	0	0	0
1993	0	0	0	0	0	0	0	0	0	0	0	0
1994	0	0	0	0	0	0	0	0	0	0	0	0
1995	0	0	0	0	0	0	0	0	0	0	0	0
1996	0	0	0	0	0	0	0	0	0	0	0	0
1997	0	0	0	0	0	0	0	0	0	0	0	0
1998	0	0	0	0	0	0	0	0	0	0	0	0
1999	0	0	0	0	0	0	0	0	0	0	0	0
2001	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	8,314,085	46,234,716	189,346,446	26,691,130	12,405,758	14,128,189	15,284,459	36,833,266	34,785,902	140,128,704	14,637,054	4,927,513

TABLE B-7 (Continued)

ACTUAL AND PROJECTED CAPITAL COSTS
ALLOCATED TO TRANSPORTATION FOR EACH AQUEDUCT REACH

(in dollars)

CALENDAR YEAR	CALIFORNIA AQUEDUCT (Continued)											GRAND TOTAL
	WEST BRANCH (Continued)					COASTAL BRANCH					Total	
	Reach 29C	Reach 29D	Reach 29E	Reach 30	Subtotal	Reach 31A	Reach 33A	Reach 34	Reach 35	Subtotal		
1952	1,152	1,013	1,794	1,540	6,186	0	0	0	0	0	97,102	97,435
1953	3,866	3,398	6,017	5,166	20,754	0	0	0	0	0	312,678	314,339
1954	4,289	3,769	6,674	5,730	23,022	0	0	0	0	0	387,890	393,315
1955	1,647	1,447	2,564	2,262	8,903	0	0	0	0	0	180,044	187,331
1956	1,442	1,268	2,245	1,988	7,804	0	0	0	0	0	229,537	328,698
1957	5,131	4,510	7,986	6,856	27,545	0	0	0	0	0	624,216	1,363,682
1958	8,442	7,421	13,139	11,280	45,319	0	0	0	0	0	1,178,099	2,060,635
1959	16,048	14,106	24,978	32,697	97,406	17,329	28,599	4,526	4,526	54,980	1,942,743	2,695,768
1960	24,315	21,373	37,845	44,299	142,343	34,168	59,021	7,832	11,317	112,338	2,661,451	4,360,038
1961	24,701	21,712	38,446	88,038	187,638	18,691	35,600	2,466	5,896	62,653	4,774,462	8,928,065
1962	101,717	89,412	158,317	224,643	634,792	25,648	56,698	2,313	4,865	89,524	6,415,417	9,609,700
1963	184,320	162,023	286,885	210,689	953,915	45,335	101,874	4,692	10,230	162,131	21,107,401	26,893,011
1964	336,951	296,274	524,482	758,148	2,116,943	326,450	106,305	5,567	12,214	450,536	34,315,015	44,498,085
1965	706,552	422,702	1,066,478	2,717,392	5,357,306	705,071	51,484	3,222	8,107	767,884	60,512,252	65,023,445
1966	1,332,650	16,558	1,660,662	8,157,250	11,794,530	2,514,000	48,000	2,000	5,000	2,569,000	115,520,056	123,243,056
1967	7,655,584	468,494	8,740,440	16,258,982	34,901,628	7,569,000	61,000	2,000	7,000	7,639,000	191,841,934	197,395,934
1968	16,065,574	522,064	18,217,502	22,006,556	60,938,182	1,160,000	63,000	2,000	7,000	1,232,000	240,967,170	243,029,170
1969	16,689,586	1,251,590	17,747,426	39,193,760	83,144,166	133,000	64,000	2,000	7,000	206,000	272,345,426	272,646,426
1970	3,920,634	6,270,612	6,995,196	7,319,610	26,981,510	0	62,000	2,000	7,000	71,000	168,715,376	168,753,376
1971	1,287,066	13,609,702	763,524	1,172,696	18,128,456	0	65,000	2,000	24,000	91,000	87,811,308	88,187,308
1972	192,852	6,367,038	254,214	1,779,498	8,723,118	0	269,000	32,000	73,000	374,000	18,438,032	18,812,032
1973	0	1,541,842	0	469,468	2,011,310	0	358,000	59,000	245,000	662,000	3,893,732	4,290,732
1974	0	320,446	0	269,798	590,244	0	782,000	58,000	277,000	1,117,000	2,467,938	2,856,938
1975	0	0	0	0	0	0	2,082,000	58,000	263,000	2,403,000	2,500,400	2,529,400
1976	0	0	0	0	0	0	6,034,000	58,000	182,000	6,274,000	8,514,200	8,680,200
1977	0	0	0	0	0	25,000	7,327,000	443,000	239,000	8,034,000	11,930,000	12,150,000
1978	0	0	0	0	0	400,000	9,992,000	1,630,000	3,067,000	15,089,000	17,426,600	19,696,600
1979	0	0	0	0	0	150,000	4,312,000	429,000	3,002,000	7,893,000	7,893,000	11,480,000
1980	0	0	0	0	0	0	0	0	0	0	0	0
1981	0	0	0	0	0	0	0	0	0	0	1,004,194	1,004,194
1982	0	0	0	0	0	0	0	0	0	0	2,006,440	2,006,440
1983	0	0	0	0	0	0	60,000	0	0	60,000	4,073,854	4,073,854
1984	0	0	0	0	0	0	765,000	0	0	765,000	3,774,660	3,774,660
1985	0	0	0	0	0	0	315,000	0	0	315,000	315,000	315,000
1986	0	0	0	0	0	0	0	0	0	0	0	0
1987	0	0	0	0	0	0	0	0	0	0	0	12,000
1988	0	0	0	0	0	0	0	0	0	0	0	100,000
1989	0	0	0	0	0	0	0	0	0	0	0	160,000
1990	0	0	0	0	0	0	0	0	0	0	0	0
1991	0	0	0	0	0	0	0	0	0	0	0	0
1992	0	0	0	0	0	0	0	0	0	0	0	0
1993	0	0	0	0	0	0	0	0	0	0	0	0
1994	0	0	0	0	0	0	0	0	0	0	0	0
1995	0	0	0	0	0	0	0	0	0	0	0	0
1996	0	0	0	0	0	0	0	0	0	0	0	0
1997	0	0	0	0	0	0	0	0	0	0	0	0
1998	0	0	0	0	0	0	0	0	0	0	0	0
1999	0	0	0	0	0	0	0	0	0	0	0	0
2000	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	48,564,519	31,418,774	56,556,814	100,738,346	256,843,020	13,123,692	33,098,581	2,809,618	7,462,155	56,494,046	1,296,177,627	1,351,950,867

TABLE B-8

DIRECT ANNUAL OPERATING COSTS[1] OF PUMPING AND POWER RECOVERY PLANTS

(in dollars)

CALENDAR YEAR	NORTH BAY AQUEDUCT		SOUTH BAY AQUEDUCT	CALIFORNIA AQUEDUCT					
	Reach 1	Reach 3	Reach 1	Reach 1	Reach 4	Reach 14A	Reach 15	Reach 16	Reach 17C
	Calhoun Pumping Plant	Cordelia Pumping Plant	South Bay Pumping Plant[2]	Delta Pumping Plant	Dos Amigos Pumping Plant	Buena Vista Pumping Plant	Wheeler Ridge Pumping Plant	Wind Gap Pumping Plant	Tehachapi Pumping Plant
1961	0	0	0	0	0	0	0	0	0
62	0	0	0	0	0	0	0	0	0
63	0	0	0	0	0	0	0	0	0
64	0	0	0	0	0	0	0	0	0
65	0	0	0	0	0	0	0	0	0
66	0	0	229,000	0	0	0	0	0	0
67	0	0	293,000	190,000	0	0	0	0	0
68	0	15,000	392,000	411,000	297,000	0	0	0	0
69	0	17,000	419,000	824,000	296,000	0	0	0	0
1970	0	19,000	451,000	515,000	290,000	93,000	159,000	313,000	430,000
71	0	21,000	440,000	802,000	512,000	537,000	625,000	1,293,000	3,486,000
72	0	21,000	455,000	1,262,000	716,000	916,000	1,056,000	2,243,000	6,769,000
73	0	21,000	458,000	1,210,000	911,000	1,017,000	1,176,000	2,514,000	7,499,000
74	0	25,000	488,000	1,392,000	981,000	938,000	1,104,000	2,331,000	6,396,000
75	0	32,000	437,000	1,403,000	953,000	886,000	1,032,000	2,197,000	6,100,000
76	0	33,000	439,000	1,355,000	987,000	933,000	1,087,000	2,299,000	6,551,000
77	0	34,000	445,000	1,588,000	1,123,000	1,071,000	1,388,000	2,677,000	7,908,000
78	0	35,000	429,000	1,395,000	1,254,000	1,299,000	1,540,000	3,008,000	9,151,000
79	0	40,000	441,000	1,472,000	1,412,000	1,468,000	1,740,000	3,432,000	10,694,000
1980	15,000	47,000	433,000	1,564,000	1,552,000	1,614,000	1,905,000	3,798,000	12,162,000
81	6,000	48,000	436,000	1,692,000	1,657,000	1,734,000	2,059,000	4,151,000	13,445,000
82	6,000	39,000	465,000	1,916,000	1,807,000	1,874,000	2,229,000	4,469,000	14,654,000
83	6,000	44,000	484,000	2,083,000	2,017,000	2,099,000	2,458,000	4,983,000	16,381,000
84	6,000	61,000	472,000	1,944,000	2,098,000	2,171,000	2,560,000	5,176,000	17,136,000
85	6,000	60,000	437,000	1,672,000	2,057,000	2,189,000	2,481,000	5,026,000	16,695,000
86	6,000	44,000	416,000	2,734,000	1,682,000	2,021,000	2,403,000	4,859,000	16,093,000
87	6,000	44,000	412,000	2,436,000	1,735,000	2,066,000	2,448,000	5,025,000	16,720,000
88	6,000	46,000	416,000	2,372,000	1,864,000	2,198,000	2,637,000	5,372,000	18,014,000
89	6,000	48,000	440,000	2,438,000	1,941,000	2,341,000	2,759,000	5,670,000	19,111,000
1990	6,000	50,000	454,000	2,742,000	2,348,000	2,514,000	2,759,000	5,651,000	19,104,000
91	6,000	50,000	458,000	2,747,000	2,365,000	2,536,000	2,889,000	5,676,000	19,156,000
92	6,000	50,000	465,000	2,813,000	2,365,000	2,536,000	2,889,000	5,676,000	19,156,000
93	6,000	50,000	469,000	2,815,000	2,365,000	2,536,000	2,889,000	5,676,000	19,156,000
94	6,000	50,000	474,000	2,817,000	2,365,000	2,536,000	2,889,000	5,676,000	19,156,000
95	6,000	50,000	476,000	2,817,000	2,365,000	2,536,000	2,889,000	5,676,000	19,156,000
96	6,000	50,000	478,000	2,819,000	2,365,000	2,536,000	2,889,000	5,676,000	19,156,000
97	6,000	50,000	480,000	2,819,000	2,365,000	2,536,000	2,889,000	5,676,000	19,156,000
98	6,000	50,000	480,000	2,819,000	2,365,000	2,536,000	2,889,000	5,676,000	19,156,000
99	6,000	50,000	480,000	2,819,000	2,365,000	2,536,000	2,889,000	5,676,000	19,156,000
2000[3]	6,000	50,000	480,000	2,819,000	2,365,000	2,536,000	2,889,000	5,676,000	19,156,000

Footnotes on Sheet 2.

TABLE B-8 (Continued)

DIRECT ANNUAL OPERATING COSTS[1] OF PUMPING AND POWER RECOVERY PLANTS

(in dollars)

CALENDAR YEAR	CALIFORNIA AQUEDUCT (Continued)								GRAND TOTAL
	Reach 18A	Reach 22B	Reaches 26, 27	Reach 29A	Reach 29C	Reach 29E	Reach 31	Reach 33	
	Cottonwood Powerplant	Pearblossom Pumping Plant	Upper and Lower Devil Canyon Powerplants	Oso Pumping Plant	Pyramid Powerplant	Castaic Powerplant	Las Perillas and Badger Hill Pumping Plants	Devil's Den Sawtooth and Polonio PP's and San Luis Obispo Pwp	
1961	0	0	0	0	0	0	0	0	0
62	0	0	0	0	0	0	0	0	0
63	0	0	0	0	0	0	0	0	0
64	0	0	0	0	0	0	0	0	0
65	0	0	0	0	0	0	0	0	0
66	0	0	0	0	0	0	0	0	229,000
67	0	0	0	0	0	0	16,000	0	499,000
68	0	0	0	0	0	0	166,000	0	1,281,000
69	0	0	0	0	0	0	155,000	0	1,711,000
1970	0	0	0	48,000	- 66,000	- 48,000	145,000	0	2,349,000
71	- 24,000	173,000	- 622,000	370,000	- 611,000	- 385,000	143,000	0	6,760,000
72	- 81,000	837,000	-1,050,000	448,000	- 666,000	- 709,000	152,000	0	12,369,000
73	- 90,000	1,087,000	- 624,000	499,000	- 900,000	-1,714,000	178,000	0	13,242,000
74	- 98,000	906,000	- 586,000	414,000	-1,018,000	-2,677,000	199,000	0	10,795,000
75	- 99,000	664,000	- 568,000	459,000	-1,027,000	-2,313,000	193,000	0	10,349,000
76	-114,000	767,000	- 753,000	477,000	-1,176,000	-2,814,000	194,000	0	10,265,000
77	-143,000	744,000	-1,446,000	528,000	-1,535,000	-2,886,000	199,000	0	11,695,000
78	-176,000	986,000	-1,701,000	698,000	-1,602,000	-3,387,000	225,000	0	13,154,000
79	-172,000	1,161,000	-1,895,000	784,000	-1,742,000	-3,898,000	259,000	0	15,196,000
1980	-194,000	1,023,000	-1,961,000	716,000	-2,006,000	-4,267,000	190,000	203,000	16,794,000
81	-227,000	1,157,000	-2,224,000	764,000	-2,248,000	-4,786,000	184,000	210,000	18,058,000
82	-293,000	1,855,000	-2,267,000	955,000	-2,491,000	-4,833,000	184,000	226,000	20,795,000
83	-284,000	1,963,000	-2,720,000	1,089,000	-2,495,000	-5,657,000	181,000	216,000	22,848,000
84	-293,000	1,920,000	-2,890,000	1,129,000	-2,458,000	-5,636,000	220,000	393,000	24,009,000
85	-333,000	1,854,000	-3,220,000	1,006,000	-2,665,000	-5,893,000	203,000	295,000	21,870,000
86	-313,000	1,791,000	-2,741,000	1,012,000	-2,504,000	-4,843,000	152,000	356,000	23,168,000
87	-339,000	1,675,000	-2,813,000	1,081,000	-2,835,000	-4,902,000	155,000	356,000	23,270,000
88	-346,000	1,771,000	-2,961,000	1,243,000	-3,119,000	-5,071,000	192,000	408,000	25,042,000
89	-376,000	1,795,000	-3,050,000	1,294,000	-3,315,000	-5,177,000	189,000	472,000	26,586,000
1990	-373,000	1,863,000	-3,231,000	1,307,000	-3,260,000	-5,390,000	257,000	529,000	27,330,000
91	-365,000	1,926,000	-3,265,000	1,279,000	-3,190,000	-5,398,000	261,000	537,000	27,668,000
92	-365,000	1,926,000	-3,265,000	1,279,000	-3,190,000	-5,398,000	261,000	537,000	27,741,000
93	-365,000	1,926,000	-3,265,000	1,279,000	-3,190,000	-5,398,000	261,000	537,000	27,747,000
94	-365,000	1,926,000	-3,265,000	1,279,000	-3,190,000	-5,398,000	261,000	537,000	27,754,000
95	-365,000	1,926,000	-3,265,000	1,279,000	-3,190,000	-5,398,000	261,000	537,000	27,756,000
96	-365,000	1,926,000	-3,265,000	1,279,000	-3,190,000	-5,398,000	261,000	537,000	27,760,000
97	-365,000	1,926,000	-3,265,000	1,279,000	-3,190,000	-5,398,000	261,000	537,000	27,762,000
98	-365,000	1,926,000	-3,265,000	1,279,000	-3,190,000	-5,398,000	261,000	537,000	27,762,000
99	-365,000	1,926,000	-3,265,000	1,279,000	-3,190,000	-5,398,000	261,000	537,000	27,762,000
2000[3]	-365,000	1,926,000	-3,265,000	1,279,000	-3,190,000	-5,398,000	261,000	537,000	27,762,000

1/ Includes only the costs of the project transportation facilities for electrical power and energy, materials, supplies and replacements associated with the operation of electro-mechanical units, prior to allocation between construction water, losses, deliveries, recreation and excess capacity.

2/ The estimated costs of Del Valle Pumping Plant have been combined with those of the South Bay Pumping Plant to simplify the allocation procedure.

3/ And thereafter for the remainder of the project repayment period.

TABLE B-9

ACTUAL AND PROJECTED MINIMUM OPERATION, MAINTENANCE, POWER, AND REPLACEMENT COSTS ALLOCATED TO TRANSPORTATION FOR EACH AQUEDUCT REACH

(in dollars)

CALENDAR YEAR	NORTH BAY AQUEDUCT				SOUTH BAY AQUEDUCT						
	Reach 1	Reach 2	Reach 3	Total	Reach 1	Reach 2	Reach 4	Reach 5	Reach 6	Reach 7	Reach 8
1960	0	0	0	0	0	0	0	0	0	0	0
1961	0	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	62,918	5,678	0	0	0	0	0
1963	0	0	0	0	134,818	17,798	0	0	0	0	0
1964	0	0	0	0	136,317	29,423	0	0	0	0	0
1965	0	0	0	0	236,619	22,579	43,910	0	1,856	6,188	3,197
1966	0	0	0	0	142,000	16,000	63,000	0	1,000	6,000	14,000
1967	0	0	0	0	136,000	17,000	66,000	0	1,000	7,000	14,000
1968	0	0	28,000	28,000	120,000	17,000	67,000	0	1,000	7,000	15,000
1969	0	0	28,000	28,000	138,000	18,000	68,000	8,000	1,000	7,000	15,000
1970	0	0	28,000	28,000	142,000	17,000	66,000	8,000	1,000	7,000	15,000
1971	0	0	28,000	28,000	141,000	17,000	67,000	8,000	1,000	7,000	15,000
1972	0	0	28,000	28,000	134,000	17,000	67,000	8,000	1,000	7,000	15,000
1973	0	0	27,000	27,000	132,000	17,000	66,000	9,000	1,000	7,000	14,000
1974	0	0	27,000	27,000	133,000	17,000	65,000	9,000	1,000	7,000	14,000
1975	0	0	27,000	27,000	130,000	17,000	65,000	9,000	1,000	7,000	14,000
1976	0	0	27,000	27,000	130,000	17,000	65,000	9,000	1,000	7,000	14,000
1977	0	0	27,000	27,000	130,000	17,000	65,000	9,000	1,000	7,000	14,000
1978	0	0	27,000	27,000	129,000	17,000	65,000	9,000	1,000	7,000	14,000
1979	0	0	27,000	27,000	129,000	17,000	65,000	9,000	1,000	7,000	14,000
1980	81,000	41,000	22,000	144,000	129,000	17,000	65,000	9,000	1,000	7,000	14,000
1981	80,000	41,000	22,000	143,000	129,000	17,000	65,000	9,000	1,000	7,000	14,000
1982	80,000	41,000	22,000	143,000	129,000	17,000	65,000	9,000	1,000	7,000	14,000
1983	80,000	41,000	22,000	143,000	130,000	17,000	65,000	9,000	1,000	7,000	14,000
1984	80,000	41,000	22,000	143,000	129,000	17,000	65,000	9,000	1,000	7,000	14,000
1985	80,000	41,000	22,000	143,000	128,000	17,000	65,000	9,000	1,000	7,000	14,000
1986	80,000	41,000	22,000	143,000	127,000	17,000	65,000	9,000	1,000	7,000	14,000
1987	80,000	41,000	22,000	143,000	127,000	17,000	65,000	9,000	1,000	7,000	14,000
1988	80,000	41,000	22,000	143,000	127,000	17,000	65,000	9,000	1,000	7,000	14,000
1989	80,000	41,000	22,000	143,000	127,000	17,000	65,000	9,000	1,000	7,000	14,000
1990	80,000	41,000	22,000	143,000	127,000	17,000	65,000	9,000	1,000	7,000	14,000
1991	80,000	41,000	22,000	143,000	127,000	17,000	65,000	9,000	1,000	7,000	14,000
1992	80,000	41,000	22,000	143,000	126,000	17,000	65,000	9,000	1,000	7,000	14,000
1993	80,000	41,000	22,000	143,000	126,000	17,000	65,000	9,000	1,000	7,000	14,000
1994	80,000	41,000	22,000	143,000	126,000	17,000	65,000	9,000	1,000	7,000	14,000
1995	80,000	41,000	22,000	143,000	126,000	17,000	65,000	9,000	1,000	7,000	14,000
1996	80,000	41,000	22,000	143,000	126,000	17,000	65,000	9,000	1,000	7,000	14,000
1997	80,000	41,000	22,000	143,000	126,000	17,000	65,000	9,000	1,000	7,000	14,000
1998	80,000	41,000	22,000	143,000	126,000	17,000	65,000	9,000	1,000	7,000	14,000
1999	80,000	41,000	22,000	143,000	126,000	17,000	65,000	9,000	1,000	7,000	14,000
2000*	80,000	41,000	22,000	143,000	126,000	17,000	65,000	9,000	1,000	7,000	14,000

* And thereafter for the remainder of the project repayment period.

TABLE B-9 (Continued)

ACTUAL AND PROJECTED MINIMUM OPERATION, MAINTENANCE, POWER, AND REPLACEMENT COSTS ALLOCATED TO TRANSPORTATION FOR EACH AQUEDUCT REACH

(in dollars)

CALENDAR YEAR	SOUTH BAY AQUEDUCT (Continued)		CALIFORNIA AQUEDUCT								
			NORTH SAN JOAQUIN DIVISION			SAN LUIS DIVISION					
	Reach 9	Total	Reach 1	Reach 2	Subtotal	Reach 3	Reach 4	Reach 5	Reach 6	Reach 7	Subtotal
1960	0	0	0	0	0	0	0	0	0	0	0
1961	0	0	0	0	0	0	0	0	0	0	0
1962	0	68,596	0	0	0	0	0	0	0	0	0
1963	0	152,616	0	0	0	0	0	0	0	0	0
1964	0	165,740	0	0	0	0	0	0	0	0	0
1965	5,517	319,866	0	0	0	0	0	0	0	0	0
1966	26,000	268,000	0	0	0	0	0	0	0	0	0
1967	28,000	269,000	405,000	0	405,000	0	0	0	0	0	0
1968	28,000	255,000	1,161,000	668,000	1,829,000	56,000	399,000	194,000	67,000	106,000	822,000
1969	28,000	283,000	1,428,000	663,000	2,091,000	65,000	420,000	224,000	78,000	122,000	909,000
1970	28,000	284,000	1,383,000	700,000	2,083,000	65,000	404,000	222,000	77,000	122,000	890,000
1971	28,000	284,000	1,398,000	688,000	2,086,000	67,000	424,000	229,000	79,000	125,000	924,000
1972	28,000	277,000	1,362,000	687,000	2,049,000	66,000	420,000	228,000	79,000	124,000	917,000
1973	28,000	274,000	1,323,000	676,000	1,999,000	65,000	430,000	224,000	78,000	122,000	919,000
1974	28,000	274,000	1,343,000	675,000	2,018,000	65,000	438,000	224,000	78,000	122,000	927,000
1975	27,000	270,000	1,338,000	674,000	2,012,000	65,000	432,000	224,000	77,000	122,000	920,000
1976	27,000	270,000	1,316,000	674,000	1,990,000	65,000	425,000	223,000	77,000	122,000	912,000
1977	27,000	270,000	1,327,000	674,000	2,001,000	65,000	428,000	223,000	77,000	122,000	915,000
1978	27,000	269,000	1,297,000	674,000	1,971,000	65,000	430,000	223,000	77,000	122,000	917,000
1979	27,000	269,000	1,294,000	674,000	1,968,000	65,000	434,000	223,000	77,000	122,000	921,000
1980	27,000	269,000	1,290,000	674,000	1,964,000	65,000	440,000	223,000	77,000	122,000	927,000
1981	27,000	269,000	1,291,000	674,000	1,965,000	65,000	439,000	223,000	77,000	122,000	926,000
1982	27,000	269,000	1,299,000	674,000	1,973,000	65,000	441,000	223,000	77,000	122,000	928,000
1983	27,000	270,000	1,301,000	674,000	1,975,000	65,000	445,000	223,000	77,000	122,000	932,000
1984	27,000	269,000	1,286,000	674,000	1,960,000	65,000	443,000	223,000	77,000	122,000	930,000
1985	27,000	268,000	1,264,000	674,000	1,938,000	65,000	436,000	223,000	77,000	122,000	923,000
1986	27,000	267,000	1,315,000	674,000	1,989,000	65,000	413,000	223,000	77,000	122,000	900,000
1987	27,000	267,000	1,293,000	674,000	1,967,000	65,000	412,000	223,000	77,000	122,000	899,000
1988	27,000	267,000	1,284,000	674,000	1,958,000	65,000	413,000	223,000	77,000	122,000	900,000
1989	27,000	267,000	1,284,000	674,000	1,958,000	65,000	413,000	223,000	77,000	122,000	900,000
1990	27,000	267,000	1,295,000	674,000	1,969,000	65,000	427,000	223,000	77,000	122,000	914,000
1991	27,000	267,000	1,294,000	674,000	1,968,000	65,000	428,000	223,000	77,000	122,000	915,000
1992	27,000	266,000	1,297,000	674,000	1,971,000	65,000	428,000	223,000	77,000	122,000	915,000
1993	27,000	266,000	1,297,000	674,000	1,971,000	65,000	428,000	223,000	77,000	122,000	915,000
1994	27,000	266,000	1,297,000	674,000	1,971,000	65,000	428,000	223,000	77,000	122,000	915,000
1995	27,000	266,000	1,297,000	674,000	1,971,000	65,000	428,000	223,000	77,000	122,000	915,000
1996	27,000	266,000	1,297,000	674,000	1,971,000	65,000	428,000	223,000	77,000	122,000	915,000
1997	27,000	266,000	1,297,000	674,000	1,971,000	65,000	428,000	223,000	77,000	122,000	915,000
1998	27,000	266,000	1,297,000	674,000	1,971,000	65,000	428,000	223,000	77,000	122,000	915,000
1999	27,000	266,000	1,297,000	674,000	1,971,000	65,000	428,000	223,000	77,000	122,000	915,000
2000*	27,000	266,000	1,297,000	674,000	1,971,000	65,000	428,000	223,000	77,000	122,000	915,000

* And thereafter for the remainder of the project repayment period.

TABLE B-9 (Continued)

ACTUAL AND PROJECTED MINIMUM OPERATION, MAINTENANCE, POWER, AND REPLACEMENT COSTS ALLOCATED TO TRANSPORTATION FOR EACH AQUEDUCT REACH

(in dollars)

CALENDAR YEAR	CALIFORNIA AQUEDUCT (Continued)										
	SOUTH SAN JOAQUIN DIVISION										
	Reach 8	Reach 9	Reach 10A	Reach 11B	Reach 12D	Reach 12E	Reach 13B	Reach 14A	Reach 14B	Reach 14C	Reach 15
1960	0	0	0	0	0	0	0	0	0	0	0
1961	0	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0	0	0	0	0
1967	0	0	0	0	0	0	0	0	0	0	0
1968	102,000	0	0	0	0	0	0	0	0	0	0
1969	128,000	128,000	132,000	89,000	0	0	0	0	0	0	0
1970	123,000	123,000	125,000	85,000	152,000	91,000	125,000	0	0	0	0
1971	150,000	150,000	154,000	105,000	185,000	113,000	155,000	426,000	120,000	100,000	291,000
1972	152,000	152,000	156,000	108,000	190,000	114,000	156,000	443,000	122,000	102,000	308,000
1973	150,000	150,000	154,000	106,000	189,000	113,000	156,000	437,000	121,000	101,000	304,000
1974	150,000	150,000	154,000	106,000	188,000	113,000	155,000	434,000	120,000	100,000	306,000
1975	150,000	150,000	154,000	105,000	188,000	112,000	155,000	429,000	120,000	100,000	301,000
1976	150,000	150,000	154,000	105,000	188,000	112,000	155,000	425,000	120,000	100,000	294,000
1977	150,000	150,000	154,000	105,000	188,000	112,000	155,000	426,000	120,000	100,000	305,000
1978	150,000	150,000	154,000	105,000	188,000	112,000	155,000	433,000	120,000	100,000	306,000
1979	150,000	150,000	154,000	105,000	188,000	112,000	155,000	436,000	120,000	100,000	308,000
1980	150,000	150,000	154,000	105,000	188,000	112,000	155,000	435,000	120,000	100,000	308,000
1981	150,000	150,000	154,000	105,000	188,000	112,000	155,000	436,000	120,000	100,000	308,000
1982	150,000	150,000	154,000	105,000	188,000	112,000	155,000	435,000	120,000	100,000	309,000
1983	150,000	150,000	154,000	105,000	188,000	112,000	155,000	438,000	120,000	100,000	311,000
1984	150,000	150,000	154,000	105,000	188,000	112,000	155,000	436,000	120,000	100,000	309,000
1985	150,000	150,000	154,000	105,000	188,000	112,000	155,000	432,000	120,000	100,000	302,000
1986	150,000	150,000	154,000	105,000	188,000	112,000	155,000	422,000	120,000	100,000	295,000
1987	150,000	150,000	154,000	105,000	188,000	112,000	155,000	420,000	120,000	100,000	293,000
1988	150,000	150,000	154,000	105,000	188,000	112,000	155,000	421,000	120,000	100,000	294,000
1989	150,000	150,000	154,000	105,000	188,000	112,000	155,000	422,000	120,000	100,000	295,000
1990	150,000	150,000	154,000	105,000	188,000	112,000	155,000	426,000	120,000	100,000	294,000
1991	150,000	150,000	154,000	105,000	188,000	112,000	155,000	426,000	120,000	100,000	297,000
1992	150,000	150,000	154,000	105,000	188,000	112,000	155,000	426,000	120,000	100,000	297,000
1993	150,000	150,000	154,000	105,000	188,000	112,000	155,000	426,000	120,000	100,000	297,000
1994	150,000	150,000	154,000	105,000	188,000	112,000	155,000	426,000	120,000	100,000	297,000
1995	150,000	150,000	154,000	105,000	188,000	112,000	155,000	426,000	120,000	100,000	297,000
1996	150,000	150,000	154,000	105,000	188,000	112,000	155,000	426,000	120,000	100,000	297,000
1997	150,000	150,000	154,000	105,000	188,000	112,000	155,000	426,000	120,000	100,000	297,000
1998	150,000	150,000	154,000	105,000	188,000	112,000	155,000	426,000	120,000	100,000	297,000
1999	150,000	150,000	154,000	105,000	188,000	112,000	155,000	426,000	120,000	100,000	297,000
2000*	150,000	150,000	154,000	105,000	188,000	112,000	155,000	426,000	120,000	100,000	297,000

* And thereafter for the remainder of the project repayment period.

TABLE B-9 (Continued)

ACTUAL AND PROJECTED MINIMUM OPERATION, MAINTENANCE, POWER, AND REPLACEMENT COSTS ALLOCATED TO TRANSPORTATION FOR EACH AQUEDUCT REACH

(in dollars)

CALENDAR YEAR	CALIFORNIA AQUEDUCT (Continued)										
	SOUTH SAN JOAQUIN DIVISION		TEHACHAPI DIVISION			MOJAVE DIVISION					
	Reach 16	Subtotal	Reach 17C	Reach 17D	Subtotal	Reach 18A	Reach 19	Reach 20	Reach 21	Reach 22A	Reach 22B
1960	0	0	0	0	0	0	0	0	0	0	0
1961	0	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0	0	0	0	0
1967	0	0	0	0	0	0	0	0	0	0	0
1968	0	102,000	0	0	0	0	0	0	0	0	0
1969	0	477,000	0	0	0	0	0	0	0	0	0
1970	0	824,000	0	0	0	0	0	0	0	0	0
1971	704,000	2,653,000	1,734,000	15,000	1,749,000	0	0	0	0	0	0
1972	750,000	2,753,000	1,907,000	16,000	1,923,000	45,000	260,000	298,000	82,000	71,000	862,000
1973	738,000	2,719,000	1,870,000	16,000	1,886,000	38,000	255,000	294,000	80,000	70,000	861,000
1974	739,000	2,715,000	1,838,000	16,000	1,854,000	37,000	255,000	293,000	80,000	70,000	849,000
1975	730,000	2,694,000	1,825,000	16,000	1,841,000	36,000	255,000	293,000	80,000	70,000	834,000
1976	717,000	2,670,000	1,799,000	16,000	1,815,000	35,000	255,000	292,000	80,000	70,000	835,000
1977	724,000	2,689,000	1,835,000	16,000	1,851,000	34,000	255,000	292,000	80,000	70,000	827,000
1978	727,000	2,700,000	1,856,000	16,000	1,872,000	33,000	255,000	292,000	80,000	70,000	839,000
1979	735,000	2,713,000	1,889,000	16,000	1,905,000	34,000	255,000	292,000	80,000	70,000	844,000
1980	735,000	2,712,000	1,899,000	16,000	1,915,000	33,000	255,000	292,000	80,000	70,000	831,000
1981	737,000	2,715,000	1,911,000	16,000	1,927,000	33,000	255,000	292,000	80,000	70,000	831,000
1982	738,000	2,716,000	1,919,000	16,000	1,935,000	31,000	255,000	292,000	80,000	70,000	857,000
1983	743,000	2,726,000	1,945,000	16,000	1,961,000	33,000	255,000	292,000	80,000	70,000	853,000
1984	739,000	2,718,000	1,936,000	16,000	1,952,000	33,000	255,000	292,000	80,000	70,000	844,000
1985	725,000	2,693,000	1,890,000	16,000	1,906,000	33,000	255,000	292,000	80,000	70,000	836,000
1986	711,000	2,662,000	1,843,000	16,000	1,859,000	34,000	255,000	292,000	80,000	70,000	830,000
1987	708,000	2,655,000	1,835,000	16,000	1,851,000	33,000	255,000	292,000	80,000	70,000	824,000
1988	710,000	2,659,000	1,845,000	16,000	1,861,000	33,000	255,000	292,000	80,000	70,000	827,000
1989	713,000	2,664,000	1,859,000	16,000	1,875,000	33,000	255,000	292,000	80,000	70,000	826,000
1990	712,000	2,666,000	1,853,000	16,000	1,869,000	33,000	255,000	292,000	80,000	70,000	827,000
1991	712,000	2,669,000	1,852,000	16,000	1,868,000	33,000	255,000	292,000	80,000	70,000	829,000
1992	712,000	2,669,000	1,852,000	16,000	1,868,000	33,000	255,000	292,000	80,000	70,000	829,000
1993	712,000	2,669,000	1,852,000	16,000	1,868,000	33,000	255,000	292,000	80,000	70,000	829,000
1994	712,000	2,669,000	1,852,000	16,000	1,868,000	33,000	255,000	292,000	80,000	70,000	829,000
1995	712,000	2,669,000	1,852,000	16,000	1,868,000	33,000	255,000	292,000	80,000	70,000	829,000
1996	712,000	2,669,000	1,852,000	16,000	1,868,000	33,000	255,000	292,000	80,000	70,000	829,000
1997	712,000	2,669,000	1,852,000	16,000	1,868,000	33,000	255,000	292,000	80,000	70,000	829,000
1998	712,000	2,669,000	1,852,000	16,000	1,868,000	33,000	255,000	292,000	80,000	70,000	829,000
1999	712,000	2,669,000	1,852,000	16,000	1,868,000	33,000	255,000	292,000	80,000	70,000	829,000
2000*	712,000	2,669,000	1,852,000	16,000	1,868,000	33,000	255,000	292,000	80,000	70,000	829,000

* And thereafter for the remainder of the project repayment period.

TABLE B-9 (Continued)

ACTUAL AND PROJECTED MINIMUM OPERATION, MAINTENANCE, POWER, AND REPLACEMENT COSTS ALLOCATED TO TRANSPORTATION FOR EACH AQUEDUCT REACH

(in dollars)

CALENDAR YEAR	CALIFORNIA AQUEDUCT (Continued)											
	MOJAVE DIVISION (Continued)			SANTA ANA DIVISION							WEST BRANCH	
	Reach 23	Reach 24	Subtotal	Reach 25	Reach 26	Reach 27	Reach 28A	Reach 28B	Reach 28C	Subtotal	Reach 29A	Reach 29B
1960	0	0	0	0	0	0	0	0	0	0	0	0
1961	0	0	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0	0	0	0	0	0
1967	0	0	0	0	0	0	0	0	0	0	0	0
1968	0	0	0	0	0	0	0	0	0	0	0	0
1969	0	0	0	0	0	0	0	0	0	0	0	0
1970	0	0	0	0	0	0	0	0	0	0	0	0
1971	0	0	0	0	0	0	0	0	0	0	199,000	60,000
1972	4,000	32,000	1,654,000	12,000	204,000	142,000	22,000	63,000	32,000	475,000	242,000	63,000
1973	5,000	32,000	1,635,000	12,000	190,000	130,000	21,000	62,000	32,000	447,000	225,000	62,000
1974	5,000	32,000	1,621,000	12,000	189,000	130,000	21,000	62,000	32,000	446,000	226,000	61,000
1975	5,000	32,000	1,605,000	12,000	190,000	132,000	21,000	62,000	32,000	449,000	227,000	61,000
1976	5,000	32,000	1,604,000	12,000	189,000	130,000	21,000	62,000	32,000	446,000	225,000	61,000
1977	5,000	32,000	1,595,000	12,000	177,000	122,000	21,000	62,000	32,000	426,000	225,000	61,000
1978	5,000	32,000	1,606,000	12,000	175,000	121,000	21,000	62,000	32,000	423,000	229,000	61,000
1979	5,000	32,000	1,612,000	12,000	174,000	121,000	21,000	62,000	32,000	422,000	229,000	61,000
1980	5,000	32,000	1,598,000	12,000	176,000	122,000	21,000	62,000	32,000	425,000	225,000	61,000
1981	5,000	32,000	1,598,000	12,000	176,000	122,000	21,000	62,000	32,000	425,000	225,000	61,000
1982	5,000	32,000	1,622,000	12,000	178,000	124,000	21,000	62,000	32,000	429,000	229,000	61,000
1983	5,000	32,000	1,620,000	12,000	177,000	122,000	21,000	62,000	32,000	426,000	230,000	61,000
1984	5,000	32,000	1,611,000	12,000	177,000	123,000	21,000	62,000	32,000	427,000	230,000	61,000
1985	5,000	32,000	1,603,000	12,000	177,000	122,000	21,000	62,000	32,000	426,000	227,000	61,000
1986	5,000	32,000	1,598,000	12,000	183,000	126,000	21,000	62,000	32,000	436,000	226,000	61,000
1987	5,000	32,000	1,591,000	12,000	182,000	126,000	21,000	62,000	32,000	435,000	226,000	61,000
1988	5,000	32,000	1,594,000	12,000	181,000	125,000	21,000	62,000	32,000	433,000	228,000	61,000
1989	5,000	32,000	1,593,000	12,000	181,000	125,000	21,000	62,000	32,000	433,000	228,000	61,000
1990	5,000	32,000	1,594,000	12,000	180,000	124,000	21,000	62,000	32,000	431,000	228,000	61,000
1991	5,000	32,000	1,596,000	12,000	180,000	124,000	21,000	62,000	32,000	431,000	227,000	61,000
1992	5,000	32,000	1,596,000	12,000	180,000	124,000	21,000	62,000	32,000	431,000	227,000	61,000
1993	5,000	32,000	1,596,000	12,000	180,000	124,000	21,000	62,000	32,000	431,000	227,000	61,000
1994	5,000	32,000	1,596,000	12,000	180,000	124,000	21,000	62,000	32,000	431,000	227,000	61,000
1995	5,000	32,000	1,596,000	12,000	180,000	124,000	21,000	62,000	32,000	431,000	227,000	61,000
1996	5,000	32,000	1,596,000	12,000	180,000	124,000	21,000	62,000	32,000	431,000	227,000	61,000
1997	5,000	32,000	1,596,000	12,000	180,000	124,000	21,000	62,000	32,000	431,000	227,000	61,000
1998	5,000	32,000	1,596,000	12,000	180,000	124,000	21,000	62,000	32,000	431,000	227,000	61,000
1999	5,000	32,000	1,596,000	12,000	180,000	124,000	21,000	62,000	32,000	431,000	227,000	61,000
2000*	5,000	32,000	1,596,000	12,000	180,000	124,000	21,000	62,000	32,000	431,000	227,000	61,000

* And thereafter for the remainder of the project repayment period.

TABLE B-9 (Continued)

ACTUAL AND PROJECTED MINIMUM OPERATION, MAINTENANCE, POWER, AND REPLACEMENT COSTS ALLOCATED TO TRANSPORTATION FOR EACH AQUEDUCT REACH

(in dollars)

CALENDAR YEAR	CALIFORNIA AQUEDUCT (Continued)											GRAND TOTAL
	WEST BRANCH (Continued)					COASTAL BRANCH					Total	
	Reach 29C	Reach 29D	Reach 29E	Reach 30	Subtotal	Reach 31A	Reach 33A	Reach 34	Reach 35	Subtotal		
1960	0	0	0	0	0	0	0	0	0	0	0	0
1961	0	0	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	0	0	0	68,596
1963	0	0	0	0	0	0	0	0	0	0	0	152,616
1964	0	0	0	0	0	0	0	0	0	0	0	165,740
1965	0	0	0	0	0	0	0	0	0	0	0	319,866
1966	0	0	0	0	0	0	0	0	0	0	0	268,000
1967	0	0	0	0	0	0	0	0	0	0	405,000	674,000
1968	0	0	0	0	0	91,000	0	0	0	91,000	2,844,000	3,127,000
1969	0	0	0	0	0	110,000	0	0	0	110,000	3,587,000	3,898,000
1970	0	0	0	0	0	110,000	0	0	0	110,000	3,907,000	4,219,000
1971	392,000	32,000	533,000	35,000	1,251,000	129,000	0	0	0	129,000	8,792,000	9,104,000
1972	395,000	31,000	655,000	34,000	1,420,000	131,000	0	0	0	131,000	11,322,000	11,627,000
1973	427,000	31,000	561,000	34,000	1,340,000	128,000	0	0	0	128,000	11,073,000	11,374,000
1974	414,000	31,000	529,000	34,000	1,295,000	128,000	0	0	0	128,000	11,004,000	11,305,000
1975	414,000	31,000	543,000	34,000	1,310,000	128,000	0	0	0	128,000	10,959,000	11,256,000
1976	412,000	31,000	537,000	34,000	1,300,000	127,000	0	0	0	127,000	10,864,000	11,161,000
1977	407,000	31,000	543,000	34,000	1,301,000	127,000	0	0	0	127,000	10,905,000	11,202,000
1978	409,000	31,000	539,000	34,000	1,303,000	127,000	0	0	0	127,000	10,919,000	11,215,000
1979	410,000	31,000	536,000	34,000	1,301,000	127,000	0	0	0	127,000	10,969,000	11,265,000
1980	407,000	31,000	535,000	34,000	1,293,000	130,000	258,000	9,000	27,000	424,000	11,258,000	11,671,000
1981	404,000	31,000	530,000	34,000	1,285,000	130,000	245,000	9,000	27,000	411,000	11,252,000	11,664,000
1982	402,000	31,000	533,000	34,000	1,290,000	130,000	218,000	9,000	27,000	384,000	11,277,000	11,689,000
1983	404,000	31,000	526,000	34,000	1,286,000	129,000	200,000	9,000	27,000	365,000	11,291,000	11,704,000
1984	407,000	31,000	530,000	34,000	1,293,000	130,000	212,000	9,000	27,000	378,000	11,269,000	11,681,000
1985	405,000	31,000	530,000	34,000	1,288,000	128,000	185,000	9,000	27,000	349,000	11,126,000	11,537,000
1986	411,000	31,000	545,000	34,000	1,308,000	126,000	183,000	9,000	27,000	345,000	11,097,000	11,507,000
1987	408,000	31,000	549,000	34,000	1,309,000	126,000	179,000	9,000	27,000	341,000	11,048,000	11,458,000
1988	407,000	31,000	551,000	34,000	1,312,000	127,000	178,000	9,000	27,000	341,000	11,058,000	11,468,000
1989	406,000	31,000	552,000	34,000	1,312,000	126,000	176,000	9,000	27,000	338,000	11,073,000	11,483,000
1990	407,000	31,000	550,000	34,000	1,311,000	127,000	175,000	9,000	27,000	338,000	11,092,000	11,502,000
1991	408,000	31,000	550,000	34,000	1,311,000	127,000	175,000	9,000	27,000	338,000	11,096,000	11,506,000
1992	408,000	31,000	550,000	34,000	1,311,000	127,000	175,000	9,000	27,000	338,000	11,099,000	11,508,000
1993	408,000	31,000	550,000	34,000	1,311,000	127,000	175,000	9,000	27,000	338,000	11,099,000	11,508,000
1994	408,000	31,000	550,000	34,000	1,311,000	127,000	175,000	9,000	27,000	338,000	11,099,000	11,508,000
1995	408,000	31,000	550,000	34,000	1,311,000	127,000	175,000	9,000	27,000	338,000	11,099,000	11,508,000
1996	408,000	31,000	550,000	34,000	1,311,000	127,000	175,000	9,000	27,000	338,000	11,099,000	11,508,000
1997	408,000	31,000	550,000	34,000	1,311,000	127,000	175,000	9,000	27,000	338,000	11,099,000	11,508,000
1998	408,000	31,000	550,000	34,000	1,311,000	127,000	175,000	9,000	27,000	338,000	11,099,000	11,508,000
1999	408,000	31,000	550,000	34,000	1,311,000	127,000	175,000	9,000	27,000	338,000	11,099,000	11,508,000
2000*	408,000	31,000	550,000	34,000	1,311,000	127,000	175,000	9,000	27,000	338,000	11,099,000	11,508,000

* And thereafter for the remainder of the project repayment period.

TABLE B-10

ACTUAL AND PROJECTED VARIABLE OPERATION, MAINTENANCE, POWER, AND REPLACEMENT COSTS ALLOCATED TO TRANSPORTATION

(in dollars)

CALENDAR YEAR	NORTH BAY AQUEDUCT			SOUTH BAY AQUEDUCT		CALIFORNIA AQUEDUCT					
	Reach 1	Reach 3		Reach 1		Reach 1	Reach 4	Reach 14A	Reach 15	Reach 16	Reach 17C
	Calhoun Pumping Plant	Cordelia Pumping Plant	Total	South Bay and Del Valle Pumping Plants 1/	Total	Delta Pumping Plant	Dos Amigos Pumping Plant	Buena Vista Pumping Plant	Wheeler Ridge Pumping Plant	Wind Gap Pumping Plant	Tehachapi Pumping Plant
1960	0	0	0	0	0	0	0	0	0	0	0
1961	0	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	38,709	38,709	0	0	0	0	0	0
1963	0	0	0	60,415	60,415	0	0	0	0	0	0
1964	0	0	0	78,335	78,335	0	0	0	0	0	0
1965	0	0	0	149,141	149,141	0	0	0	0	0	0
1966	0	0	0	224,000	224,000	0	0	0	0	0	0
1967	0	0	0	288,000	288,000	184,000	0	0	0	0	0
1968	0	15,000	15,000	388,000	388,000	261,000	187,000	0	0	0	0
1969	0	17,000	17,000	370,000	370,000	563,000	201,000	0	0	0	0
1970	0	19,000	19,000	433,000	433,000	335,000	177,000	0	0	0	0
1971	0	21,000	21,000	423,000	423,000	550,000	346,000	341,000	404,000	830,000	2,250,000
1972	0	21,000	21,000	438,000	438,000	825,000	460,000	533,000	616,000	1,299,000	3,899,000
1973	0	21,000	21,000	441,000	441,000	850,000	636,000	663,000	771,000	1,644,000	4,836,000
1974	0	25,000	25,000	470,000	470,000	1,090,000	772,000	726,000	861,000	1,814,000	4,949,000
1975	0	32,000	32,000	421,000	421,000	1,203,000	829,000	790,000	929,000	1,977,000	5,492,000
1976	0	33,000	33,000	423,000	423,000	1,180,000	872,000	844,000	992,000	2,096,000	5,975,000
1977	0	34,000	34,000	429,000	429,000	1,401,000	1,004,000	979,000	1,279,000	2,466,000	7,284,000
1978	0	35,000	35,000	414,000	414,000	1,244,000	1,133,000	1,198,000	1,430,000	2,792,000	8,497,000
1979	0	40,000	40,000	426,000	426,000	1,325,000	1,286,000	1,364,000	1,626,000	3,206,000	9,995,000
1980	14,000	47,000	61,000	418,000	418,000	1,409,000	1,414,000	1,508,000	1,790,000	3,567,000	11,430,000
1981	6,000	48,000	54,000	421,000	421,000	1,535,000	1,520,000	1,627,000	1,944,000	3,917,000	12,696,000
1982	6,000	39,000	45,000	450,000	450,000	1,750,000	1,667,000	1,768,000	2,113,000	4,234,000	13,893,000
1983	6,000	44,000	50,000	468,000	468,000	1,914,000	1,872,000	1,989,000	2,339,000	4,740,000	15,585,000
1984	6,000	61,000	67,000	457,000	457,000	1,795,000	1,956,000	2,064,000	2,444,000	4,938,000	16,353,000
1985	6,000	60,000	66,000	423,000	423,000	1,551,000	1,925,000	2,087,000	2,375,000	4,808,000	15,976,000
1986	6,000	44,000	50,000	403,000	403,000	2,546,000	1,580,000	1,932,000	2,306,000	4,660,000	15,438,000
1987	6,000	44,000	50,000	399,000	399,000	2,277,000	1,635,000	1,980,000	2,354,000	4,830,000	16,076,000
1988	6,000	46,000	52,000	403,000	403,000	2,225,000	1,762,000	2,111,000	2,541,000	5,175,000	17,356,000
1989	6,000	48,000	54,000	427,000	427,000	2,291,000	1,839,000	2,252,000	2,662,000	5,468,000	18,434,000
1990	6,000	50,000	56,000	441,000	441,000	2,581,000	2,227,000	2,420,000	2,663,000	5,451,000	18,435,000
1991	6,000	50,000	56,000	445,000	445,000	2,587,000	2,243,000	2,441,000	2,789,000	5,476,000	18,488,000
1992	6,000	50,000	56,000	453,000	453,000	2,649,000	2,243,000	2,441,000	2,789,000	5,476,000	18,488,000
1993	6,000	50,000	56,000	457,000	457,000	2,651,000	2,243,000	2,441,000	2,789,000	5,476,000	18,488,000
1994	6,000	50,000	56,000	462,000	462,000	2,653,000	2,243,000	2,441,000	2,789,000	5,476,000	18,488,000
1995	6,000	50,000	56,000	464,000	464,000	2,653,000	2,243,000	2,441,000	2,789,000	5,476,000	18,488,000
1996	6,000	50,000	56,000	466,000	466,000	2,655,000	2,243,000	2,441,000	2,789,000	5,476,000	18,488,000
1997	6,000	50,000	56,000	468,000	468,000	2,655,000	2,243,000	2,441,000	2,789,000	5,476,000	18,488,000
1998	6,000	50,000	56,000	468,000	468,000	2,655,000	2,243,000	2,441,000	2,789,000	5,476,000	18,488,000
1999	6,000	50,000	56,000	468,000	468,000	2,655,000	2,243,000	2,441,000	2,789,000	5,476,000	18,488,000
2000*	6,000	50,000	56,000	468,000	468,000	2,655,000	2,243,000	2,441,000	2,789,000	5,476,000	18,488,000

* And thereafter for the remainder of the project repayment period.

TABLE B-10 (Continued)

ACTUAL AND PROJECTED VARIABLE OPERATION, MAINTENANCE, POWER, AND REPLACEMENT COSTS ALLOCATED TO TRANSPORTATION

(in dollars)

CALENDAR YEAR	CALIFORNIA AQUEDUCT (Continued)										GRAND TOTAL
	Reach 18A	Reach 22B	Reach 26	Reach 27	Reach 29A	Reach 29C	Reach 29E	Reach 31	Reach 33	Total	
	Cottonwood Powerplant	Pearblossom Pumping Plant	Upper Devil Canyon Powerplant	Lower Devil Canyon Powerplant	Oso Pumping Plant	Pyramid Powerplant	Castaic Powerplant	Las Perillas and Badger Hill Pumping Plants	Devil's Den Sawtooth and Polonio PP's and San Luis Obispo Pwp		
1960	0	0	0	0	0	0	0	0	0	0	0
1961	0	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	0	0	38,709
1963	0	0	0	0	0	0	0	0	0	0	60,415
1964	0	0	0	0	0	0	0	0	0	0	78,335
1965	0	0	0	0	0	0	0	0	0	0	149,141
1966	0	0	0	0	0	0	0	0	0	0	224,000
1967	0	0	0	0	0	0	0	0	0	184,000	472,000
1968	0	0	0	0	0	0	0	159,000	0	607,000	1,010,000
1969	0	0	0	0	0	0	0	149,000	0	913,000	1,300,000
1970	0	0	0	0	0	0	0	139,000	0	651,000	1,103,000
1971	0	0	0	0	283,000	474,000-	298,000-	138,000	0	4,370,000	4,814,000
1972	41,000-	413,000	399,000-	263,000-	285,000	427,000-	455,000-	147,000	0	6,892,000	7,351,000
1973	56,000-	681,000	295,000-	194,000-	328,000	595,000-	1,421,000-	172,000	0	8,020,000	8,482,000
1974	69,000-	637,000	323,000-	213,000-	340,000	842,000-	2,361,000-	193,000	0	7,574,000	8,069,000
1975	82,000-	569,000	318,000-	209,000-	433,000	976,000-	2,225,000-	187,000	0	8,599,000	9,052,000
1976	97,000-	669,000	427,000-	278,000-	453,000	1,124,000-	2,720,000-	189,000	0	8,624,000	9,080,000
1977	124,000-	658,000	820,000-	542,000-	504,000	1,475,000-	2,800,000-	194,000	0	10,008,000	10,471,000
1978	154,000-	882,000	969,000-	642,000-	670,000	1,545,000-	3,296,000-	220,000	0	11,460,000	11,909,000
1979	153,000-	1,049,000	1,086,000-	718,000-	755,000	1,686,000-	3,802,000-	254,000	0	13,415,000	13,881,000
1980	174,000-	932,000	1,130,000-	745,000-	692,000	1,947,000-	4,171,000-	181,000	97,000	14,853,000	15,332,000
1981	206,000-	1,066,000	1,287,000-	851,000-	740,000	2,185,000-	4,684,000-	176,000	126,000	16,134,000	16,609,000
1982	268,000-	1,725,000	1,316,000-	873,000-	926,000	2,425,000-	4,735,000-	176,000	169,000	18,804,000	19,299,000
1983	262,000-	1,838,000	1,586,000-	1,050,000-	1,058,000	2,432,000-	5,548,000-	174,000	177,000	20,808,000	21,326,000
1984	272,000-	1,808,000	1,694,000-	1,115,000-	1,098,000	2,398,000-	5,533,000-	212,000	342,000	21,998,000	22,522,000
1985	311,000-	1,754,000	1,888,000-	1,249,000-	980,000	2,603,000-	5,790,000-	197,000	271,000	20,083,000	20,572,000
1986	294,000-	1,701,000	1,612,000-	1,064,000-	987,000	2,449,000-	4,762,000-	148,000	334,000	21,451,000	21,904,000
1987	319,000-	1,593,000	1,656,000-	1,091,000-	1,056,000	2,777,000-	4,826,000-	151,000	338,000	21,621,000	22,070,000
1988	326,000-	1,686,000	1,740,000-	1,152,000-	1,216,000	3,060,000-	4,998,000-	187,000	391,000	23,374,000	23,829,000
1989	355,000-	1,710,000	1,792,000-	1,188,000-	1,267,000	3,254,000-	5,105,000-	185,000	457,000	24,871,000	25,352,000
1990	352,000-	1,777,000	1,904,000-	1,254,000-	1,280,000	3,201,000-	5,316,000-	252,000	515,000	25,574,000	26,071,000
1991	345,000-	1,837,000	1,922,000-	1,270,000-	1,253,000	3,132,000-	5,323,000-	256,000	523,000	25,901,000	26,402,000
1992	345,000-	1,837,000	1,922,000-	1,270,000-	1,253,000	3,132,000-	5,323,000-	256,000	523,000	25,963,000	26,472,000
1993	345,000-	1,837,000	1,922,000-	1,270,000-	1,253,000	3,132,000-	5,323,000-	256,000	523,000	25,965,000	26,478,000
1994	345,000-	1,837,000	1,922,000-	1,270,000-	1,253,000	3,132,000-	5,323,000-	256,000	523,000	25,967,000	26,485,000
1995	345,000-	1,837,000	1,922,000-	1,270,000-	1,253,000	3,132,000-	5,323,000-	256,000	523,000	25,967,000	26,487,000
1996	345,000-	1,837,000	1,922,000-	1,270,000-	1,253,000	3,132,000-	5,323,000-	256,000	523,000	25,969,000	26,491,000
1997	345,000-	1,837,000	1,922,000-	1,270,000-	1,253,000	3,132,000-	5,323,000-	256,000	523,000	25,969,000	26,493,000
1998	345,000-	1,837,000	1,922,000-	1,270,000-	1,253,000	3,132,000-	5,323,000-	256,000	523,000	25,969,000	26,493,000
1999	345,000-	1,837,000	1,922,000-	1,270,000-	1,253,000	3,132,000-	5,323,000-	256,000	523,000	25,969,000	26,493,000
2000*	345,000-	1,837,000	1,922,000-	1,270,000-	1,253,000	3,132,000-	5,323,000-	256,000	523,000	25,969,000	26,493,000

* And thereafter for the remainder of the project repayment period.

TABLE B-11

ALLOCATED CAPITAL COSTS TO EACH CONTRACTOR

(in dollars)

CALENDAR YEAR	FUTURE CONTRACTORS			NORTH BAY AREA			SOUTH BAY AREA				CENTRAL COASTAL AREA		
	South Bay	Cedar Springs	Nuclear Powerplant (Assumed)	Napa County FC & WCD	Solano County FC & WCD	Total	Alameda County FC & WCD, Zone 7	Alameda County Water District	Santa Clara County FC & WD	Total	San Luis Obispo County FC & WCD	Santa Barbara County FC & WCD	Total
1952	48	53	282	0	0	0	74	78	305	457	111	260	371
1953	196	177	885	0	0	0	269	307	1311	1887	290	677	967
1954	551	196	1117	0	0	0	692	834	3874	5400	352	822	1174
1955	696	75	538	0	0	0	844	1038	4991	6873	179	417	596
1956	8464	66	1025	0	0	0	10089	12554	68471	91114	213	498	711
1957	19219	234	2442	12834	8046	20880	22867	28485	648510	699862	268	626	894
1958	32220	386	5810	29076	11805	40881	57134	56576	696666	810376	786	1833	2619
1959	64419	911	10841	17843	4704	22547	129591	119998	422412	672001	14906	38509	53415
1960	151029	1962	11740	10299	8659	18958	303914	280138	951848	1535900	28318	74293	102611
1961	436139	4241	20329	8142	7727	15869	882324	818907	2008864	3710095	20963	52688	73651
1962	327474	2058	33390	3415	2648	6063	535986	578728	1762175	2876889	38675	93449	132124
1963	628841	8440	115194	8271	6660	14931	523236	1267171	3488229	5278636	110814	265262	376076
1964	1070921	6387	214598	64567	17093	81660	739207	1070398	7451028	9260633	186598	443398	629996
1965	355818	12877	372878	199052	20409	219461	373771	434183	3424464	4232418	280559	659830	940389
1966	742749	35656	633503	641538	82462	724000	1492866	1164960	4017170	6674996	640733	1498336	2139069
1967	450592	38513	736741	1515277	101723	1617000	926453	720423	2369602	4016478	1184627	2768512	3953139
1968	198466	111672	707037	130892	160108	291000	414835	316840	960969	1692644	205631	484024	689655
1969	7342	339157	683518	96551	141449	238000	15344	11863	35414	62621	38639	94348	132987
1970	466	292614	236644	14739	19261	34000	972	887	2120	3979	20254	51450	71704
1971	35862	14367	79889	14137	19863	34000	74873	68260	163207	306340	23543	67761	91304
1972	35866	21405	5468	13341	18659	32000	74882	68268	163226	306376	98158	276199	374357
1973	0	16234	0	268793	128207	397000	0	0	0	0	155706	506294	662000
1974	0	15184	0	263201	125799	389000	0	0	0	0	287414	829586	1117000
1975	0	0	0	11545	17455	29000	0	0	0	0	675306	1727694	2403000
1976	0	0	0	87150	78850	166000	0	0	0	0	1848818	4425182	6274000
1977	0	0	0	132723	87277	220000	0	0	0	0	2327100	5691437	8018537
1978	0	0	0	1144426	1125574	2270000	0	0	0	0	3831155	11010431	14841586
1979	0	0	0	1907066	1679934	3587000	0	0	0	0	1842243	5957977	7800220
1980	0	0	0	0	0	0	0	0	0	0	0	0	0
1981	0	0	7300	0	0	0	0	0	0	0	5649	13181	18830
1982	0	0	14585	0	0	0	0	0	0	0	11285	26337	37622
1983	0	0	29179	0	0	0	0	0	0	0	40574	94689	135263
1984	0	0	21880	0	0	0	0	0	0	0	246406	575029	821435
1985	0	0	0	0	0	0	0	0	0	0	94490	220510	315000
1986	0	0	0	0	0	0	0	0	0	0	0	0	0
1987	1257	0	0	0	0	0	2626	2394	5723	10743	0	0	0
1988	10480	0	0	0	0	0	21880	19947	47693	89520	0	0	0
1989	16768	0	0	0	0	0	35008	31916	76308	143232	0	0	0
1990	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	4595883	922865	3946813	6594878	3874372	10469250	6639737	7075153	28774580	42489470	14260763	37951539	52212302

TABLE B-11 (Continued)

ALLOCATED CAPITAL COSTS TO EACH CONTRACTOR

(in dollars)

CALENDAR YEAR	SAN JOAQUIN VALLEY										SOUTHERN CALIFORNIA		
	Devil's Den Water District	Dudley Ridge Water District	Empire West Side Irrigation District	Hacienda Water District	Kern County Water Agency		Kings County (Assumed)	Oak Flat Water District	Tulare Lake Basin Water Storage District	Total	Antelope Valley-East Kern Water Agency	Big Bear Municipal Water District (Assumed)	Coachella Valley County Water District
					Agriculture	Municipal and Industrial							
1952	74	346	17	50	7966	983	17	15	649	10117	2665	269	849
1953	201	901	45	132	22717	2898	45	38	1677	28654	8552	896	2778
1954	242	1099	54	162	28172	3647	54	47	2040	35517	11501	1062	3423
1955	123	557	27	83	13896	1799	27	25	1035	17572	5854	459	1564
1956	146	667	31	99	21668	2999	31	30	1206	26877	8338	515	1922
1957	183	836	35	122	42487	6414	35	35	1416	51563	21905	1555	5492
1958	543	2451	113	360	103663	15006	114	82	4375	126707	41789	2750	10019
1959	3222	8568	430	1262	249103	31228	435	508	15986	310742	63024	3839	14447
1960	4978	10676	510	1572	306511	36006	519	638	19451	380861	68968	5990	20304
1961	6105	21122	1023	3110	530518	63583	1041	699	38758	665959	125204	12417	44068
1962	14075	54727	2685	8063	1117820	125452	2726	1946	101043	1428537	184436	10772	43367
1963	53587	226468	11593	33360	4247688	464614	11779	9425	428033	5486547	584660	33624	133526
1964	103989	356965	18432	52588	7103584	764551	18722	14870	677905	9111606	1139012	48903	220398
1965	179987	569394	29065	83881	12336104	1349913	29539	31565	1074531	15683979	1939715	80754	372431
1966	425396	1052517	50500	155051	23950125	2557141	51335	64722	1920578	30227365	3650523	153439	710664
1967	785835	932369	41196	137351	27535954	2874000	41863	47940	1629325	34025833	5831787	277071	1208297
1968	125105	163997	7967	24157	9953915	1257719	8091	5769	301227	11847947	6989154	449705	1663618
1969	12098	8655	436	1277	4878401	663932	443	667	16211	5582120	6770044	585533	2250786
1970	145	658	32	97	1496343	237914	32	31	1219	1736471	2839236	529764	1475210
1971	63	286	15	43	483968	93275	15	13	530	578208	1240368	163611	500933
1972	75	336	17	50	53454	18278	18	17	627	72872	306837	23863	103145
1973	0	0	0	0	0	0	0	0	0	0	0	2598	5985
1974	0	0	0	0	0	0	0	0	0	0	0	2430	5598
1975	0	0	0	0	0	204	0	0	0	204	5265	181	900
1976	0	0	0	0	0	4697	0	0	0	4697	121101	4167	20689
1977	1914	0	0	0	13549	8170	0	0	0	23633	210610	7248	35980
1978	30625	0	0	0	216789	4902	0	0	0	252316	126366	4349	21588
1979	11484	0	0	0	81296	0	0	0	0	92780	0	0	0
1980	0	0	0	0	0	0	0	0	0	0	0	0	0
1981	3902	17636	916	2597	310789	33350	928	0	33596	403714	31118	1071	5315
1982	7797	35237	1830	5191	620975	66635	1857	0	67130	806652	62176	2138	10619
1983	15600	70490	3660	10384	1242250	133302	3716	0	134292	1613694	124382	4279	21242
1984	11697	52856	2745	7786	931462	99951	2787	0	100696	1209980	93263	3208	15928
1985	0	0	0	0	0	0	0	0	0	0	0	0	0
1986	0	0	0	0	0	0	0	0	0	0	0	0	0
1987	0	0	0	0	0	0	0	0	0	0	0	0	0
1988	0	0	0	0	0	0	0	0	0	0	0	0	0
1989	0	0	0	0	0	0	0	0	0	0	0	0	0
1990	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	1799191	3589814	173374	528828	97901167	10922563	176169	179082	6573536	121843724	32607853	2418460	8931085

TABLE B-11 (Continued)

ALLOCATED CAPITAL COSTS TO EACH CONTRACTOR

(in dollars)

CALENDAR YEAR	SOUTHERN CALIFORNIA (Continued)												GRAND TOTAL
	Crestline-Lake Arrowhead Water Agency	Desert Water Agency	Littlerock Creek Irrigation District	Mojave Water Agency	Palmdale Irrigation District	San Bernardino Valley Municipal Water District	San Gabriel Valley Municipal Water District	San Gorgonio Pass Water Agency	The Metropolitan Water District of S. California	Upper Santa Clara Valley Water Agency	Ventura County Flood Control District	Total	
1952	242	1398	71	1761	410	6145	1566	802	68858	727	344	86107	97435
1953	799	4581	234	5757	1328	20300	5162	2632	225141	2318	1095	281573	314339
1954	975	5647	294	7136	1729	23974	6155	3177	279590	3184	1513	349360	393315
1955	439	2579	137	3285	844	10293	2681	1412	128989	1657	788	160981	187331
1956	523	3166	176	4087	1146	11390	3045	1654	160894	2425	1160	200441	328699
1957	1518	9055	486	11606	3093	34693	9127	4862	455917	6281	2998	568588	1363682
1958	2748	16520	899	21255	5813	61298	16255	8739	835693	12084	5774	1041636	2060635
1959	4080	23826	1303	30476	8688	87084	23173	12774	1259424	19483	9271	1560892	2695768
1960	6018	33486	1724	42103	10361	138974	35521	19171	1741437	22325	10595	2156977	4360038
1961	13127	72684	3521	90793	19745	288152	77926	41819	3153970	39567	18789	4001782	8928065
1962	12049	71530	3626	91651	24794	241328	66042	36760	3916171	68446	32193	4803165	9609700
1963	37555	220227	11823	283135	79387	763288	206639	115147	12222742	198077	94516	14984346	26893011
1964	58550	363515	20426	478220	147874	1076752	303287	174329	19535156	376895	178967	24122284	44498085
1965	99635	614267	33722	807088	250534	1785972	507307	300967	35368196	710547	334490	43205625	65023445
1966	194089	1172140	65185	1532792	485105	3442644	979210	575851	67123505	1350434	630137	82065718	123243056
1967	321722	1992914	104935	2623523	773136	6122396	1754905	1029709	126745132	2573960	1198151	152557638	197395934
1968	464968	2743896	146990	3565575	1044697	10242913	2842574	1592209	190519501	3564231	1660718	227490749	243029170
1969	705031	3712360	158768	4631913	1105301	14170448	3878771	2207067	219754476	3895256	1774927	265600681	272646426
1970	506810	2433158	49177	2833906	366572	12916060	2745597	1505104	135990139	1498813	687952	166377498	168753376
1971	136526	826220	23523	1059026	172112	3639650	814566	409152	76885609	818810	357232	87047338	88187308
1972	34280	170128	5631	209415	41454	608311	162747	95603	15734751	329386	138137	17963688	18812032
1973	7647	9872	0	0	0	129776	27010	17612	2937352	55827	21819	3215498	4290732
1974	7153	9234	0	0	0	121383	25263	16473	1125434	16383	6403	1335754	2856938
1975	229	1484	88	1978	663	3860	1134	682	78362	1599	771	97196	2529400
1976	5254	34123	2033	45497	15258	88782	26091	15673	1802327	36782	17726	2235503	8680200
1977	9138	59344	3535	79125	26535	154403	45375	27257	3134482	63969	30829	3887830	12150000
1978	5483	35607	2121	47475	15921	92642	27225	16354	1880689	38381	18497	2332698	19696600
1979	0	0	0	0	0	0	0	0	0	0	0	0	11480000
1980	0	0	0	0	0	0	0	0	0	0	0	0	0
1981	1350	8765	523	11689	3921	22805	6703	4027	463059	9450	4554	574350	1004194
1982	2697	17514	1044	23353	7833	45567	13391	8045	925219	18885	9100	1147581	2006440
1983	5395	35037	2088	46717	15670	91157	26789	16092	1850886	37777	18207	2295718	4073854
1984	4045	26270	1565	35029	11750	68349	20086	12067	1387828	28326	13651	1721365	3774660
1985	0	0	0	0	0	0	0	0	0	0	0	0	315000
1986	0	0	0	0	0	0	0	0	0	0	0	0	0
1987	0	0	0	0	0	0	0	0	0	0	0	0	12000
1988	0	0	0	0	0	0	0	0	0	0	0	0	100000
1989	0	0	0	0	0	0	0	0	0	0	0	0	160000
1990	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	2650075	14730547	645648	18625366	4641674	56510789	14661323	8273222	927690929	15802285	7281304	1115470560	1351950867

TABLE B-12

CAPITAL COST COMPONENTS OF EACH CONTRACTOR*

(in dollars)

CALENDAR YEAR	FUTURE CONTRACTORS			NORTH BAY AREA			SOUTH BAY AREA			
	South Bay	Cedar Springs	Nuclear Powerplant (Assumed)	Napa County FC & WCD	Solano County FC & WCD	Total	Alameda County FC & WCD, Zone 7	Alameda County Water District	Santa Clara County FC & WD	Total
1962	0	0	0	0	0	0	0	0	0	0
1963	47187	477	0	0	0	0	87592	85454	304054	477100
1964	74351	842	0	0	0	0	90606	140191	454733	685530
1965	120611	1118	0	0	0	0	117018	186428	776591	1080037
1966	135981	1674	0	16261	0	16261	130373	205183	924516	1260072
1967	168065	3214	0	43973	0	43973	183713	255505	1098044	1537262
1968	187529	4878	0	109428	0	109428	216815	286625	1200403	1703843
1969	196102	9702	0	115082	20038	135120	231637	300311	1241913	1773861
1970	196419	24352	0	119253	26148	145401	232185	300823	1243443	1776451
1971	196439	36992	0	119890	26980	146870	232220	300861	1243535	1776616
1972	197988	37613	0	120501	27838	148339	300187	303810	1250585	1854582
1973	199537	38538	207857	121077	28644	149721	303422	306759	1257636	1867817
1974	199537	39239	207857	132688	34182	166870	303422	306759	1257636	1867817
1975	199537	39895	207857	144057	39616	183673	303422	306759	1257636	1867817
1976	199537	39895	207857	144556	40370	184926	303422	306759	1257636	1867817
1977	199537	39895	207857	148321	43776	192097	303422	306759	1257636	1867817
1978	199537	39895	207857	154054	47546	201600	303422	306759	1257636	1867817
1979	199537	39895	207857	203489	96167	299656	303422	306759	1257636	1867817
1980	199537	39895	207857	285868	168734	454602	303422	306759	1257636	1867817
1981	199537	39895	207857	285868	168734	454602	303422	306759	1257636	1867817
1982	199537	39895	208172	285868	168734	454602	303422	306759	1257636	1867817
1983	199537	39895	208802	285868	168734	454602	303422	306759	1257636	1867817
1984	199537	39895	210062	285868	168734	454602	303422	306759	1257636	1867817
1985	199537	39895	211007	285868	168734	454602	303422	306759	1257636	1867817
1986	199537	39895	211007	285868	168734	454602	303422	306759	1257636	1867817
1987	199537	39895	211007	285868	168734	454602	303422	306759	1257636	1867817
1988	199591	39895	211007	285868	168734	454602	303535	306862	1257883	1868280
1989	200044	39895	211007	285868	168734	454602	304480	307724	1259943	1872147
1990	200768	39895	211007	285868	168734	454602	305992	309103	1263239	1878334
1991	200768	39895	211007	285868	168734	454602	305992	309103	1263239	1878334
1992	200768	39895	211007	285868	168734	454602	305992	309103	1263239	1878334
1993	200768	39895	211007	285868	168734	454602	305992	309103	1263239	1878334
1994	200768	39895	211007	285868	168734	454602	305992	309103	1263239	1878334
1995	200768	39895	211007	285868	168734	454602	305992	309103	1263239	1878334
1996	200768	39895	211007	285868	168734	454602	305992	309103	1263239	1878334
1997	200768	39895	211007	285868	168734	454602	305992	309103	1263239	1878334
1998	200768	39895	211007	285868	168734	454602	305992	309103	1263239	1878334
1999	200768	39895	211007	285868	168734	454602	305992	309103	1263239	1878334
2000	200768	39895	211007	285868	168734	454602	305992	309103	1263239	1878334
2001	200768	39895	211007	285868	168734	454602	305992	309103	1263239	1878334
2002	200768	39895	211007	285868	168734	454602	305992	309103	1263239	1878334
2003	200768	39895	211007	285868	168734	454602	305992	309103	1263239	1878334
2004	200768	39895	211007	285868	168734	454602	305992	309103	1263239	1878334
2005	200768	39895	211007	285868	168734	454602	305992	309103	1263239	1878334
2006	200768	39895	211007	285868	168734	454602	305992	309103	1263239	1878334
2007	200768	39895	211007	285868	168734	454602	305992	309103	1263239	1878334
2008	200768	39895	211007	285868	168734	454602	305992	309103	1263239	1878334
2009	200768	39895	211007	285868	168734	454602	305992	309103	1263239	1878334
2010	200768	39895	211007	285868	168734	454602	305992	309103	1263239	1878334
2011	200768	39895	211007	285868	168734	454602	305992	309103	1263239	1878334
2012	200768	39895	211007	285868	168734	454602	305992	309103	1263239	1878334
2013	153581	39418	211007	285868	168734	454602	211025	223649	959185	1393859
2014	126417	39053	211007	285868	168734	454602	187482	168912	808506	1164900
2015	80157	38777	211007	285868	168734	454602	153577	122675	486648	762900
2016	64787	38221	211007	269607	168734	438341	136600	103920	338723	579243
2017	32703	36681	211007	241895	168734	410629	69420	53598	165195	288213
2018	13239	35017	211007	176440	168734	345174	28099	22478	62836	113413
2019	4666	30193	211007	170786	148696	319482	9754	8792	21326	39872
2020	4349	15543	211007	166615	142586	309201	9081	8280	19796	37157
2021	4329	2903	211007	165978	141754	307732	9039	8242	19704	36985
2022	2780	2282	211007	165367	140896	306263	5805	5293	12654	23752
2023	1231	1357	3150	164791	140090	304881	2570	2344	5603	10517
2024	1231	656	3150	153180	134552	287732	2570	2344	5603	10517
2025	1231	0	3150	141811	129118	270929	2570	2344	5603	10517
2026	1231	0	3150	141312	128364	269676	2570	2344	5603	10517
2027	1231	0	3150	137547	124958	262505	2570	2344	5603	10517
2028	1231	0	3150	131814	121188	253002	2570	2344	5603	10517
2029	1231	0	3150	82379	72567	154946	2570	2344	5603	10517
2030	1231	0	3150	0	0	0	2570	2344	5603	10517
2031	1231	0	3150	0	0	0	2570	2344	5603	10517
2032	1231	0	2835	0	0	0	2570	2344	5603	10517
2033	1231	0	2205	0	0	0	2570	2344	5603	10517
2034	1231	0	945	0	0	0	2570	2344	5603	10517
2035	1231	0	0	0	0	0	2570	2344	5603	10517
2036	1231	0	0	0	0	0	2570	2344	5603	10517
2037	1231	0	0	0	0	0	2570	2344	5603	10517
2038	1177	0	0	0	0	0	2457	2241	5356	10054
2039	724	0	0	0	0	0	1512	1379	3296	6187

* Unadjusted for prior overpayments or underpayments of charges.

TABLE B-12 (Continued)

CAPITAL COST COMPONENTS OF EACH CONTRACTOR*

(in dollars)

CALENDAR YEAR	SAN JOAQUIN VALLEY									
					Kern County Water Agency					
	Devil's Den Water District	Dudley Ridge Water District	Empire West Side Irrigation District	Hacienda Water District	Agriculture	Municipal and Industrial	Kings County (Assumed)	Oak Flat Water District	Tulare Lake Basin Water Storage District	Total
1962	0	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	67980	0	0	0	67980
1966	0	0	0	0	0	126292	0	0	0	126292
1967	0	0	0	0	0	236752	5233	0	0	241985
1968	23429	39381	6928	4552	493958	360899	7041	3702	89745	1029635
1969	29761	46573	6928	5603	543354	415228	7391	4024	97752	1156614
1970	36093	53764	6928	7003	663153	443908	7410	4185	106093	1328537
1971	42426	61298	6928	8054	916945	454185	7411	4507	114100	1615854
1972	48758	68489	6928	9104	1316653	458214	7412	4668	122440	2042666
1973	55090	75338	6928	10155	1522185	459004	7413	4990	130447	2271550
1974	61422	82530	6928	11555	1720904	459004	7413	5151	143458	2498365
1975	67754	89721	6928	12606	1899751	459004	7413	5473	156470	2705120
1976	74087	96912	6928	13656	2162059	459013	7413	5634	169481	2995183
1977	80418	104104	6928	14707	2419258	459216	7413	5956	182826	3280826
1978	80418	111295	6928	16108	2681567	459569	7413	6278	195837	3565413
1979	80418	118487	6928	17158	2937062	459781	7413	6439	208849	3842535
1980	80418	125678	6928	18209	3204481	459781	7413	6761	221860	4131529
1981	80418	132869	6928	19609	3479280	459781	7413	6922	234871	4428091
1982	80418	140403	6928	20660	3730801	461222	7453	7244	247883	4703012
1983	80418	146910	6928	21710	4027744	464100	7533	7405	260894	5023642
1984	80418	154444	6928	22761	4300272	469858	7694	7727	273905	5324007
1985	80418	161635	6928	24161	4571665	474176	7814	7888	286917	5621602
1986	80418	168827	6928	25212	4831135	474176	7814	8210	300262	5902982
1987	80418	176017	6928	26262	5108206	474176	7814	8371	313274	6201466
1988	80418	183209	6928	27312	5321118	474176	7814	8693	326284	6435952
1989	80418	190401	6928	28713	5518134	474176	7814	9015	339296	6654895
1990	80418	197592	6928	29764	5742403	474176	7814	9176	366987	6915258
1991	80418	197592	6928	29764	5742403	474176	7814	9176	366987	6915258
1992	80418	197592	6928	29764	5742403	474176	7814	9176	366987	6915258
1993	80418	197592	6928	29764	5742403	474176	7814	9176	366987	6915258
1994	80418	197592	6928	29764	5742403	474176	7814	9176	366987	6915258
1995	80418	197592	6928	29764	5742403	474176	7814	9176	366987	6915258
1996	80418	197592	6928	29764	5742403	474176	7814	9176	366987	6915258
1997	80418	197592	6928	29764	5742403	474176	7814	9176	366987	6915258
1998	80418	197592	6928	29764	5742403	474176	7814	9176	366987	6915258
1999	80418	197592	6928	29764	5742403	474176	7814	9176	366987	6915258
2000	80418	197592	6928	29764	5742403	474176	7814	9176	366987	6915258
2001	80418	197592	6928	29764	5742403	474176	7814	9176	366987	6915258
2002	80418	197592	6928	29764	5742403	474176	7814	9176	366987	6915258
2003	80418	197592	6928	29764	5742403	474176	7814	9176	366987	6915258
2004	80418	197592	6928	29764	5742403	474176	7814	9176	366987	6915258
2005	80418	197592	6928	29764	5742403	474176	7814	9176	366987	6915258
2006	80418	197592	6928	29764	5742403	474176	7814	9176	366987	6915258
2007	80418	197592	6928	29764	5742403	474176	7814	9176	366987	6915258
2008	80418	197592	6928	29764	5742403	474176	7814	9176	366987	6915258
2009	80418	197592	6928	29764	5742403	474176	7814	9176	366987	6915258
2010	80418	197592	6928	29764	5742403	474176	7814	9176	366987	6915258
2011	80418	197592	6928	29764	5742403	474176	7814	9176	366987	6915258
2012	80418	197592	6928	29764	5742403	474176	7814	9176	366987	6915258
2013	80418	197592	6928	29764	5742403	474176	7814	9176	366987	6915258
2014	80418	197592	6928	29764	5742403	474176	7814	9176	366987	6915258
2015	80418	197592	6928	29764	5742403	406196	7814	9176	366987	6847278
2016	80418	197592	6928	29764	5742403	347884	7814	9176	366987	6788966
2017	80418	197592	6928	29764	5742403	237424	2581	9176	366987	6679273
2018	80418	197592	6928	29764	5742403	113277	773	9176	366987	6547318
2019	80418	197592	6928	29764	5742403	58948	423	9176	366987	6492639
2020	80418	197592	6928	29764	5742403	30268	404	9176	366987	6463940
2021	80418	197592	6928	29764	5742403	19991	403	9176	366987	6453662
2022	80418	197592	6928	29764	5742403	15962	402	9176	366987	6449632
2023	80418	197592	6928	29764	5742403	15172	401	9176	366987	6448841
2024	80418	197592	6928	29764	5742403	15172	401	9176	366987	6448841
2025	80418	197592	6928	29764	5742403	15172	401	9176	366987	6448841
2026	80418	197592	6928	29764	5742403	15163	401	9176	366987	6448832
2027	80418	197592	6928	29764	5742403	14960	401	9176	366987	6448629
2028	80418	197592	6928	29764	5742403	14607	401	9176	366987	6448276
2029	80418	197592	6928	29764	5742403	14395	401	9176	366987	6448064
2030	80418	197592	6928	29764	5742403	14395	401	9176	366987	6448064
2031	80418	197592	6928	29764	5742403	14395	401	9176	366987	6448064
2032	80418	197592	6928	29764	5742403	12954	361	9176	366987	6446583
2033	80418	197592	6928	29764	5742403	10076	281	9176	366987	6443625
2034	80418	197592	6928	29764	5742403	4318	120	9176	366987	6437706
2035	80418	197592	6928	29764	5742403	0	0	9176	366987	6433268
2036	80418	197592	6928	29764	5742403	0	0	9176	366987	6433268
2037	80418	197592	6928	29764	5742403	0	0	9176	366987	6433268
2038	80418	197592	6928	29764	5742403	0	0	9176	366987	6433268
2039	80418	197592	6928	29764	5742403	0	0	9176	366987	6433268

* Unadjusted for prior overpayments or underpayments of charges.

TABLE B-12 (Continued)

CAPITAL COST COMPONENTS OF EACH CONTRACTOR*

(in dollars)

CALENDAR YEAR	SOUTHERN CALIFORNIA									
	Antelope Valley-East Kern Water Agency	Big Bear Municipal Water District (Assumed)	Coachella Valley County Water District	Crestline-Lake Arrowhead Water Agency	Desert Water Agency	Littlerock Creek Irrigation District	Mojave Water Agency	Palmdale Irrigation District	San Bernardino Valley Municipal Water District	San Gabriel Valley Municipal Water District
1962	0	0	0	0	0	0	0	0	0	0
1963	25090	0	0	0	0	0	0	0	42896	0
1964	50345	0	12874	3660	32549	1110	27089	7168	75867	32215
1965	99546	0	22394	6189	36532	1992	47746	13556	122379	33467
1966	183335	0	38482	10493	63066	3449	82609	24378	199527	55381
1967	341025	16287	69180	18877	113698	6265	148820	45333	348237	97679
1968	593457	28273	121463	32797	199931	10807	262342	78795	613083	173597
1969	895364	47699	193325	52882	318458	17156	416362	123922	1055541	296386
1970	1187806	72992	290551	83337	478819	24014	616444	171667	1667655	463935
1971	1310451	95876	354275	105229	583923	26138	738859	187502	2225584	582535
1972	1364031	102943	375914	111126	619613	27154	784605	194937	2382804	617721
1973	1377285	103974	380370	112607	626962	27397	793651	196728	2409081	624751
1974	1377285	104086	380629	112937	627388	27397	793651	196728	2414687	625918
1975	1377285	104191	380871	113246	627787	27397	793651	196728	2419930	627009
1976	1377512	104199	380910	113256	627851	27401	793736	196757	2420097	627058
1977	1382743	104379	381804	113483	629325	27489	795701	197416	2423932	628185
1978	1391841	104692	383358	113878	631888	27642	799119	198562	2430602	630145
1979	1397300	104880	384291	114115	633426	27734	801170	199250	2434604	631321
1980	1397300	104880	384291	114115	633426	27734	801170	199250	2434604	631321
1981	1397300	104880	384291	114115	633426	27734	801170	199250	2434604	631321
1982	1398644	104926	384521	114173	633805	27757	801675	199419	2435589	631611
1983	1401330	105018	384980	114290	634562	27802	802684	199757	2437557	632189
1984	1406703	105203	385898	114523	636075	27892	804702	200434	2441495	633346
1985	1410732	105342	386586	114698	637210	27960	806215	200942	2444447	634214
1986	1410732	105342	386586	114698	637210	27960	806215	200942	2444447	634214
1987	1410732	105342	386586	114698	637210	27960	806215	200942	2444447	634214
1988	1410732	105342	386586	114698	637210	27960	806215	200942	2444447	634214
1989	1410732	105342	386586	114698	637210	27960	806215	200942	2444447	634214
1990	1410732	105342	386586	114698	637210	27960	806215	200942	2444447	634214
1991	1410732	105342	386586	114698	637210	27960	806215	200942	2444447	634214
1992	1410732	105342	386586	114698	637210	27960	806215	200942	2444447	634214
1993	1410732	105342	386586	114698	637210	27960	806215	200942	2444447	634214
1994	1410732	105342	386586	114698	637210	27960	806215	200942	2444447	634214
1995	1410732	105342	386586	114698	637210	27960	806215	200942	2444447	634214
1996	1410732	105342	386586	114698	637210	27960	806215	200942	2444447	634214
1997	1410732	105342	386586	114698	637210	27960	806215	200942	2444447	634214
1998	1410732	105342	386586	114698	637210	27960	806215	200942	2444447	634214
1999	1410732	105342	386586	114698	637210	27960	806215	200942	2444447	634214
2000	1410732	105342	386586	114698	637210	27960	806215	200942	2444447	634214
2001	1410732	105342	386586	114698	637210	27960	806215	200942	2444447	634214
2002	1410732	105342	386586	114698	637210	27960	806215	200942	2444447	634214
2003	1410732	105342	386586	114698	637210	27960	806215	200942	2444447	634214
2004	1410732	105342	386586	114698	637210	27960	806215	200942	2444447	634214
2005	1410732	105342	386586	114698	637210	27960	806215	200942	2444447	634214
2006	1410732	105342	386586	114698	637210	27960	806215	200942	2444447	634214
2007	1410732	105342	386586	114698	637210	27960	806215	200942	2444447	634214
2008	1410732	105342	386586	114698	637210	27960	806215	200942	2444447	634214
2009	1410732	105342	386586	114698	637210	27960	806215	200942	2444447	634214
2010	1410732	105342	386586	114698	637210	27960	806215	200942	2444447	634214
2011	1410732	105342	386586	114698	637210	27960	806215	200942	2444447	634214
2012	1410732	105342	386586	114698	637210	27960	806215	200942	2444447	634214
2013	1385642	105342	386586	114698	625894	27960	806215	200942	2401551	622774
2014	1360387	105342	373712	111038	616381	26850	779126	193774	2368580	613848
2015	1311186	105342	364192	108509	600678	25968	758469	187386	2322068	600747
2016	1227397	105342	348104	104205	574144	24511	723606	176564	2244920	578833
2017	1069707	89055	317406	95821	523512	21695	657395	155609	2096210	536535
2018	817275	77069	265123	81901	437279	17153	543873	122147	1831364	460617
2019	515368	57643	193261	61816	318752	10804	389853	77020	1388906	337828
2020	222926	32350	96035	31361	158391	3946	189771	29275	776792	170279
2021	100281	9466	32311	9469	53287	1822	67356	13440	218863	51679
2022	46701	2399	10672	3572	17597	806	21610	6005	61643	16493
2023	33447	1368	6216	2091	10248	563	12564	4214	35366	9463
2024	33447	1256	5957	1761	9822	563	12564	4214	29760	8296
2025	33447	1151	5715	1452	9423	563	12564	4214	24517	7205
2026	33220	1143	5676	1442	9359	559	12479	4185	24350	7156
2027	27989	963	4782	1215	7885	471	10514	3526	20515	6029
2028	18891	650	3228	820	5322	318	7096	2380	13845	4069
2029	13432	462	2295	583	3784	226	5045	1692	9843	2893
2030	13432	462	2295	583	3784	226	5045	1692	9843	2893
2031	13432	462	2295	583	3784	226	5045	1692	9843	2893
2032	12088	416	2065	525	3405	203	4540	1523	8858	2603
2033	9402	324	1606	408	2648	158	3531	1185	6890	2025
2034	4029	139	688	175	1135	68	1513	508	2952	868
2035	0	0	0	0	0	0	0	0	0	0
2036	0	0	0	0	0	0	0	0	0	0
2037	0	0	0	0	0	0	0	0	0	0
2038	0	0	0	0	0	0	0	0	0	0
2039	0	0	0	0	0	0	0	0	0	0

* Unadjusted for prior overpayments or underpayments of charges

TABLE B-12 (Continued)

CAPITAL COST COMPONENTS OF EACH CONTRACTOR *

(in dollars)

CALENDAR YEAR	SOUTHERN CALIFORNIA (Continued)					CENTRAL COASTAL AREA			GRAND TOTAL
	San Gorgonio Pass Water Agency	The Metropolitan Water District of Southern California	Upper Santa Clara Valley Water Agency	Ventura County Flood Control District	Total	San Luis Obispo County FC & WCD	Santa Barbara County FC & WCD	Total	
1962	0	0	0	0	0	0	0	0	0
1963	0	565690	0	0	633676	0	0	0	1158440
1964	17591	1093670	17055	8108	1379301	8970	22118	31088	2171112
1965	18702	1937520	33336	15839	2389198	15417	37506	52923	3711867
1966	31703	3465302	64029	30288	4252042	24051	57875	81926	5874248
1967	56578	6364802	122363	57508	7806652	39301	93599	132900	9934051
1968	101125	11847468	233707	109340	14406185	53152	126102	179254	17620752
1969	169903	20077244	387669	181077	24232988	56300	133630	189930	27694317
1970	265241	29569868	555930	257748	35706007	57312	136171	193483	39370650
1971	330256	35444166	620673	287465	42892932	58187	138393	196580	46862283
1972	347930	38765355	656043	302896	46653072	59204	141320	200524	51134784
1973	352060	39445041	670271	308863	47429041	63444	153251	216695	52380756
1974	352821	39571924	672683	309806	47567940	70170	175121	245291	52792916
1975	353533	39620539	673391	310083	47625641	82585	210956	293541	53123081
1976	353562	39623924	673460	310116	47629839	194945	479706	674651	53799705
197	354239	39701778	675049	310882	47726405	274807	670858	945665	54460099
1978	355416	39837177	677812	312214	47894346	375330	916708	1292038	55268503
1979	356122	39918416	679470	313013	47995112	540822	1392320	1933142	56385551
1980	356122	39918416	679470	313013	47995112	620400	1649684	2270084	57166433
1981	356122	39918416	679470	313013	47995112	620400	1649684	2270084	57462995
1982	356296	39938419	679878	313210	48019923	620644	1650253	2270897	57763855
1983	356644	39978385	680694	313603	48069495	621131	1651391	2272522	58136312
1984	357339	40058337	682326	314389	48168662	622884	1655481	2278365	58542947
1985	357860	40118286	683550	314979	48243021	633528	1680320	2313848	58951329
1986	357860	40118286	683550	314979	48243021	637610	1689845	2327455	59246316
1987	357860	40118286	683550	314979	48243021	637610	1689845	2327455	59544800
1988	357860	40118286	683550	314979	48243021	637610	1689845	2327455	59779803
1989	357860	40118286	683550	314979	48243021	637610	1689845	2327455	60003066
1990	357860	40118286	683550	314979	48243021	637610	1689845	2327455	60270340
1991	357860	40118286	683550	314979	48243021	637610	1689845	2327455	60270340
1992	357860	40118286	683550	314979	48243021	637610	1689845	2327455	60270340
1993	357860	40118286	683550	314979	48243021	637610	1689845	2327455	60270340
1994	357860	40118286	683550	314979	48243021	637610	1689845	2327455	60270340
1995	357860	40118286	683550	314979	48243021	637610	1689845	2327455	60270340
1996	357860	40118286	683550	314979	48243021	637610	1689845	2327455	60270340
1997	357860	40118286	683550	314979	48243021	637610	1689845	2327455	60270340
1998	357860	40118286	683550	314979	48243021	637610	1689845	2327455	60270340
1999	357860	40118286	683550	314979	48243021	637610	1689845	2327455	60270340
2000	357860	40118286	683550	314979	48243021	637610	1689845	2327455	60270340
2001	357860	40118286	683550	314979	48243021	637610	1689845	2327455	60270340
2002	357860	40118286	683550	314979	48243021	637610	1689845	2327455	60270340
2003	357860	40118286	683550	314979	48243021	637610	1689845	2327455	60270340
2004	357860	40118286	683550	314979	48243021	637610	1689845	2327455	60270340
2005	357860	40118286	683550	314979	48243021	637610	1689845	2327455	60270340
2006	357860	40118286	683550	314979	48243021	637610	1689845	2327455	60270340
2007	357860	40118286	683550	314979	48243021	637610	1689845	2327455	60270340
2008	357860	40118286	683550	314979	48243021	637610	1689845	2327455	60270340
2009	357860	40118286	683550	314979	48243021	637610	1689845	2327455	60270340
2010	357860	40118286	683550	314979	48243021	637610	1689845	2327455	60270340
2011	357860	40118286	683550	314979	48243021	637610	1689845	2327455	60270340
2012	357860	40118286	683550	314979	48243021	637610	1689845	2327455	60270340
2013	351662	39552596	683550	314979	47580391	637610	1689845	2327455	59075571
2014	346688	39024616	666495	306871	46893708	628640	1667727	2296367	58101312
2015	339158	38180766	650214	299140	45853823	622193	1652339	2274532	56523076
2016	326157	36652984	619521	284691	43990979	613559	1631970	2245529	54357073
2017	301282	33753484	561187	257471	40436369	598309	1596246	2194555	50283430
2018	256735	28270818	449843	205639	33836836	584458	1563743	2148201	43250205
2019	187957	20041042	295881	133902	24010033	581310	1556215	2137525	33245417
2020	92619	10548418	127620	57231	12537014	580298	1553674	2133972	21712183
2021	27604	4674120	62877	27514	5350089	579423	1551452	2130875	14497582
2022	9930	1352931	27507	12083	1589949	578406	1548525	2126931	10712596
2023	5800	673245	13279	6116	813980	574166	1536594	2110760	9694717
2024	5039	546362	10867	5173	675081	567440	1514724	2082164	9509372
2025	4327	497747	10159	4896	617380	555025	1478889	2033914	9385962
2026	4298	494362	10090	4863	613182	442665	1210139	1652804	8999392
2027	3621	416508	8501	4097	516616	362803	1018987	1381790	8624438
2028	2444	281109	5738	2765	348675	262280	773137	1035417	8100268
2029	1738	199870	4080	1966	247909	96788	297525	394313	7260130
2030	1738	199870	4080	1966	247909	17210	40161	57371	6768242
2031	1738	199870	4080	1966	247909	17210	40161	57371	6768242
2032	1564	179867	3672	1769	223098	16966	39592	56558	6740822
2033	1216	139901	2856	1376	173526	16479	38454	54933	6686037
2034	521	59949	1224	590	74359	14726	34364	49090	6573848
2035	0	0	0	0	0	4082	9525	13607	6458623
2036	0	0	0	0	0	0	0	0	6445016
2037	0	0	0	0	0	0	0	0	6445016
2038	0	0	0	0	0	0	0	0	6444499
2039	0	0	0	0	0	0	0	0	6440179

* Unadjusted for prior overpayments or underpayments of charges.

TABLE B-13

MINIMUM OPERATION, MAINTENANCE, POWER, AND REPLACEMENT COMPONENTS
OF EACH CONTRACTOR*

(in dollars)

CALENDAR YEAR	FUTURE CONTRACTORS			NORTH BAY AREA			SOUTH BAY AREA			
	South Bay	Cedar Springs	Nuclear Powerplant (Assumed)	Napa County FC & WCD	Solano County FC & WCD	Total	Alameda County FC & WCD, Zone 7	Alameda County Water District	Santa Clara County FC & WD	Total
1962	0	0	0	0	0	0	15008	13684	0	28692
1963	15994	0	0	0	0	0	33392	30442	72788	136622
1964	17369	0	0	0	0	0	36264	33061	79046	148371
1965	33451	0	0	0	0	0	65105	63049	158261	286415
1966	27034	0	0	0	0	0	46359	47143	147464	240966
1967	28709	0	0	0	0	0	49502	50392	157230	257124
1968	30638	0	0	28000	0	28000	53061	53727	165828	272616
1969	34742	0	0	28000	0	28000	61584	61248	184777	307609
1970	34641	0	0	28000	0	28000	61464	61055	184321	306840
1971	34710	0	0	28000	0	28000	61566	61188	184640	307394
1972	33820	639	0	28000	0	28000	59707	59494	180587	299788
1973	33233	639	48876	27000	0	27000	58950	58674	178130	295754
1974	33316	639	49028	27000	0	27000	59165	58832	178505	296502
1975	32980	639	48700	27000	0	27000	58464	58192	175975	292631
1976	32884	639	48216	27000	0	27000	58263	58010	175539	291812
1977	32932	639	48530	27000	0	27000	58364	58101	175757	292222
1978	32696	639	48457	27000	0	27000	57872	57653	174685	290210
1979	32683	639	48615	27000	0	27000	57844	57628	174626	290098
1980	32666	639	48619	70567	73433	144000	57808	57595	174547	289950
1981	32670	639	48654	70169	72831	143000	57817	57603	174567	289987
1982	32705	639	48735	70169	72831	143000	57890	57669	174725	290284
1983	32819	639	48892	70169	72831	143000	58127	57885	175242	291254
1984	32648	639	48682	70169	72831	143000	57772	57562	174467	289801
1985	32448	639	48192	70169	72831	143000	57353	57180	173554	288087
1986	32565	639	48032	70169	72831	143000	57598	57403	174088	289089
1987	32469	639	47791	70169	72831	143000	57398	57221	173652	288271
1988	32430	639	47781	70169	72831	143000	57316	57146	173474	287936
1989	32430	639	47839	70169	72831	143000	57316	57146	173474	287936
1990	32478	639	48037	70169	72831	143000	57417	57237	173692	288346
1991	32473	639	48071	70169	72831	143000	57407	57229	173672	288308
1992	32381	639	48092	70169	72831	143000	57216	57055	173254	287525
1993	32381	639	48092	70169	72831	143000	57216	57055	173254	287525
1994	32381	639	48092	70169	72831	143000	57216	57055	173254	287525
1995	32381	639	48092	70169	72831	143000	57216	57055	173254	287525
1996	32381	639	48092	70169	72831	143000	57216	57055	173254	287525
1997	32381	639	48092	70169	72831	143000	57216	57055	173254	287525
1998	32381	639	48092	70169	72831	143000	57216	57055	173254	287525
1999	32381	639	48092	70169	72831	143000	57216	57055	173254	287525
2000	32381	639	48092	70169	72831	143000	57216	57055	173254	287525
2001	32381	639	48092	70169	72831	143000	57216	57055	173254	287525
2002	32381	639	48092	70169	72831	143000	57216	57055	173254	287525
2003	32381	639	48092	70169	72831	143000	57216	57055	173254	287525
2004	32381	639	48092	70169	72831	143000	57216	57055	173254	287525
2005	32381	639	48092	70169	72831	143000	57216	57055	173254	287525
2006	32381	639	48092	70169	72831	143000	57216	57055	173254	287525
2007	32381	639	48092	70169	72831	143000	57216	57055	173254	287525
2008	32381	639	48092	70169	72831	143000	57216	57055	173254	287525
2009	32381	639	48092	70169	72831	143000	57216	57055	173254	287525
2010	32381	639	48092	70169	72831	143000	57216	57055	173254	287525
2011	32381	639	48092	70169	72831	143000	57216	57055	173254	287525
2012	32381	639	48092	70169	72831	143000	57216	57055	173254	287525
2013	32381	639	48092	70169	72831	143000	57216	57055	173254	287525
2014	32381	639	48092	70169	72831	143000	57216	57055	173254	287525
2015	32381	639	48092	70169	72831	143000	57216	57055	173254	287525
2016	32381	639	48092	70169	72831	143000	57216	57055	173254	287525
2017	32381	639	48092	70169	72831	143000	57216	57055	173254	287525
2018	32381	639	48092	70169	72831	143000	57216	57055	173254	287525
2019	32381	639	48092	70169	72831	143000	57216	57055	173254	287525
2020	32381	639	48092	70169	72831	143000	57216	57055	173254	287525
2021	32381	639	48092	70169	72831	143000	57216	57055	173254	287525
2022	32381	639	48092	70169	72831	143000	57216	57055	173254	287525
2023	32381	639	48092	70169	72831	143000	57216	57055	173254	287525
2024	32381	639	48092	70169	72831	143000	57216	57055	173254	287525
2025	32381	639	48092	70169	72831	143000	57216	57055	173254	287525
2026	32381	639	48092	70169	72831	143000	57216	57055	173254	287525
2027	32381	639	48092	70169	72831	143000	57216	57055	173254	287525
2028	32381	639	48092	70169	72831	143000	57216	57055	173254	287525
2029	32381	639	48092	70169	72831	143000	57216	57055	173254	287525
2030	32381	639	48092	70169	72831	143000	57216	57055	173254	287525
2031	32381	639	48092	70169	72831	143000	57216	57055	173254	287525
2032	32381	639	48092	70169	72831	143000	57216	57055	173254	287525
2033	32381	639	48092	70169	72831	143000	57216	57055	173254	287525
2034	32381	639	48092	70169	72831	143000	57216	57055	173254	287525
2035	32381	639	48092	70169	72831	143000	57216	57055	173254	287525
2036	32381	639	48092	70169	72831	143000	57216	57055	173254	287525
2037	32381	639	48092	70169	72831	143000	57216	57055	173254	287525
2038	32381	639	48092	70169	72831	143000	57216	57055	173254	287525
2039	32381	639	48092	70169	72831	143000	57216	57055	173254	287525

* Unadjusted for prior overpayments or underpayments of charges.

TABLE B-13 (Continued)

MINIMUM OPERATION, MAINTENANCE, POWER AND REPLACEMENT COMPONENTS
OF EACH CONTRACTOR*

(in dollars)

CALENDAR YEAR	SAN JOAQUIN VALLEY									
					Kern County Water Agency					
	Devil's Den Water District	Dudley Ridge Water District	Empire West Side Irrigation District	Hacienda Water District	Agriculture	Municipal and Industrial	Kings County (Assumed)	Oak Flat Water District	Tulare Lake Basin Water Storage District	Total
1962	0	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0	0	0	0
1967	0	0	0	0	0	0	0	0	0	0
1968	17461	47426	2370	6986	885129	89770	2408	3053	88454	1143057
1969	20331	53811	2676	7927	1107928	115051	2720	3483	100132	1414059
1970	20213	53280	2652	7849	1156180	125910	2696	3472	99214	1471466
1971	21913	54396	2687	8014	1334182	150909	2731	3476	100835	1679143
1972	21909	53687	2648	7909	1330947	151166	2691	3416	99446	1673819
1973	21492	52838	2605	7784	1310775	148971	2647	3333	97869	1648314
1974	21594	53297	2629	7852	1318200	149699	2672	3364	98743	1658050
1975	21544	53073	2618	7819	1312623	149007	2660	3353	98315	1651012
1976	21355	52564	2592	7743	1301732	147786	2633	3317	97343	1637065
1977	21407	52802	2603	7778	1307018	148469	2645	3335	97796	1643853
1978	21304	52333	2579	7709	1299691	147714	2620	3286	96903	1634139
1979	21308	52352	2581	7713	1300782	147929	2622	3281	96940	1635508
1980	21546	52391	2582	7718	1302973	148013	2623	3275	97013	1638134
1981	21546	52390	2582	7717	1303138	148060	2623	3276	97012	1638344
1982	21583	52559	2591	7743	1306118	148407	2632	3289	97334	1642256
1983	21530	52663	2597	7758	1308041	148740	2638	3293	97532	1644792
1984	21542	52376	2582	7716	1303033	148110	2623	3268	96985	1638235
1985	21280	51883	2556	7644	1291871	146876	2597	3232	96047	1623986
1986	21228	52337	2579	7710	1296712	147379	2620	3316	96910	1630791
1987	21142	51949	2560	7653	1289433	146571	2600	3279	96172	1621359
1988	21190	51816	2552	7633	1287867	146371	2593	3265	95918	1619205
1989	21113	51816	2552	7633	1287606	146444	2593	3265	95918	1618940
1990	21284	52246	2575	7697	1296069	147260	2616	3283	96738	1629768
1991	21285	52247	2575	7697	1296287	147285	2616	3281	96740	1630013
1992	21296	52298	2577	7704	1297176	147380	2618	3286	96836	1631171
1993	21296	52298	2577	7704	1297176	147380	2618	3286	96836	1631171
1994	21296	52298	2577	7704	1297176	147380	2618	3286	96836	1631171
1995	21296	52298	2577	7704	1297176	147380	2618	3286	96836	1631171
1996	21296	52298	2577	7704	1297176	147380	2618	3286	96836	1631171
1997	21296	52298	2577	7704	1297176	147380	2618	3286	96836	1631171
1998	21296	52298	2577	7704	1297176	147380	2618	3286	96836	1631171
1999	21296	52298	2577	7704	1297176	147380	2618	3286	96836	1631171
2000	21296	52298	2577	7704	1297176	147380	2618	3286	96836	1631171
2001	21296	52298	2577	7704	1297176	147380	2618	3286	96836	1631171
2002	21296	52298	2577	7704	1297176	147380	2618	3286	96836	1631171
2003	21296	52298	2577	7704	1297176	147380	2618	3286	96836	1631171
2004	21296	52298	2577	7704	1297176	147380	2618	3286	96836	1631171
2005	21296	52298	2577	7704	1297176	147380	2618	3286	96836	1631171
2006	21296	52298	2577	7704	1297176	147380	2618	3286	96836	1631171
2007	21296	52298	2577	7704	1297176	147380	2618	3286	96836	1631171
2008	21296	52298	2577	7704	1297176	147380	2618	3286	96836	1631171
2009	21296	52298	2577	7704	1297176	147380	2618	3286	96836	1631171
2010	21296	52298	2577	7704	1297176	147380	2618	3286	96836	1631171
2011	21296	52298	2577	7704	1297176	147380	2618	3286	96836	1631171
2012	21296	52298	2577	7704	1297176	147380	2618	3286	96836	1631171
2013	21296	52298	2577	7704	1297176	147380	2618	3286	96836	1631171
2014	21296	52298	2577	7704	1297176	147380	2618	3286	96836	1631171
2015	21296	52298	2577	7704	1297176	147380	2618	3286	96836	1631171
2016	21296	52298	2577	7704	1297176	147380	2618	3286	96836	1631171
2017	21296	52298	2577	7704	1297176	147380	2618	3286	96836	1631171
2018	21296	52298	2577	7704	1297176	147380	2618	3286	96836	1631171
2019	21296	52298	2577	7704	1297176	147380	2618	3286	96836	1631171
2020	21296	52298	2577	7704	1297176	147380	2618	3286	96836	1631171
2021	21296	52298	2577	7704	1297176	147380	2618	3286	96836	1631171
2022	21296	52298	2577	7704	1297176	147380	2618	3286	96836	1631171
2023	21296	52298	2577	7704	1297176	147380	2618	3286	96836	1631171
2024	21296	52298	2577	7704	1297176	147380	2618	3286	96836	1631171
2025	21296	52298	2577	7704	1297176	147380	2618	3286	96836	1631171
2026	21296	52298	2577	7704	1297176	147380	2618	3286	96836	1631171
2027	21296	52298	2577	7704	1297176	147380	2618	3286	96836	1631171
2028	21296	52298	2577	7704	1297176	147380	2618	3286	96836	1631171
2029	21296	52298	2577	7704	1297176	147380	2618	3286	96836	1631171
2030	21296	52298	2577	7704	1297176	147380	2618	3286	96836	1631171
2031	21296	52298	2577	7704	1297176	147380	2618	3286	96836	1631171
2032	21296	52298	2577	7704	1297176	147380	2618	3286	96836	1631171
2033	21296	52298	2577	7704	1297176	147380	2618	3286	96836	1631171
2034	21296	52298	2577	7704	1297176	147380	2618	3286	96836	1631171
2035	21296	52298	2577	7704	1297176	147380	2618	3286	96836	1631171
2036	21296	52298	2577	7704	1297176	147380	2618	3286	96836	1631171
2037	21296	52298	2577	7704	1297176	147380	2618	3286	96836	1631171
2038	21296	52298	2577	7704	1297176	147380	2618	3286	96836	1631171
2039	21296	52298	2577	7704	1297176	147380	2618	3286	96836	1631171

* Unadjusted for prior overpayments or underpayments of charges.

TABLE B-13 (Continued)

MINIMUM OPERATION, MAINTENANCE, POWER, AND REPLACEMENT COMPONENTS
OF EACH CONTRACTOR*

(in dollars)

CALENDAR YEAR	SOUTHERN CALIFORNIA									
	Antelope Valley-East Kern Water Agency	Big Bear Municipal Water District (Assumed)	Coachella Valley County Water District	Crestline-Lake Arrowhead Water Agency	Desert Water Agency	Littlerock Creek Irrigation District	Mojave Water Agency	Palmdale Irrigation District	San Bernardino Valley Municipal Water District	San Gabriel Valley Municipal Water District
1962	0	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0	0	0	0
1967	0	0	0	0	0	0	0	0	0	0
1968	83768	2882	14306	3632	23597	1406	31462	10553	61391	18041
1969	107329	3692	18330	4656	30232	1802	40310	13522	78661	23117
1970	121104	4168	20682	5252	34115	2032	45488	15256	88757	26084
1971	301122	10316	51218	13007	84475	5035	112635	37777	219788	64590
1972	355313	22061	96610	24795	159340	6945	211806	50472	476552	137147
1973	348685	21624	95293	24462	157169	6820	208881	49572	466945	134452
1974	347519	21504	94734	24322	156248	6799	207658	49403	464408	133710
1975	345315	21365	93945	24121	154944	6761	205921	49129	461455	132834
1976	341735	21225	93337	23965	153940	6698	204581	48659	458409	131945
1977	344829	21158	93644	24044	154450	6752	205261	49049	456844	131526
1978	345511	21228	94088	24157	155179	6762	206232	49132	458308	131962
1979	348046	21335	94658	24302	156122	6803	207486	49450	460610	132640
1980	348430	21297	94372	24231	155646	6810	206855	49502	459812	132399
1981	349206	21324	94503	24265	155863	6823	207145	49600	460378	132567
1982	349729	21510	95301	24467	157185	6833	208905	49663	464389	133735
1983	352037	21549	95586	24538	157651	6871	209527	49952	465171	133973
1984	350671	21457	95105	24417	156860	6847	208471	49781	463253	133407
1985	346153	21253	94117	24165	155227	6771	206297	49214	458866	132120
1986	343125	21178	93435	23992	154104	6721	204799	48833	457389	131665
1987	341549	21084	93002	23882	153388	6695	203845	48634	455383	131078
1988	342043	21107	93166	23924	153661	6703	204205	48695	455800	131206
1989	343022	21133	93305	23961	153889	6719	204512	48818	456400	131381
1990	343553	21145	93423	23990	154085	6728	204774	48885	456617	131448
1991	343640	21159	93494	24008	154201	6729	204930	48896	456921	131538
1992	343729	21162	93509	24012	154226	6731	204963	48908	456986	131557
1993	343729	21162	93509	24012	154226	6731	204963	48908	456986	131557
1994	343729	21162	93509	24012	154226	6731	204963	48908	456986	131557
1995	343729	21162	93509	24012	154226	6731	204963	48908	456986	131557
1996	343729	21162	93509	24012	154226	6731	204963	48908	456986	131557
1997	343729	21162	93509	24012	154226	6731	204963	48908	456986	131557
1998	343729	21162	93509	24012	154226	6731	204963	48908	456986	131557
1999	343729	21162	93509	24012	154226	6731	204963	48908	456986	131557
2000	343729	21162	93509	24012	154226	6731	204963	48908	456986	131557
2001	343729	21162	93509	24012	154226	6731	204963	48908	456986	131557
2002	343729	21162	93509	24012	154226	6731	204963	48908	456986	131557
2003	343729	21162	93509	24012	154226	6731	204963	48908	456986	131557
2004	343729	21162	93509	24012	154226	6731	204963	48908	456986	131557
2005	343729	21162	93509	24012	154226	6731	204963	48908	456986	131557
2006	343729	21162	93509	24012	154226	6731	204963	48908	456986	131557
2007	343729	21162	93509	24012	154226	6731	204963	48908	456986	131557
2008	343729	21162	93509	24012	154226	6731	204963	48908	456986	131557
2009	343729	21162	93509	24012	154226	6731	204963	48908	456986	131557
2010	343729	21162	93509	24012	154226	6731	204963	48908	456986	131557
2011	343729	21162	93509	24012	154226	6731	204963	48908	456986	131557
2012	343729	21162	93509	24012	154226	6731	204963	48908	456986	131557
2013	343729	21162	93509	24012	154226	6731	204963	48908	456986	131557
2014	343729	21162	93509	24012	154226	6731	204963	48908	456986	131557
2015	343729	21162	93509	24012	154226	6731	204963	48908	456986	131557
2016	343729	21162	93509	24012	154226	6731	204963	48908	456986	131557
2017	343729	21162	93509	24012	154226	6731	204963	48908	456986	131557
2018	343729	21162	93509	24012	154226	6731	204963	48908	456986	131557
2019	343729	21162	93509	24012	154226	6731	204963	48908	456986	131557
2020	343729	21162	93509	24012	154226	6731	204963	48908	456986	131557
2021	343729	21162	93509	24012	154226	6731	204963	48908	456986	131557
2022	343729	21162	93509	24012	154226	6731	204963	48908	456986	131557
2023	343729	21162	93509	24012	154226	6731	204963	48908	456986	131557
2024	343729	21162	93509	24012	154226	6731	204963	48908	456986	131557
2025	343729	21162	93509	24012	154226	6731	204963	48908	456986	131557
2026	343729	21162	93509	24012	154226	6731	204963	48908	456986	131557
2027	343729	21162	93509	24012	154226	6731	204963	48908	456986	131557
2028	343729	21162	93509	24012	154226	6731	204963	48908	456986	131557
2029	343729	21162	93509	24012	154226	6731	204963	48908	456986	131557
2030	343729	21162	93509	24012	154226	6731	204963	48908	456986	131557
2031	343729	21162	93509	24012	154226	6731	204963	48908	456986	131557
2032	343729	21162	93509	24012	154226	6731	204963	48908	456986	131557
2033	343729	21162	93509	24012	154226	6731	204963	48908	456986	131557
2034	343729	21162	93509	24012	154226	6731	204963	48908	456986	131557
2035	343729	21162	93509	24012	154226	6731	204963	48908	456986	131557
2036	343729	21162	93509	24012	154226	6731	204963	48908	456986	131557
2037	343729	21162	93509	24012	154226	6731	204963	48908	456986	131557
2038	343729	21162	93509	24012	154226	6731	204963	48908	456986	131557
2039	343729	21162	93509	24012	154226	6731	204963	48908	456986	131557

* Unadjusted for prior overpayments or underpayments of charges.

TABLE B-13 (Continued)

MINIMUM OPERATION, MAINTENANCE, POWER, AND REPLACEMENT COMPONENTS
OF EACH CONTRACTOR*

(in dollars)

CALENDAR YEAR	SOUTHERN CALIFORNIA (Continued)					CENTRAL COASTAL AREA			GRAND TOTAL
	San Gorgonio Pass Water Agency	The Metropolitan Water District of Southern California	Upper Santa Clara Valley Water Agency	Ventura County Flood Control District	Total	San Luis Obispo County FC & WCD	Santa Barbara County FC & WCD	Total	
1962	0	0	0	0	0	0	0	0	28692
1963	0	0	0	0	0	0	0	0	152616
1964	0	0	0	0	0	0	0	0	165740
1965	0	0	0	0	0	0	0	0	319866
1966	0	0	0	0	0	0	0	0	268000
1967	0	0	0	0	0	0	0	0	285833
1968	10838	1248046	25442	12263	1547627	25620	59781	85401	3107339
1969	13886	1605087	32599	15711	1988934	29840	69629	99469	3872813
1970	15669	1817618	36783	17727	2250735	29671	69234	98905	4190587
1971	38802	5780609	121071	58180	6898625	32201	75143	107344	9055216
1972	74046	7628125	128867	61939	9434018	32202	75147	107349	11577433
1973	73062	7442129	125482	60311	9214887	31588	73709	105297	11374000
1974	72641	7371995	124097	59642	9134680	31734	74051	105785	11305000
1975	72043	7346325	123823	59510	9097491	31663	73884	105547	11256000
1976	71580	7281253	122545	58892	9018764	31385	73235	104620	11161000
1977	71815	7309651	123549	59378	9051950	31461	73413	104874	11202000
1978	72149	7329425	123837	59515	9077485	31311	73063	104374	11215000
1979	72581	7367667	124518	59844	9126062	31318	73077	104395	11265000
1980	72362	7361369	124493	59834	9117412	114903	284677	399580	11671000
1981	72463	7365357	124538	59855	9124127	111003	275576	386579	11664000
1982	73070	7401918	124890	60025	9171620	102959	256802	359761	11689000
1983	73284	7425289	125413	60274	9201115	97477	244012	341489	11704000
1984	72920	7405922	125164	60155	9174430	101100	252465	353565	11681000
1985	72171	7325699	123679	59440	9075372	92614	232662	325276	11537000
1986	71656	7300586	123196	59208	9039887	91930	231067	322997	11507000
1987	71326	7274232	122782	59008	9005888	90606	227977	318583	11458000
1988	71452	7285114	122999	59113	9019188	90377	227444	317821	11468000
1989	71557	7299527	123297	59255	9036776	89664	225776	315440	11483000
1990	71648	7305400	123433	59322	9044451	89616	225665	315281	11502000
1991	71700	7308198	123463	59336	9048213	89617	225666	315283	11506000
1992	71711	7309522	123490	59349	9049855	89633	225704	315337	11508000
1993	71711	7309522	123490	59349	9049855	89633	225704	315337	11508000
1994	71711	7309522	123490	59349	9049855	89633	225704	315337	11508000
1995	71711	7309522	123490	59349	9049855	89633	225704	315337	11508000
1996	71711	7309522	123490	59349	9049855	89633	225704	315337	11508000
1997	71711	7309522	123490	59349	9049855	89633	225704	315337	11508000
1998	71711	7309522	123490	59349	9049855	89633	225704	315337	11508000
1999	71711	7309522	123490	59349	9049855	89633	225704	315337	11508000
2000	71711	7309522	123490	59349	9049855	89633	225704	315337	11508000
2001	71711	7309522	123490	59349	9049855	89633	225704	315337	11508000
2002	71711	7309522	123490	59349	9049855	89633	225704	315337	11508000
2003	71711	7309522	123490	59349	9049855	89633	225704	315337	11508000
2004	71711	7309522	123490	59349	9049855	89633	225704	315337	11508000
2005	71711	7309522	123490	59349	9049855	89633	225704	315337	11508000
2006	71711	7309522	123490	59349	9049855	89633	225704	315337	11508000
2007	71711	7309522	123490	59349	9049855	89633	225704	315337	11508000
2008	71711	7309522	123490	59349	9049855	89633	225704	315337	11508000
2009	71711	7309522	123490	59349	9049855	89633	225704	315337	11508000
2010	71711	7309522	123490	59349	9049855	89633	225704	315337	11508000
2011	71711	7309522	123490	59349	9049855	89633	225704	315337	11508000
2012	71711	7309522	123490	59349	9049855	89633	225704	315337	11508000
2013	71711	7309522	123490	59349	9049855	89633	225704	315337	11508000
2014	71711	7309522	123490	59349	9049855	89633	225704	315337	11508000
2015	71711	7309522	123490	59349	9049855	89633	225704	315337	11508000
2016	71711	7309522	123490	59349	9049855	89633	225704	315337	11508000
2017	71711	7309522	123490	59349	9049855	89633	225704	315337	11508000
2018	71711	7309522	123490	59349	9049855	89633	225704	315337	11508000
2019	71711	7309522	123490	59349	9049855	89633	225704	315337	11508000
2020	71711	7309522	123490	59349	9049855	89633	225704	315337	11508000
2021	71711	7309522	123490	59349	9049855	89633	225704	315337	11508000
2022	71711	7309522	123490	59349	9049855	89633	225704	315337	11508000
2023	71711	7309522	123490	59349	9049855	89633	225704	315337	11508000
2024	71711	7309522	123490	59349	9049855	89633	225704	315337	11508000
2025	71711	7309522	123490	59349	9049855	89633	225704	315337	11508000
2026	71711	7309522	123490	59349	9049855	89633	225704	315337	11508000
2027	71711	7309522	123490	59349	9049855	89633	225704	315337	11508000
2028	71711	7309522	123490	59349	9049855	89633	225704	315337	11508000
2029	71711	7309522	123490	59349	9049855	89633	225704	315337	11508000
2030	71711	7309522	123490	59349	9049855	89633	225704	315337	11508000
2031	71711	7309522	123490	59349	9049855	89633	225704	315337	11508000
2032	71711	7309522	123490	59349	9049855	89633	225704	315337	11508000
2033	71711	7309522	123490	59349	9049855	89633	225704	315337	11508000
2034	71711	7309522	123490	59349	9049855	89633	225704	315337	11508000
2035	71711	7309522	123490	59349	9049855	89633	225704	315337	11508000
2036	71711	7309522	123490	59349	9049855	89633	225704	315337	11508000
2037	71711	7309522	123490	59349	9049855	89633	225704	315337	11508000
2038	71711	7309522	123490	59349	9049855	89633	225704	315337	11508000
2039	71711	7309522	123490	59349	9049855	89633	225704	315337	11508000

* Unadjusted for prior overpayments or underpayments of charges.

TABLE B-14

UNIT VARIABLE OPERATION, MAINTENANCE, POWER, AND REPLACEMENT CHARGES[1]

(in dollars per acre-foot)

CALENDAR YEAR	NORTH BAY AQUEDUCT		SOUTH BAY AQUEDUCT	CALIFORNIA AQUEDUCT					
	Reach 1	Reach 3	Reach 1	Reach 1	Reach 4	Reach 14A	Reach 15	Reach 16	Reach 17C
	Calhoun Pumping Plant	Cordelia Pumping Plant	South Bay and Del Valle Pumping Plants [2]	Delta Pumping Plant	Dos Amigos Pumping Plant	Buena Vista Pumping Plant	Wheeler Ridge Pumping Plant	Wind Gap Pumping Plant	Tehachapi Pumping Plant
1962			4.3463957						
1963			4.7777778						
1964			3.7461145						
1965			4.3937367						
1966			3.6763499						
1967			6.8505080	2.6705370					
1968		16.6666667	4.5645810	1.0532688	2.4384540				
1969		8.9473684	5.4232906	2.1285444	3.4712298				
1970		6.7857143	4.8313206	1.0397269	1.9014601				
1971		5.5263158	4.5112176	.8709422	1.5460642	2.7824674	4.2910559	7.4614150	16.2573493
1972		4.3750000	4.5909708	.8885194	1.4583122	2.5208886	3.7805740	6.4895838	14.8473717
1973		3.6206897	4.4281710	.7653803	1.4097187	2.4555277	3.6925736	6.3589851	14.6531715
1974		3.7313433	4.6958952	.8560259	1.5286603	2.4823849	3.6351095	6.0993615	13.1731409
1975		4.1558442	4.2179441	.8364180	1.4690608	2.3599284	3.4282652	5.7346760	12.4636168
1976		3.8372093	4.0741972	.7303237	1.3172437	2.1424117	3.1303395	5.2523941	11.6310208
1977		3.5416667	4.1167046	.7807793	1.3848486	2.2334514	3.3631494	5.5782634	12.4854030
1978		3.3333333	3.7982310	.6306717	1.2471361	2.1797221	3.3176230	5.5809174	12.8241192
1979		3.4782609	3.8269342	.6166855	1.2558877	2.2225211	3.4027636	5.7728681	13.5138312
1980	.7272727	4.4872727	3.7056821	.6047919	1.2502397	2.2313545	3.4241892	5.8450760	13.9461330
1981	.2758621	3.7667712	3.6829848	.6099921	1.2499581	2.2393009	3.4353686	5.8878990	14.1809190
1982	.2459016	2.8459016	3.8806747	.6479161	1.2997839	2.2839378	3.4894603	5.9509923	14.3737131
1983	.2218115	2.9295038	3.9678492	.6580897	1.3357569	2.3594748	3.5933081	6.1411226	14.9565767
1984	.2027027	3.6884170	3.7622206	.5797693	1.2433467	2.2384008	3.4462932	5.9336261	14.6031672
1985	.1832061	3.3832061	3.3730202	.4717856	1.0854664	2.0290802	3.1325971	5.4137458	13.3829783
1986	.1643836	2.3643836	3.4527711	.7316367	1.2065863	2.0287598	3.0376548	5.1201791	12.3794188
1987	.1454545	2.2160427	3.2735915	.6189009	1.0829146	1.8786057	2.8513318	4.8903363	12.0231691
1988	.1212121	2.1656565	3.2165460	.5739230	1.0477156	1.8505826	2.8444314	4.9134159	12.2005651
1989	.1030043	2.1240569	3.2951720	.5702199	1.0472073	1.8708040	2.8764905	4.9952561	12.4907386
1990	.0955414	2.0955414	3.3675937	.6267609	1.1903589	2.0632180	3.0571351	5.1462027	12.5590520
1991	.0955414	2.0955414	3.2996716	.6253928	1.1911640	2.0674564	3.1033352	5.1914987	12.5866987
1992	.0955414	2.0955414	3.2747838	.6395307	1.2053019	2.0815943	3.1174731	5.2056366	12.6008366
1993	.0955414	2.0955414	3.2152640	.6391648	1.2049360	2.0812284	3.1171072	5.2052707	12.6004707
1994	.0955414	2.0955414	3.1773999	.6389384	1.2047096	2.0810020	3.1168808	5.2050443	12.6002443
1995	.0955414	2.0955414	3.1603699	.6386308	1.2044020	2.0806944	3.1165732	5.2047367	12.5999367
1996	.0955414	2.0955414	3.1441810	.6388047	1.2045759	2.0808683	3.1167471	5.2049106	12.6001106
1997	.0955414	2.0955414	3.1278591	.6384974	1.2042686	2.0805610	3.1164398	5.2046033	12.5998033
1998	.0955414	2.0955414	3.1278591	.6384974	1.2042686	2.0805610	3.1164398	5.2046033	12.5998033
1999	.0955414	2.0955414	3.1278591	.6384974	1.2042686	2.0805610	3.1164398	5.2046033	12.5998033
2000[3]	.0955414	2.0955414	3.1278591	.6384974	1.2042686	2.0805610	3.1164398	5.2046033	12.5998033

Footnotes shown on Sheet 2.

TABLE B-14 (Continued)

UNIT VARIABLE OPERATION, MAINTENANCE, POWER, AND REPLACEMENT CHARGES[1]

(in dollars per acre-foot)

CALENDAR YEAR	CALIFORNIA AQUEDUCT (Continued)								
	Reach 18A	Reach 22B	Reach 26	Reach 27	Reach 29A	Reach 29C	Reach 29E	Reach 31	Reach 33
	Cottonwood Powerplant	Pearblossom Pumping Plant	Upper Devil Canyon Powerplant	Lower Devil Canyon Powerplant	Oso Pumping Plant	Pyramid Powerplant	Castaic Powerplant	Las Perillas and Badger Hill Pumping Plants	Devil's Den Sawtooth and Polonio PP's and San Luis Obispo Pwp
1962									
1963									
1964									
1965									
1966									
1967									
1968								7.4542269	
1969								7.8925948	
1970								5.9072238	
1971					17.3636824	15.5106722	14.3456996	5.4116104	
1972	14.6199868	17.2253198	14.2772109	12.3339712	15.8519540	14.3468430	12.7430362	5.2567618	
1973	14.3925355	18.0414861	16.1809799	14.9574606	15.5500815	13.9230648	10.0373661	5.5344189	
1974	12.8851922	15.9930247	14.1140909	12.8750417	13.9163103	12.0758731	6.9152174	5.8463337	
1975	12.1698953	14.5598884	12.9708895	11.9265474	13.2737197	11.4477141	7.2849452	5.3893962	
1976	11.3305456	13.7966141	11.9266121	10.7091401	12.3719433	10.5335396	6.0847336	4.9035815	
1977	12.1444261	14.3038493	11.1077158	8.9951495	13.2175355	11.0748859	7.0074832	4.8063654	
1978	12.4441537	15.0533124	11.6506619	9.3962743	13.6995929	11.6807767	7.3739689	4.7559080	
1979	13.1707688	15.9930663	12.5257441	10.2333524	14.4097609	12.4090489	7.8973603	4.5892210	
1980	13.5890832	15.8846667	12.5729523	10.3895654	14.6974086	12.5836316	8.0553502	3.5530387	47.6439478
1981	13.8092955	16.0951039	12.8340773	10.6777963	14.9405946	12.6974984	7.8889572	3.4582392	41.6400574
1982	13.9410133	17.2306940	14.2791015	12.3210922	15.2748419	12.9149742	8.3071501	3.4202658	29.0263264
1983	14.5738256	17.7298514	14.5384541	12.4256122	15.9353907	13.6854128	8.5526541	3.3519794	21.2307673
1984	14.2403356	17.0631788	13.9728459	11.9387720	15.5713358	13.4268838	8.5781253	3.4562903	26.4093104
1985	13.0015283	15.5108273	12.3634315	10.2812825	14.2086586	12.0155505	7.1372962	2.8747489	13.8021683
1986	12.0446694	14.2978614	11.8131940	10.1731902	13.1716172	11.2059699	7.3838333	2.4117980	12.5024324
1987	11.6691192	13.7362778	11.2159677	9.5555460	12.8052175	10.7486375	7.1746169	2.1981288	10.3821482
1988	11.8476852	13.9918586	11.3766740	9.6452414	13.0360742	10.9335594	7.4994519	2.2952139	9.9170463
1989	12.1156916	14.2478665	11.5868031	9.8226606	13.3296448	11.1751060	7.7949828	2.1523447	9.0661117
1990	12.1953773	14.3725451	11.5770590	9.7359143	13.4031008	11.2923194	7.7868792	2.5503157	8.7776434
1991	12.2350167	14.4670945	11.6730837	9.8268851	13.4129433	11.3476614	7.8376053	2.5727074	8.8967703
1992	12.2491546	14.4812324	11.6872216	9.8410230	13.4270812	11.3617993	7.8517432	2.5868453	8.9109082
1993	12.2487887	14.4808665	11.6868557	9.8406571	13.4267153	11.3614334	7.8513773	2.5864794	8.9105423
1994	12.2485623	14.4806401	11.6866293	9.8404307	13.4264889	11.3612070	7.8511509	2.5862530	8.9103159
1995	12.2482547	14.4803325	11.6863217	9.8401231	13.4261813	11.3608994	7.8508433	2.5859454	8.9100083
1996	12.2484286	14.4805064	11.6864956	9.8402970	13.4263552	11.3610733	7.8510172	2.5861193	8.9101822
1997	12.2481213	14.4801991	11.6861883	9.8399897	13.4260479	11.3607660	7.8507099	2.5858120	8.9098749
1998	12.2481213	14.4801991	11.6861883	9.8399897	13.4260479	11.3607660	7.8507099	2.5858120	8.9098749
1999	12.2481213	14.4801991	11.6861883	9.8399897	13.4260479	11.3607660	7.8507099	2.5858120	8.9098749
2000[3]	12.2481213	14.4801991	11.6861883	9.8399897	13.4260479	11.3607660	7.8507099	2.5858120	8.9098749

1/ Rates as shown constitute the total rate, cumulative from the Sacramento-San Joaquin Delta, applicable to deliveries downstream from the indicated pumping and power recovery plants.

2/ The relatively minor estimated costs of the Del Valle Pumping Plant have been combined with those of the South Bay Pumping Plant to simplify the allocation procedure. The increase in the unit rate in 1967 reflects use of commercial power, rather than power currently supplied by the Bureau of Reclamation.

3/ And thereafter for the remainder of the project repayment period.

TABLE B-15

VARIABLE OPERATION, MAINTENANCE, POWER, AND REPLACEMENT COMPONENTS OF EACH CONTRACTOR*

(in dollars)

CALENDAR YEAR	FUTURE CONTRACTOR	NORTH BAY AREA			SOUTH BAY AREA			
	Nuclear Powerplant (Assumed)	Napa County FC & WCD	Solano County FC & WCD	Total	Alameda County FC & WCD, Zone 7	Alameda County Water District	Santa Clara County FC & WD	Total
1962	0	0	0	0	2147	36562	0	38709
1963	0	0	0	0	8270	52145	0	60415
1964	0	0	0	0	6267	72068	0	78335
1965	0	0	0	0	11418	71914	65809	149141
1966	0	0	0	0	15441	70292	138267	224000
1967	0	0	0	0	27402	97962	346636	472000
1968	0	15000	0	15000	34234	68469	401683	504386
1969	0	17000	0	17000	47725	84061	477250	609036
1970	0	19000	0	19000	48313	78268	425156	551737
1971	0	21000	0	21000	50525	76691	396987	524203
1972	0	21000	0	21000	56928	82178	404006	543112
1973	111282	21000	0	21000	60223	83249	389679	533151
1974	106738	25000	0	25000	69499	92039	413239	574777
1975	100356	32000	0	32000	67488	86467	371179	525134
1976	91917	33000	0	33000	70077	86780	358529	515386
1977	97619	34000	0	34000	75747	91391	362269	529407
1978	97666	35000	0	35000	74445	87740	334244	496429
1979	101025	40000	0	40000	79600	91464	336770	507834
1980	102276	56091	4909	61000	81524	91900	326095	499519
1981	102829	51793	2207	54000	84709	95758	324102	504569
1982	104143	42689	2311	45000	93136	105554	341500	540190
1983	214938	47604	2396	50000	99196	112687	349171	561054
1984	207677	64547	2453	67000	97818	111361	331076	540255
1985	189481	63435	2565	66000	91071	103889	296826	491786
1986	179205	47288	2712	50000	96678	110834	303844	511356
1987	171160	47091	2909	50000	94934	109010	288076	492020
1988	171969	48727	3273	52000	96497	110970	283056	490523
1989	174835	50446	3554	54000	102150	117638	296566	516354
1990	180117	52389	3611	56000	107762	124264	309819	541845
1991	181703	52389	3611	56000	112189	126707	310169	549065
1992	182198	52389	3611	56000	117892	130664	314379	562935
1993	182185	52389	3611	56000	122180	133111	315096	570387
1994	182177	52389	3611	56000	127096	133450	317740	578286
1995	182166	52389	3611	56000	132735	132735	316037	581507
1996	182172	52389	3611	56000	138343	132056	314418	584817
1997	182161	52389	3611	56000	143882	131370	312786	588038
1998	182161	52389	3611	56000	143882	131370	312786	588038
1999	182161	52389	3611	56000	143882	131370	312786	588038
2000	182161	52389	3611	56000	143882	131370	312786	588038
2001	182161	52389	3611	56000	143882	131370	312786	588038
2002	182161	52389	3611	56000	143882	131370	312786	588038
2003	182161	52389	3611	56000	143882	131370	312786	588038
2004	182161	52389	3611	56000	143882	131370	312786	588038
2005	182161	52389	3611	56000	143882	131370	312786	588038
2006	182161	52389	3611	56000	143882	131370	312786	588038
2007	182161	52389	3611	56000	143882	131370	312786	588038
2008	182161	52389	3611	56000	143882	131370	312786	588038
2009	182161	52389	3611	56000	143882	131370	312786	588038
2010	182161	52389	3611	56000	143882	131370	312786	588038
2011	182161	52389	3611	56000	143882	131370	312786	588038
2012	182161	52389	3611	56000	143882	131370	312786	588038
2013	182161	52389	3611	56000	143882	131370	312786	588038
2014	182161	52389	3611	56000	143882	131370	312786	588038
2015	182161	52389	3611	56000	143882	131370	312786	588038
2016	182161	52389	3611	56000	143882	131370	312786	588038
2017	182161	52389	3611	56000	143882	131370	312786	588038
2018	182161	52389	3611	56000	143882	131370	312786	588038
2019	182161	52389	3611	56000	143882	131370	312786	588038
2020	182161	52389	3611	56000	143882	131370	312786	588038
2021	182161	52389	3611	56000	143882	131370	312786	588038
2022	182161	52389	3611	56000	143882	131370	312786	588038
2023	182161	52389	3611	56000	143882	131370	312786	588038
2024	182161	52389	3611	56000	143882	131370	312786	588038
2025	182161	52389	3611	56000	143882	131370	312786	588038
2026	182161	52389	3611	56000	143882	131370	312786	588038
2027	182161	52389	3611	56000	143882	131370	312786	588038
2028	182161	52389	3611	56000	143882	131370	312786	588038
2029	182161	52389	3611	56000	143882	131370	312786	588038
2030	182161	52389	3611	56000	143882	131370	312786	588038
2031	182161	52389	3611	56000	143882	131370	312786	588038
2032	182161	52389	3611	56000	143882	131370	312786	588038
2033	182161	52389	3611	56000	143882	131370	312786	588038
2034	182161	52389	3611	56000	143882	131370	312786	588038
2035	182161	52389	3611	56000	143882	131370	312786	588038
2036	182161	52389	3611	56000	143882	131370	312786	588038
2037	182161	52389	3611	56000	143882	131370	312786	588038
2038	182161	52389	3611	56000	143882	131370	312786	588038
2039	182161	52389	3611	56000	143882	131370	312786	588038

* Unadjusted for prior overpayments of underpayments of charges.

TABLE B-15 (Continued)

VARIABLE OPERATION, MAINTENANCE, POWER AND REPLACEMENT COMPONENTS
OF EACH CONTRACTOR*

(in dollars)

CALENDAR YEAR	SAN JOAQUIN VALLEY									
					Kern County Water Agency					
	Devil's Den Water District	Dudley Ridge Water District	Empire West Side Irrigation District	Hacienda Water District	Agriculture	Municipal and Industrial	Kings County (Assumed)	Oak Flat Water District	Tulare Lake Basin Water Storage District	Total
1962	0	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0	0	0	0
1967	0	0	0	0	0	0	0	0	0	0
1968	27580	28043	7316	3170	352587	0	3901	2423	65594	490614
1969	37095	47208	10414	5554	460417	0	6248	5321	101707	673964
1970	33672	29853	5704	3803	338258	53811	3993	2703	60466	532263
1971	36257	27675	4638	3556	423643	44527	3556	2439	52875	599166
1972	40478	29166	4374	3791	556791	90054	3791	2577	53520	784542
1973	48150	31013	4229	4089	619734	92881	3947	2373	55120	861536
1974	56709	36840	4586	5045	737686	96220	4586	2739	65732	1010143
1975	57667	38489	4407	5289	761528	117191	4848	2844	68899	1061162
1976	57372	37278	3952	5137	811866	108054	4610	2556	66915	1097740
1977	61041	42100	4154	5816	939681	136735	5262	2889	75890	1273568
1978	60400	40532	3741	5737	989990	140936	4989	2460	73206	1321991
1979	58283	43453	3768	6154	1105389	154939	5024	2467	78619	1458096
1980	45122	45880	3750	6501	1107889	165311	5001	2540	83133	1465127
1981	43919	48499	3750	7000	1180654	181431	5000	2623	87997	1560873
1982	43437	53290	3900	7669	1294937	203140	5199	2916	96574	1711062
1983	42570	57304	4007	8282	1417869	224354	5343	3027	104456	1867212
1984	43895	56075	3730	8081	1461729	227376	4973	2783	102079	1910721
1985	36510	51234	3256	7489	1380561	214852	4342	2312	93350	1793906
1986	30630	59485	3620	8688	1494976	232082	4826	3731	108592	1946630
1987	27916	55662	3249	8122	1449912	226142	4332	3218	101686	1880239
1988	29149	56053	3143	8171	1504153	241421	4191	3099	102467	1951847
1989	27335	58224	3142	8587	1574876	250649	4189	3193	106501	2036696
1990	32389	68684	3571	10117	1804837	276569	4761	3573	130940	2335441
1991	32673	68730	3573	10125	1814089	277642	4765	3565	131028	2346190
1992	32853	69546	3616	10245	1828388	279649	4821	3645	132583	2365346
1993	32848	69525	3614	10242	1828018	279598	4820	3643	132543	2364851
1994	32846	69512	3614	10240	1827789	279565	4819	3642	132518	2364545
1995	32842	69494	3613	10237	1827478	279522	4818	3640	132484	2364128
1996	32844	69504	3614	10239	1827654	279546	4818	3641	132504	2364364
1997	32840	69486	3612	10236	1827343	279503	4817	3639	132470	2363946
1998	32840	69486	3612	10236	1827343	279503	4817	3639	132470	2363946
1999	32840	69486	3612	10236	1827343	279503	4817	3639	132470	2363946
2000	32840	69486	3612	10236	1827343	279503	4817	3639	132470	2363946
2001	32840	69486	3612	10236	1827343	279503	4817	3639	132470	2363946
2002	32840	69486	3612	10236	1827343	279503	4817	3639	132470	2363946
2003	32840	69486	3612	10236	1827343	279503	4817	3639	132470	2363946
2004	32840	69486	3612	10236	1827343	279503	4817	3639	132470	2363946
2005	32840	69486	3612	10236	1827343	279503	4817	3639	132470	2363946
2006	32840	69486	3612	10236	1827343	279503	4817	3639	132470	2363946
2007	32840	69486	3612	10236	1827343	279503	4817	3639	132470	2363946
2008	32840	69486	3612	10236	1827343	279503	4817	3639	132470	2363946
2009	32840	69486	3612	10236	1827343	279503	4817	3639	132470	2363946
2010	32840	69486	3612	10236	1827343	279503	4817	3639	132470	2363946
2011	32840	69486	3612	10236	1827343	279503	4817	3639	132470	2363946
2012	32840	69486	3612	10236	1827343	279503	4817	3639	132470	2363946
2013	32840	69486	3612	10236	1827343	279503	4817	3639	132470	2363946
2014	32840	69486	3612	10236	1827343	279503	4817	3639	132470	2363946
2015	32840	69486	3612	10236	1827343	279503	4817	3639	132470	2363946
2016	32840	69486	3612	10236	1827343	279503	4817	3639	132470	2363946
2017	32840	69486	3612	10236	1827343	279503	4817	3639	132470	2363946
2018	32840	69486	3612	10236	1827343	279503	4817	3639	132470	2363946
2019	32840	69486	3612	10236	1827343	279503	4817	3639	132470	2363946
2020	32840	69486	3612	10236	1827343	279503	4817	3639	132470	2363946
2021	32840	69486	3612	10236	1827343	279503	4817	3639	132470	2363946
2022	32840	69486	3612	10236	1827343	279503	4817	3639	132470	2363946
2023	32840	69486	3612	10236	1827343	279503	4817	3639	132470	2363946
2024	32840	69486	3612	10236	1827343	279503	4817	3639	132470	2363946
2025	32840	69486	3612	10236	1827343	279503	4817	3639	132470	2363946
2026	32840	69486	3612	10236	1827343	279503	4817	3639	132470	2363946
2027	32840	69486	3612	10236	1827343	279503	4817	3639	132470	2363946
2028	32840	69486	3612	10236	1827343	279503	4817	3639	132470	2363946
2029	32840	69486	3612	10236	1827343	279503	4817	3639	132470	2363946
2030	32840	69486	3612	10236	1827343	279503	4817	3639	132470	2363946
2031	32840	69486	3612	10236	1827343	279503	4817	3639	132470	2363946
2032	32840	69486	3612	10236	1827343	279503	4817	3639	132470	2363946
2033	32840	69486	3612	10236	1827343	279503	4817	3639	132470	2363946
2034	32840	69486	3612	10236	1827343	279503	4817	3639	132470	2363946
2035	32840	69486	3612	10236	1827343	279503	4817	3639	132470	2363946
2036	32840	69486	3612	10236	1827343	279503	4817	3639	132470	2363946
2037	32840	69486	3612	10236	1827343	279503	4817	3639	132470	2363946
2038	32840	69486	3612	10236	1827343	279503	4817	3639	132470	2363946
2039	32840	69486	3612	10236	1827343	279503	4817	3639	132470	2363946

* Unadjusted for prior overpayments or underpayments of charges.

TABLE B-15 (Continued)

VARIABLE OPERATION, MAINTENANCE, POWER, AND REPLACEMENT COMPONENTS
OF EACH CONTRACTOR *

(in dollars)

CALENDAR YEAR	SOUTHERN CALIFORNIA									
	Antelope Valley-East Kern Water Agency	Big Bear Municipal Water District (Assumed)	Coachella Valley County Water District	Crestline-Lake Arrowhead Water Agency	Desert Water Agency	Littlerock Creek Irrigation District	Mojave Water Agency	Palmdale Irrigation District	San Bernardino Valley Municipal Water District	San Gabriel Valley Municipal Water District
1962	0	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0	0	0	0
1967	0	0	0	0	0	0	0	0	0	0
1968	0	0	0	0	0	0	0	0	0	0
1969	0	0	0	0	0	0	0	0	0	0
1970	0	0	0	0	0	0	0	0	0	0
1971	0	0	0	0	0	0	0	0	0	0
1972	292400	56736	89570	9990	137802	2486	144693	23685	561701	130741
1973	359813	68804	104640	15697	162373	4174	193044	42314	711362	172011
1974	386556	59225	102355	18552	159929	5156	209511	54892	641255	158362
1975	425946	54863	101920	21111	160160	6328	224223	67907	618105	156237
1976	498542	49263	104854	24006	165560	7251	245581	78181	576602	149928
1977	607221	41379	120453	29037	185950	8865	288937	99827	502468	133128
1978	709316	43223	139122	34923	210747	11449	338699	116227	543838	147523
1979	829758	47073	160938	41743	239896	13697	398227	135131	614104	169874
1980	940245	47785	172868	46062	270010	15626	432016	151907	643142	180748
1981	1034804	49064	194688	51306	305580	17523	476064	161430	684337	195185
1982	1133406	56678	229616	59962	361843	19238	549661	171753	790533	235331
1983	1278124	57158	257916	66841	407786	21860	608135	188586	797240	247270
1984	1338591	54919	269052	69276	426579	22927	626218	193099	766004	247132
1985	1305352	47294	263514	67472	418792	22492	604922	184362	659657	224132
1986	1285166	46799	260365	66343	414637	22162	591931	178261	673252	236018
1987	1318611	43957	266909	67721	432693	22871	600275	179936	692413	235067
1988	1414613	44368	288960	73038	475723	24525	643625	190038	759514	250778
1989	1522943	45184	311643	78504	520047	26534	691022	201849	834092	269141
1990	1611009	44786	332007	83363	547594	28050	730125	210979	887895	280394
1991	1693326	45205	334189	83907	551197	28139	734929	211666	963037	283014
1992	1695283	45270	334515	83989	551735	28172	735647	211911	964422	283422
1993	1695233	45268	334507	83987	551721	28171	735629	211905	964386	283411
1994	1695201	45267	334501	83986	551713	28171	735617	211901	964364	283404
1995	1695158	45266	334494	83984	551701	28170	735602	211895	964334	283396
1996	1695183	45267	334498	83985	551708	28170	735610	211898	964351	283401
1997	1695140	45265	334491	83983	551696	28170	735595	211893	964321	283392
1998	1695140	45265	334491	83983	551696	28170	735595	211893	964321	283392
1999	1695140	45265	334491	83983	551696	28170	735595	211893	964321	283392
2000	1695140	45265	334491	83983	551696	28170	735595	211893	964321	283392
2001	1695140	45265	334491	83983	551696	28170	735595	211893	964321	283392
2002	1695140	45265	334491	83983	551696	28170	735595	211893	964321	283392
2003	1695140	45265	334491	83983	551696	28170	735595	211893	964321	283392
2004	1695140	45265	334491	83983	551696	28170	735595	211893	964321	283392
2005	1695140	45265	334491	83983	551696	28170	735595	211893	964321	283392
2006	1695140	45265	334491	83983	551696	28170	735595	211893	964321	283392
2007	1695140	45265	334491	83983	551696	28170	735595	211893	964321	283392
2008	1695140	45265	334491	83983	551696	28170	735595	211893	964321	283392
2009	1695140	45265	334491	83983	551696	28170	735595	211893	964321	283392
2010	1695140	45265	334491	83983	551696	28170	735595	211893	964321	283392
2011	1695140	45265	334491	83983	551696	28170	735595	211893	964321	283392
2012	1695140	45265	334491	83983	551696	28170	735595	211893	964321	283392
2013	1695140	45265	334491	83983	551696	28170	735595	211893	964321	283392
2014	1695140	45265	334491	83983	551696	28170	735595	211893	964321	283392
2015	1695140	45265	334491	83983	551696	28170	735595	211893	964321	283392
2016	1695140	45265	334491	83983	551696	28170	735595	211893	964321	283392
2017	1695140	45265	334491	83983	551696	28170	735595	211893	964321	283392
2018	1695140	45265	334491	83983	551696	28170	735595	211893	964321	283392
2019	1695140	45265	334491	83983	551696	28170	735595	211893	964321	283392
2020	1695140	45265	334491	83983	551696	28170	735595	211893	964321	283392
2021	1695140	45265	334491	83983	551696	28170	735595	211893	964321	283392
2022	1695140	45265	334491	83983	551696	28170	735595	211893	964321	283392
2023	1695140	45265	334491	83983	551696	28170	735595	211893	964321	283392
2024	1695140	45265	334491	83983	551696	28170	735595	211893	964321	283392
2025	1695140	45265	334491	83983	551696	28170	735595	211893	964321	283392
2026	1695140	45265	334491	83983	551696	28170	735595	211893	964321	283392
2027	1695140	45265	334491	83983	551696	28170	735595	211893	964321	283392
2028	1695140	45265	334491	83983	551696	28170	735595	211893	964321	283392
2029	1695140	45265	334491	83983	551696	28170	735595	211893	964321	283392
2030	1695140	45265	334491	83983	551696	28170	735595	211893	964321	283392
2031	1695140	45265	334491	83983	551696	28170	735595	211893	964321	283392
2032	1695140	45265	334491	83983	551696	28170	735595	211893	964321	283392
2033	1695140	45265	334491	83983	551696	28170	735595	211893	964321	283392
2034	1695140	45265	334491	83983	551696	28170	735595	211893	964321	283392
2035	1695140	45265	334491	83983	551696	28170	735595	211893	964321	283392
2036	1695140	45265	334491	83983	551696	28170	735595	211893	964321	283392
2037	1695140	45265	334491	83983	551696	28170	735595	211893	964321	283392
2038	1695140	45265	334491	83983	551696	28170	735595	211893	964321	283392
2039	1695140	45265	334491	83983	551696	28170	735595	211893	964321	283392

* Unadjusted for prior overpayments of underpayments of charges.

TABLE B-15 (Continued)

VARIABLE OPERATION, MAINTENANCE, POWER, AND REPLACEMENT COMPONENTS
OF EACH CONTRACTOR*

(in dollars)

CALENDAR YEAR	SOUTHERN CALIFORNIA (Continued)					CENTRAL COASTAL AREA			GRAND TOTAL
	San Gorgonio Pass Water Agency	The Metropolitan Water District of Southern California	Upper Santa Clara Valley Water Agency	Ventura County Flood Control District	Total	San Luis Obispo County FC & WCD	Santa Barbara County FC & WCD	Total	
1962	0	0	0	0	0	0	0	0	38709
1963	0	0	0	0	0	0	0	0	60415
1964	0	0	0	0	0	0	0	0	78335
1965	0	0	0	0	0	0	0	0	149141
1966	0	0	0	0	0	0	0	0	224000
1967	0	0	0	0	0	0	0	0	472000
1968	0	0	0	0	0	0	0	0	1010000
1969	0	0	0	0	0	0	0	0	1300000
1970	0	0	0	0	0	0	0	0	1103000
1971	0	3646678	22953	0	3669631	0	0	0	4814000
1972	17227	4488165	47150	0	6002346	0	0	0	7351000
1973	30670	5032915	57214	0	6955031	0	0	0	8482000
1974	38383	4466302	51864	0	6352342	0	0	0	8069000
1975	45136	5382205	69207	0	7333348	0	0	0	9052000
1976	52427	5320396	69366	0	7341957	0	0	0	9080000
1977	64368	6360872	93901	0	8536406	0	0	0	10471000
1978	78278	7471747	112822	0	9957914	0	0	0	11909000
1979	94361	8889461	139782	0	11774045	0	0	0	13881000
1980	108004	9920922	161874	8053	13099262	47644	57172	104816	15332000
1981	125449	10764050	174083	15754	14249317	41640	95772	137412	16609000
1982	151630	12718102	204357	24922	16707032	58053	133520	191573	19299000
1983	173753	14053665	230067	34210	18422611	63692	146493	210185	21326000
1984	184284	14912252	249623	42892	19402848	118842	274657	393499	22522000
1985	183028	13444150	220543	42823	17688533	103517	238777	342294	20572000
1986	184443	14541603	242929	59071	18802980	125023	288806	413829	21904000
1987	192308	14670028	253264	71746	19047799	129776	299006	428782	22070000
1988	211276	15899486	280479	97493	20653916	153714	355031	508745	23829000
1989	230814	16808011	306343	124718	21970845	181322	417948	599270	25352000
1990	248645	16747946	323156	155736	22231685	219441	506471	725912	26071000
1991	250281	16872377	325262	156751	22533280	222419	513343	735762	26402000
1992	250526	16900815	325849	157034	22568590	222772	514159	736931	26472000
1993	250520	16900079	325833	157026	22567676	222763	514138	736901	26478000
1994	250516	16899623	325824	157022	22567110	222757	514125	736882	26485000
1995	250510	16899005	325811	157016	22566342	222750	514107	736857	26487000
1996	250513	16899355	325818	157019	22566776	222754	514117	736871	26491000
1997	250508	16898737	325806	157013	22566010	222746	514099	736845	26493000
1998	250508	16898737	325806	157013	22566010	222746	514099	736845	26493000
1999	250508	16898737	325806	157013	22566010	222746	514099	736845	26493000
2000	250508	16898737	325806	157013	22566010	222746	514099	736845	26493000
2001	250508	16898737	325806	157013	22566010	222746	514099	736845	26493000
2002	250508	16898737	325806	157013	22566010	222746	514099	736845	26493000
2003	250508	16898737	325806	157013	22566010	222746	514099	736845	26493000
2004	250508	16898737	325806	157013	22566010	222746	514099	736845	26493000
2005	250508	16898737	325806	157013	22566010	222746	514099	736845	26493000
2006	250508	16898737	325806	157013	22566010	222746	514099	736845	26493000
2007	250508	16898737	325806	157013	22566010	222746	514099	736845	26493000
2008	250508	16898737	325806	157013	22566010	222746	514099	736845	26493001
2009	250508	16898737	325806	157013	22566010	222746	514099	736845	26493000
2010	250508	16898737	325806	157013	22566010	222746	514099	736845	26493000
2011	250508	16898737	325806	157013	22566010	222746	514099	736845	26493000
2012	250508	16898737	325806	157013	22566010	222746	514099	736845	26493000
2013	250508	16898737	325806	157013	22566010	222746	514099	736845	26493000
2014	250508	16898737	325806	157013	22566010	222746	514099	736845	26493000
2015	250508	16898737	325806	157013	22566010	222746	514099	736845	26493000
2016	250508	16898737	325806	157013	22566010	222746	514099	736845	26493000
2017	250508	16898737	325806	157013	22566010	222746	514099	736845	26493000
2018	250508	16898737	325806	157013	22566010	222746	514099	736845	26493000
2019	250508	16898737	325806	157013	22566010	222746	514099	736845	26493000
2020	250508	16898737	325806	157013	22566010	222746	514099	736845	26493000
2021	250508	16898737	325806	157013	22566010	222746	514099	736845	26493000
2022	250508	16898737	325806	157013	22566010	222746	514099	736845	26493000
2023	250508	16898737	325806	157013	22566010	222746	514099	736845	26493000
2024	250508	16898737	325806	157013	22566010	222746	514099	736845	26493000
2025	250508	16898737	325806	157013	22566010	222746	514099	736845	26493000
2026	250508	16898737	325806	157013	22566010	222746	514099	736845	26493000
2027	250508	16898737	325806	157013	22566010	222746	514099	736845	26493000
2028	250508	16898737	325806	157013	22566010	222746	514099	736845	26493000
2029	250508	16898737	325806	157013	22566010	222746	514099	736845	26493000
2030	250508	16898737	325806	157013	22566010	222746	514099	736845	26493000
2031	250508	16898737	325806	157013	22566010	222746	514099	736845	26493001
2032	250508	16898737	325806	157013	22566010	222746	514099	736845	26493000
2033	250508	16898737	325806	157013	22566010	222746	514099	736845	26493000
2034	250508	16898737	325806	157013	22566010	222746	514099	736845	26493000
2035	250508	16898737	325806	157013	22566010	222746	514099	736845	26493000
2036	250508	16898737	325806	157013	22566010	222746	514099	736845	26493000
2037	250508	16898737	325806	157013	22566010	222746	514099	736845	26493000
2038	250508	16898737	325806	157013	22566010	222746	514099	736845	26493000
2039	250508	16898737	325806	157013	22566010	222746	514099	736845	26493000

* Unadjusted for prior overpayments or underpayments of charges.

TABLE B-16

TOTAL TRANSPORTATION CHARGES OF EACH CONTRACTOR*

(in dollars)

CALENDAR YEAR	FUTURE CONTRACTORS			NORTH BAY AREA			SOUTH BAY AREA			
	South Bay	Cedar Springs	Nuclear Powerplant (Assumed)	Napa County FC & WCD	Solano County FC & WCD	Total	Alameda County FC & WCD, Zone 7	Alameda County Water District	Santa Clara County FC & WD	Total
1962	0	0	0	0	0	0	17155	50246	0	67401
1963	63181	477	0	0	0	0	129254	168041	376842	674137
1964	91720	842	0	0	0	0	133137	245320	533779	912236
1965	154062	1118	0	0	0	0	193541	321391	1000661	1515593
1966	163015	1674	0	16261	0	16261	192173	322618	1210247	1725038
1967	196774	3214	0	43973	0	43973	260617	403859	1601910	2266386
1968	218167	4878	0	152428	0	152428	304110	408821	1767914	2480845
1969	230844	9702	0	160082	20038	180120	340946	445620	1903940	2690506
1970	231060	24352	0	166253	26148	192401	341962	440146	1852920	2635028
1971	231149	36992	0	168890	26980	195870	344311	438740	1825162	2608213
1972	231808	38252	0	169501	27838	197339	416822	445482	1835178	2697482
1973	232770	39177	368015	169077	28644	197721	422595	448682	1825445	2696722
1974	232853	39878	363623	184688	34182	218870	432086	457630	1849380	2739096
1975	232517	40534	356913	203057	39616	242673	429374	451418	1804790	2685582
1976	232421	40534	347990	204556	40370	244926	431762	451549	1791704	2675015
1977	232469	40534	354006	209321	43776	253097	437533	456251	1795662	2689446
1978	232233	40534	353980	216054	47546	263600	435739	452152	1766565	2654456
1979	232220	40534	357497	270489	96167	366656	440866	455851	1769032	2665749
1980	232203	40534	358752	412526	247076	659602	442754	456254	1758278	2657286
1981	232207	40534	359340	407830	243772	651602	445948	460120	1756305	2662373
1982	232242	40534	361050	398726	243876	642602	454448	469982	1773861	2698291
1983	232356	40534	472632	403641	243961	647602	460745	477331	1782049	2720125
1984	232185	40534	466421	420584	244018	664602	459012	475682	1763179	2697873
1985	231985	40534	448680	419472	244130	663602	451846	467828	1728016	2647690
1986	232102	40534	438244	403325	244277	647602	457698	474996	1735568	2668262
1987	232006	40534	429958	403128	244474	647602	455754	472990	1719364	2648108
1988	232021	40534	430757	404764	244838	649602	457348	474978	1714413	2646739
1989	232474	40534	433681	406483	245119	651602	463946	482508	1729983	2676437
1990	233246	40534	439161	408426	245176	653602	471171	490604	1746750	2708525
1991	233241	40534	440781	408426	245176	653602	475588	493039	1747080	2715707
1992	233149	40534	441297	408426	245176	653602	481100	496822	1750872	2728794
1993	233149	40534	441284	408426	245176	653602	485388	499269	1751589	2736246
1994	233149	40534	441276	408426	245176	653602	490304	499608	1754233	2744145
1995	233149	40534	441265	408426	245176	653602	495943	498893	1752530	2747366
1996	233149	40534	441271	408426	245176	653602	501551	498214	1750911	2750676
1997	233149	40534	441260	408426	245176	653602	507090	497528	1749279	2753897
1998	233149	40534	441260	408426	245176	653602	507090	497528	1749279	2753897
1999	233149	40534	441260	408426	245176	653602	507090	497528	1749279	2753897
2000	233149	40534	441260	408426	245176	653602	507090	497528	1749279	2753897
2001	233149	40534	441260	408426	245176	653602	507090	497528	1749279	2753897
2002	233149	40534	441260	408426	245176	653602	507090	497528	1749279	2753897
2003	233149	40534	441260	408426	245176	653602	507090	497528	1749279	2753897
2004	233149	40534	441260	408426	245176	653602	507090	497528	1749279	2753897
2005	233149	40534	441260	408426	245176	653602	507090	497528	1749279	2753897
2006	233149	40534	441260	408426	245176	653602	507090	497528	1749279	2753897
2007	233149	40534	441260	408426	245176	653602	507090	497528	1749279	2753897
2008	233149	40534	441260	408426	245176	653602	507090	497528	1749279	2753897
2009	233149	40534	441260	408426	245176	653602	507090	497528	1749279	2753897
2010	233149	40534	441260	408426	245176	653602	507090	497528	1749279	2753897
2011	233149	40534	441260	408426	245176	653602	507090	497528	1749279	2753897
2012	233149	40534	441260	408426	245176	653602	507090	497528	1749279	2753897
2013	185962	40057	441260	408426	245176	653602	412123	412074	1445225	2269422
2014	158798	39692	441260	408426	245176	653602	388580	357337	1294546	2040463
2015	112538	39416	441260	408426	245176	653602	354675	311100	972688	1638463
2016	97168	38860	441260	392165	245176	637341	337698	292345	824763	1454806
2017	65084	37320	441260	364453	245176	609629	270518	242023	651235	1163776
2018	45620	35656	441260	298998	245176	544174	229197	210903	548876	988976
2019	37047	30832	441260	293344	225138	518482	210852	197217	507366	915435
2020	36730	16182	441260	289173	219028	508201	210179	196705	505836	912720
2021	36710	3542	441260	288536	218196	506732	210137	196667	505744	912548
2022	35161	2921	441260	287925	217338	505263	206903	193718	498694	899315
2023	33612	1996	233403	287349	216532	503881	203668	190769	491643	886080
2024	33612	1295	233403	275738	210994	486732	203668	190769	491643	886080
2025	33612	639	233403	264369	205560	469929	203668	190769	491643	886080
2026	33612	639	233403	263870	204806	468676	203668	190769	491643	886080
2027	33612	639	233403	260105	201400	461505	203668	190769	491643	886080
2028	33612	639	233403	254372	197630	452002	203668	190769	491643	886080
2029	33612	639	233403	204937	149009	353946	203668	190769	491643	886080
2030	33612	639	233403	122558	76442	199000	203668	190769	491643	886080
2031	33612	639	233403	122558	76442	199000	203668	190769	491643	886080
2032	33612	639	233088	122558	76442	199000	203668	190769	491643	886080
2033	33612	639	232458	122558	76442	199000	203668	190769	491643	886080
2034	33612	639	231198	122558	76442	199000	203668	190769	491643	886080
2035	33612	639	230253	122558	76442	199000	203668	190769	491643	886080
2036	33612	639	230253	122558	76442	199000	203668	190769	491643	886080
2037	33612	639	230253	122558	76442	199000	203668	190769	491643	886080
2038	33558	639	230253	122558	76442	199000	203555	190666	491396	885617
2039	33105	639	230253	122558	76442	199000	202610	189804	489336	881750

*Unadjusted for prior overpayments or underpayments of charges. In addition to the Transportation Charge, each contractor shall pay the Delta Water Charge. The latter charge may be estimated by applying $3.50 to each acre-foot of entitlement through calendar year 1969, and $6.39 to each acre-foot of entitlement thereafter.

TABLE B-16 (Continued)

TOTAL TRANSPORTATION CHARGES OF EACH CONTRACTOR*

(in dollars)

CALENDAR YEAR	SAN JOAQUIN VALLEY									
					Kern County Water Agency					
	Devil's Den Water District	Dudley Ridge Water District	Empire West Side Irrigation District	Hacienda Water District	Agriculture	Municipal and Industrial	Kings County (Assumed)	Oak Flat Water District	Tulare Lake Basin Water Storage District	Total
1962	0	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	67980	0	0	0	67980
1966	0	0	0	0	0	126292	0	0	0	126292
1967	0	0	0	0	0	236752	5233	0	0	241985
1968	68470	114850	16614	14708	1731674	450669	13350	9178	243793	2663306
1969	87187	147592	20018	19084	2111699	530279	16359	12828	299591	3244637
1970	89978	136897	15284	18655	2157591	623629	14099	10360	265773	3332266
1971	100596	143369	14253	19624	2674770	649621	13698	10422	267810	3894163
1972	111145	151342	13950	20804	3204391	699434	13894	10661	275406	4501027
1973	124732	159189	13762	22028	3452694	700856	14007	10696	283436	4781400
1974	139725	172667	14143	24452	3776790	704923	14671	11254	307933	5166558
1975	146965	181283	13953	25714	3973902	725202	14921	11670	323684	5417294
1976	152814	186754	13472	26536	4275657	714853	14656	11507	333739	5729988
1977	162866	199006	13685	28301	4665957	744420	15320	12180	356512	6198247
1978	162122	204160	13248	29554	4971248	748219	15022	12024	365946	6521543
1979	160009	214292	13277	31025	5343233	762649	15059	12187	384408	6936139
1980	147086	223949	13260	32428	5615343	773105	15037	12576	402006	7234790
1981	145883	233758	13260	34326	5963072	789272	15036	12821	419880	7627308
1982	145438	246252	13419	36072	6331856	812769	15284	13449	441791	8056330
1983	144518	256877	13532	37750	6753654	837194	15514	13725	462882	8535646
1984	145855	262895	13240	38558	7065034	845344	15290	13778	472969	8872963
1985	138208	264752	12740	39294	7244097	835904	14753	13432	476314	9039494
1986	132276	280649	13127	41610	7622823	853637	15260	15257	505764	9480403
1987	129476	283628	12737	42037	7847551	846889	14746	14868	511132	9703064
1988	130757	291078	12623	43116	8113138	861968	14598	15057	524669	10007004
1989	128866	300441	12622	44933	8380616	871269	14596	15473	541715	10310531
1990	134091	318522	13074	47576	8843309	898005	15191	16032	594665	10880467
1991	134376	318569	13076	47586	8852779	899103	15195	16022	594755	10891461
1992	134567	319436	13121	47713	8867967	901205	15253	16107	596406	10911775
1993	134562	319415	13119	47710	8867597	901154	15252	16105	596366	10911280
1994	134560	319402	13119	47708	8867368	901121	15251	16104	596341	10910974
1995	134556	319384	13118	47705	8867057	901078	15250	16102	596307	10910557
1996	134558	319394	13119	47707	8867233	901102	15250	16103	596327	10910793
1997	134554	319376	13117	47704	8866922	901059	15249	16101	596293	10910375
1998	134554	319376	13117	47704	8866922	901059	15249	16101	596293	10910375
1999	134554	319376	13117	47704	8866922	901059	15249	16101	596293	10910375
2000	134554	319376	13117	47704	8866922	901059	15249	16101	596293	10910375
2001	134554	319376	13117	47704	8866922	901059	15249	16101	596293	10910375
2002	134554	319376	13117	47704	8866922	901059	15249	16101	596293	10910375
2003	134554	319376	13117	47704	8866922	901059	15249	16101	596293	10910375
2004	134554	319376	13117	47704	8866922	901059	15249	16101	596293	10910375
2005	134554	319376	13117	47704	8866922	901059	15249	16101	596293	10910375
2006	134554	319376	13117	47704	8866922	901059	15249	16101	596293	10910375
2007	134554	319376	13117	47704	8866922	901059	15249	16101	596293	10910375
2008	134554	319376	13117	47704	8866922	901059	15249	16101	596293	10910375
2009	134554	319376	13117	47704	8866922	901059	15249	16101	596293	10910375
2010	134554	319376	13117	47704	8866922	901059	15249	16101	596293	10910375
2011	134554	319376	13117	47704	8866922	901059	15249	16101	596293	10910375
2012	134554	319376	13117	47704	8866922	901059	15249	16101	596293	10910375
2013	134554	319376	13117	47704	8866922	901059	15249	16101	596293	10910375
2014	134554	319376	13117	47704	8866922	901059	15249	16101	596293	10910375
2015	134554	319376	13117	47704	8866922	833079	15249	16101	596293	10842395
2016	134554	319376	13117	47704	8866922	774767	15249	16101	596293	10784083
2017	134554	319376	13117	47704	8866922	664307	10016	16101	596293	10668390
2018	134554	319376	13117	47704	8866922	540160	8208	16101	596293	10542435
2019	134554	319376	13117	47704	8866922	485831	7858	16101	596293	10487756
2020	134554	319376	13117	47704	8866922	457151	7839	16101	596293	10459057
2021	134554	319376	13117	47704	8866922	446874	7838	16101	596293	10448779
2022	134554	319376	13117	47704	8866922	442845	7837	16101	596293	10444749
2023	134554	319376	13117	47704	8866922	442055	7836	16101	596293	10443958
2024	134554	319376	13117	47704	8866922	442055	7836	16101	596293	10443958
2025	134554	319376	13117	47704	8866922	442055	7836	16101	596293	10443958
2026	134554	319376	13117	47704	8866922	442046	7836	16101	596293	10443949
2027	134554	319376	13117	47704	8866922	441843	7836	16101	596293	10443746
2028	134554	319376	13117	47704	8866922	441490	7836	16101	596293	10443393
2029	134554	319376	13117	47704	8866922	441278	7836	16101	596293	10443181
2030	134554	319376	13117	47704	8866922	441278	7836	16101	596293	10443181
2031	134554	319376	13117	47704	8866922	441278	7836	16101	596293	10443181
2032	134554	319376	13117	47704	8866922	439837	7796	16101	596293	10441700
2033	134554	319376	13117	47704	8866922	436959	7716	16101	596293	10438742
2034	134554	319376	13117	47704	8866922	431201	7555	16101	596293	10432823
2035	134554	319376	13117	47704	8866922	426883	7435	16101	596293	10428385
2036	134554	319376	13117	47704	8866922	426883	7435	16101	596293	10428385
2037	134554	319376	13117	47704	8866922	426883	7435	16101	596293	10428385
2038	134554	319376	13117	47704	8866922	426883	7435	16101	596293	10428385
2039	134554	319376	13117	47704	8866922	426883	7435	16101	596293	10428385

*Unadjusted for prior overpayments or underpayments of charges. In addition to the Transportation Charge, each contractor shall pay the Delta Water Charge. The latter charge may be estimated by applying $3.50 to each acre-foot of entitlement through calendar year 1969, and $6.39 to each acre-foot of entitlement thereafter.

TABLE B-16 (Continued)

TOTAL TRANSPORTATION CHARGES OF EACH CONTRACTOR*

(in dollars)

CALENDAR YEAR	SOUTHERN CALIFORNIA									
	Antelope Valley-East Kern Water Agency	Big Bear Municipal Water District (Assumed)	Coachella Valley County Water District	Crestline-Lake Arrowhead Water Agency	Desert Water Agency	Littlerock Creek Irrigation District	Mojave Water Agency	Palmdale Irrigation District	San Bernardino Valley Municipal Water District	San Gabriel Valley Municipal Water District
1962	0	0	0	0	0	0	0	0	0	0
1963	25090	0	0	0	0	0	0	0	42896	0
1964	50345	0	12874	3660	32549	1110	27089	7168	75867	32215
1965	99546	0	22394	6189	36532	1992	47746	13556	122379	33467
1966	183335	0	38482	10493	63066	3449	82609	24378	199527	55381
1967	341025	16287	69180	18877	113698	6265	148820	45333	348237	97679
1968	677225	31155	135769	36429	223528	12213	293804	89348	674474	191638
1969	1002693	51391	211655	57538	348690	18958	456672	137444	1134202	319503
1970	1308910	77160	311233	88589	512934	26046	661932	186923	1756412	490019
1971	1611573	106192	405493	118236	668398	31173	851494	225279	2445372	647125
1972	2011744	181740	562094	145911	916755	36585	1141104	269094	3421057	885609
1973	2085783	194402	580303	152766	946504	38391	1195576	288614	3587388	931214
1974	2111360	184815	577718	155811	943565	39352	1210820	301023	3520350	917990
1975	2148546	180419	576736	158478	942891	40486	1223795	313764	3499490	916080
1976	2217789	174687	579101	161227	947351	41350	1243898	323597	3455108	908931
1977	2334793	166916	595901	166564	969725	43106	1289899	346292	3383244	892839
1978	2446668	169143	616568	172958	997814	45853	1344050	363921	3432748	909630
1979	2575104	173288	639887	180160	1029444	48234	1406883	383831	3509318	933835
1980	2685975	173962	651531	184408	1059082	50170	1440041	400659	3537558	944468
1981	2781310	175268	673482	189686	1094869	52080	1484379	410280	3579319	959073
1982	2881779	183114	709438	198602	1152833	53828	1560241	420835	3690511	1000677
1983	3031491	183725	738482	205669	1199999	56533	1620346	438295	3699968	1013432
1984	3095965	181579	750055	208216	1219514	57666	1639391	443314	3670752	1013885
1985	3062237	173889	744217	206335	1211229	57223	1617434	434518	3562970	990466
1986	3039023	173319	740386	205033	1205951	56843	1602945	428036	3575088	1001897
1987	3070892	170383	746497	206301	1223291	57526	1610335	429512	3592243	1000359
1988	3167388	170817	768712	211660	1266594	59188	1654045	439675	3659761	1016198
1989	3276697	171659	791534	217163	1311146	61213	1701749	451609	3734939	1034736
1990	3365294	171273	812016	222051	1338889	62738	1741114	460806	3788959	1046056
1991	3447698	171706	814269	222613	1342608	62828	1746074	461504	3864405	1048766
1992	3449744	171774	814610	222699	1343171	62863	1746825	461761	3865855	1049193
1993	3449694	171772	814602	222697	1343157	62862	1746807	461755	3865819	1049182
1994	3449662	171771	814596	222696	1343149	62862	1746795	461751	3865797	1049175
1995	3449619	171770	814589	222694	1343137	62861	1746780	461745	3865767	1049167
1996	3449644	171771	814593	222695	1343144	62861	1746788	461748	3865784	1049172
1997	3449601	171769	814586	222693	1343132	62861	1746773	461743	3865754	1049163
1998	3449601	171769	814586	222693	1343132	62861	1746773	461743	3865754	1049163
1999	3449601	171769	814586	222693	1343132	62861	1746773	461743	3865754	1049163
2000	3449601	171769	814586	222693	1343132	62861	1746773	461743	3865754	1049163
2001	3449601	171769	814586	222693	1343132	62861	1746773	461743	3865754	1049163
2002	3449601	171769	814586	222693	1343132	62861	1746773	461743	3865754	1049163
2003	3449601	171769	814586	222693	1343132	62861	1746773	461743	3865754	1049163
2004	3449601	171769	814586	222693	1343132	62861	1746773	461743	3865754	1049163
2005	3449601	171769	814586	222693	1343132	62861	1746773	461743	3865754	1049163
2006	3449601	171769	814586	222693	1343132	62861	1746773	461743	3865754	1049163
2007	3449601	171769	814586	222693	1343132	62861	1746773	461743	3865754	1049163
2008	3449601	171769	814586	222693	1343132	62861	1746773	461743	3865754	1049163
2009	3449601	171769	814586	222693	1343132	62861	1746773	461743	3865754	1049163
2010	3449601	171769	814586	222693	1343132	62861	1746773	461743	3865754	1049163
2011	3449601	171769	814586	222693	1343132	62861	1746773	461743	3865754	1049163
2012	3449601	171769	814586	222693	1343132	62861	1746773	461743	3865754	1049163
2013	3424511	171769	814586	222693	1331816	62861	1746773	461743	3822858	1037723
2014	3399256	171769	801712	219033	1322303	61751	1719684	454575	3789887	1028797
2015	3350055	171769	792192	216504	1306600	60869	1699027	448187	3743375	1015696
2016	3266266	171769	776104	212200	1280066	59412	1664164	437365	3666227	993782
2017	3108576	155482	745406	203816	1229434	56596	1597953	416410	3517517	951484
2018	2856144	143496	693123	189896	1143201	52054	1484431	382948	3252671	875566
2019	2554237	124070	621261	169811	1024674	45705	1330411	337821	2810213	752777
2020	2261795	98777	524035	139356	864313	38847	1130329	290076	2198099	585228
2021	2139150	75893	460311	117464	759209	36723	1007914	274241	1640170	466628
2022	2085570	68826	438672	111567	723519	35707	962168	266806	1482950	431442
2023	2072316	67795	434216	110086	716170	35464	953122	265015	1456673	424412
2024	2072316	67683	433957	109756	715744	35464	953122	265015	1451067	423245
2025	2072316	67578	433715	109447	715345	35464	953122	265015	1445824	422154
2026	2072089	67570	433676	109437	715281	35460	953037	264986	1445657	422105
2027	2066858	67390	432782	109210	713807	35372	951072	264327	1441822	420978
2028	2057760	67077	431228	108815	711244	35219	947654	263181	1435152	419018
2029	2052301	66889	430295	108578	709706	35127	945603	262493	1431150	417842
2030	2052301	66889	430295	108578	709706	35127	945603	262493	1431150	417842
2031	2052301	66889	430295	108578	709706	35127	945603	262493	1431150	417842
2032	2050957	66843	430065	108520	709327	35104	945098	262324	1430165	417552
2033	2048271	66751	429606	108403	708570	35059	944089	261986	1428197	416974
2034	2042898	66566	428688	108170	707057	34969	942071	261309	1424259	415817
2035	2038869	66427	428000	107995	705922	34901	940558	260801	1421307	414949
2036	2038869	66427	428000	107995	705922	34901	940558	260801	1421307	414949
2037	2038869	66427	428000	107995	705922	34901	940558	260801	1421307	414949
2038	2038869	66427	428000	107995	705922	34901	940558	260801	1421307	414949
2039	2038869	66427	428000	107995	705922	34901	940558	260801	1421307	414949

*Unadjusted for prior overpayments or underpayments of charges. In addition to the Transportation Charge, each contractor shall pay the Delta Water Charge. The latter charge may be estimated by applying $3.50 to each acre-foot of entitlement through calendar year 1969, and $6.39 to each acre-foot of entitlement thereafter.

TABLE B-16 (Continued)

TOTAL TRANSPORTATION CHARGES OF EACH CONTRACTOR*

(in dollars)

CALENDAR YEAR	SOUTHERN CALIFORNIA (Continued)					CENTRAL COASTAL AREA			GRAND TOTAL
	San Gorgonio Pass Water Agency	The Metropolitan Water District of Southern California	Upper Santa Clara Valley Water Agency	Ventura County Flood Control District	Total	San Luis Obispo County FC & WCD	Santa Barbara County FC & WCD	Total	
1962	0	0	0	0	0	0	0	0	67401
1963	0	565690	0	0	633676	0	0	0	1371471
1964	17591	1093670	17055	8108	1379301	8970	22118	31088	2415187
1965	18702	1937520	33336	15839	2389198	15417	37506	52923	4180874
1966	31703	3465302	64029	30288	4252042	24051	57875	81926	6366248
1967	56578	6364802	122363	57508	7806652	39301	93599	132900	10691884
1968	111963	13095514	259149	121603	15953812	78772	185883	264655	21738091
1969	183789	21682331	420268	196788	26221922	86140	203259	289399	32867130
1970	280910	31387486	592713	275475	37956742	86983	205405	292388	44664237
1971	369058	44871453	764697	345645	53461188	90388	213536	303924	60731499
1972	439203	50881645	832060	364835	62089436	91406	216467	307873	70063217
1973	455792	51920085	852967	369174	63598959	95032	226960	321992	72236756
1974	463845	51410221	848644	369448	63054962	101904	249172	351076	72166916
1975	470712	52349069	866421	369593	64056480	114248	284840	399088	73431081
1976	477569	52225573	865371	369008	63990560	226330	552941	779271	74040705
1977	490422	53372301	892499	370260	65314761	306268	744271	1050539	76133099
1978	505843	54638349	914471	371729	66929745	406641	989771	1396412	78392503
1979	523064	56175544	943770	372857	68895219	572140	1465397	2037537	81531551
1980	536488	57200707	965837	380900	70211786	782947	1991533	2774480	84169433
1981	554034	58048063	978091	388622	71368556	773043	2021032	2794075	85735995
1982	580996	60058439	1009125	398157	73898575	781656	2040575	2822231	88751855
1983	603681	61457339	1036174	408087	75693221	782300	2041896	2824196	91166312
1984	614543	62376511	1057113	417436	76745940	842826	2182603	3025429	92745947
1985	613059	60888335	1027772	417242	75006926	829659	2151759	2981418	91060329
1986	613959	61960475	1049675	433258	76085888	854563	2209718	3064281	92657316
1987	621494	62062546	1059596	445733	76296708	857992	2216828	3074820	93072800
1988	640588	63302886	1087028	471585	77916125	881701	2272320	3154021	95076803
1989	660231	64225824	1113190	498952	79250642	908596	2333569	3242165	96838066
1990	678153	64171632	1130139	530037	79519157	946667	2421981	3368648	97843340
1991	679841	64298861	1132275	531066	79824514	949646	2428854	3378500	98178340
1992	680097	64328623	1132889	531362	79861466	950015	2429708	3379723	98250340
1993	680091	64327887	1132873	531354	79860552	950006	2429687	3379693	98256340
1994	680087	64327431	1132864	531350	79859986	950000	2429674	3379674	98263340
1995	680081	64326813	1132851	531344	79859218	949993	2429656	3379649	98265340
1996	680084	64327163	1132858	531347	79859652	949997	2429666	3379663	98269340
1997	680079	64326545	1132846	531341	79858886	949989	2429648	3379637	98271340
1998	680079	64326545	1132846	531341	79858886	949989	2429648	3379637	98271340
1999	680079	64326545	1132846	531341	79858886	949989	2429648	3379637	98271340
2000	680079	64326545	1132846	531341	79858886	949989	2429648	3379637	98271340
2001	680079	64326545	1132846	531341	79858886	949989	2429648	3379637	98271340
2002	680079	64326545	1132846	531341	79858886	949989	2429648	3379637	98271340
2003	680079	64326545	1132846	531341	79858886	949989	2429648	3379637	98271340
2004	680079	64326545	1132846	531341	79858886	949989	2429648	3379637	98271340
2005	680079	64326545	1132846	531341	79858886	949989	2429648	3379637	98271340
2006	680079	64326545	1132846	531341	79858886	949989	2429648	3379637	98271340
2007	680079	64326545	1132846	531341	79858886	949989	2429648	3379637	98271340
2008	680079	64326545	1132846	531341	79858886	949989	2429648	3379637	98271340
2009	680079	64326545	1132846	531341	79858886	949989	2429648	3379637	98271340
2010	680079	64326545	1132846	531341	79858886	949989	2429648	3379637	98271340
2011	680079	64326545	1132846	531341	79858886	949989	2429648	3379637	98271340
2012	680079	64326545	1132846	531341	79858886	949989	2429648	3379637	98271340
2013	673881	63760855	1132846	531341	79196256	949989	2429648	3379637	97076571
2014	668907	63232875	1115791	523233	78509573	941019	2407530	3348549	96102312
2015	661377	62389025	1099510	515502	77469688	934572	2392142	3326714	94524076
2016	648376	60861243	1068817	501053	75606844	925938	2371773	3297711	92358073
2017	623501	57961743	1010483	473833	72052234	910688	2336049	3246737	88284430
2018	578954	52479077	899139	422001	65452701	896837	2303546	3200383	81251205
2019	510176	44249301	745177	350264	55625898	893689	2296018	3189707	71246417
2020	414838	34756677	576916	273593	44152879	892677	2293477	3186154	59713183
2021	349823	28882379	512173	243876	36965954	891802	2291255	3183057	52498582
2022	332149	25561190	476803	228445	33205814	890785	2288328	3179113	48713596
2023	328019	24881504	462575	222478	32429845	886545	2276397	3162942	47695717
2024	327258	24754621	460163	221535	32290946	879819	2254527	3134346	47510372
2025	326546	24706006	459455	221258	32233245	867404	2218692	3086096	47386962
2026	326517	24702621	459386	221225	32229047	755044	1949942	2704986	47000392
2027	325840	24624767	457797	220459	32132481	675182	1758790	2433972	46625438
2028	324663	24489368	455034	219127	31964540	574659	1512940	2087599	46101268
2029	323957	24408129	453376	218328	31863774	409167	1037328	1446495	45261130
2030	323957	24408129	453376	218328	31863774	329589	779964	1109553	44769242
2031	323957	24408129	453376	218328	31863774	329589	779964	1109553	44769242
2032	323783	24388126	452968	218131	31838963	329345	779395	1108740	44741822
2033	323435	24348160	452152	217738	31789391	328858	778257	1107115	44687037
2034	322740	24268208	450520	216952	31690224	327105	774167	1101272	44574848
2035	322219	24208259	449296	216362	31615865	316461	749328	1065789	44459623
2036	322219	24208259	449296	216362	31615865	312379	739803	1052182	44446016
2037	322219	24208259	449296	216362	31615865	312379	739803	1052182	44446016
2038	322219	24208259	449296	216362	31615865	312379	739803	1052182	44445499
2039	322219	24208259	449296	216362	31615865	312379	739803	1052182	44441179

*Unadjusted for prior overpayments or underpayments of charges. In addition to the Transportation Charge, each contractor shall pay the Delta Water Charge. The latter charge may be estimated by applying $3.50 to each acre-foot of entitlement through calendar year 1969, and $6.39 to each acre-foot of entitlement thereafter.

APPENDIX C

FACILITY DESCRIPTIONS

THE CALIFORNIA STATE WATER PROJECT

THE CALIFORNIA STATE WATER PROJECT

Water problems today have become so vital a part of the national consciousness that most Americans are now aware the future development of their country is intimately related to the wise use of its water resources. This precept is particularly true in California, the nation's most populous state, where principal water-producing areas are geographically far removed from major water-using centers.

To balance this inequity of Nature, the California Water Plan of 1957 presented a blueprint for conserving and distributing water, from the stream-rich north to the arid, populous south, so that all water needs within the State could be met for all time.

In November 1960, California voters took the first major step toward bringing that engineering concept to reality by ratifying the Burns-Porter Act, the legislative provision which furnishes the major financing source for the $2,500,000,000 State Water Project through authorization of $1,750,000,000 in general obligation bonds. With a guaranteed source of financing, work began on the gigantic arrangement of dams, aqueducts, pipelines, powerplants and reservoirs that, together with works constructed by local and federal agencies, will satisfy the growing water needs of the State until the year 1990.

The northern key facility for the State Water Project is Oroville Dam, located at the base of the Feather River country and scheduled for completion in 1968 as the highest dam in the United States. Above its reaches are the sites of five smaller dams and reservoirs in the Upper Feather Area.

Alameda and Santa Clara Counties in Central California are already receiving water deliveries from the South Bay Aqueduct. The California Aqueduct, which extends from the Sacramento-San Joaquin Delta to Perris reservoir in Riverside County, is scheduled to deliver water in the San Joaquin Valley in 1968 and in Southern California in 1971. The North Bay Aqueduct, where construction is soon to begin, is slated to deliver water to Napa County in 1968.

Project construction moves into the future with plans for: the Upper Eel River Development, where waters that would otherwise flow uselessly into the Pacific Ocean can be directed from the Eel River to the Delta; the Peripheral Canal, which would convey water from the Sacramento River, across the eastern islands of the Delta, to the intake of the California Aqueduct; and, the San Joaquin Master Drain, a proposed conveyance facility for removal of poor quality drainage water from problem areas throughout the San Joaquin Valley.

The location of the project facilities is shown on the opposite page. These facilities are briefly described in the following pages, together with pertinent statistics which are current as of April 1966.

UPPER FEATHER AREA

Authorization

The construction of the five units constituting the Upper Feather division was authorized by the California Legislature in 1957.

Purpose

Each of the five units will be operated to enhance downstream fisheries as well as to promote recreational activities in the reservoir areas. Three of the units, Antelope, Abbey Bridge, and Dixie Refuge, will be constructed solely for these purposes. Two of the units, Frenchman and Grizzly Valley, will also supplement local water supplies for agricultural, domestic, and municipal uses.

Description

Each unit consists of an earthfill dam, a reservoir, and related recreational features. The Grizzly Valley unit also includes the proposed Grizzly Valley Pipeline, which may be constructed in the future to convey water from the dam to the town of Portola.

Project Status, April 1, 1966

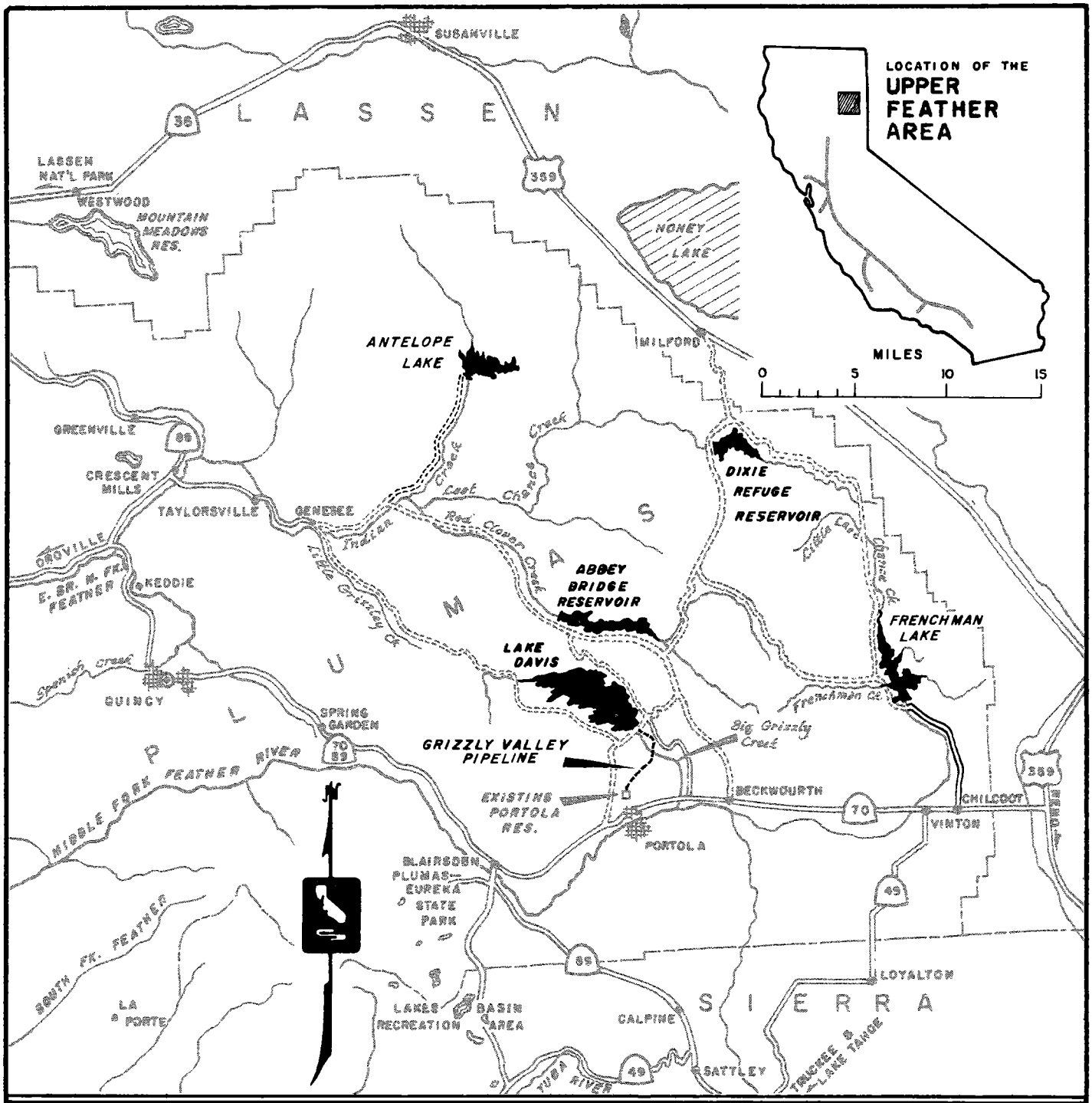
Frenchman Dam was completed in 1961, and Antelope Dam was completed in 1964. The construction of Grizzly Valley Dam is over 40 percent completed, with completion expected in November of this year. Construction of the remaining two dams has not as yet been scheduled.

Project Statistics

Dams (Earthfill)	Frenchman	Antelope	Grizzly Valley	Abbey Bridge	Dixie Refuge
Height, feet	128	105	115	110	100
Volume, cubic yards	543,000	380,000	230,000	478,000	360,000
Crest length, feet	720	1,320	800	1,150	1,050
Crest elevation, feet 1/	5,607	5,025	5,785	5,450	5,754
Spillway capacity, cubic feet per second	15,000	23,400	2,420	38,000	20,000

Reservoirs	Frenchman Lake	Antelope Lake	Lake Davis	Abbey Bridge	Dixie Refuge
Capacity, acre-feet	55,400	22,500	83,000	45,000	16,000
Dead storage, acre-feet	2,000	500	90	1,750	500
Surface area, acres	1,580	930	4,000	1,950	900
Shoreline, miles	21	15	32	12	15

1/ Above sea level.



Project Costs

Frenchman Dam and Lake	$ 3,174,000
Antelope Dam and Lake	4,486,000
Grizzly Valley Dam and Lake Davis	4,129,000
Abbey Bridge Dam and reservoir	5,349,000
Dixie Refuge Dam and reservoir	4,693,000
Total Cost	$21,831,000

OROVILLE AREA

Authorization

The construction of the Oroville division was authorized by the California Legislature in 1951.

Purpose

The Oroville division will be operated for the purposes of water supply, power generation, flood control, recreation, and fish and wildlife enhancement. It will provide a new water supply for areas adjacent to the Feather River and additional water for diversion from the Sacramento-San Joaquin Delta. It will generate at least 710,000 kilowatts of dependable power at 34 percent capacity factor. It will maintain a reservation of 750,000 acre-feet of storage for flood control. The reservoirs created by the Oroville division, together with proposed recreational features and controlled releases to the downstream channel, will provide a new base for recreational activities and will enhance the fish and wildlife resources of the Feather River.

Description

Oroville Dam will be the highest dam in the United States and the third largest embankment dam in the world in terms of total volume of fill. Oroville Powerplant, the largest underground hydroelectric installation in the United States, will be located in the left abutment of the dam. During onpeak power periods, water passing through the powerplant will be diverted by Thermalito Diversion Dam and conveyed through the Thermalito Power Canal to Thermalito Forebay for use by the Thermalito Powerplant. Flow through the Thermalito Powerplant will be received by the Thermalito Afterbay for release back to the river channel or for storage and reuse during the pumpback operation. Under pumpback operation water will be returned through reversible pump-turbine units in both powerplants to Oroville reservoir during the offpeak power periods.

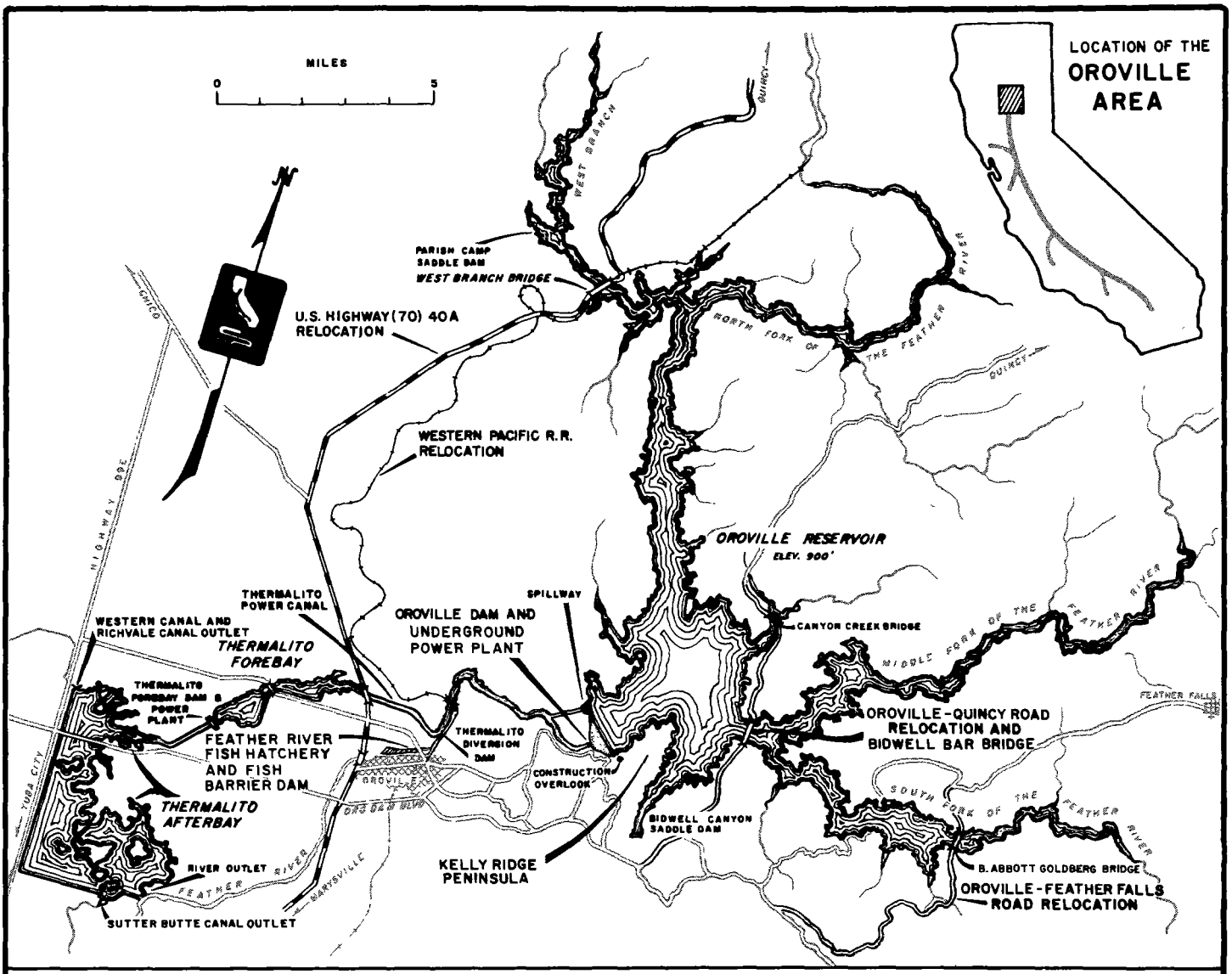
Feather River Fish Barrier Dam will divert migrating salmon and steelhead into the Feather River Fish Hatchery. The hatchery will substitute for the salmon and steelhead spawning areas inundated by Oroville reservoir.

Project Status, April 1, 1966

The Oroville-Quincy Road and Oroville-Feather Falls Road are the last two relocation projects. Each will be completed near the end of 1967. The embankment of Oroville Dam is more than 55 percent complete, and the excavation of the Oroville Powerplant underground chamber is over 90 percent complete, with the placing of concrete under way. The remaining major projects are all in the construction phase and the entire area is scheduled for completion early in 1969.

Project Costs

Oroville Dam and reservoir	$211,354,000
Feather River Fish Hatchery and Fish Barrier Dam	6,716,000
Oroville Powerplant	82,141,000
Thermalito Diversion Dam	13,545,000
Thermalito Powerplant	34,758,000
Thermalito Forebay and Afterbay	32,492,000
Thermalito Power Canal	7,446,000
Major relocations	89,982,000
Total Cost	$478,434,000



Project Statistics

Pumping-Generating Plants	Oroville	Thermalito
Pumping capacity, cubic feet per second	16,500	16,500
Generating capactiy, kilowatts	644,000	115,000
Static head, feet	675	102
Annual output, kilowatt-hours 1/	2,467,000,000	379,000,000

Thermalito Power Canal	
Capacity	17,000 cubic feet per second
Length	2.5 miles

Dams	Oroville	Thermalito Diversion	Thermalito Forebay	Thermalito Afterbay
Heights, feet	770	246	71	37
Volume, cubic yards	80,000,000	155,000	1,580,000	5,038,000
Crest length, feet	6,920	1,280	15,900	41,600
Crest elevation, feet 2/	922	205	231	142
Spillway capacity, cubic feet per second	650,000	650,000	None	17,000
Reservoirs				
Capacity, acre-feet	3,484,000	13,500	11,400	57,000
Surface area, acres	15,500	330	600	4,550
Shoreline, miles	167	10	10	26

1/ Under full project development.
2/ Above sea level.

NORTH BAY AQUEDUCT

Authorization

The construction of the North Bay Aqueduct was authorized by the California Legislature in 1957.

Purpose

The North Bay Aqueduct will provide an additional water supply for municipal and industrial uses in Napa and Solano Counties.

Description

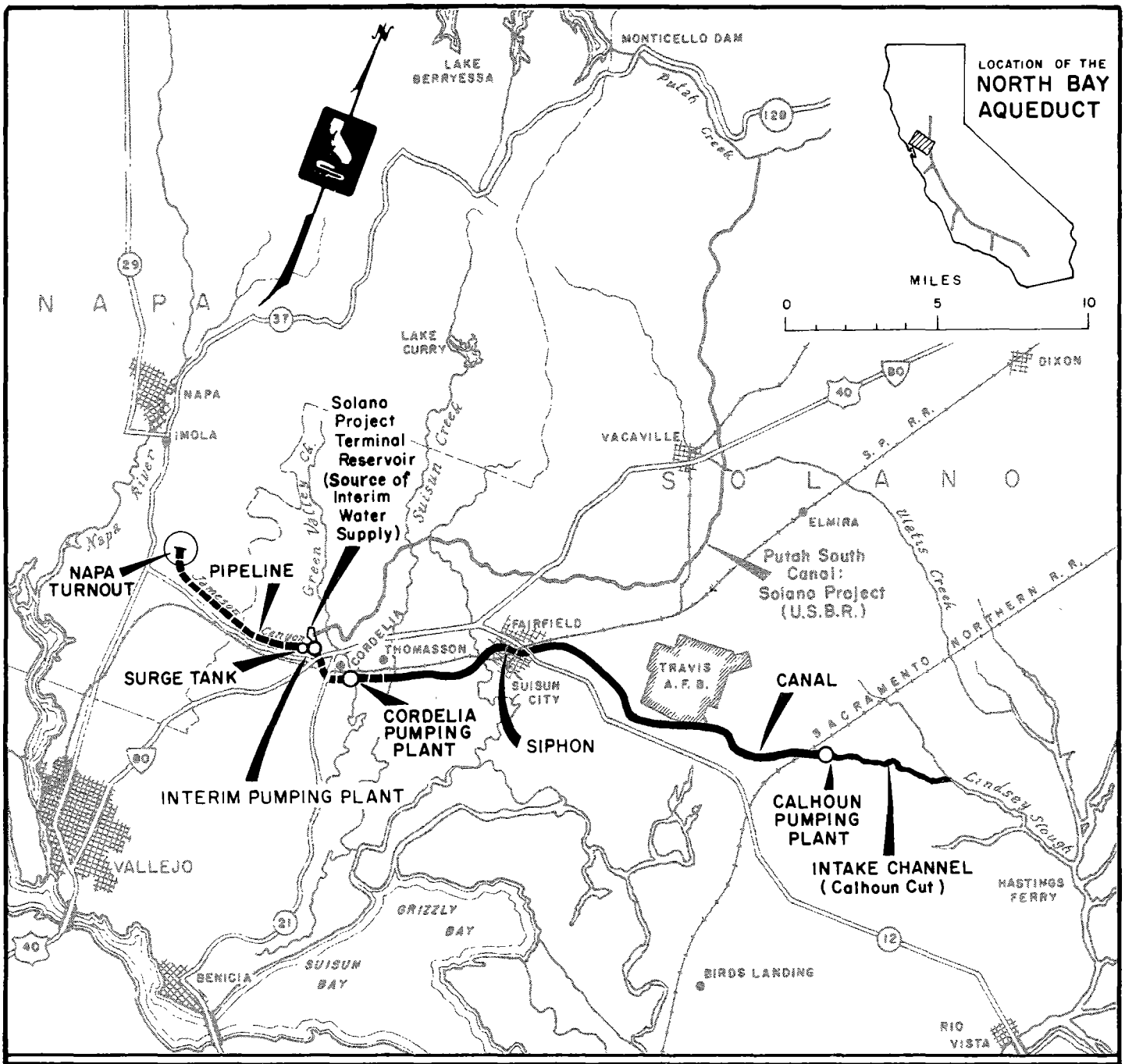
Project water will be diverted from the Sacramento-San Joaquin Delta through an enlargement of Lindsey Slough to the Calhoun Pumping Plant. The pumping plant will lift the water about 30 feet to a canal which will convey water to service areas in Solano County and to the Cordelia Pumping Plant. Cordelia Pumping Plant will lift the remaining water about 396 feet to a pipeline which will extend to the initial terminus in Napa County. Prior to about 1980, nonproject water from the Solano Project terminal reservoir will be conveyed by the Interim Pumping Plant and the 24-inch diameter Interim pipeline to the surge tank downstream from the Cordelia Pumping Plant. The Interim facilities, surge tank, 36-inch diameter pipeline downstream from the surge tank and the Napa turnout constitute Phase I of the North Bay Aqueduct. Phase II will include the remaining facilities required to deliver project water to both counties from the Delta.

Project Status, April 1, 1966

Phase I facilities are in the final design stage, and right-of-way acquisition is proceeding for this unit. Advertising for bids will commence in 1966, to allow for water delivery early in 1968. The determination of the alignment of Phase II facilities for right-of-way purposes also is scheduled to be completed in 1966. The water supply contracts with Napa and Solano Counties provide that the construction of Phase II facilities shall not commence until 1975, unless an earlier date is mutually agreed upon by the contracting parties.

Project Costs

Channel, canal and pipeline	$ 7,906,000
Interim Pumping Plant	472,000
Calhoun Pumping Plant	571,000
Cordelia Pumping Plant	1,520,000
Total Cost	$10,469,000



Project Statistics

Aqueduct

Capacity	117 to 46 cubic feet per second
Unlined channel	3.8 miles
Unlined canal	18.0 miles
Pipeline	8.1 miles
Total Length	29.9 miles

Pumping Plants	Interim	Calhoun	Cordelia
Capacity, cubic feet per second	23	117	46
Static head, feet	255	30	396

SOUTH BAY AQUEDUCT

Authorization

The construction of the South Bay Aqueduct was authorized by the California Legislature in 1951. Del Valle reservoir was added to the authorized works in 1958 through administrative action by the Director of the Department of Water Resources.

Purpose

The South Bay Aqueduct provides additional water supply for agricultural, municipal, and industrial uses in Alameda and Santa Clara Counties. Del Valle reservoir will be constructed for the purposes of flood control and recreation as well as for the purpose of water supply.

Description

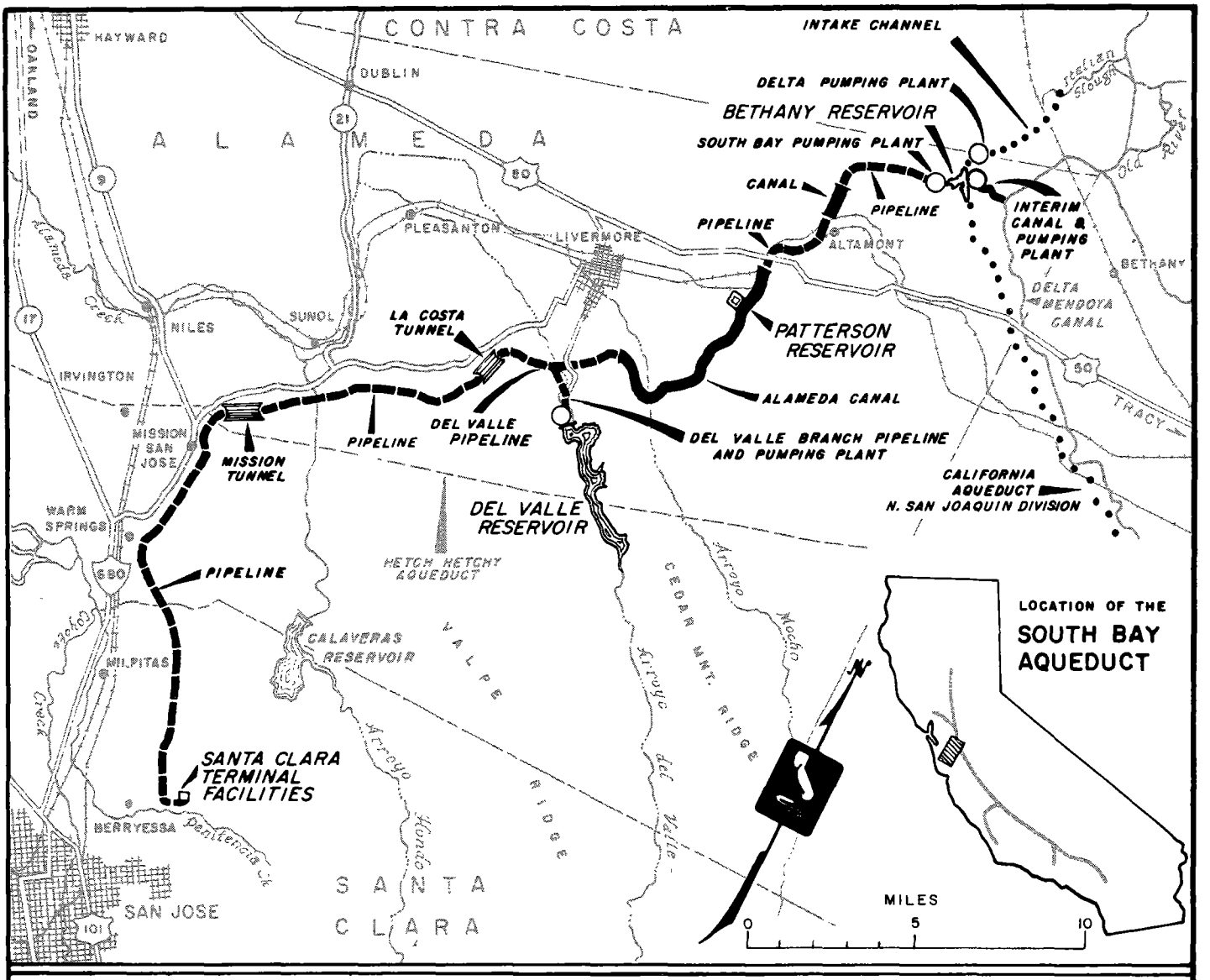
Nonproject water, purchased from the federal Central Valley Project, is being diverted from the Delta-Mendota Canal through the Interim Intake canal and the Interim Pumping Plant to Bethany reservoir of the California Aqueduct. Water is lifted 600 feet from Bethany reservoir by the South Bay Pumping Plant, and conveyed through about 42 miles of pipelines, canals, and tunnels to a terminal facility in Santa Clara County, with deliveries to water users made enroute. A portion of the conveyed water will be lifted 40 feet by the Del Valle Pumping Plant through 9,000 feet of 60-inch pipeline to Del Valle reservoir, where it will be regulated and later released during periods of peak water demand.

Project Status, April 1, 1966

Nonproject water has been delivered to contractors in Alameda County since 1962, and the delivery of such water to Santa Clara County began in August 1965. Project water deliveries are scheduled to commence in 1967 when the Delta Pumping Plant of the California Aqueduct becomes operable. The contract for construction of Del Valle Dam and reservoir was awarded in March of this year, with completion scheduled in 1968.

Project Costs

Canal and pipelines	$28,514,000
Tunnels	3,391,000
South Bay Pumping Plant	3,129,000
Del Valle Dam and reservoir	23,350,000
Del Valle Pumping Plant	1,000,000
Total Cost	$59,384,000



Project Statistics

Aqueduct

Capacity	363 to 184 cubic feet per second
Concrete-lined canal	11.5 miles
Pipelines	30.6 miles
Tunnels	1.6 miles
Total length	43.7 miles

Pumping Plants

	Interim	South Bay	Del Valle
Capacity, cubic feet per second	125	315	120
Static head, feet	60	600	40

Dams (Earthfill)

	Patterson	Del Valle
Height, feet	29	223
Volume, cubic yards	97,450	4,034,000
Crest length, feet	1,831	880
Crest elevation, feet	709.6	773

Reservoirs

Capacity, acre-feet	100	78,500
Surface area, acres	4.2	1,075
Shoreline, miles	0.3	16

1/ Above sea level.

PERIPHERAL CANAL

Authorization

The Delta facilities of the State Water Project were authorized for construction upon the ratification of the Burns-Porter Act by the California electorate in November 1960.

Numerous studies of the Sacramento-San Joaquin Delta have been made by the Department of Water Resources, the Corps of Engineers and the Bureau of Reclamation. In 1961, an Interagency Delta Committee was formed by the three agencies. A mutually acceptable plan was formulated by the group and was published in January 1965, as "Plan for Development, Sacramento-San Joaquin Delta". The Committee's plan recommended a peripheral canal as the initial feature of an overall framework within which the activities of state, federal, and local governmental agencies could proceed cooperatively. Administrative action, in March 1966, by the Director of the Department of Water Resources officially adopted the Peripheral Canal and designated it as an initial feature of the State Water Facilities.

Purpose

The main purpose of the Peripheral Canal is to divert water from the Sacramento River and transfer it to the state and federal pumping plants located in the southern Delta, without interfering with local Delta development. The Canal would also serve the purposes of local water supply, recreation, and fish and wildlife enhancement.

Description

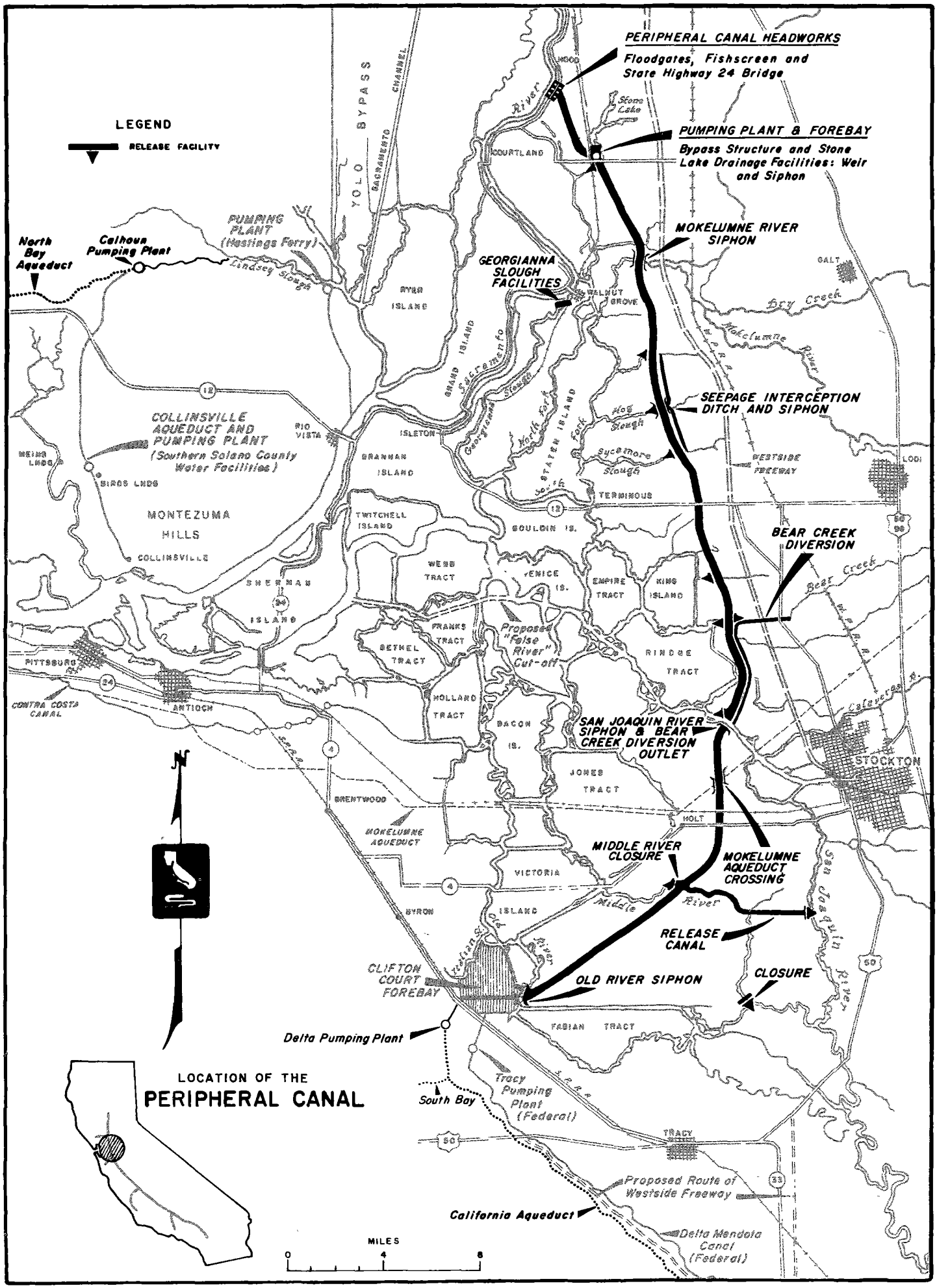
The Peripheral Canal would begin with an intake and fish screen structure located on the Sacramento River near Hood, followed by a low-lift pumping plant located near Lambert Road. The Canal would traverse the eastern edge of the northern Delta, pass beneath the Mokelumne River in a siphon, and continue toward Stockton where it would be siphoned beneath the San Joaquin River, then proceed southwesterly across the southern Delta and be siphoned beneath Old River. The Canal would divide at this point into two branches, the easterly branch terminating at the Tracy Pumping Plant of the federal Central Valley Project and the westerly branch terminating at the Clifton Court Forebay of the California Aqueduct.

Project Status, April 1, 1966

The studies of the Peripheral Canal are just entering the advance planning stage. Completion of the facility is scheduled for the end of the year 1973.

Project Statistics and Cost

Length of canal	43.0 miles
Capacity of canal (total)	21,800 to 18,300 cubic feet per second
Static head of pumping plant	11 feet
Cost (State share only)	$55,097,000


PERIPHERAL CANAL HEADWORKS
Floodgates, Fishscreen and State Highway 24 Bridge
PUMPING PLANT & FOREBAY
Bypass Structure and Stone Lake Drainage Facilities: Weir and Siphon
MOKELUMNE RIVER SIPHON
GEORGIANNA SLOUGH FACILITIES
SEEPAGE INTERCEPTION DITCH AND SIPHON
BEAR CREEK DIVERSION
SAN JOAQUIN RIVER SIPHON & BEAR CREEK DIVERSION OUTLET
MIDDLE RIVER CLOSURE
MOKELUMNE AQUEDUCT CROSSING
RELEASE CANAL
CLOSURE
OLD RIVER SIPHON
CLIFTON COURT FOREBAY
Delta Pumping Plant
South Bay
Tracy Pumping Plant (Federal)
Proposed Route of Westside Freeway
California Aqueduct
Delta Mendota Canal (Federal)
LEGEND
RELEASE FACILITY
North Bay Aqueduct
Calhoun Pumping Plant
PUMPING PLANT (Hastings Ferry)
COLLINSVILLE AQUEDUCT AND PUMPING PLANT (Southern Solano County Water Facilities)
MONTEZUMA HILLS
YOLO BYPASS
SACRAMENTO CHANNEL
Proposed "False River" Cut-off
MOKELUMNE AQUEDUCT
CONTRA COSTA CANAL
LOCATION OF THE PERIPHERAL CANAL
MILES
0
4
8

CALIFORNIA AQUEDUCT

Authorization

The construction of the California Aqueduct, including the West Branch, was originally authorized by the California Legislature in 1951. San Luis reservoir and associated features were added to the authorized works by the Legislature in 1955. The San Luis Act of 1960 gave federal authorization to the Secretary of the Interior to construct the San Luis Unit of the Central Valley Project. The State entered into an agreement with the United States on December 30, 1961, for federal construction and state operation of the features of the San Luis Unit jointly used by the federal Central Valley Project and the State Water Project. The Coastal Branch was added to the California Aqueduct in 1959 through administrative action by the Director of the Department of Water Resources.

Purpose

The California Aqueduct will serve the purposes of water supply, recreation, and fish and wildlife enhancement. It is the principal conveyance facility of the State Water Project and extends from the Sacramento-San Joaquin Delta to termini in Southern California and Central Coastal areas. The Aqueduct north of San Luis reservoir will serve dual water conservation-water transportation functions. It will convey surplus water flowing into the Delta, to the San Luis reservoir for conservation and later delivery during times of deficient Delta flows. It will also transport flows directly from the Delta to the South Bay Aqueduct and to water supply contractors south of San Luis reservoir. Water deliveries from the Aqueduct will be made to the San Joaquin Valley, to Southern California, and in the Central Coastal area. Fishing access sites and aquatic parks will be scattered throughout the length of the Aqueduct. All major reservoirs will include recreational features.

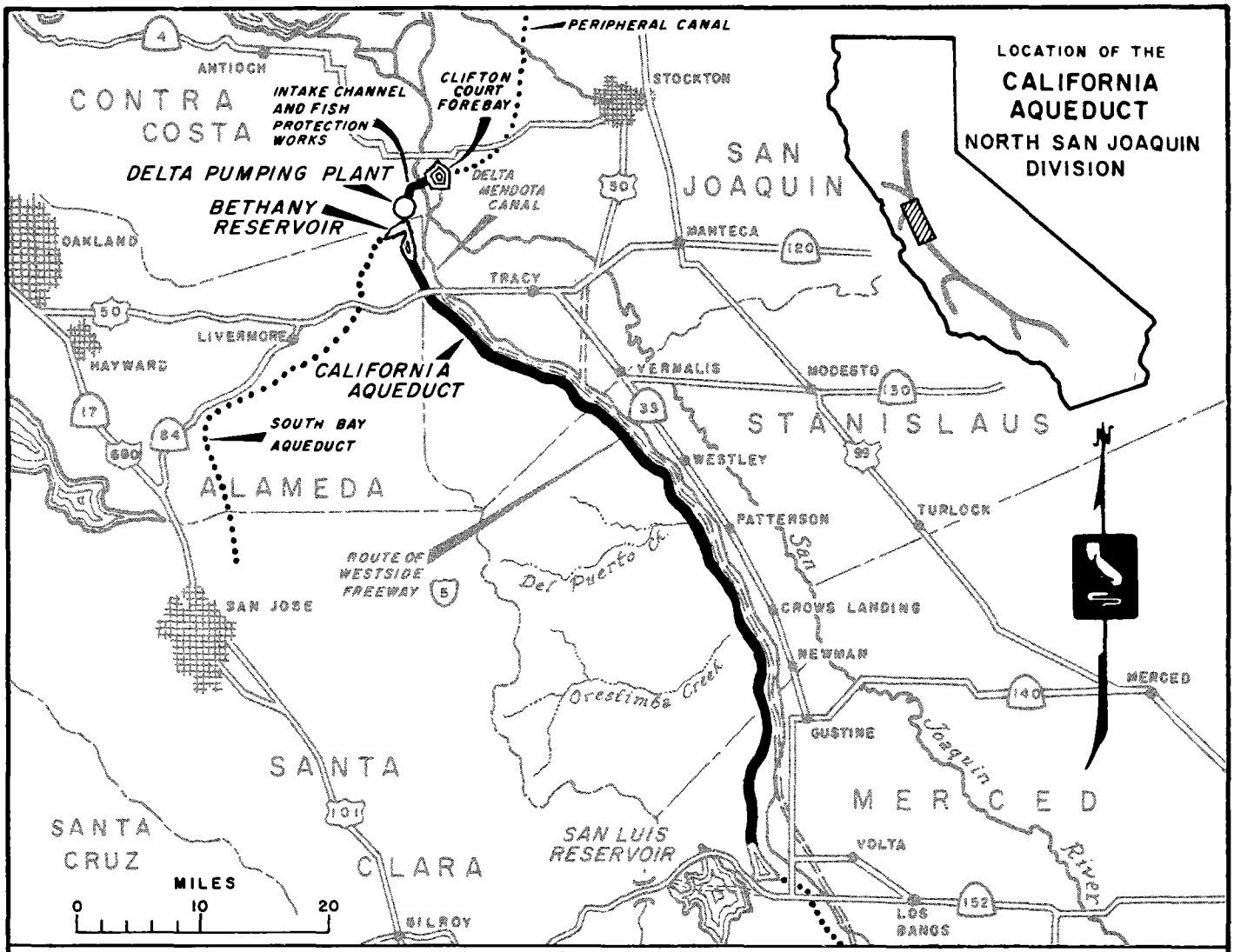
North San Joaquin Division

Description

The North San Joaquin division covers the portion of the California Aqueduct from Clifton Court Forebay in the Sacramento-San Joaquin Delta to San Luis Forebay. The major features will consist of a forebay, excavated intake channel, fish protection works, the Delta Pumping Plant, Bethany reservoir, and a concrete-lined canal 62 miles in length. Water will be lifted 244 feet from the Delta to the head of the canal. Project water for the South Bay Aqueduct will be diverted from Bethany reservoir.

Project Status, April 1, 1966

The initial stage of Bethany reservoir was completed in 1961 and is being used as a part of the interim facilities now serving the South Bay Aqueduct. Construction is under way on the Intake channel, Delta Pumping Plant, and several reaches of the canal. Initial operation of the Delta Pumping Plant is planned for 1967. The entire division is scheduled for operation in 1968.



Project Statistics

Aqueduct		
Capacity	10,000 cubic feet per second	
Concrete-lined canal	62.0 miles	
Delta Pumping Plant		
Capacity	10,350 cubic feet per second	
Static head	244 feet	
Dams	**Bethany**	**Clifton Court forebay**
Height, feet	25 to 80	14
Volume, cubic yards	1,040,000	N/A
Crest length, feet	3,220	51,200
Crest elevation, feet 1/	250	N/A
Reservoirs		
Capacity, acre-feet	4,800	35,400
Surface area, acres	161	2,900
Shoreline, miles	4	9.7

Project Costs

Fish protection works	$ 4,825,000
Canal	90,022,000
Clifton Court forebay	11,659,000
Delta Pumping Plant	25,123,000
Bethany Dams and reservoir	3,154,000
Total Cost	$134,783,000

1/ Above sea level.

CALIFORNIA AQUEDUCT

San Luis Division

Description

The San Luis division of the California Aqueduct includes those facilities of the San Luis Unit of the federal Central Valley Project which will be jointly used by the State Water Project. The major features will consist of the San Luis Forebay, Pumping-Generating Plant, Dam, and reservoir; Dos Amigos Pumping Plant; and a 101-mile long canal extending from the Forebay to near Kettleman City. The canal will be protected from floods occurring in Los Banos Creek and Little Panoche Creek by two dams which will create detention reservoirs. When water entering San Luis Forebay exceeds service area demands, the excess will be pumped to San Luis reservoir by the San Luis Pumping-Generating Plant. When water entering San Luis Forebay is less than service area demands, water will be released through the San Luis Pumping-Generating Plant to produce electrical energy and to help meet water delivery requirements.

Project Status, April 1, 1966

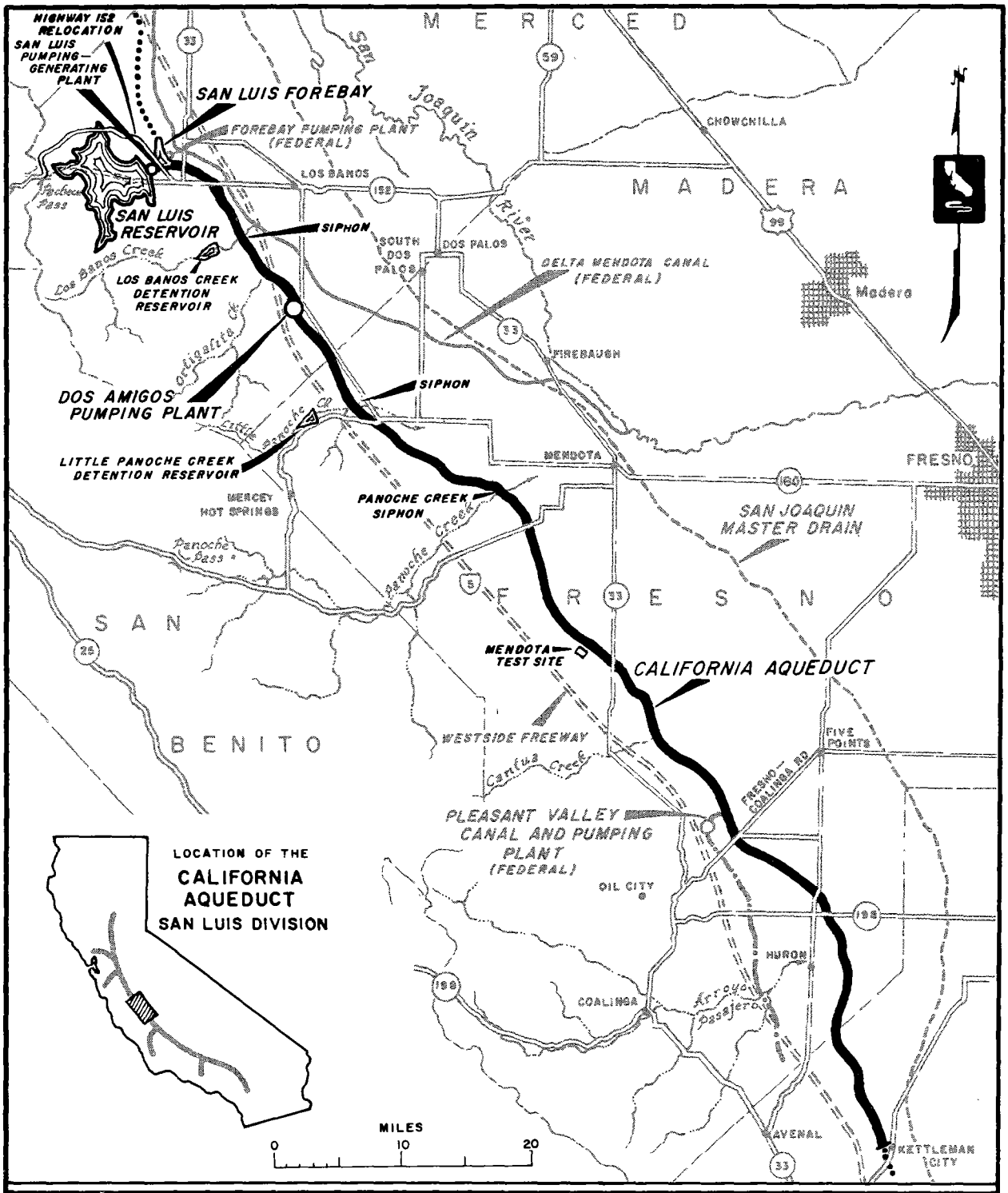
San Luis Dam, Forebay Dam and Pumping-Generating Plant are about 80 percent complete. Dos Amigos Pumping Plant is over 96 percent constructed. The Los Banos Creek Detention Dam is finished and Little Panoche Creek Detention Dam is over 50 percent completed. Deliveries of water through the division are scheduled to commence in 1967 for the federal Central Valley Project, and in 1968 for the State Water Project.

Project Statistics

Aqueduct	
Capacity	13,100 to 8,350 cubic feet per second
Concrete-lined canal	101.4 miles
San Luis Pumping-Generating Plant	
Pumping capacity	11,000 cubic feet per second
Generating capacity	424,000 kilowatts
Static head	320 feet
Annual output[1/]	118,000,000 kilowatt-hours
Dos Amigos Pumping Plant	
Capacity	13,200 cubic feet per second
Static head	117 feet

Dams	San Luis	San Luis Forebay	Los Banos Creek	Little Panoche Creek
Height, feet	320	70	154	120
Volume, cubic yards	77,000,000	3,000,000	2,200,000	630,000
Crest length, feet	18,480	13,500	1,370	1,440
Crest elevation, feet[2/]	554	233	384	676
Reservoirs				
Capacity, acre-feet	2,095,000	58,000	34,500	13,270
Surface area, acres	13,800	2,000	623	354
Shoreline, miles	65	14	12	10

1/ State share under full project development.
2/ Above sea level.



Project Costs	
Canal	$111,803,000
San Luis Dam and reservoir	84,600,000
San Luis Pumping-Generating Plant	61,470,000
San Luis Forebay	8,807,000
Dos Amigos Pumping Plant	24,670,000
Los Banos Creek Detention Dam	5,625,000
Little Panoche Creek Detention Dam	3,350,000
Other channels, levees, and floodworks	4,578,000
Permanent operating facilities	3,100,000
Total Costs, features jointly used	$308,003,000
State share (55%)	$169,402,000
Additional State-only costs	$ 20,575,000
Total State Costs	$189,977,000

CALIFORNIA AQUEDUCT

South San Joaquin Division

Description

The South San Joaquin division covers the portion of the California Aqueduct from near Kettleman City to the Tehachapi Pumping Plant. The major features will consist of three pumping plants -- Buena Vista, Wheeler Ridge, and Wind Gap -- and about 120 miles of canal. The three pumping plants will lift the conveyed water a total of 954 feet.

Project Status, April 1, 1966

Preconsolidation of unstable soils has been completed for more than 23 miles along the Aqueduct route. A 60-mile section of the Aqueduct is well into construction and contracts have been awarded for the three intake channels of the pumping plants. Construction activities are scheduled so that initial water deliveries can be made to Seventh Standard Road in 1968, and to Tehachapi Pumping Plant in 1971.

Project Statistics

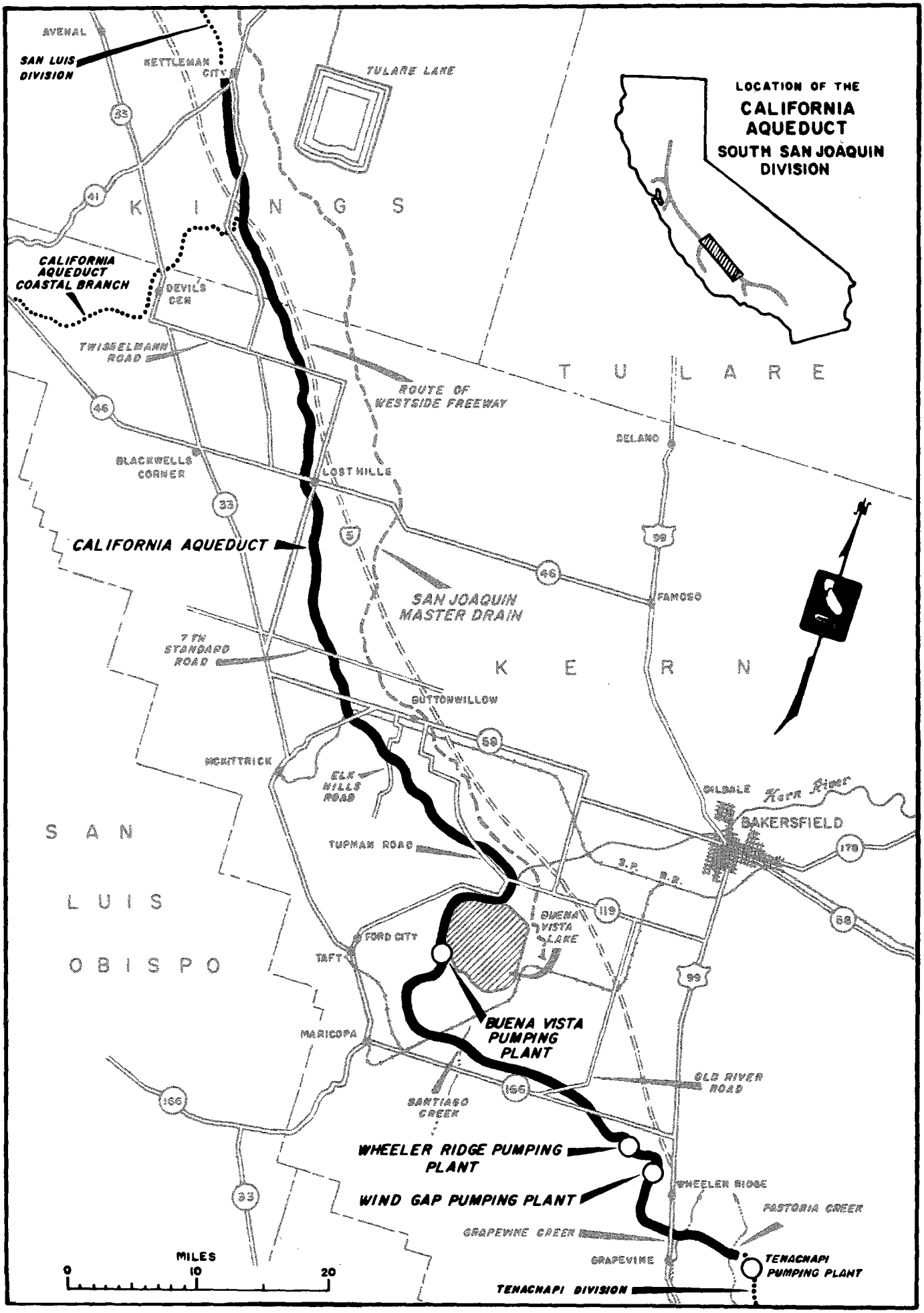
Aqueduct

Capacity	8,100 to 4,400 cubic feet per second
Concrete-lined canal	120 miles

Pumping Plants	Buena Vista	Wheeler Ridge	Wind Gap
Capacity, cubic feet per second	4,900	4,600	4,400
Static head, feet	205	230	519

Project Costs

Canal	$158,729,000
Buena Vista Pumping Plant	30,085,000
Wheeler Ridge Pumping Plant	27,864,000
Wind Gap Pumping Plant	35,713,000
Total Cost	$252,391,000


LOCATION OF THE
CALIFORNIA
AQUEDUCT
SOUTH SAN JOAQUIN
DIVISION
AVENAL
SAN LUIS
DIVISION
KETTLEMAN
CITY
TULARE LAKE
K I N G S
CALIFORNIA
AQUEDUCT
COASTAL BRANCH
DEVILS
DEN
TWISSELMANN
ROAD
ROUTE OF
WESTSIDE FREEWAY
T U L A R E
SELANO
BLACKWELLS
CORNER
LOST HILLS
CALIFORNIA AQUEDUCT
SAN JOAQUIN
MASTER DRAIN
FAMOSO
7TH
STANDARD
ROAD
K E R N
BUTTONWILLOW
MCKITTRICK
ELK
HILLS
ROAD
OILDALE
Kern River
BAKERSFIELD
S A N
L U I S
O B I S P O
TUPMAN ROAD
S.P.
R.R.
BUENA
VISTA
LAKE
FORD CITY
TAFT
BUENA VISTA
PUMPING
PLANT
MARICOPA
OLD RIVER
ROAD
SANTIAGO
CREEK
WHEELER RIDGE PUMPING
PLANT
WIND GAP PUMPING PLANT
WHEELER RIDGE
PASTORIA CREEK
GRAPEVINE CREEK
GRAPEVINE
TEHACHAPI
PUMPING PLANT
TEHACHAPI DIVISION
MILES
0
10
20

CALIFORNIA AQUEDUCT

Tehachapi Division

Description

The Tehachapi division consists of the portion of the California Aqueduct from the intake to the Tehachapi Pumping Plant to, and including, the Tehachapi Afterbay. The major features of the division will be the Tehachapi Pumping Plant, which will lift the water 1,926 feet through twin 150-inch discharge lines, and four tunnels: Tehachapi Tunnels Nos. 1, 2, and 3 and the Carley V. Porter Tunnel.

Project Status, April 1, 1966

The Tehachapi Pumping Plant, Beartrap, and Cottonwood access roads have been completed. Excavation of the north and south portals of Carley V. Porter Tunnel is completed, and tunnel excavation is proceeding from both portals. Delivery of water through the division is scheduled to commence in 1971.

Project Statistics

Aqueduct

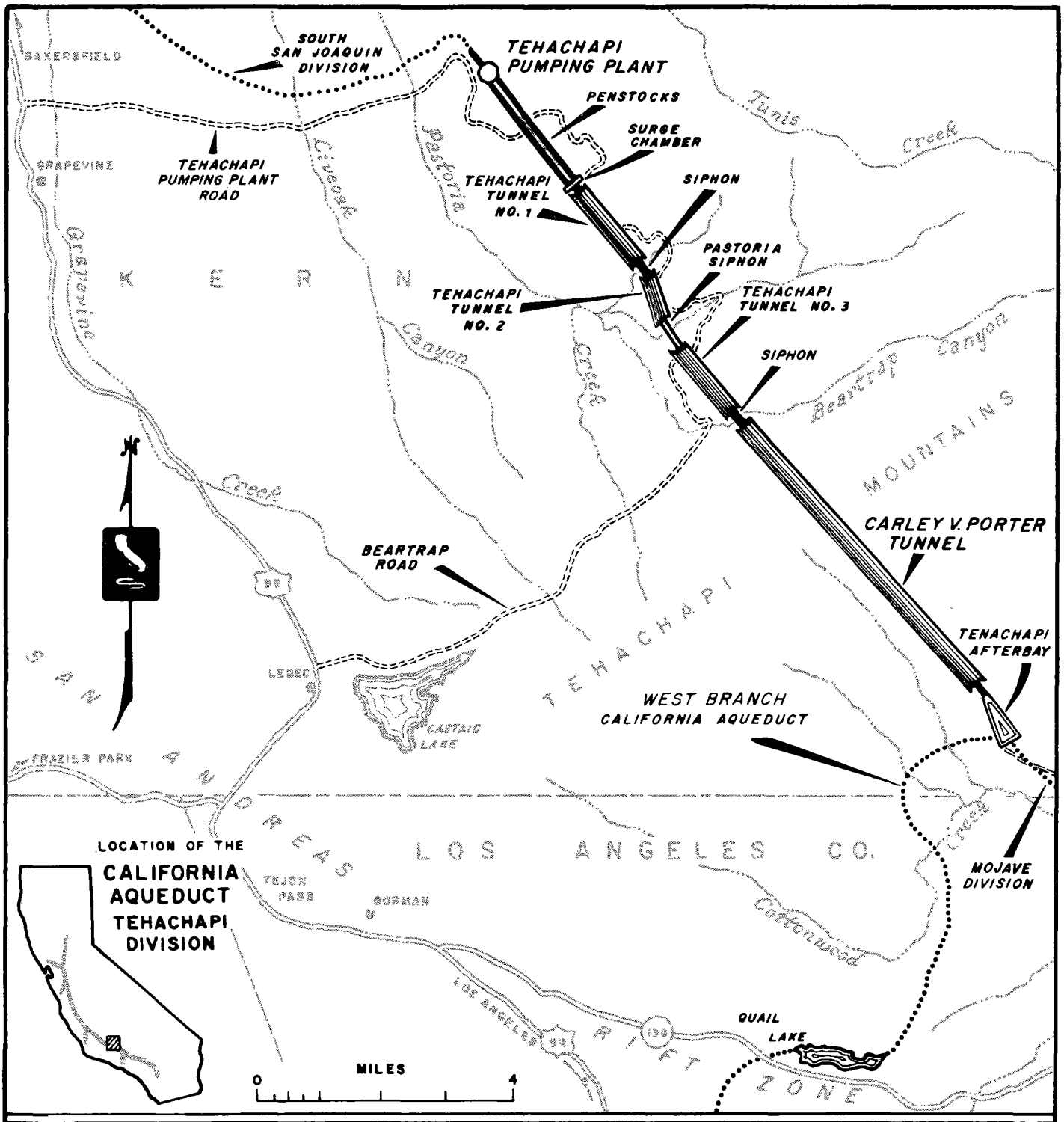
Capacity	4,100 cubic feet per second
Canal and Tehachapi Afterbay	1.6 miles
Pipelines and siphons	2.2 miles
Tunnels	7.9 miles
Total length	11.7 miles

Tehachapi Pumping Plant

Capacity	4,100 cubic feet per second
Static head	1,926 feet

Tunnel and Pipeline Data

	Capacity (cubic feet per second)	Length (feet)	Diameter (feet)
Tehachapi Tunnels Nos. 1, 2, & 3	4,112	16,152	23.5
Carley V. Porter Tunnel	4,112	25,080	20.0
Pumping plant penstocks	4,112	7,950	12.5
Siphons Nos. 1 & 3	4,112	552	23.5
Siphon No. 4	4,112	800	20.0
Pastoria Siphons	4,112	2,980	16.0



Project Costs

Tehachapi crossing	$ 99,590,000
Tehachapi Pumping Plant	135,292,000
Total Costs	$234,882,000

CALIFORNIA AQUEDUCT

Mojave and Santa Ana Divisions

Description

The Mojave and Santa Ana divisions now comprise that section of the California Aqueduct previously known as the East Branch division. The Mojave division extends from the Tehachapi Afterbay to, and including, Cedar Springs reservoir. The major features include Cottonwood Powerplant, Pearblossom Pumping Plant, Cedar Springs Dam and reservoir, and about 106 miles of canal. Santa Ana division extends from the intake of the San Bernardino Tunnel to, and including, Perris reservoir, the terminus of the California Aqueduct. Major features of the division are the San Bernardino Tunnel, Upper and Lower Devil Canyon Powerplants, over 27 miles of pipeline and Perris Dam and reservoir. The reservoirs will regulate inflow from the Aqueduct to meet downstream delivery schedules and will provide emergency storage in case of Aqueduct outages.

Project Status, April 1, 1966

The construction of fill in areas which the Aqueduct will cross is under way. Final design has been started on Cedar Springs Dam and Pearblossom Pumping Plant. The remaining features are generally in the preliminary design stages. Water deliveries through the division are scheduled to commence in 1972.

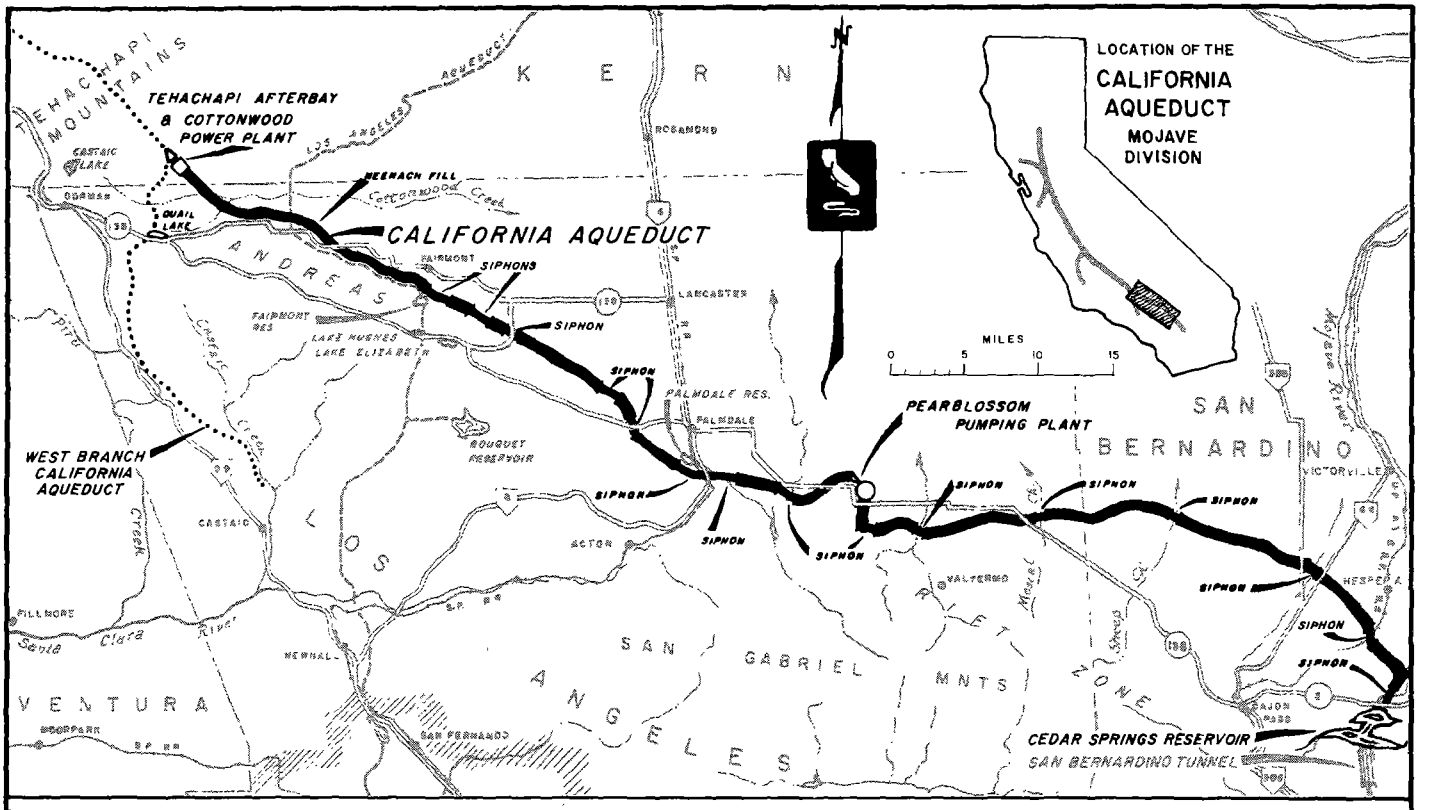
Project Statistics

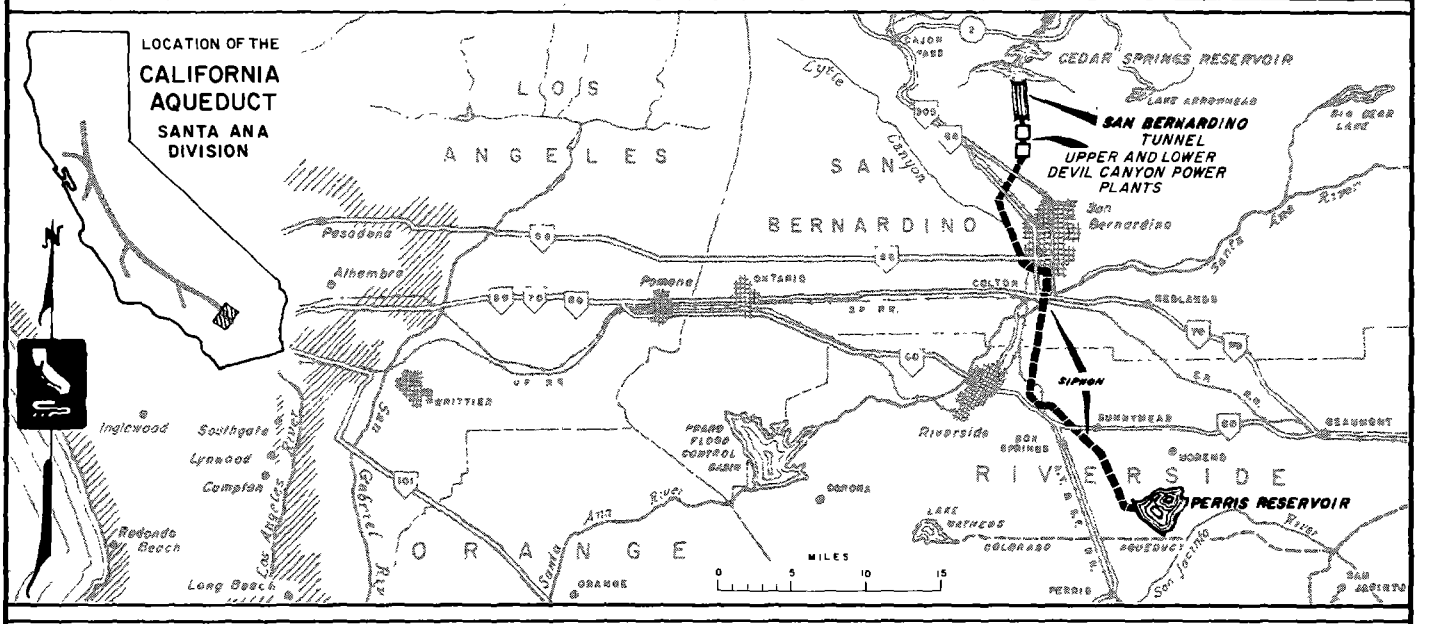
Aqueduct - Mojave division		
Capacity	1,560 to 1,220	cubic feet per second
Concrete-lined canal	106.0	miles
Cottonwood Powerplant		
Capacity	14,000	kilowatts
Static head	140	feet
Annual output[1/]	113,000,000	kilowatt-hours
Pearblossom Pumping Plant		
Capacity	1,295	cubic feet per second
Static head	545	feet
Aqueduct - Santa Ana division		
Capacity	1,220 to 440	cubic feet per second
Pipeline	27.3	miles
Tunnel	3.8	miles
Total Length	31.1	miles

Devil Canyon Powerplants	Upper	Lower
Capacity, kilowatts	74,000	48,850
Annual output, kilowatt-hours[1/]	531,000,000	350,000,000

Dams	Cedar Springs	Perris
Height, feet	305	115
Volume, cubic yards	17,648,000	13,020,000
Crest length, feet	2,475	11,450
Crest elevation, feet[2/]	3,463	1,583
Reservoirs		
Capacity, acre-feet	200,000	97,000
Surface area, acres	1,630	1,970
Shoreline, miles	22.2	8

1/ Under full project development
2/ Above sea level.





Project Costs

Canal, pipeline and tunnel	$187,332,000
Cottonwood Powerplant	12,091,000
Pearblossom Pumping Plant	29,142,000
Cedar Springs Dam and reservoir	47,470,000
Upper Devil Canyon Powerplant	12,737,000
Lower Devil Canyon Powerplant	14,505,000
Perris Dam and reservoir	35,714,000
Total Costs	$338,991,000

CALIFORNIA AQUEDUCT

West Branch

Description

The West Branch of the California Aqueduct will extend from the Tehachapi Afterbay to, and including, Castaic reservoir. It will include the Oso Pumping Plant, Pyramid and Castaic Powerplants, Pyramid and Castaic Dams and reservoirs, and about 21 miles of canal, pipeline, and tunnel. The reservoirs will regulate inflow from the aqueduct to meet downstream delivery schedules and will provide emergency storage in case of aqueduct outages.

Project Status, April 1, 1966

Work on the foundation trench of the Castaic Dam is completed. Construction of the diversion tunnel started in 1966 and is scheduled for completion in 1967. The relocation of Lake Hughes Road is in progress, with over 70 percent of Phase I complete. Delivery of water through the West Branch of the Aqueduct is scheduled to commence in 1971.

Project Statistics

Aqueduct	
Capacity	3,160 to 3,100 cubic feet per second
Canals	7.5 miles
Pipelines	6.5 miles
Tunnels	7.4 miles
Total Length[1]	21.4 miles

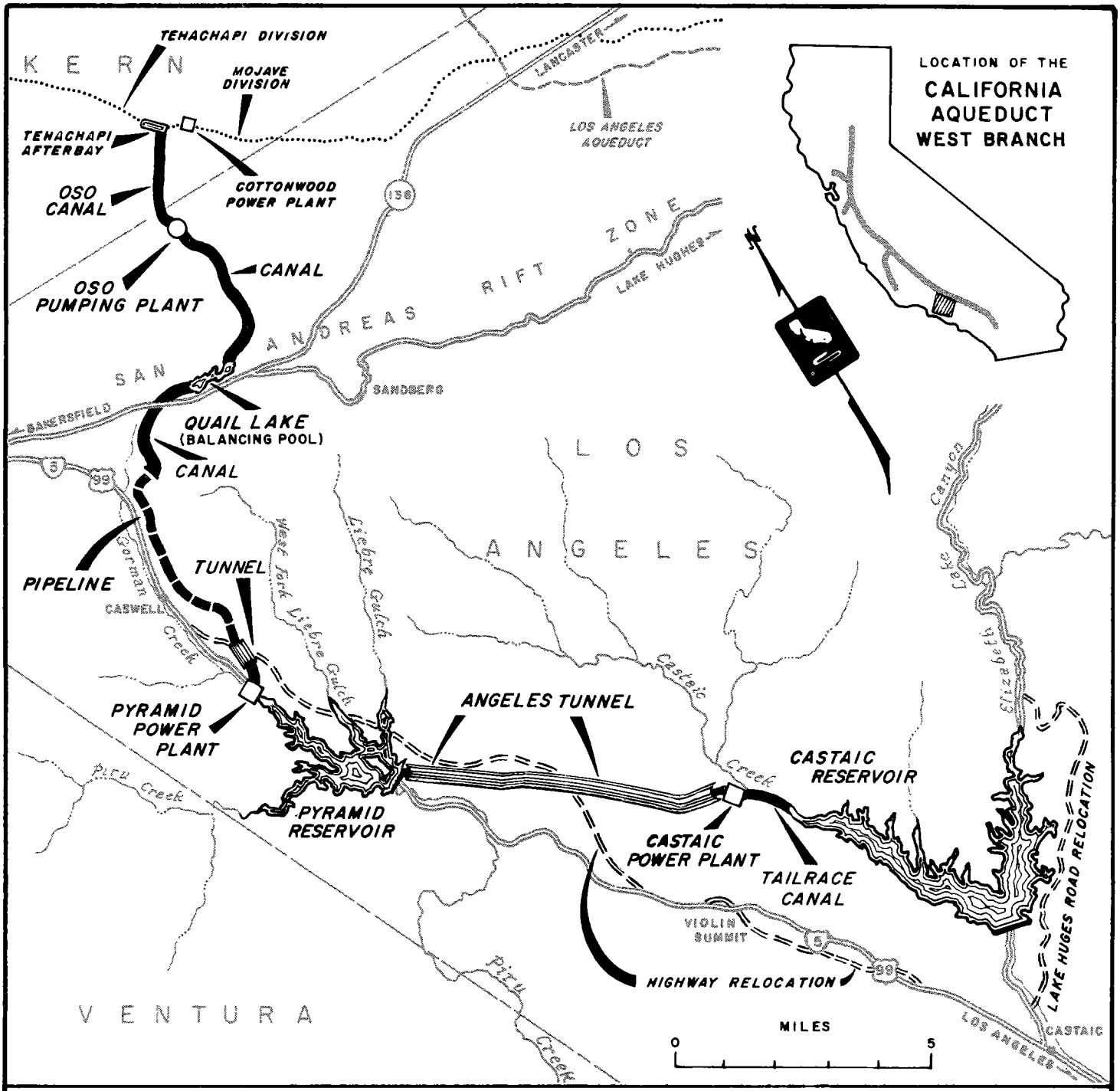
Powerplants	Capacity (kilowatts)	Static Head (feet)	Annual Output[2] (kilowatt-hours)
Pyramid	158,000	755	943,000,000
Castaic	214,000	1,060	1,284,000,000

Pumping Plant	Capacity	Static Head
Oso	3,126 cubic feet per second	207 feet

Dams	Pyramid	Castaic
Heights, feet	342	335
Volume, cubic yards	6,071,000	40,000,000
Crest length, feet	1,000	5,400
Crest elevation, feet[3]	2,570	1,530
Reservoirs		
Capacity, acre-feet	146,700	350,000
Surface area, acres	1,225	2,630
Shoreline, miles	21.2	33.6

Tunnels	Pyramid	Angeles
Capacity, cubic feet per second	3,105	3,092
Length, feet	920	37,735
Diameter, feet	15.0	17.0

1/ The reservoirs extend the length an additional 9.4 miles.
2/ Under full project development
3/ Above sea level.



Project Costs

Canal, pipeline and tunnels	$ 82,087,000
Oso Pumping Plant	15,236,000
Pyramid Powerplant	27,303,000
Pyramid Dam and reservoir	32,268,000
Castaic Powerplant	24,163,000
Castaic Dam and reservoir	103,442,000
Total Costs	$284,499,000

CALIFORNIA AQUEDUCT

Coastal Branch

Description

The Coastal Branch will extend about 100 miles from a point on the main line of the California Aqueduct near the boundary between Kings and Kern Counties, to a terminus on the Santa Maria River which forms a portion of the boundary between San Luis Obispo and Santa Barbara Counties. Water diverted from the main line will be initially lifted about 206 feet by the Las Perillas and Badger Hill Pumping Plants to supply agricultural service areas in the San Joaquin Valley. Water destined for the Central Coastal counties will continue through a succession of three pumping plants -- Devil's Den, Sawtooth, and Polonio -- which will lift it an additional 1,550 feet across the summit of the Temblor Range. The water will then flow through a pipeline to near the City of San Luis Obispo, where it will be dropped about 730 feet through the San Luis Obispo Powerplant, and will continue through a 60-inch pipeline to Santa Maria terminus near Santa Barbara County.

Project Status, April 1, 1966

Construction has started on the first 15 miles of Aqueduct from the main line of the California Aqueduct to the Devil's Den Pumping Plant, with preconsolidation of unstable soils well under way. This portion of the branch is scheduled to be operable in 1968. Water deliveries through Devil's Den Pumping Plant to San Luis Obispo and Santa Barbara Counties are not scheduled to commence until about 1980. The latter date may be modified if mutually agreed upon by the contracting parties.

Project Statistics

Aqueduct

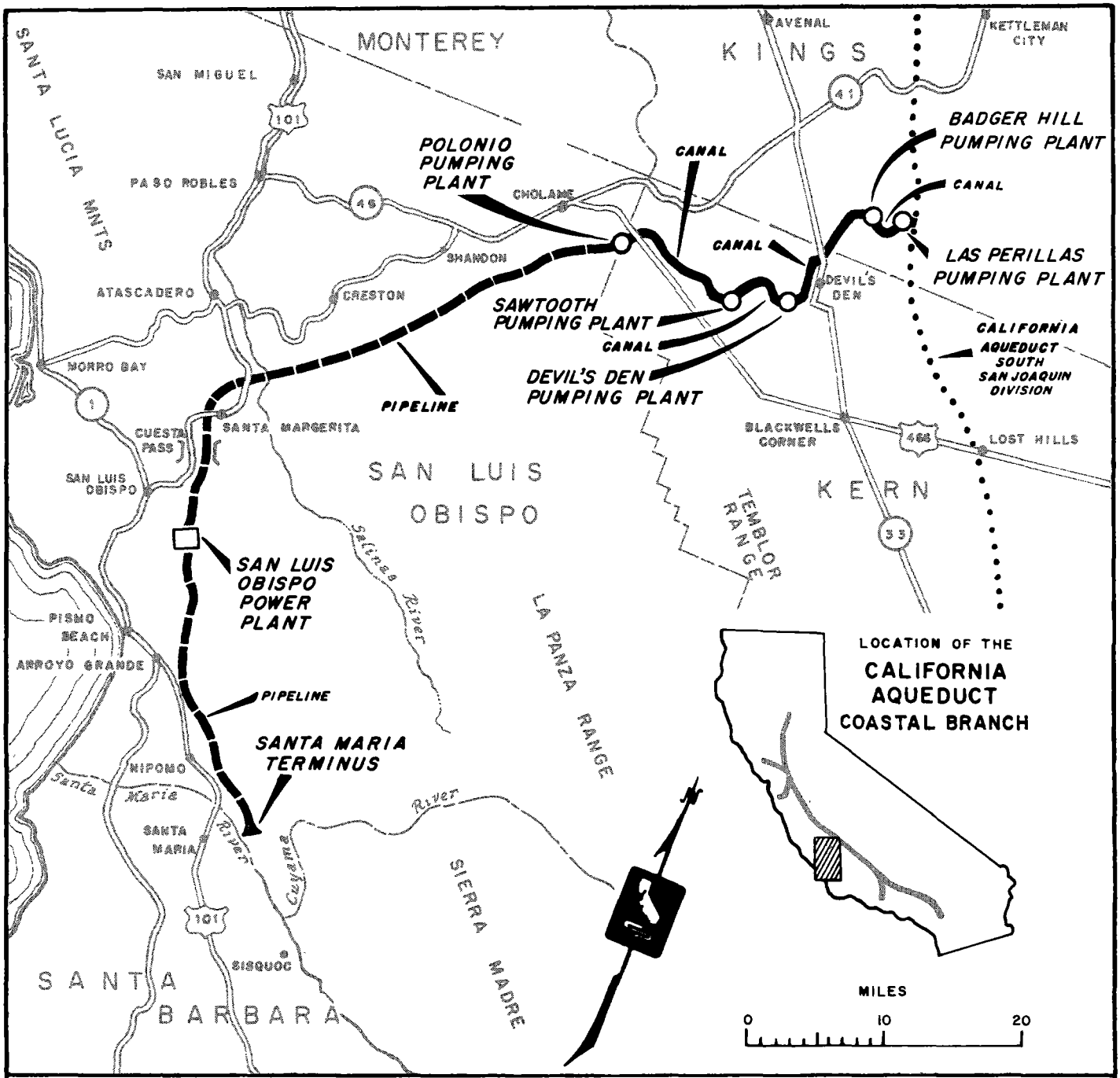
Capacity	450 to 102 cubic feet per second
Concrete-lined canal	20 miles
Pipelines	80 miles
Total length	100 miles

San Luis Obispo Powerplant

Capacity	5,900 kilowatts
Static head	730 feet
Annual output 1/	48,200,000 kilowatt-hours

Pumping Plants	Capacity (cubic feet per second)	Static Head (feet)
Las Perillas	450	55
Badger Hill	450	151
Devil's Den	127	409
Sawtooth	127	331
Polonio	127	810

1/ Under full project development



Project Costs

Canal and pipeline	$42,195,000
Las Perillas and Budger Hill Pumping Plants	5,695,000
Devil's Den Pumping Plant	2,418,000
Sawtooth Pumping Plant	2,130,000
Polonio Pumping Plant	2,672,000
San Luis Obispo Powerplant	1,384,000
Total Cost	$56,494,000

UPPER EEL RIVER DEVELOPMENT

Authorization

The Upper Eel River Development was authorized in 1964 as an additional facility of the State Water Project through administrative action by the Director of the Department of Water Resources.

Purpose

Oroville reservoir, San Luis reservoir, and the Peripheral Canal will have the capability to conserve the required project yield under present water supply conditions. Increased water uses in the areas tributary to the Sacramento-San Joaquin Delta will continue to decrease the surplus flows available to the State Water Project, however. The Upper Eel River Development, which will import water from the North Coastal area, has been identified as the first of the additional project conservation facilities which will maintain the required project yield. This development will also serve the purposes of flood control, recreation, and fish and wildlife enhancement, and may include power generation facilities.

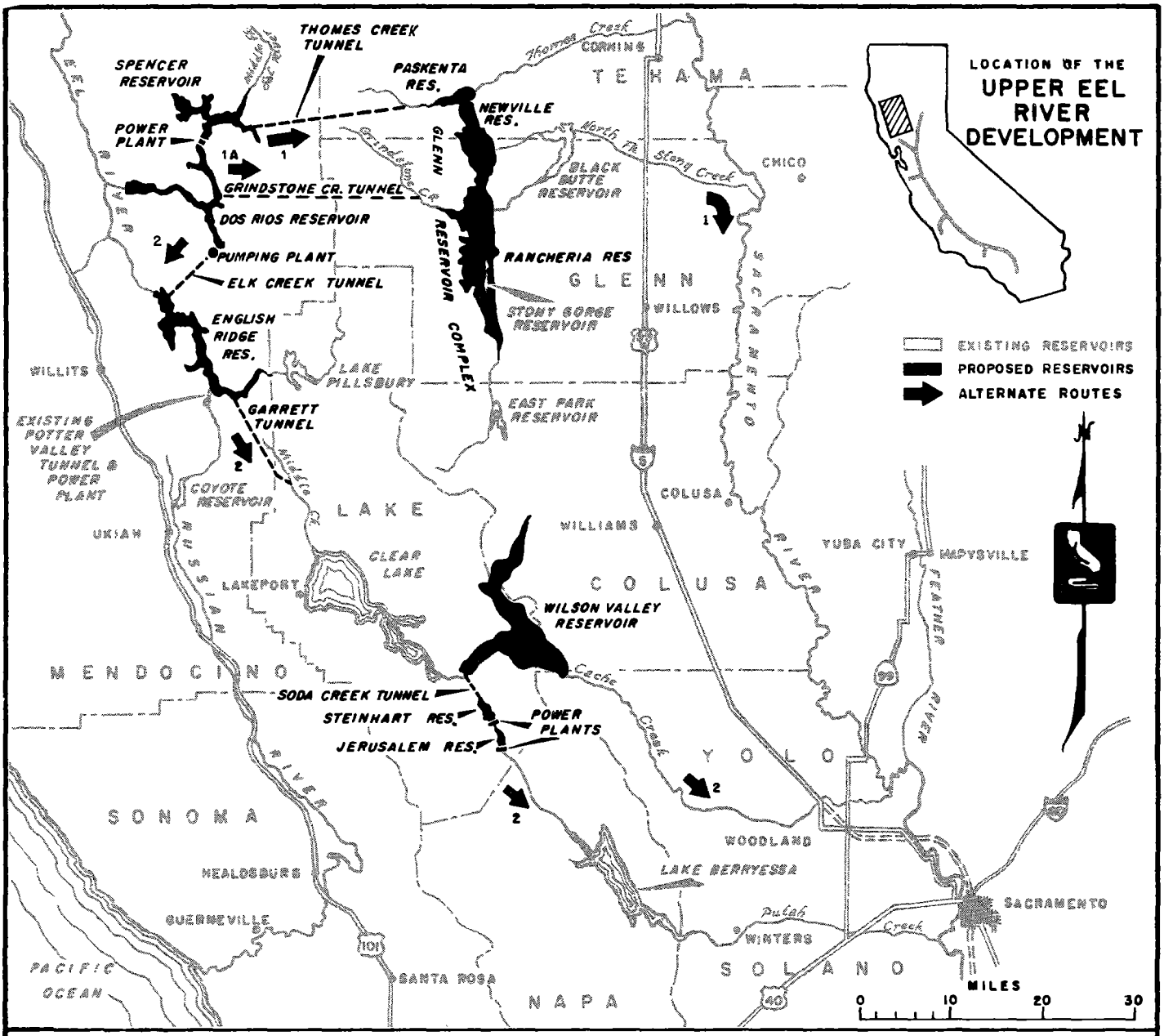
Description and Status

The Upper Eel Development, as authorized, consists of Spencer and Franciscan Dams, Spencer reservoir, and Dos Rios Dam and reservoir, or alternatives thereto on the Middle Fork Eel River in Mendocino County; and associated conveyance features to deliver the conserved water supplies to local areas and to the Sacramento River Basin, either (1) via gravity diversion to Thomes or Stoney Creeks with inclusion of elements of the Glenn reservoir complex, or (2) via pumped diversion to the upper main stream of the Eel River with subsequent gravity diversion via Clear Lake and Putah or Cache Creeks to the Sacramento River. Selection of the diversion route and determination of the specific project units will be made during the advance planning studies now in progress.

Project Costs

An alternative route (1A) via gravity diversion to Grindstone Creek has been selected for the purpose of illustrating the costs and capacities of component features of the Upper Eel River Development. The Development, as summarized herein, would make about 900,000 acre-feet of additional water supplies annually available in the Delta. The annual yield of the State Water Project could be maintained thereby until about 2030.

Dos Rios Dam and reservoir	$ 29,496,000
Paskenta Dam and reservoir	8,427,000
Newville Dam and reservoir	21,070,000
Rancheria Dam and reservoir	62,161,000
Grindstone Creek Tunnel	105,352,000
Total Cost	$226,506,000



Project Statistics

Tunnels	Grindstone Creek
Capacity, cubic feet per second	790
Length, miles	23.3
Diameter, feet	12.0

Dams	Dos Rios	Paskenta	Newville	Rancheria
Height, feet	430	185	260	345
Volume, cubic yards	6,000,000	2,000,000	16,000,000	30,000,000
Crest length, feet	1,250	1,350	5,300	6,200
Crest elevation, feet 1/	1,345	975	860	925
Reservoirs				
Capacity, acre-feet	560,000	70,000	1,130,000	2,600,000
Surface area, acres	6,400	1,300	11,300	24,000
Shoreline, miles	65	12	31	102

1/ Above sea level.

SAN JOAQUIN MASTER DRAIN

Authorization

The construction of the San Joaquin Master Drain was authorized with the ratification of the Burns-Porter Act by the California electorate in November 1960.

Purpose

The San Joaquin Master Drain will provide the first step toward full protection of the quality of surface and underground water supplies of the San Joaquin Valley. It will serve as a conveyance facility for removal of poor quality drainage waters from problem areas. It may also serve the purposes of recreation and fish and wildlife enhancement.

Description and Status

The San Joaquin Master Drain will be a concrete-lined canal beginning at a point about 16 miles southwest of Bakersfield in Kern County and discharging approximately 276 miles to the north into the Sacramento-San Joaquin Delta near the Antioch Bridge in Contra Costa County. A dilution facility will be located near the Delta Pumping Plant. In addition, a surveillance system will be initiated to monitor the quality of the receiving waters and to detect any detrimental changes that may occur in those waters due to operation of the drain. If surveillance indicates that the discharge from the drain is adversely affecting the quality of the receiving waters, the drain will be extended. The drain will also include a regulatory reservoir in Kings County just north of the Kern County line, a discharge control reservoir on the Merced-Fresno County line near South Dos Palos, and two pumping plants.

The Master Drain will be constructed in three stages. The first stage will extend from Antioch Bridge to Kettleman City, a distance of 188 miles, and will be ready to accept waters from Tranquillity northward in 1969 and from Kettleman City northward in 1970. The remaining two stages are still in the planning phase. The second stage will extend from Kettleman City to Buena Vista Lake, and the third stage will comprise an enlargement of the first stage.

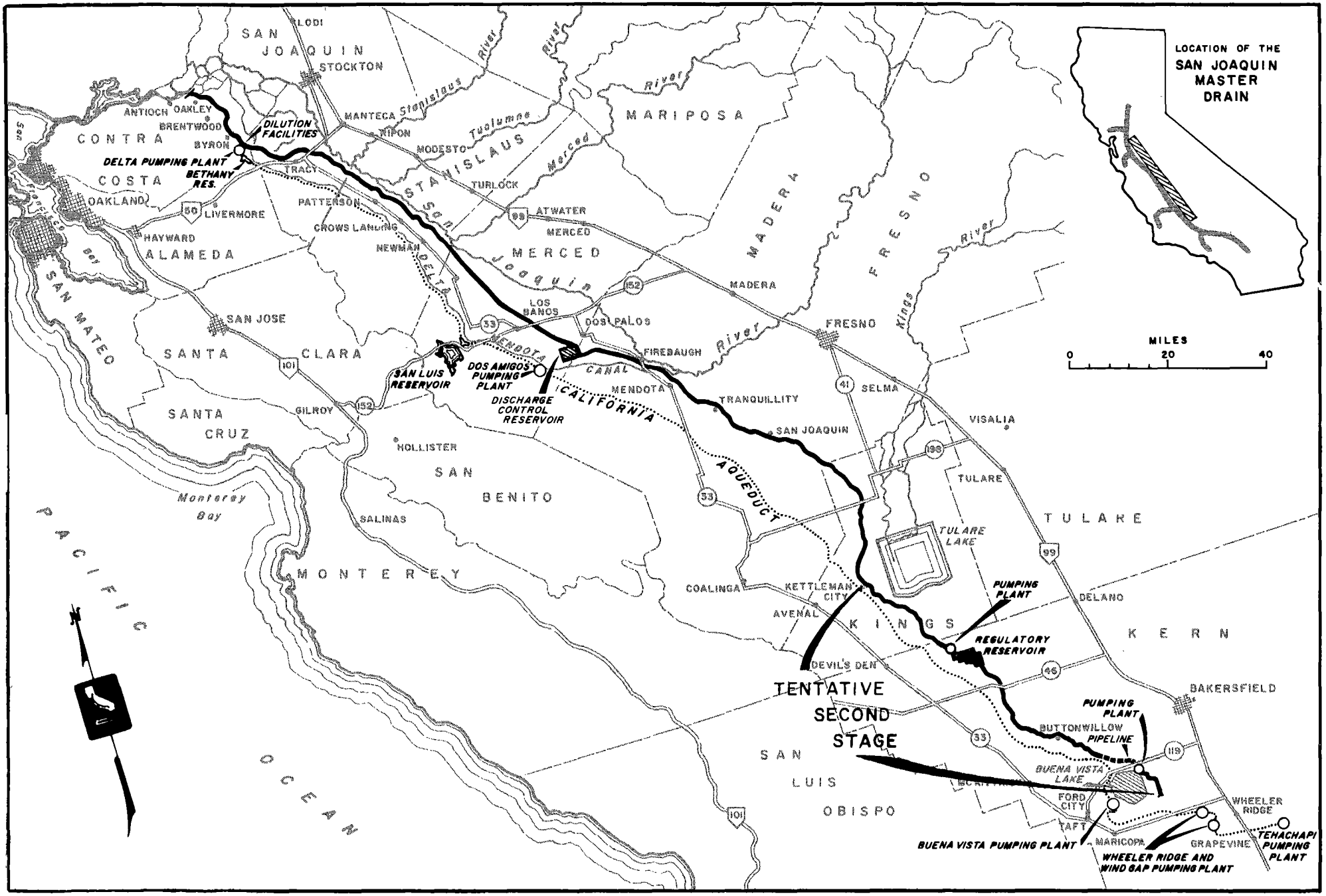
Project Statistics, (First stage)

Canal	
Capacity (First stage)	400 to 110 cubic feet per second
Concrete-lined canal	188.0 miles

Pumping Plant	Capacity (cubic feet per second)	Static Head (feet)
Dilution facilities	200	9

Project Costs, (First stage)

Canal and pumping plant	$53,934,000


LOCATION OF THE SAN JOAQUIN MASTER DRAIN
MILES
0
20
40
SAN JOAQUIN
STOCKTON
LODI
MANTECA
RIPON
MODESTO
TURLOCK
MERCED
ATWATER
MARIPOSA
MADERA
FRESNO
CONTRA COSTA
ANTIOCH
OAKLEY
BRENTWOOD
BYRON
TRACY
DILUTION FACILITIES
DELTA PUMPING PLANT
BETHANY RES.
OAKLAND
LIVERMORE
HAYWARD
ALAMEDA
PATTERSON
CROWS LANDING
NEWMAN
DELTA
SAN MATEO
SAN JOSE
SANTA CLARA
SANTA CRUZ
GILROY
HOLLISTER
SALINAS
SAN BENITO
MONTEREY
Monterey Bay
PACIFIC OCEAN
LOS BANOS
DOS PALOS
FIREBAUGH
MENDOTA
SAN LUIS RESERVOIR
DOS AMIGOS PUMPING PLANT
DISCHARGE CONTROL RESERVOIR
CALIFORNIA AQUEDUCT
CANAL
TRANQUILLITY
SAN JOAQUIN
COALINGA
AVENAL
KETTLEMAN CITY
DEVIL'S DEN
SELMA
VISALIA
TULARE
TULARE LAKE
DELANO
KINGS
KERN
BAKERSFIELD
PUMPING PLANT
REGULATORY RESERVOIR
BUTTONWILLOW
PIPELINE
BUENA VISTA LAKE
FORD CITY
TAFT
MARICOPA
WHEELER RIDGE
GRAPEVINE
TEHACHAPI PUMPING PLANT
BUENA VISTA PUMPING PLANT
WHEELER RIDGE AND WIND GAP PUMPING PLANT
SAN LUIS OBISPO
TENTATIVE SECOND STAGE
Stanislaus River
Tuolumne River
Merced River
San Joaquin River
Kings River

GENERAL PROJECT STATISTICS 1/

GENERAL PROJECT

Dams (19)

Crest length	25 miles
Volume	254 million cubic yards

Pumping Plants (24)

Annual requirements	13.1 billion kilowatt-hours

Powerplants (9)

Capacity	1.7 million kilowatts
Annual Output	6.2 billion kilowatt-hours

Reservoirs (19)

Storage	6,865,570 acre-feet
Shoreline	514 miles
Surface area	87 square miles

Aqueduct Lengths

Canals	482.3 miles
Pipelines	161.4 miles
Tunnels	20.7 miles
Channel and reservoirs	25.0 miles
Total length	689.4 miles

Total Project Cost	$2,530,386,000

MAJOR DAMS AND RESERVOIRS

Name of dam	Dams: Height (feet)	Dams: Crest length (feet)	Dams: Volume (cubic yards)	Reservoirs: Gross capacity (acre-feet)	Reservoirs: Surface area (acres)	Reservoirs: Shoreline (miles)
Frenchman	128	720	543,000	55,400	1,580	21
Antelope	105	1,320	380,000	22,500	930	15
Grizzly Valley	115	800	230,000	83,000	4,000	32
Abbey Bridge	110	1,150	478,000	45,000	1,950	12
Dixie Refuge	100	1,050	360,000	16,000	900	15
Oroville	770	6,920	80,000,000	3,484,000	15,500	167
Thermalito Diversion	246	1,280	155,000	13,500	330	10
Thermalito Forebay	71	15,900	1,580,000	11,400	600	10
Thermalito Afterbay	37	41,600	5,038,000	57,000	4,550	26
Clifton Court Forebay	14	51,200	N/A	35,400	2,900	10
Bethany	80	3,220	1,040,000	4,800	161	4
Del Valle	223	880	4,034,000	78,500	1,075	16
San Luis	320	18,480	77,000,000	2,095,000	13,800	65
San Luis Forebay	70	13,500	3,000,000	58,000	2,000	14
Los Banos Creek	154	1,370	2,200,000	34,500	623	12
Little Panoche Creek	120	1,440	630,000	13,270	354	10
Cedar Springs	305	2,475	17,648,000	200,000	1,630	22
Perris	115	11,450	13,020,000	97,000	1,970	8
Pyramid	342	1,000	6,071,000	146,700	1,225	21
Castaic	335	5,400	40,000,000	350,000	2,630	34
TOTALS		181,155	253,407,000	6,900,970	58,708	524

POWERPLANTS

Name	Installed capacity (kilowatts)	Annual output (kilowatt-hours)
Oroville	644,000	2,467,000,000
Thermalito	115,000	379,000,000
San Luis	424,000	118,000,000
Cottonwood	14,000	113,000,000
Upper Devil Canyon	74,000	531,000,000
Lower Devil Canyon	49,000	350,000,000
Pyramid	158,000	943,000,000
Castaic	214,000	1,284,000,000
San Luis Obispo	5,900	48,200,000
TOTALS	1,697,900	6,233,200,000

PUMPING PLANTS

Name	Static head (feet)	Capacity (cubic feet per second)	Annual energy requirements (kilowatt-hours)
Oroville-Thermalito (pumped storage)	675	16,500	469,000,000
North Bay Aqueduct:			
Calhoun	30	117	3,000,000
Cordelia	396	46	12,000,000
Subtotal			15,000,000
South Bay Aqueduct:			
South Bay	600	315	138,000,000
Del Valle	40	120	2,000,000
Subtotal			140,000,000
California Aqueduct (main line):			
Delta	244	10,300	1,258,000,000
San Luis	320	11,000	159,000,000
Dos Amigos	117	13,200	608,000,000
Buena Vista	205	4,900	707,000,000
Wheeler Ridge	230	4,600	779,000,000
Wind Gap	519	4,400	1,685,000,000
Tehachapi	1,926	4,100	5,990,000,000
Pearblossom	545	1,295	585,000,000
Subtotal			11,771,000,000
California Aqueduct (branches):			
Oso	207	3,126	391,000,000
Las Perillas	55	450	15,000,000
Badger Hill	151	450	41,000,000
Devil's Den	409	127	50,000,000
Sawtooth	331	127	40,000,000
Polonio	810	127	93,000,000
Subtotal			630,000,000
Peripheral Canal	11	21,800	48,000,000
San Joaquin Master Drain	41	380	1,000,000
TOTAL			13,074,000,000

AQUEDUCT LENGTHS (MILES)

Name	Total	Canal	Pipeline	Tunnel	Channel & reservoir
North Bay Aqueduct	29.9	18.0	8.1	0	3.8
South Bay Aqueduct	43.7	11.5	30.6	1.6	0
Peripheral Canal	43.0	43.0	0	0	0
Subtotal	116.6	72.5	38.7	1.6	3.8
California Aqueduct (main line):					
North San Joaquin division	66.5	62.0	0	0	4.5
San Luis division	104.3	101.4	0	0	2.9
South San Joaquin division	120.0	120.0	0	0	0
Tehachapi division	11.7	1.6	2.2	7.9	0
Mojave division	108.1	97.3	8.7	0	2.1
Santa Ana division	33.3	0	27.3	3.8	2.2
Subtotal	443.9	382.3	38.2	11.7	11.7
California Aqueduct (branches):					
West Branch	30.9	7.5	6.5	7.4	9.5
Coastal Branch	100.0	20.0	80.0	0	0
Subtotal	130.9	27.5	86.5	7.4	9.5
TOTALS	691.4	482.3	163.4	20.7	25.0

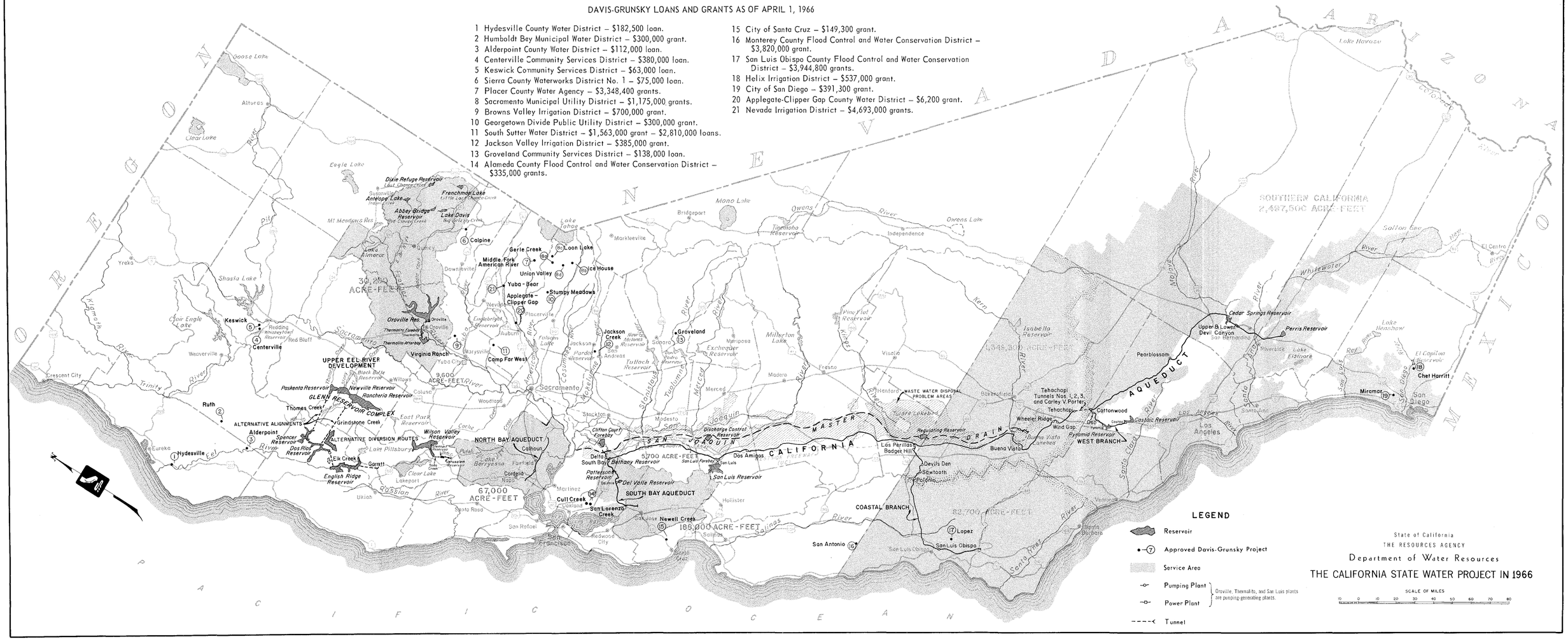
COSTS

Feather River facilities	
Upper Feather Area	21,831,000
Oroville Area	478,434,000
North Bay Aqueduct	10,469,000
South Bay Aqueduct	59,384,000
Peripheral Canal, (State share)	55,097,000
California Aqueduct:	
North San Joaquin division	134,783,000
San Luis division, (State share)	189,977,000
South San Joaquin division	252,391,000
Tehachapi division	234,882,000
Mojave and Santa Ana divisions	338,991,000
West Branch	284,499,000
Coastal Branch	56,494,000
Upper Eel River Development	226,506,000
San Joaquin Master Drain	53,934,000
Subtotal, facilities described herein	$2,397,672,000
Local Projects (Davis-Grunsky Program)	131,419,000
Costs incurred for deleted features	1,295,000
Subtotal, facilities not described herein	$ 132,714,000
TOTAL, STATE WATER PROJECT	$2,530,386,000

1/ The descriptive data in this summary excludes the facilities of the Upper Eel River Development and the conduit of the San Joaquin Master Drain. The estimated costs for these works are included, however.

DAVIS-GRUNSKY LOANS AND GRANTS AS OF APRIL 1, 1966

1 Hydesville County Water District – $182,500 loan.
2 Humboldt Bay Municipal Water District – $300,000 grant.
3 Alderpoint County Water District – $112,000 loan.
4 Centerville Community Services District – $380,000 loan.
5 Keswick Community Services District – $63,000 loan.
6 Sierra County Waterworks District No. 1 – $75,000 loan.
7 Placer County Water Agency – $3,348,400 grants.
8 Sacramento Municipal Utility District – $1,175,000 grants.
9 Browns Valley Irrigation District – $700,000 grant.
10 Georgetown Divide Public Utility District – $300,000 grant.
11 South Sutter Water District – $1,563,000 grant – $2,810,000 loans.
12 Jackson Valley Irrigation District – $385,000 grant.
13 Groveland Community Services District – $138,000 loan.
14 Alameda County Flood Control and Water Conservation District – $335,000 grants.
15 City of Santa Cruz – $149,300 grant.
16 Monterey County Flood Control and Water Conservation District – $3,820,000 grant.
17 San Luis Obispo County Flood Control and Water Conservation District – $3,944,800 grants.
18 Helix Irrigation District – $537,000 grant.
19 City of San Diego – $391,300 grant.
20 Applegate-Clipper Gap County Water District – $6,200 grant.
21 Nevada Irrigation District – $4,693,000 grants.



LEGEND

- Reservoir
- (7) Approved Davis-Grunsky Project
- Service Area
- Pumping Plant
- Power Plant
- Oroville, Thermalito, and San Luis plants are pumping-generating plants.
- Tunnel

State of California
THE RESOURCES AGENCY
Department of Water Resources

THE CALIFORNIA STATE WATER PROJECT IN 1966

SCALE OF MILES
10 0 10 20 30 40 50 60 70 80