State of California
The Resources Agency

Department of
Water Resources

save water
DWR

The California State Water Project– Current Activities and Future Management Plans.

Bulletin 132-80
October 1980

ON THE COVER: Scale model of Bottle Rock Powerplant, the first Department of Water Resources geothermal plant, to be constructed in Lake County. When complete, the 55-megawatt power plant will produce electrical power for State Water Project pumping.

Department of
Water Resources

Bulletin 132-80

The California State Water Project– Current Activities and Future Management Plans.

October 1980

Huey D. Johnson
Secretary for Resources
The Resources Agency

Edmund G. Brown Jr.
Governor
State of California

Ronald B. Robie
Director
Department of Water Resources

Torrential rains in the Oroville area in January 1980 necessitated the biggest flood control release in Oroville's twelve year history. The spill unleashed 2 000 cubic metres per second (70,000 cfs) of water from Lake Oroville.

FOREWORD

The last 18 months have been months of great accomplishment for the Department and the State Water Project (SWP). Culminating more than four years of effort, the California Legislature passed a major water management program for the SWP -- Senate Bill 200, introduced by Senator Ruben Ayala, Chairperson of the Senate Agriculture and Water Resources Committee -- incorporating the basic recommendations of Bulletin 76, "Delta Water Facilities". The legislation provides strong Delta and San Francisco Bay guarantees, along with a comprehensive plan for meeting the water needs of the SWP through the year 2000.

After incorporating significant reductions in demand due to water conservation and water reclamation, SB 200 authorizes (1) the Peripheral Canal, (2) construction of facilities to guarantee that the Suisun Marsh remains a major habitat for birds and wildlife in the Delta, (3) ground water storage in lieu of comparable surface storage, and (4) additional storage projects in the Sacramento Valley system. The program incorporated in SB 200 assures that the needs of the SWP can be met without damming any of California's wild and scenic rivers.

After State action on this legislation, Congress completed action on HR 5278, which authorizes a joint feasibility study of enlarging Shasta Dam to provide additional water yield for the SWP and the federal Central Valley Project. The Shasta studies will be integrated into the detailed studies of surface storage alternatives included in SB 200.

The Delta-San Francisco Bay guarantees in SB 200, along with greater protection for the North Coast wild rivers, was included in Assembly Constitutional Amendment 90, a companion measure approved by the Legislature, introduced by Assemblyman Larry Kapiloff, Chairperson of the Assembly Water, Parks, and Wildlife Committee. This measure will lock into the California Constitution the water quality guarantees in SB 200 and will provide that water storage projects on California's wild rivers can be authorized only by a two-thirds, rather than a majority, vote of the Legislature. ACA 90 will also provide procedures to expedite judicial challenges of the features in SB 200. This amendment will appear as Proposition 8 on the November 4, 1980, general election ballot.

Other legislation supported by the Department requiring conservation plans for the SWP was not approved by the Legislature. However, when Governor Edmund G. Brown Jr. signed SB 200, he issued an Executive Order directing the Department to prepare a plan of water conservation, reclamation, and management for the SWP and to implement, as quickly as possible, a program of recycling agricultural drainage and other brackish water to augment project water supplies by 493 000 cubic dekametres (400,000 acre-feet) by year 2000.

Senate Bill 200, Assembly Constitutional Amendment 90, and the Governor's Executive Order provide a clear blueprint for meeting the reasonable needs of the SWP through the year 2000. As Governor Brown said in signing the legislation:

> "...it marks an end of an era -- an era of growth without strict conservation. And the beginning of a period where we will enhance our natural systems: soils, forests, fisheries, water and air; as good stewards of those natural resources and for those who will come after us..."

I am pleased that, as the decade of the 1980s has begun, the integrity of the SWP has been maintained and it has a clear direction to follow to meet the water needs of the people it serves during the remainder of the century.

With regard to the Department's power supply, this same period represented major milestones as well. The Department now has assurances of reliable and economic supplies of electrical energy for project pumping after March 1, 1983 -- the date when current firm power purchase contracts expire -- and has such power available through the remainder of this century. Significant steps taken to accomplish this objective include:

- o developing three DWR-constructed geothermal plants, and a precedent-setting, innovative geothermal-biomass plant
- o purchasing The Metropolitan Water District of Southern California energy from five small hydroelectric projects developed by the District
- o purchasing energy from the Kings River Conservation District for the Pine Flat Dam Powerplant
- o committing to construction of 15 DWR-constructed small hydroelectric power plants
- o signing purchase and exchange contracts with Southern California Edison Company for energy supplies
- o contracting for joint ownership of Reid Gardner Unit No. 4 coal-fired power plant.

During this period, reductions in projected project water deliveries have resulted in a 23 percent reduction in the year 2000 energy requirement. In addition, the Department significantly changed direction in developing its future energy resources by eliminating plans to build a major coal-fired plant and by implementing a program of renewable energy resources to meet its future power needs. Specific steps taken include our small hydro program, wind efforts and a major thrust in cogeneration. Thus since 1975, the Department has made significant progress in providing both power and water resources for the SWP.

This bulletin is the eighteenth in a series of annual reports by the Department of Water Resources, published to present information on the continuing activities of the SWP, together with the Project's future management plans. Over the years, the time period covering the discussion portion has varied. This bulletin covers the period January 1, 1979 through June 30, 1980, with the exception of tables and charts, which remain on an annual basis and cover the year 1979. With a fall publication date in the future, the next bulletin in this series will cover the period July 1, 1980 through June 30, 1981.

Ronald B. Robie, Director
Department of Water Resources
The Resources Agency
State of California

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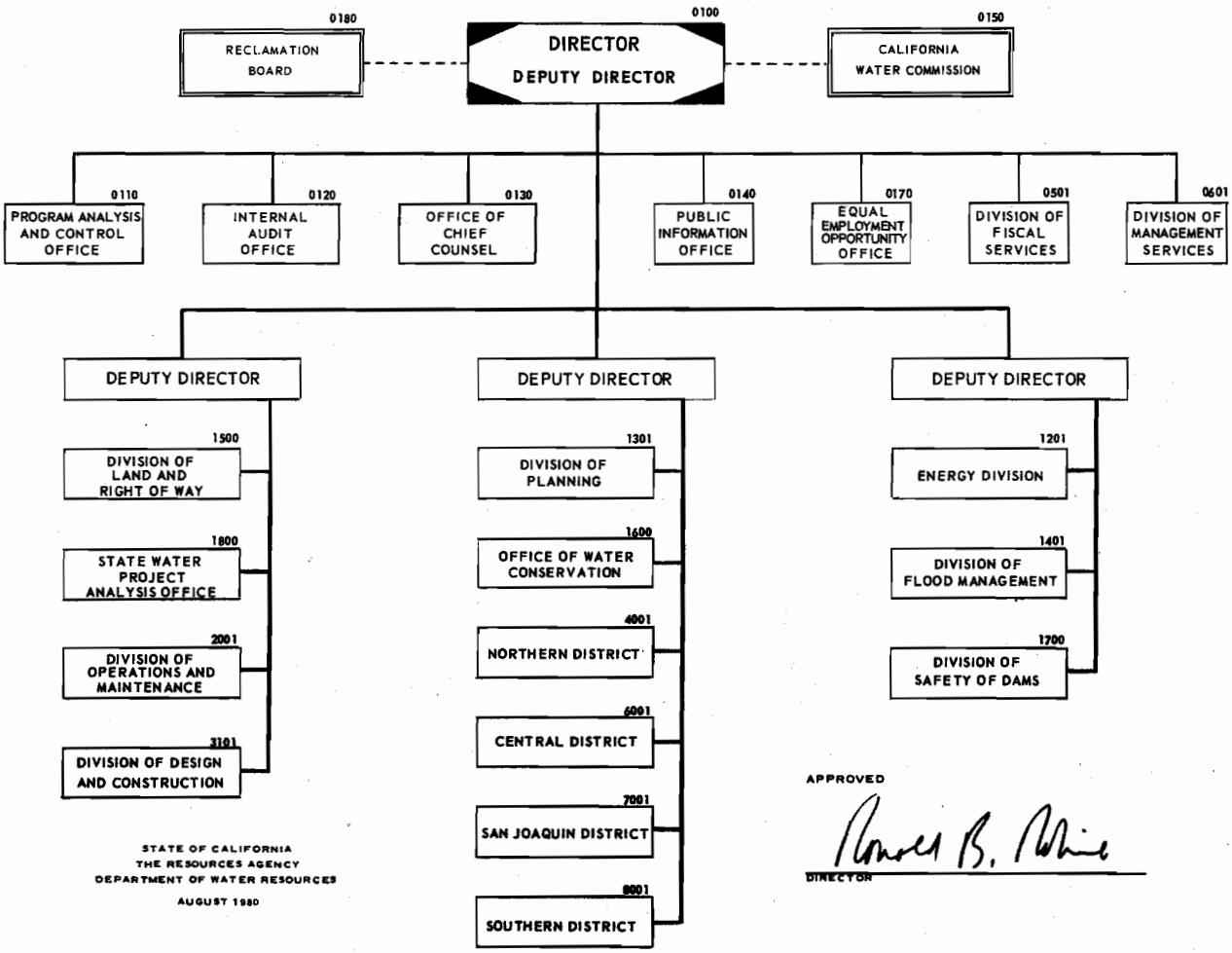
The California Water Commission serves as a policy advisory body to the Director of Water Resources on all California water resources matters. The nine-member citizen Commission provides a water resources forum for the people of the State, acts as liaison between the legislative and executive branches of State Government, and coordinates Federal, State, and local water resources efforts.



ORGANIZATION OF THE DEPARTMENT OF WATER RESOURCES

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CHAPTER I

STATE WATER PROJECT FUTURE MANAGEMENT PLANS

The year 1951 marked the initial authorization by the California Legislature of what evolved to be the State Water Project (SWP)[1/]. In 1959 the Legislature passed legislation to provide for a comprehensive water development program within the State. The program was enacted by a vote of the people in November 1960 with their approval of the California Water Resources Development Bond Act (popularly known as the Burns-Porter Act)[2/]. This Act authorized certain facilities to be constructed as a part of the SWP including "...facilities in the Sacramento-San Joaquin Delta for water conservation, water supply in the Delta, transfer of water across the Delta, flood and salinity control, and related functions." The Act also authorized future construction of: (1) a complete aqueduct system; (2) specific initial storage facilities; and (3) additional, but unspecified, future conservation facilities (reservoirs) for local needs and to augment water supplies in the Delta as necessary.

Although the major aqueducts and initial reservoirs have been built, reservoir facilities that will be needed to meet future needs have not. SWP planning includes staged construction of such facilities to meet contracting agency needs as water demands increase. To date, only about one-half of the water committed by SWP contracts has been developed on a firm basis, and the Delta facilities have not been built. Instead, natural Delta channels are currently used by both the SWP and the federal Central Valley Project (CVP) to transport water across the Delta. This has caused problems in controlling salinity intrusion and has caused a decline in the fishery resources of the estuary. Without corrective action, if a drought occurs, we can expect water shortages in the 1980's, and the continued decline of the fishery resources in the Bay-Delta estuary.

The situation has generated much controversy during two decades of design, construction, and operation of other Project facilities. The broad issues of the controversy involve the Delta environment, water rights, and export for urban and agricultural uses south and west of the Delta. The Delta controversy centers on whether Project water should be transferred around the Delta by a canal which isolates Project water from the waters within the Delta, and on how Delta protection should be guaranteed.

A review of the major events and efforts to resolve the Delta controversy prior to 1979 is presented in Chapter I of Bulletin 132-79. Climaxing more than 15 years of study, restudy, and debate, the 1979-80 Legislature enacted new legislation to resolve the Delta facility issue, meet the water needs of the SWP, and provide the necessary environmental and water-right safeguards for the Delta-Bay Estuary.

State Water Project Legislative Program

During the 1979-80 legislative session, no less than 14 bills relating to important policy issues on Delta protection and future construction and operation of the SWP, including the Peripheral Canal, were introduced. All major elements of water use, development, control, conservation, ground water, water rights, and

1/ *California Stats., 1951, Ch. 1441, Water Code Sec. 11260.*
2/ *California Stats., 1959, Ch. 1762, Water Code Secs. 12930-12944.*

management were included. Participation of the federal CVP through either agreements or congressional legislation was also involved. The Senate Bills considered were SB 89, SB 144, SB 200, SB 1361, and SB 1798. The Assembly Bills were AB 303, AB 835, AB 1209, AB 1328. AB 2512, AB 3392, AB 3423, and ACA 90. Of these bills only SB 200 and ACA 90 passed the Legislature. Many hours of DWR staff work were required in analyzing these bills, preparing for and participating in hearings, and responding to the many questions by legislators and other interested parties.

Successful Bills

Senate Bill 200. Of all the bills introduced in the 1979-80 Legislature, SB 200 (Ayala) most closely approximates the program recommended by DWR in Bulletin 76, "Delta Water Facilities", July 1978. SB 200 was introduced on January 15, 1979, amended four times, passed by the Senate on January 23, 1980, passed by the Assembly on July 7, 1980, and signed by the Governor on July 18, 1980. The Department supported this bill.

Besides authorizing construction of the Peripheral Canal and related facilities in the Sacramento-San Joaquin Delta which are shown in Figure 1, SB 200 requires agreements to ensure protection of Delta water quality and fish and wildlife within the Delta. SB 200 requires agreements to ensure implementation of additional surface and ground water storage; and water conservation and reclamation programs to meet the water needs of the SWP through year 2000. It also authorizes the Mid-Valley Canal to restore falling ground water levels on the east side of the San Joaquin Valley and facilities to transport water to Alameda, Contra Costa, San Joaquin, San Francisco, and San Mateo counties. These are separate from the SWP, however. Following is a summary of the major provisions in the bill:

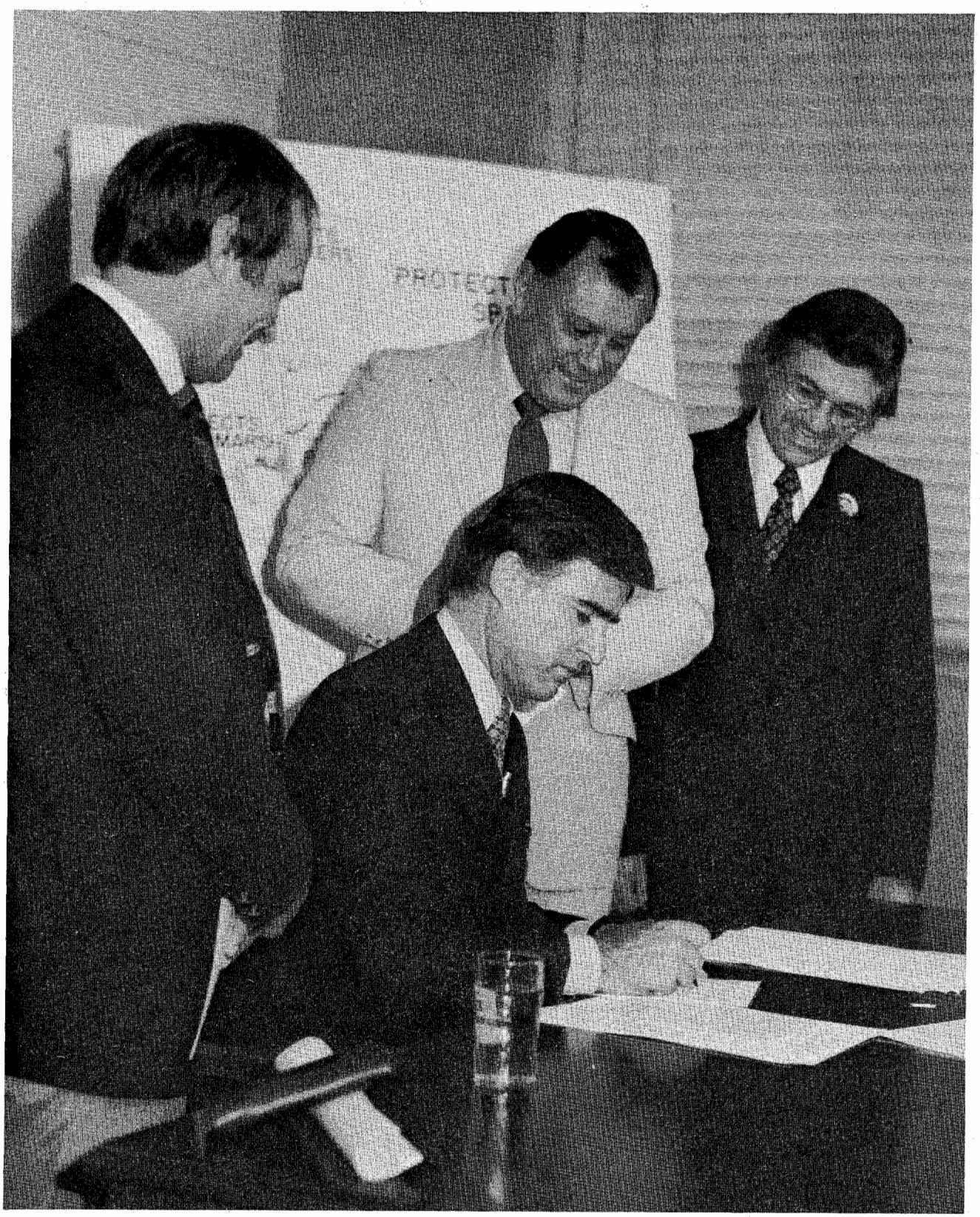
o *Delta Protection*

1. Requires that the Peripheral Canal and other facilities of the SWP as a whole be operated to restore fisheries to average historic levels (1922-67). This will be accomplished by (a) eliminating cross-Delta flows that interfere with migrating salmon and other fish; (b) providing the net positive downstream flow in all major Delta channels; (c) eliminating present detriment to aquatic fish food organisms in Delta channels; (d) greatly reducing the loss of eggs, larvae, and young fish to the export diversions; and (e) meeting water quality standards (per items 4 and 5 below).

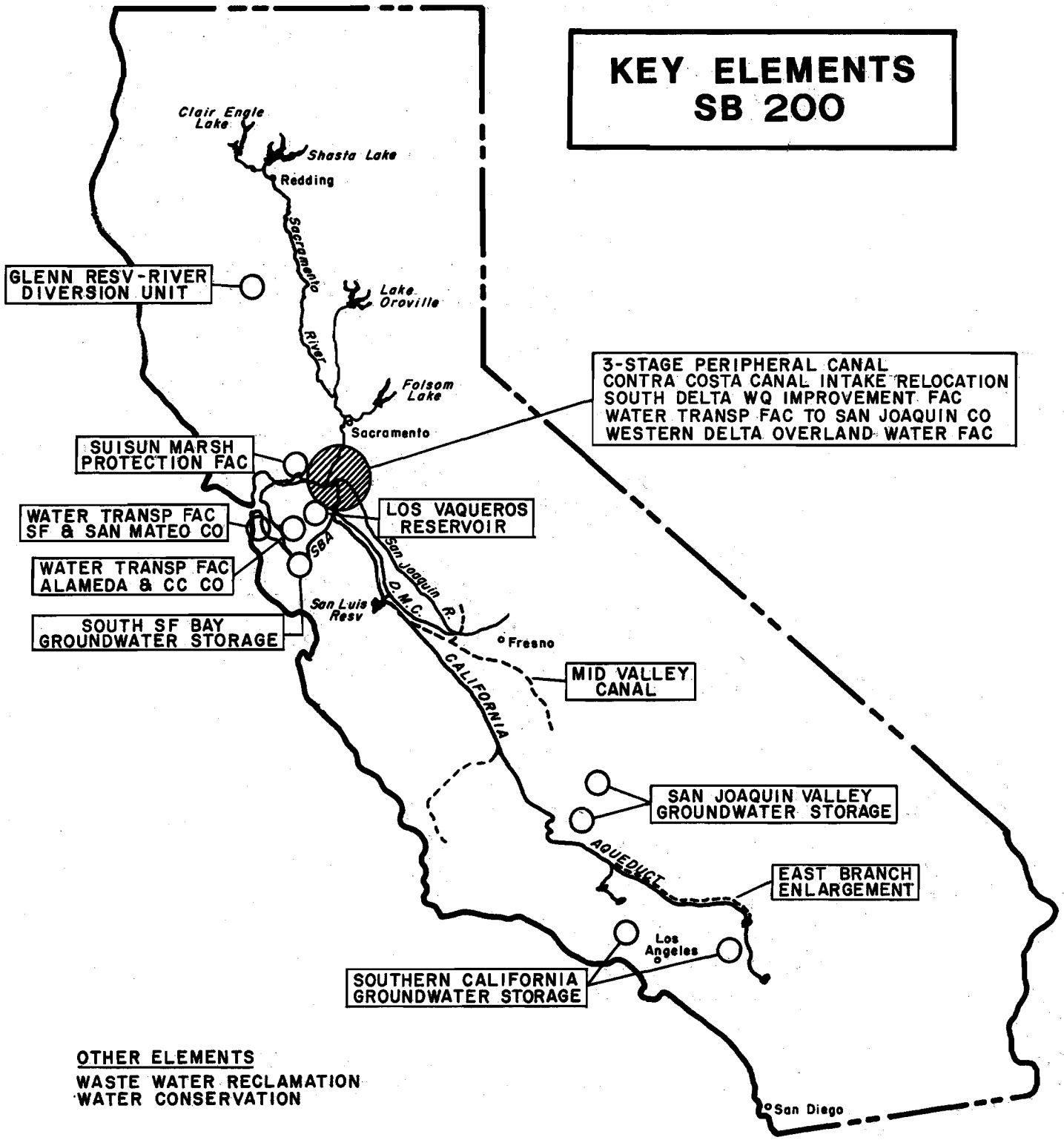
2. Requires staged construction of the Peripheral Canal to facilitate extensive testing of the fish screen and a determination of its adequacy before completing the canal.

3. Provides for limitations on Delta exports necessary to restore and maintain historic levels of fish and wildlife.

4. Clarifies that the SWP, including the Peripheral Canal, must be operated to meet SWRCB water quality standards to protect the Delta, Suisun Marsh, and San Francisco Bay. This is the first time that the Marsh and Bay have had clear protection under the law.



SB 200 was signed into law on July 18, 1980, by Governor Edmund G. Brown, Jr. Also pictured are Assemblyman Larry Kapiloff (left) who sponsored the bill in the Assembly; Senator Ruben Ayala (on Governor's left), author of the bill, and DWR Director Ronald B. Robie.



OTHER ELEMENTS

WASTE WATER RECLAMATION
WATER CONSERVATION

5. Requires the SWP to make water releases to rectify any failure of the Department of the Interior to operate the federal CVP in compliance with SWRCB water quality standards for the Delta, Marsh, and Bay. The Federal Government has had a long history of vacillating on this obligation.[3/]

6. Requires the Department of Fish and Game (DFG) and other State agencies to make a comprehensive joint study of San Francisco Bay fish and wildlife and their needs for Delta outflows, including "flushing flows". Study results are to be used by the SWRCB in its future water right decisions to assure that future exports and diversions to storage in new SB 200 reservoirs will not appreciably deplete unregulated Delta outflows needed to protect the Bay.

7. Assures adequate quantity and quality of water to continue a high level of agriculture in the Delta by requiring DWR to enter into permanent and enforceable water right/water quality contracts (either through negotiation or binding arbitration) with Delta agencies which will recognize water user rights and establish quality criteria which will have priority over Delta export.

o *Delta Facilities*

1. Authorizes the Peripheral Canal, an isolated water transfer facility. The Canal will be operated to move water more efficiently across the Delta to aqueducts serving Southern California, the San Joaquin Valley, and South San Francisco Bay area, and will improve the flow of water through the Delta and into San Francisco Bay.

2. Authorizes relocation of the federal CVP intake to the Contra Costa Canal to improve the quality of water for industrial and domestic users of water from the canal.

3. Provides for west and south Delta facilities to improve irrigation water quality through pumping plants, canals, and channel control structures.

4. Requires channel improvements, control structures, and other facilities to protect the Suisun Marsh as a migratory waterfowl area.

o *Conservation, Reclamation and Water Storage - Surface and Underground*

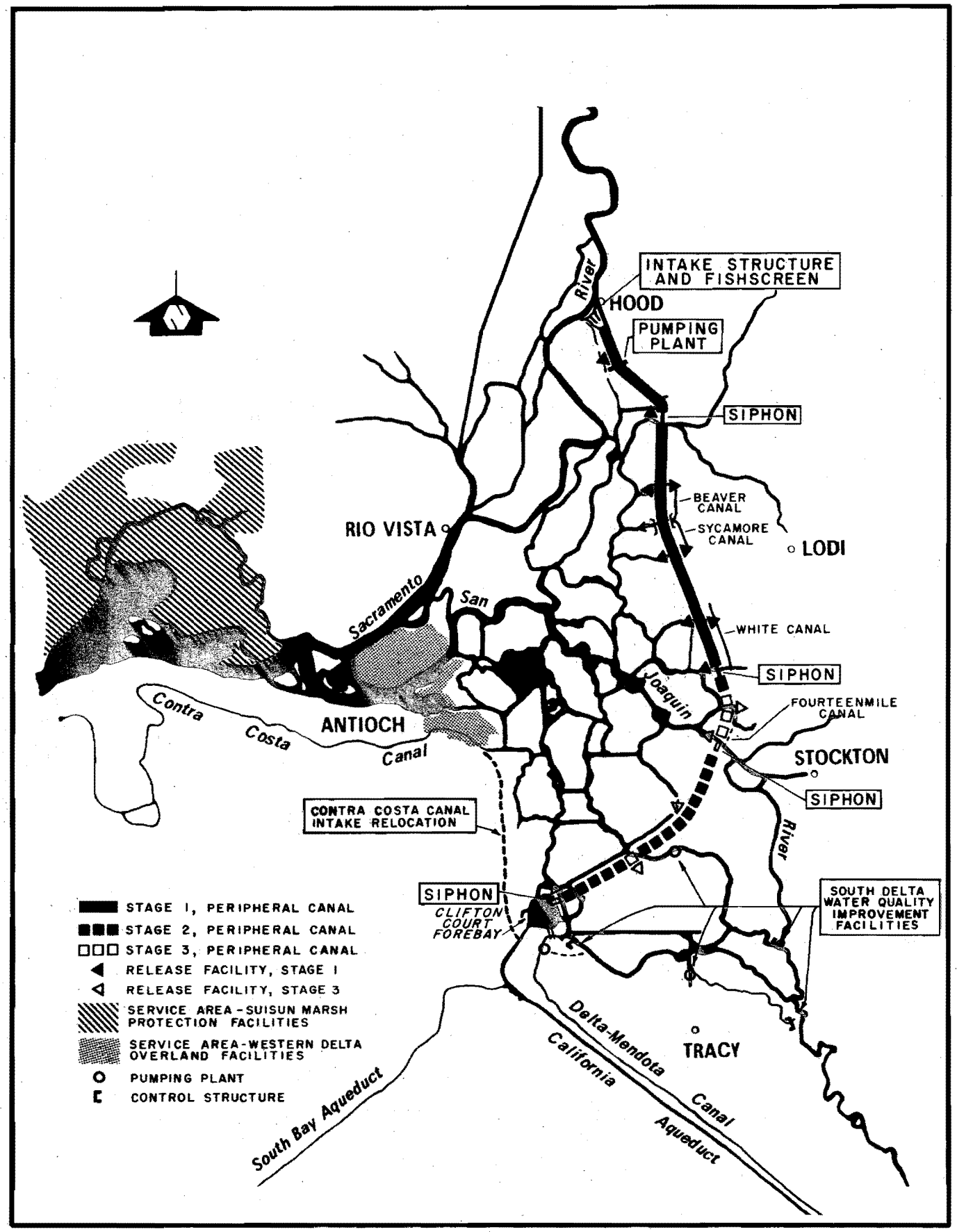
1. Provides for waste water reclamation projects to provide yield for the state Water Resources Development System.

2. Authorizes water conservation and reclamation programs within the boundaries of State water service contractors to reduce demand of SWP contractors a total 863 000 cubic dekametres (700,000 acre-feet) annually by year 2000.

3. Authorizes the Glenn Reservoir--River Diversion Unit, which may be constructed in stages. This is an off-stream storage reservoir on the west side of the Sacramento Valley.

3/ Even though the United States Supreme Court decision in California vs. U.S. requires the United States to comply with State water law, the Department of the Interior has not accepted this decision regarding the Delta.

Figure 1: DELTA FACILITIES



PERIPHERAL CANAL STATISTICS

DIMENSIONS

Length – Total 69 Kilometres (43 miles)
Stage 1 – 39 Kilometres (24 miles)
Stage 2 – 24 Kilometres (15 miles) (Preconsolidation)
Stage 3 – 29 Kilometres (18 miles) (Completion)

Width
Bottom – 61 Metres (200 feet)
Top – 122-152 Metres (400-500 feet)

Depth – 6-9 Metres (20-30 feet)

Right of Way – 2660 Hectares (6,570 acres)

Siphons
Mokelumne R. 4-7.6 Metres (25 feet) square
192 Metres (630 feet) long
Disappointment Sl. 4-7.6 Metres (25 feet) square
165 Metres (540 feet) long
San Joaquin River 4-7.6 Metres (25 feet) square
244 Metres (800 feet) long
Old River 4-6.9 Metres (22.5 feet) square
152 Metres (500 feet) long

OTHER FEATURES

Fish Screen – positive, low approach velocity type
Control Gates
Sediment Basin
14 Bridges (13 roads, 1 railroad)
135 Kilometres (84 miles) of public access and operating roads
16 Kilometres (10 miles) of public and private roads

CAPACITIES

	Cubic Metres per Second	(Cubic Feet per Second
Canal		
Hood Intake to Middle River 1/	617	(21,800)
Middle R. To Clifton Court	518	(18,300)
Export Pumps		
SWP Delta	292	(10,300)
CVP Tracy	130	(4,600)
CVP Contra Costa Canal	10-16	(350-550)
Los Vaqueros	85	(3,000)
Release Facilities		
Stage 1		
Snodgrass Slough West	11	(400)
Lost Slough & Mokelumne R.	17	(600)
Beaver Slough West	9	(300)
Beaver Slough East	11	(400)
Sycamore Slough West	14	(500)
Sycamore Slough East	11	(400)
White Slough West	21	(750)
White Slough East	21	(750)
Disappointment Slough	43	(1,500)
Subtotal, Stage 1	**159**	**(5,600)**
Stage 3		
Fourteen Mile Slough East	3	(100)
San Joaquin River	17	(600)
Whiskey Slough West	3	(100)
Middle River East 2/	62	(2,200)
Old River West	34	(1,200)
Total Release Capacity, Stages 1 & 3	**277**	**(9,800)**
Hood Pumping Plant		
Stage 1, 2 units	154	(5,450)
Stage 3, 6 units	463	(16,350)
Maximum lift – 3 Metres (10 feet)		
Total 1/	**617**	**(21,800)**
Fish Screens		
Stage 1	154	(5,450)
Stage 3 1/	617	(21,800)

1/ Capacity will depend on releases required for water quality in the Delta.

2/ Subject to change. Depends on which alternative of the South Delta Water Quality Improvement Facilities are selected. These are the subject of negotiations with the South Delta Water Agency for Delta contracts.

4. Authorizes the Colusa Reservoir--River Diversion Unit, another off-stream storage facility, as an alternative to the Glenn Reservoir.

5. Authorizes the Los Vaqueros Unit, an off-stream storage reservoir in Contra Costa County, to help meet SWP needs and possibly, as a joint venture with local or federal agencies, to serve the Contra Costa County and other Bay area and San Joaquin Valley agencies as well.

6. Authorizes ground water storage and extraction facilities within service areas of the water project to provide yield for the State Water Resources Development System.

7. Permits participation by the State with the Federal Government in a study of the feasibility of enlarging Shasta Dam and Reservoir.

o *Water Transport Facilities*

1. Authorizes State construction of the Mid-Valley Canal to reduce ground water overdrought on the east side of the San Joaquin Valley if it is not constructed as part of the federal CVP. This project has long been planned as a federal project, and the Department has participated in the Mid-Valley Canal study on that premise. In 1979, when the Federal Water and Power Resources Service (WPRS) tried to abandon the study, DWR exerted great effort to persuade the Federal Government to resume and complete its study. However, if it becomes clear that WPRS will not proceed with Mid-Valley, and at the request of local authorities, DWR could undertake the project as a cooperative venture with local interests under the SB 200 authorization. The Mid-Valley people would have to agree to repay all the costs, with interest, incurred by DWR. Financially, the venture would be separate from the SWP. On April 8, 1980, DWR entered into a memorandum of understanding with the Kings River Conservation District outlining terms and conditions for a joint venture.

2. Authorizes unspecified facilities to transport water to Alameda, Contra Costa, San Joaquin, San Francisco, and San Mateo counties, and directs DWR to study possible interconnections between the SWP and water supply systems serving these counties.

o *Governor's Executive Order*

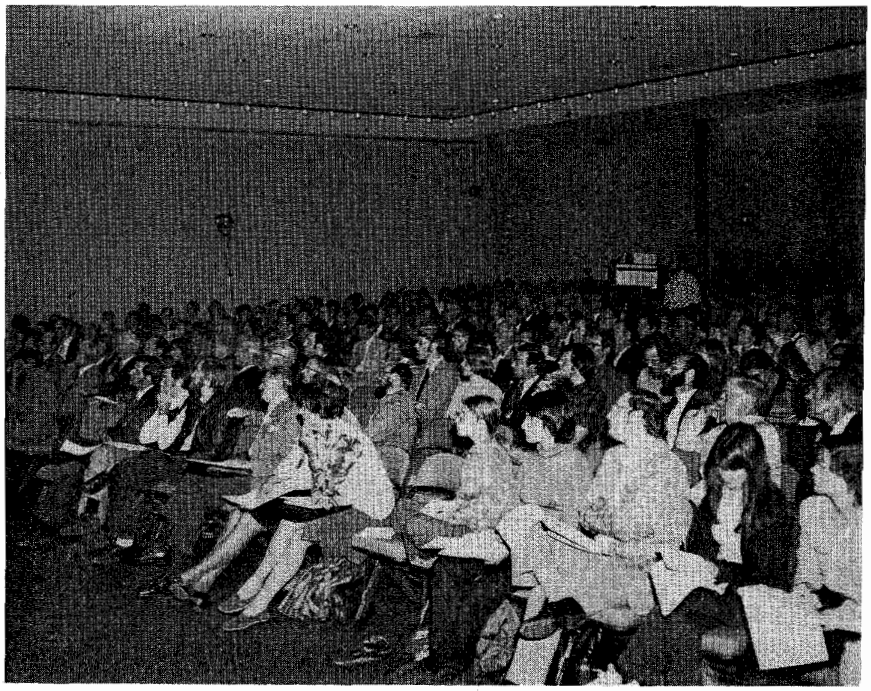
At the same time that the Governor signed SB 200, he also issued Executive Order B-68-80, directing the Department to prepare a plan of water conservation, reclamation, and management for the SWP and to implement, as quickly as possible, a program of recycling agricultural drainage and other brackish water to augment project supplies by 493 000 cubic dekametres (400,000 acre-feet) by year 2000. The Governor also sent two letters to Interior Secretary Cecil D. Andrus. One asked that five Northern California rivers receive federal wild and scenic river status and the other requested that the Secretary instruct the WPRS to expand its water conservation efforts in California. The full text of the Governor's statement at the SB 200 signing follows Chapter I.

Senate Bill 200 is a comprehensive water plan with unprecedented environmental safeguards. The bill will become law on January 1, 1981, unless delayed by a referendum (discussed later). Passage of the bill culminates many years of study and review of the water needs, water supplies, environmental concerns, and conservation requirements within California and SWP service areas. The full text of SB 200 follows Chapter I.

o *Comparison of SB 200 and SB 346 (1977-78)*

The most significant difference between SB 200 and SB 346 of the 1977-78 legislative session is how the two bills deal with federal participation in the Peripheral Canal. (The full text of SB 346 is published in Appendix A to DWR Bulletin 76, "Delta Water Facilities", July 1978.) SB 346 would have prohibited construction of the Canal until the Federal Government agreed: (1) to comply with SWRCB water quality standards; (2) to participate in agreements for guaranteeing restoration of fish and wildlife populations to historic levels; and (3) to contract with Delta agencies regarding guaranteed levels of water quality. SB 200 allows construction of the Peripheral Canal by the State without prior federal participation, but would allow for federal participation at any time. However, it restricts the transport of federal water through SWP facilities unless the Federal Government agrees to comply with water quality standards and restoration of fish and wildlife populations to historic levels.

Going further than SB 346, SB 200 provides a major guarantee by requiring the SWP to make water releases to rectify any federal failure to operate the CVP in compliance with SWRCB water quality standards. Also, by requiring binding arbitration if the Delta



Public hearings throughout California were held during the Department's initial study of possible Delta Alternatives. These hearings gave the Department guidance in formulating the comprehensive water plan (SB 200) which was signed into law by Governor Brown on July 18, 1980.

agencies and DWR do not negotiate agreements on minimum water quality and quantity standards, SB 200 assures that such agreement will be made for protection of Delta agricultural interests, and assures that water deliveries to SWP contractors will not be obstructed by Delta agencies' refusal to negotiate. SB 200 also provides for a comprehensive study of San Francisco Bay, a provision that was not in the September 8, 1977 version of SB 346 that passed the Assembly. This information will be used by the SWRCB to assure that future exports and diversions to storage in new reservoirs named in SB 200 will not take water needed to protect the Bay.

These differences mean that the environmental guarantees will go into effect immediately when SB 200 becomes law, whereas SB 346 guarantees were contingent upon federal action that might be slow or not occur at all. SB 200 also means an immediate start in the implementation of the Peripheral Canal, with its ability to restore the Delta fishery, and help the State meet water delivery obligations in its contracts with 31 public agencies.

- *Possible Referendum to Nullify SB 200*

In the summer of 1980, opponents of the Peripheral Canal circulated a petition to submit a referendum on SB 200 to the voters. The referendum has now qualified and voters will be asked to approve or reject SB 200 at either the next general election in 1982 or a special election called by the Governor. SB 200 will not be law until there is a favorable vote by the people on the measure. If the referendum rejects SB 200, such rejection would also nullify ACA 90 (Proposition 8) even if it is approved by the voters in November 1980 (see next paragraph).

Assembly Constitutional Amendment 90.

In addition to SB 200, the Legislature also passed a companion measure, Assembly Constitutional Amendment 90 (Kapiloff). ACA 90, introduced on April 10, 1980, to lessen the controversy on SB 200, passed the Legislature on June 26, 1980, and will appear as Proposition 8 on the November 1980 ballot. If approved by the voters, Proposition 8 will prevent future legislatures from weakening the SB 200 protections for the Delta, Suisun Marsh, and San Francisco Bay without a vote of the people. The Legislature, by two-thirds vote, may revise these provisions as long as the revisions do not reduce such protection.

The Delta protections in SB 200 that would be given constitutional protection by Proposition 8 are: (1) that the SWP must meet SWRCB water quality standards to protect the beneficial uses of water in the Delta, Suisun Marsh, and San Francisco Bay; (2) that the SWP must provide water releases in case the Federal Government fails to operate the Central Valley Project in compliance with such standards; (3) that the Department of Water Resources, before constructing the Peripheral Canal, must enter into a permanent agreement with the Department of Fish and Game to restore and maintain Delta fish and wildlife resources to their historic levels (1922-1967).

Proposition 8 also provides that no statute may repeal or weaken the existing Delta Protection Act unless approved by a majority vote of the electorate. The Legislature, by a two-thirds vote, may revise the law, providing the revisions do not reduce protection of either the Delta or fish and wildlife.
Proposition 8 prohibits any public agency from condemning for export any

water rights held for uses within the Delta or any contract rights for water quality maintenance in the Delta.

Proposition 8 would give similar constitutional protection to 1 770 kilometres (1,100 miles) of the State's Wild and Scenic Rivers in Northern California in prohibiting the construction of dams or the export of the North Coast rivers without either a favorable two-thirds vote of the Legislature or a vote of the people. (Currently, only a favorable majority vote of the Legislature with concurrence of the Governor is required.)

Finally, Proposition 8 would speed up any lawsuits on the Peripheral Canal, so that it can be constructed in a timely manner to reverse the decline of the Delta fishery and help meet the water supply needs discussed earlier.

Governor Brown and the Department strongly supported ACA 90. The full text of ACA 90 follows Chapter I. As noted in a previous paragraph discussing "the Possible Referendum to Nullify SB 200," ACA 90 will have no force or effect unless SB 200 becomes law.

Unsuccessful Bills

Assembly Bill 303. AB 303, by Assemblyman Lehman, would have authorized the same facilities as SB 200 except for water transportation facilities to serve San Joaquin and Bay area counties and the Glenn and Colusa projects. It would have required DWR to report to the Legislature by December 31, 1981, on the time schedule for constructing additional conservation facilities in the Sacramento River watershed and south and west of the Delta, including joint-use facilities with the United States. AB 303 would have also have authorized DWR to participate in federal studies of enlarged Shasta Dam and Reservoir or other federal reservoirs for joint use of the SWP and CVP. There were some Delta-Bay protection measures identical with SB 200 and some that were different. AB 303 died in policy committee in January 1980 without coming to a vote.

Assembly Bill 442. AB 442, by Assemblyman Kapiloff, would have established a comprehensive State water policy regarding (1) State-supervised local ground water management in areas with critical ground water overdraft; (2) instream uses of water; (3) appropriative water rights; and (4) other water matters. The original bill would have authorized SWP facilities identical to SB 200; however, because of lack of support in the Committee on Water, Parks, and Wildlife, the Peripheral Canal, Los Vaqueros Reservoir, Glenn and Colusa Reservoirs, and Mid-Valley Canal were deleted from the bill. Water conservation, waste water reclamation, ground water storage, Delta-Suisun Marsh facilities and strong guarantees for Delta-Bay protection remained in the bill, (which was supported by the Department) but it died in policy committee in January 1980 without having come to vote.

Assembly Bill 835. As amended May 29, 1980, AB 835, by Assemblyman Kapiloff, would have prescribed additional terms and conditions for construction of certain facilities authorized by SB 200. As a trailer bill to SB 200, it was the forerunner to SB 1361 (discussed later). The bill would have established a comprehensive State water policy regarding State supervised local management of areas within critically overdrafted ground water areas, instream uses of water, appropriate water rights, and other water matters. All sections were deleted but 14, 15, 16 and 24--amendments to the Delta protection provisions in SB 200--in the effort to keep the bill alive, but it was defeated in the Senate Agriculture and Water Resources Committee on June 10, 1980.

CALIFORNIA'S WILD AND SCENIC RIVERS
Proposed for National Designation

Assembly Bill 1328. AB 1328, by Assemblyman Perino, would have required that any Delta water facility constructed as part of the SWP be a nonisolated facility, thereby prohibiting an isolated water transfer facility such as the Peripheral Canal. The Delta facilities would have also included: channel control structures, a submerged sill or sills in Carquinez Strait to retard salinity intrusion, and Suisun Marsh protection facilities. However, no specific provisions for project operation to guarantee Delta water quality were included.

AB 1328 would also have authorized the Cottonwood Creek Project (already authorized by the Federal Government) as a feature of the SWP. The project would have been constructed by the State or jointly constructed by the State and the Federal Government under terms of the bill. Also, the bill would have declared, as State policy, the support of full utilization of New Melones Reservoir, early construction of a safe Auburn Dam and completion of the Folsom-South Canal. It would also have required DWR to prepare recommendations for a ground water management program that would be implemented solely at the discretion of local governmental agencies.

DWR and DFG formed a special task force to analyze and report on the Delta facilities of this proposal as it was amended from time to time during the spring and summer of 1979. This information was used by DWR and DFG representatives to point out shortcomings of the plan and to oppose the bill at several legislative hearings. AB 1328 died in policy committee in January 1980 without having come to vote.

Assembly Bill 2512. AB 2512, by Assemblyman Lehman, would have required the Department of Water Resources to begin construction on the next storage reservoir unit of the State Water Resources Development System not later than June 1, 1981, and would have required that the selected unspecified unit be capable of providing a firm yield of 370 000 cubic dekametres (300,000 acre-feet) per year. This bill died in committee without coming to vote.

Assembly Bill 3392. AB 3392, by Assemblyman Perino, would have included the additional SWP water facilities authorized by SB 200, but would have extensively revised the Delta facilities and Delta protection provisions in SB 200. It also would have included sections on conservation, instream uses, and ground water management throughout California.

Instead of the three-stage Peripheral Canal in SB 200, AB 3392 would have authorized a two-stage Delta water transfer unit around the eastern and southern rim of the Delta. Stage one was quite similar to the New Hope Cross Channel Plan presented and rejected in DWR Bulletin 76; and stage two, according to testimony by the bill advocates, would have completed an isolated water-transfer system along the alignment of the Peripheral Canal, as proposed in SB 200, after finding of necessity by SWRCB among other requirements. A number of other Delta protection provisions in SB 200 would have been revised.

While this bill was a composite of amendments to SB 200 advocated by environmentalists and Delta interests, it failed to get sufficient votes in the Senate Agriculture and Water Resources Committee, where it died.

Assembly Bill 3423. AB 3423, by Assemblyman Mello, would have enacted the California Water Resources Development Bond Act of 1980. Conditioned upon approval of the State electorate, this bill would have provided for the issuance of State general obligation bonds, in a total amount not exceeding $2,173,000,000, for

the construction of additional facilities of the State Water Resources Development System authorized by SB 200. The amount of the bond issue was set at the portion of the SB 200 costs that the Department estimated would have to be funded from issuance of revenue bonds under its existing authority. According to the author, the bill would have resulted in a savings in interest costs of between $350 million and $700 million, based on a one-half to one percent spread in interest rates between general obligation bonds and revenue bonds. DWR's financial consultants indicated that the spread in interest under current conditions (April 1980) was only 0.3 to 0.4 percent, with smaller indicated savings of between $210 to $280 million. The bill passed the Assembly but failed to get sufficient votes in the Senate Agriculture and Water Resources Committee, where it died.

Senate Bill 89. SB 89, by Senator Ayala, would have specified the Peripheral Canal as being among the Delta facilities authorized by the Burns-Porter Act. No hearings were held on this bill, probably because SB 200 specified the same thing.

Senate Bill 144. SB 144, by Senator Ayala, would have required that the terms and conditions imposed by the SWRCB on water rights for the SWP and federal CVP be incorporated in the operating criteria of any Delta water facility. Such terms and conditions were to include dry and critical year relaxations. No hearings were held on this bill, probably because of the more comprehensive SB 200.

Senate Bill 1361. Even with passage of ACA 90, which with voter approval, will provide additional protection for the North Coast rivers and make the Delta protection provisions in SB 200 more permanent, a number of environmental organizations and Northern California legislators sought additional environmental safeguards. SB 1361 (Nejedly) was supported by the department and the Governor. It passed the Assembly on July 10, 1980, but, having been amended since it originally passed the Senate, was returned to the Senate where the amended bill failed to receive Senate approval.

SB 1361 would have amended some of the Delta protection provisions of SB 200 and ACA 90. It would have required water conservation programs by agencies that transfer more than 61 700 cubic dekametres (50,000 acre-feet) of water per year from one hydrologic basin (as defined in DWR Bulletin 160-74) and would have allowed DWR to fund locally conducted ground water management studies, with technical assistance by DWR, in critically overdrafted basins as defined in DWR Bulletin 118-60, "Ground Water Basins in California", January 1980. It would have become operative concurrently with SB 200.

Senate Bill 1798. SB 1798, by Senator Nejedly, would have defined the Delta water facilities referred to in the Burns-Porter Act to be a nonisolated water transport facility using existing channels of the Delta. Facilities would have included (1) channel control structure, (2) a submerged sill or sills west of the Delta and Suisun Marsh, (3) an improved Delta Cross Channel of the federal CVP, and (4) channel improvements in the southern Delta. Releases of stored water would have been required for fish, wildlife, recreation, agriculture, and municipal and industrial uses in the Delta, Suisun Marsh, and San Francisco Bay. The bill also would have required DWR to construct facilities to preserve Delta levees. The bill died in the Senate Agriculture and Water Resources Committee without coming to vote.

Future Water Supply Plans

The major thrust of the Department in planning for the future water management of the SWP is to meet the reasonable needs within the SWP service area thru the year 2000. These needs will be met through a combination of water conservation, waste water reclamation, and ground water storage programs, and development of additional dependable surface water supplies. The conservation and reclamation goals require a net reduction in Delta exports of 740 000 cubic dekametres (600,000 acre-feet) a year by year 2000 from those amounts requested by water contractors in September 1977. An updated estimate prepared by the Department during 1979 resulted in goals totalling 814 000 cubic dekametres (660,000 acre-feet). These goals will be further refined during the development of the water conservation, waste water reclamation, and water management plan called for in Executive Order B-68-80 (discussed under SWP Legislative Program). Completion of this detailed management plan is tentatively scheduled for June 1982. To meet the established goals, effective programs for both water conservation and waste water reclamation must be implemented within the water contract service areas. The concept of meeting water conservation and reclamation goals must be agreed to before other physical facilities can be implemented, thus assuring that all elements of SB 200 are considered together.

Even with the conservation and waste water reclamation reductions, projected demands for SWP water will continue to increase between 1980 and 2000 and, the supply of water available to the SWP at the Delta will decrease between 1980 and 2000. (This is primarily due to increased water use from continuing growth upstream from the Delta and an expected increase of Central Valley Project diversions from the Delta as CVP contractual obligations increase.) The combination of increased SWP demands and decrease in SWP supply from existing facilities will likely lead to deficiencies being imposed during the 10-year period beginning in 1984 if there is a recurrence of the historic dry period or the 1976-77 drought.

Figure 2 shows the relationship between water demand and the firm water supply developed by the existing facilities, and the supplemental water yield from planned facilities through the year 2000. From the chart, the staging (year) for initial operation of each facility, and the expected range of SWP firm yield, can be determined. Staging of these facilities has been based on what can be considered the most optimistic schedule for completion of construction assuming SB 200 becomes effective in January of 1981. The Department traditionally uses water conditions and hydrology information that prevailed during the State's historical dry period between 1928 and 1934 as a measure for projecting yield from SWP facilities and in planning water supplies and operations. This means that if conditions which occurred during the historical dry period repeated, the SWP should have water supplies available for export equal to those amounts shown in the "firm yield" range on Figure 2. The curve shows that if historical dry period conditions reoccur, the SWP will not be able to deliver entitlement requests after the early 1980's.

The Department plans to meet a portion of the future yield of the SWP through waste water reclamation. The Department has been active in the waste water reclamation field since 1950 and is currently planning to construct a demonstration desalting facility to be located in the San Joaquin Valley to reclaim agricultural waste water that is too salty for reuse in irrigation. Design of a demonstration desalting plant with a 3.8 million-litre-per-day (1 million-gallons-per-day) capacity began in FY 1980-81 with construction scheduled in FY 1981-82. The demonstration plant will incorporate energy recovery systems and the use of solar ponds to generate energy with the goal of making the desalting

STATE WATER PROJECT
Desalting Facility
CONCEPTUAL PROCESS FLOWSHEET

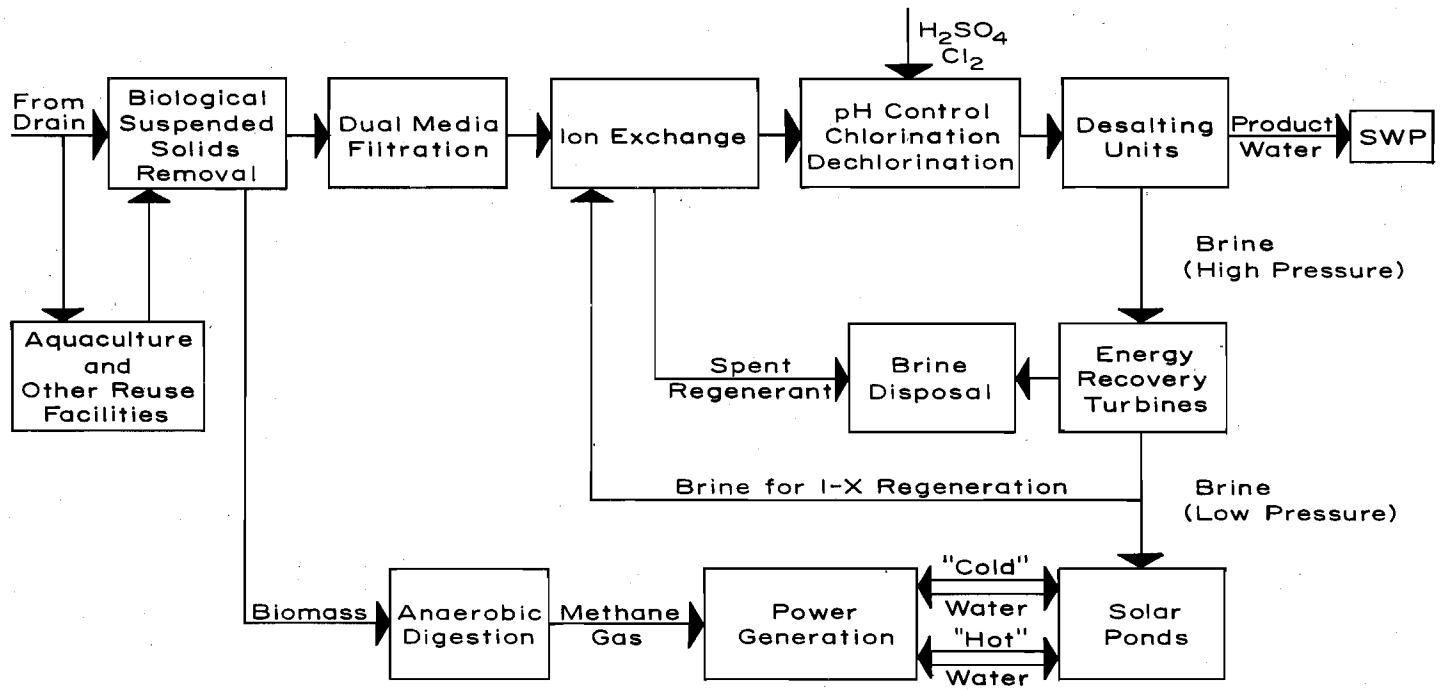
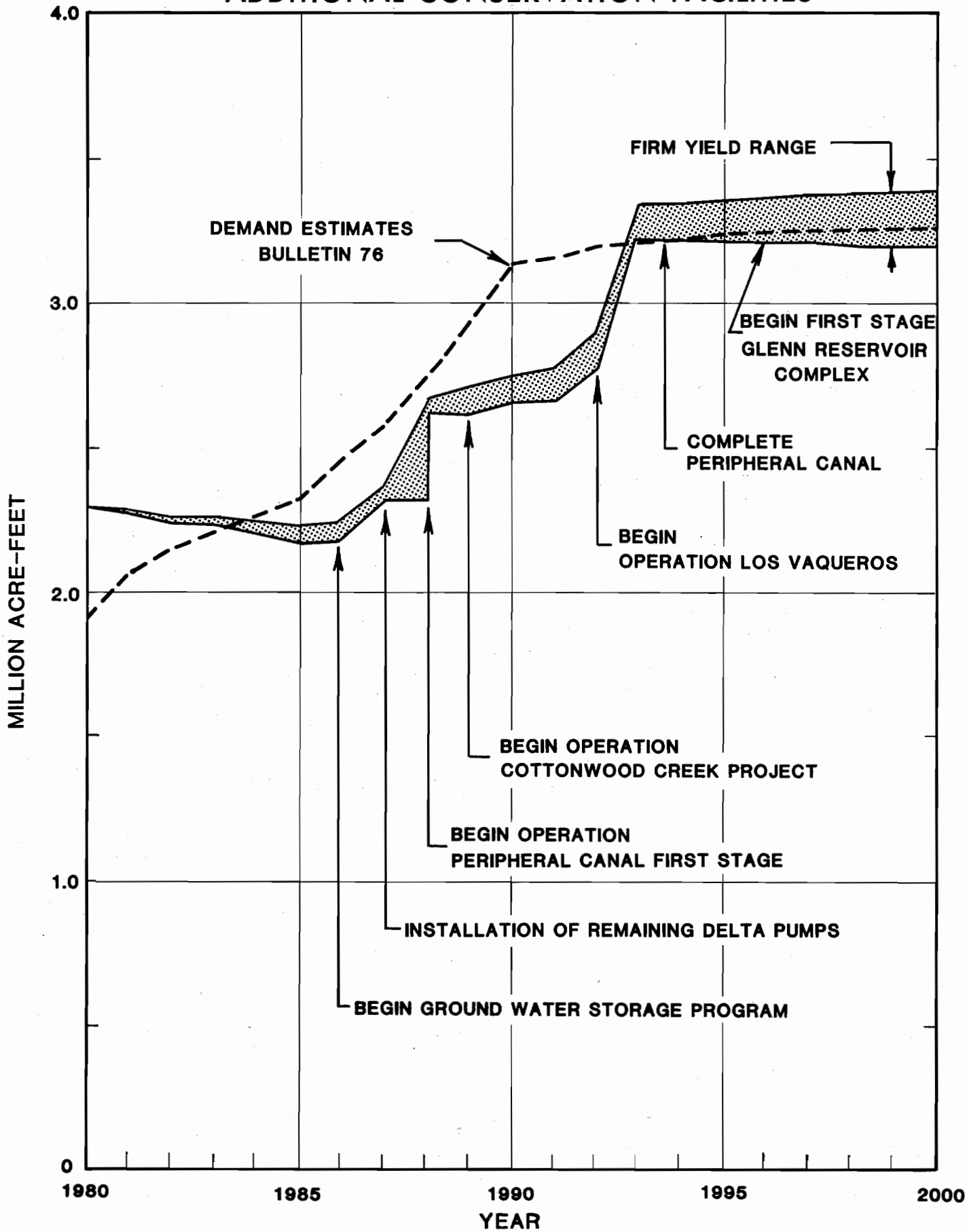


Figure 2: STAGING OF DELTA FACILITIES AND ADDITIONAL CONSERVATION FACILITIES[a]



a) This does not reflect desalting, and Colorado River water banking programs.

system energy self-sufficient. It is expected that the demonstration unit will begin operation in FY 1982-83.

Production plants of about 30 800 cubic dekametres per year (25,000 acre-feet per year) capacity are planned after feasibility is confirmed and operational experience is gained with the demonstration plant. The development schedule anticipates thatthe first solar powered desalting production plant will begin operation in the 1987-88 fiscal year with several more to follow as more agricultural waste water becomes available. The construction of such plants will help in reaching our goal of desalting 493 400 cubic dekametres (400,000 acre-feet) of agricultural drainage and other brackish water by year 2000.

Future Costs of Water Service

The future cost of water is both useful and needed by SWP contractors in short and long-range planning of their needs, operations, and economy. Each year in Appendix B to Bulletin 132 a set of tables is presented for each SWP contractor containing both past and projections of future costs, annual water charges, and water delivery information through the end of the project repayment period, year 2035. The projected costs and water charge information are based on prices and the project interest rate in effect in the year of the bulletin. Except for minor amounts, the information in Appendix B does not reflect estimates of future inflation nor cost escalation.

The Department has developed projections of future inflation rates applicable to the types of construction, operation, and energy costs of the SWP. With these inflation rates, average unit water rates have been estimated for project water delivered within major SWP service areas at 5-year intervals through the year 2000. These amounts are shown in the table on the opposite page.

The escalated costs used in determining the above unit rates are based on an assumed annual inflation rate of 9 percent for construction (capital) and 7 percent for operation, maintenance, and replacement (OM&R) costs. The costs of future energy sources are escalated at rates varying from 7.5 to 10 percent, depending on the energy component being escalated. The total unit water rates include effects of interest rate increases due to revenue bond financing required to construct future SWP facilities, contractors' repayments for costs of facilities built prior to 1980, California Aqueduct completion costs, and costs of proposed facilities, including those facilities authorized by SB 200.

It is difficult to compare future escalated costs, caused by inflation, with present-day standards of ability to pay. As an example, to put inflated cost projections in perspective, with a 9 percent inflation rate for 20 years, the purchasing power of today's dollar will be reduced to only 18 cents by the year 2000. With a 9 percent per year cost of living adjustment, a family with an annual income of $20,000 today would be receiving $112,000 in the year 2000; but the purchasing power would still be only $20,000 in what could be considered today as "real" dollars.

Negotiations for Joint Operating Agreement of SWP and CVP

The SWP and the CVP have been operated annually since January 9, 1968, under terms of interim letter agreements be-

TOTAL UNIT WATER RATES
IN SWP SERVICE AREAS
INCLUDING ALLOWANCES FOR COST ESCALATION

(in dollars per acre-foot)

SWP Service Area	1980	1985	1990	1995	2000
Feather River					
Capital, OM&R[a/b/]	20	26	100	122	135
North Bay					
Capital, OM&R		206	270	325	355
Energy		19	12	20	30
Total	c/	225	282	345	385
South Bay					
Capital, OM&R	38	56	150	180	210
Energy	6	31	40	50	75
Total	44	87	190	230	285
Kern Co. Water Agency (KCWA)					
Capital, OM&R	23	37	115	145	160
Energy	3	15	20	25	40
Total	26	52	135	170	200
San Joaquin (excluding KCWA)					
Capital, OM&R	19	33	110	135	150
Energy	2	12	15	20	30
Total	21	45	125	155	180
Southern California					
Capital, OM&R	112	132	255	300	335
Energy	12	88	110	155	240
Total	124	220	365	455	575

a) Operations, maintenance, and replacements.
b) No energy costs are required for delivery to Feather River area contractors.
c) Delivery to North Bay contractors are currently planned to begin in 1984.

tween the Department and the Water and Power Resources Service (WPRS). Currently, the projects are operating under a draft agreement entitled "Supplemental Agreement Between the United States of America and the State of California for Coordinated Operation of the Central Valley Project and the State Water Project", dated May 13, 1971. The annual letter agreements provide that the projects will operate as though the 1971 supplemental agreement had been executed except for agreed upon specific modifications.

On February 7, 1979, the Department and WPRS signed the annual letter of agreement for the 1979 coordinated operation of the CVP and the SWP. This was the first such letter in which both agencies agreed to operate to meet all conditions of SWRCB Decision 1485. The 1980 letter of agreement with WPRS was executed on March 10, 1980, and again included the obligation of both projects to meet all requirements of Decision 1485.

During 1979 and 1980, the Department and the WPRS have been negotiating a joint operating agreement. This agreement, when completed, will replace the need for execution of the annual letters mentioned above. The new agreement will address such issues as the division of available surplus flows in the Delta, based on agreed hydrology (including Delta outflows necessary to meet the water quality standards of D-1485) and project yield values based on operational studies with 1980 and 2020 levels of development. Final yields may be dependent on agreements in which the CVP will furnish yield to the SWP for the right to "wheel" CVP water through the California Aqueduct.

SB 200 limits future wheeling of CVP water through SWP facilities until such time as the United States Congress enacts legislation or the Secretary of the Interior enters into a permanent contract with the Department which:

- requires operation of the CVP in compliance with the State's Water quality standards and

- allows for protection and enhancement of fish and wildlife and provides for restoration and maintenance to historic levels in the Delta and Suisun Marsh.

The Senate Bill does provide that the Department may transport CVP water through project facilities (1) under existing contracts between the Department and the United States (2) in accordance with SWRCB requirements, and (3) for the San Felipe unit of the CVP in implementation of the existing agreements between Santa Clara Valley Water District and the Department.

Bulletin 132-79 reported on the decision in California vs. United States, which was decided in the State's favor. The decision requires that WPRS must comply with conditions established under State law by the State Water Resources Control Board (SWRCB) unless there is a clear congressional directive to the contrary. (See Bulletin 132-79, pages 16-20.) To date the decision has resulted in no discernable change in federal policy which considered federal compliance with State water quality standards to be voluntary. There is no doubt that the United States intends to " stonewall" California's efforts to control its water resources.

California vs. United States was returned to the federal district court to decide whether it is too late for the United States to raise the issue that conditions in the filling of the New Melones Reservoir permit conflict with clear congressional directives. On January 28, 1980, the case was transferred to Judge Edward D. Price in Fresno.

Two measures relating to the filling of New Melones Reservoir were submitted to the State Legislature in early 1980. AJR 58 directed the Secretary of the Interior to proceed in filling the reservoir to its maximum operating capacity. AB 2164 declares a State policy that New Melones be filled to its maximum operating capacity immediately and prohibits the SWRCB from imposing any restrictions on the quantity of water that may be impounded in the reservoir.

The SWRCB and DWR were opposed to these measures, since they provide for legislative reversal of administrative decisions by the SWRCB and would constitute a dangerous precedent by creating instability in the water rights process and uncertainty of water rights. The Department considers that the practical effect of these bills would be to invite the United States to ignore State-imposed water rights terms and conditions, and thus reduce the impact of the significant victory for the State of California in California vs. United States. The measures were passed by the legislature in May 1980, but AB 2164 was vetoed by Governor Brown.

In a continuing effort to supplement future water supplies for the federal Central Valley Project and the State Water Project, the DWR and the WPRS are interested in a possible enlargement of Shasta Reservoir. On December 26, 1979, Regional Director Billy Martin of WPRS and Director Ronald B. Robie signed a letter of intent for funding and carrying out a feasibility study on enlarging Shasta Reservoir. WPRS is responsible for the program management of a committee consisting of one representative from each agency who will direct the investigation. In this manner the Department has an equal say in the investigation. Study costs will be shared equally; but funding can be reallocated if the project is carried out. The study will focus on analysis of a full range of alternatives and determination of the need for the water and power that would be produced by the Shasta enlargement. The objective will be to insure that the alternative is in fact the most cost-effective and environmentally sound investment means of meeting additional water service requirements of the CVP-SWP systems after 2000. The investigation shall include consideration of a full range of "demand" alternatives, as well as "supply" alternatives, such as the effect of end-use efficiencies, export demand of agricultural produce, socioeconomic changes caused by environmental concerns, changes in the cost of living, etc. Other alternatives to be considered will include conservation, improvements in methods of use, waste water reclamation, conjunctive use of ground and surface water, conservation resulting from pricing changes, banking for use in water-deficient years, and interbasin or intrabasin transfers of developed water supplies.

As a portion of President Carter's actions to develop a national water policy, he ordered the U. S. Water Resources Council to prepare revisions to the federal multiple-objective Principles and Standards to incorporate water conservation into proposals for new water supplies and to consider nonstructural solutions in water planning. The Department of Water Resources reviewed the proposed new Principles and Standards and the related Manual of Procedures during the early part of 1979. In a speech to the U.S. Water Resources Council on July 10, 1979, Director Robie made the following summary:

> "In conclusion, the Department of Water Resources supports revision of the Principles and Standards to emphasize water conservation (demand reduction) and nonstructural approaches. The Department believes that the Water Resources Council's proposed revisions are consistent with the President's policy directives in these areas. However, we are concerned that the federal procedures may be becoming so cumbersome as to serve as a roadblock to meaningful decision making. We believe that the P&S (Principles and Standards) and the Manual should be so constructed as to establish procedures which will provide decision makers meaningful, comprehensive information upon which to base water management decisions. We believe additional work is needed to ensure that ground water storage is always considered as a possible alternative to construction of surface storage facilities. Also the manual should give specific emphasis to waste water reclamation. We urge that more effort be made towards striking a better balance between economic theory and its practical application."

Ground Water Storage Programs and Colorado River Banking Programs

Ground Water Storage Programs. The Department's program for meeting future water needs involves storing water that is in excess of Delta requirements in ground water basins in the San Joaquin Valley, South Bay area, and Southern California. This storage will be used in conjunction with surface water reservoirs by providing another source of storage.

The potential for storing water in ground water basins during wet periods and withdrawing it during dry years has been recognized for many years. Interest was intensified in the early 1970s, with the increasing public opposition to the development of new onstream reservoirs as a means of augmenting water supplies. In the "Delta Water Facilities", Bulletin 76, published in July 1978, the Department outlined its plans for developing up to 493 000 cubic dekametres (400,000 acre-feet) per year of firm SWP yield from storage in the San Joaquin Valley and Southern California ground water basins. This was incorporated in SB 200.

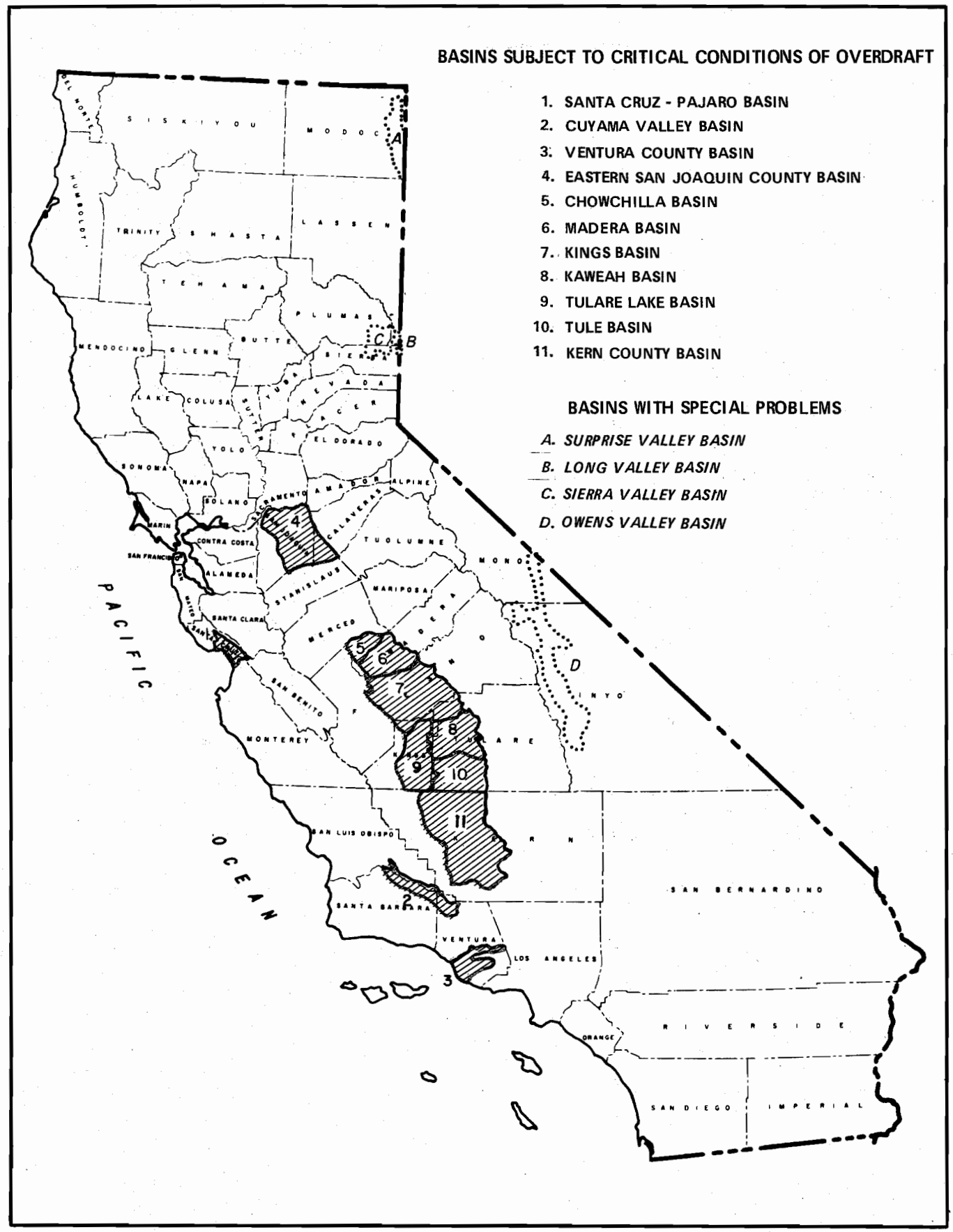
In the initial phase of the Department's current ground water basin storage program, a number of ground water basins with potential for SWP storage were identified for further study. In 1975, a study of the San Fernando Basin in Southern California was started to determine the possibility of implementing a program in the basin. The Department's Bulletin 186, released on August 8, 1979 at a Ground Water Basin Storage Symposium sponsored by the Department, reports on the study and includes the following information:

- Physical characteristics and capabilities of the basin.
- Potential for use of existing conveyance, spreading, and extraction facilities.
- Financial, legal, institutional and environmental impacts involved in the use of the basin.

In 1978, the Department completed reconnaissance-level studies for the White Wolf Basin and Kern River Fan Area in Southern San Joaquin Valley and the Chino, Raymond, Bunker Hill-San Timoteo-Yucaipa, Antelope Valley, Santa Clara River Valley, San Gabriel, Orange County, San Fernando and Las Posas Basins in Southern California. Each of these areas was considered to meet the general criteria for ground water storage (see Bulletin 132-78, page 22). In 1979, DWR completed technical information which describes each of these studies. Additional reconnaissance-level studies were initiated by DWR in the Livermore and Santa Clara Valleys of the San Francisco Bay area and the Coachella Valley of Southern California.

As the reconnaissance studies developed, the Department realized that a number of economic, legal, and institutional problems needed to be identified. DWR concluded that the best way of evaluating potential problems of a long-term program would be through operation of demonstration projects that would serve as prototypes for actual ground water storage programs. The Department proceeded to develop demonstration projects in the late 1970s in cooperation with Mojave Water Agency and San Bernardino Valley Municipal Water District. (See the Water Contracts Management Section in Chapter II for a description of these two projects.) At the end of 1979, a total of 40 655 cubic dekametres (32,959 acre-feet) of water was in storage.

In 1979 about 246 700 cubic dekametres (200,000 acre-feet) of additional surplus water was made available by the State for storage in ground water basins in the San Joaquin and in Southern California. Such programs, however, are not a substitute for SWP Ground Water Storage. For the State to commit project funds for a ground water program, such a program must result in yield for the SWP.



BASINS SUBJECT TO CRITICAL CONDITIONS OF OVERDRAFT OR WITH SPECIAL PROBLEMS

As a result of the reconnaissance-level studies, Chino, Raymond, Bunker Hill-San Timoteo-Yucaipa, Orange County, and the San Fernando Basins were recommended for feasibility studies.

On November 9, 1979, the Department entered into an agreement with MWD to jointly finance the Chino Basin Feasibility Study on a cooperative basis, with each party contributing 50 percent of the total costs. Progress is continuing on this study. A contract has been signed with Camp Dresser, and McKee, Inc. and work is underway on determining how much of the available capacity of the basin can be used by local, regional, and SWP programs. Chino is the first of the feasibility level studies in Southern California and the information developed in this study will be used in the conduct of other studies.

This year the Department is trying to work out an arrangement with Kern County Water Agency similar to the Chino study. Although little progress has been made to date, negotiations are continuing. Kern County Water Agency opposes State ground water management efforts in an area which suffers critical conditions of ground water overdraft (see map).

Specific plans for developing 493 000 cubic dekametres (400,000 acre-feet) of yield for a ground water storage program for the SWP must be agreed to by the contractors so that all elements of SB 200 can proceed on schedule.

Colorado River Storage Banking Plan. A cooperative reconnaissance-level investigation with DWR-MWD and the Colorado River Board was initiated in 1979. The investigation will determine the merits of a banking program for long-term storage of MWD's allocated Colorado River water in Lake Mead. Under this plan, MWD would reduce its Colorado River deliveries below its allocation in years when the SWP has supplies available for delivery from the Delta in excess of entitlements for SWP water. In return, MWD would receive "storage credits" in Lake Mead and would draw upon the lake during years of deficient SWP water supplies. The Colorado River Storage Banking Plan will probably not be implemented until after the Central Arizona Project becomes operational, thus making storage space available in the Colorado River reservoirs.

Future Construction of the Coastal Branch, California Aqueduct

Beginning in the early 1960's with the signing of water contracts with San Luis Obispo County and Santa Barbara County, the Department developed plans to construct the Coastal Branch Aqueduct in two phases for eventual delivery of SWP entitlement water to the counties. Phase I, consisting of an aqueduct about 15 miles long, was constructed in the late 1960's to provide water service to agricultural contractors in the vicinity of Avenal Gap. Phase II was planned to be constructed at a later date to transport project water to San Luis Obispo and Santa Barbara counties. Phase II would extend approximately 80 miles from Devil's Den Pumping Plant to a terminous near the city of Santa Maria.

Water Supply contracts signed in 1963, between the State and San Luis Obispo and Santa Barbara counties stipulated that SWP water deliveries to the counties would begin in 1980. However, these contracts also provided for the Coastal Branch's Phase II construction to be deferred or eliminated entirely, if the counties wished to exercise these options.

In 1973, the counties requested that the Department delay two years until 1982 in providing initial water deliveries and also indicated that further requests for delays could be forthcoming. In 1977, a further delay in scheduling initial water deliveries until 1986 was requested.

More recently, requests by San Luis Obispo County in August 1979, and by Santa Barbara County in January 1980, for delays in notifying the State to proceed with Phase II until July 1, 1981, and January 1, 1981, respectively, were granted. This will result in initial water deliveries to the counties being further delayed until at least the late 1980's. The November 1978 advisory election resulted in San Luis Obispo County voters narrowly supporting the use of 31 000 cubic dekametres (25,000 acre-feet) of SWP water annually. Support of the SWP water meant that a bond issue to implement a distribution system in the county would later be required.

In March 1979, voters in Santa Barbara County voted 3 to 1 against a $102 million bond issue for a distribution system required for local delivery of SWP water. Interesting enough, Kern County interests contributed heavily to the opposition campaign in the hope that rejection of SWP water by Santa Barbara County might make more water available to Kern County. Following defeat of the Santa Barbara bond issue, county representatives indicated that the area may prefer to meet future water needs through local projects and that they may no longer wish to be involved with the SWP. However, the Department has not been formally notified of this position nor has the Department been notified that the county wants to be relieved of its SWP repayment obligations. Thus, Phase II of the Coastal Branch may possibly be constructed to serve San Luis Obispo County only, or may not be constructed at all if San Luis Obispo County finds it does not wish to move forward without Santa Barbara County's participation in the costs of the project.

The Department is continuing to discuss these issues with Coastal contractors, along with discussing alternative water supplies from local sources. San Luis Obispo has indicated a desire for temporary transfers of its entitlement to other SWP contractors, until the county can more definitely define its future water program.

Future Construction of the North Bay Aqueduct

The North Bay Aqueduct, to be located in Solano and southeastern Napa counties, will consist of a water conveyance system to supply SWP water for municipal and industrial use in Solano County and Napa County. This conveyance system, consisting of aqueduct, pipelines, and pumping plant facilities, was originally planned to be constructed in two phases to meet the needs of North Bay contractors.

Two State water supply contractors, Napa County FC&WCD, with a maximum annual entitlement of 31 000 cubic dekametres (25,000 acre-feet) per year, and Solano County FC&WCD, with a maximum annual entitlement of 52 000 cubic dekametres (42,000 acre-feet) per year, will begin receiving SWP deliveries in 1984, when the aqueduct is scheduled for completion. The North Bay Aqueduct (NBA), when utilized to full capacity, will deliver all of Napa's entitlement of 31 000 cubic dekametres (25,000 acre-feet) per year and 45 000 cubic dekametres (36,400 acre-feet) per year of Solano's entitlement. The remainder 6 908 cubic dekametres (5,600 acre-feet) of Solano's entitlement will be delivered through the City of Vallejo's Cache Slough pumping plant for use by the City of Vallejo.

Phase I of the aqueduct was completed in 1968. Since that time, a temporary supply of water from the WPRS Solano project has been pumped by means of an interim pumping plant into the Phase I facilities and delivered to Napa County

for use by the American Canyon Water District and the City of Napa. When the Phase II facilities are completed, these nonproject deliveries from the Solano project are expected to cease.

Phase II of the NBA will consist of diversion facilities and a pumping plant either on Lindsey Slough or Cache Slough in the Delta, and a pipeline extending westward through Solano County to the Cordelia area. At Cordelia, another pumping plant and discharge lines will connect with the existing Phase I facilities.

Two different alignments for the Phase II facilities have been identified in the draft EIR/EIS as preferred for the Phase II facilities. Presently alternatives regarding these and other alignments are being reviewed before negotiations resume between the Department and Solano County FC&WCD and Napa County FC&WCD representatives.

Transfer of Water Entitlements

A Task Force established in 1975 reviewed the growing disparity between annual entitlements as set forth in Table A of each water contractor's long-term contract and their projected demands. Some contractor's entitlements are larger than projected needs while others are smaller. One of the approved recommendations the Task Force made for the purpose of alleviating this problem to some extent, was that both short-term and long-term decreases of future annual entitlements be approved subject to the water contractor accelerating transportation payments to maintain Project cash flow when entitlements are reduced. Pursuant to this recommendation, the 1978 entitlements of Devil's Den Water District and Empire West Side Irrigation District were reduced (See page 97 of Bulletin 132-79).

Another approved Task Force recommendation was that "Other than during short term emergency situations, requests for transfers of entitlements among contractors should not be approved by the DWR". In the spring of 1980 this recommendation was being reevaluated to determine if an equitable program of entitlement transfers could be worked out. Such a program would go into effect after SB 200 becomes effective. A discussion draft outlining a proposed temporary entitlement program was developed and sent to all contractors for consideration and comment by Water Service Contractors Council Memo No. 1373 dated May 8, 1980. Under the proposal, the Department would establish a temporary entitlement program to provide an interim means of allowing SWP water contractors to meet increased requirements for firm annual deliveries. The program would begin in 1981 and would include the following principles:

- After SB 200 becomes effective, the Department would, in 1981, 1986, and 1991, purchase annual Table A entitlements offered by project water contractors providing the Department can obtain agreements from other project water contractors for the purchase of equivalent amounts.

  (1) The Department would purchase water for three periods of availability in 1981. They would be for fifteen years (the fifteen-year pool), ten years (the ten-year pool), and five years (the five-year pool). In 1986 the Department would purchase additional water that would be available for the remaining two periods and in 1991 for the last period.

  (2) Contractors offering to sell water could participate in any of the pools. However, the total amount tendered by a contractor for any year could not exceed its annual Table A entitlement for that year.

- Prospective purchasers would submit written offers with the minimum acceptable price consisting of the following components:

  (1) The actual Delta Water Rate for the respective years.

  (2) The actual variable cost of delivery to the purchaser.

  (3) The equivalent unit transportation capital and minimum OMP&R cost components to the purchaser as calculated for Bulletin 132-80 plus a price adjuster for quantities which do not result in the purchasing agency exceeding its maximum annual entitlement.

  (4) For quantities in excess of the purchasing agency's maximum annual entitlement, the unit costs under (3) plus the charge for extra service for aqueduct reaches not included in the seller's Table B of their water contracts but which are used in the delivery of temporary entitlements.

Extension of the California Aqueduct

The five water contractors (Coachella Valley Water District, Desert Water Agency, San Gorgonio Pass Water Agency, Mojave Water Agency, and the San Bernardino Valley Municipal Water District) participated and funded the study that resulted in a report entitled "Report on the Feasibility of Extending the California Aqueduct into Upper Coachella Valley", dated February 1979. The five contractors are continuing their evaluation of the results of the alternatives presented in the report.

In the study two alternative aqueduct routes were identified and found feasible for delivering State Project water to two of the contractors in the Upper Coachella Valley--Coachella Valley Water District and Desert Water Agency. Varying degrees of enroute deliveries to other participating contractors would also be possible from the aqueduct routes. Several unresolved issues have delayed decisions by the contractors on selecting the most favorable route. These issues pertain to project authorization, funding source, responsibility for design and construction, and timing of construction and project water deliveries.

Only one participating water contractor sought official action in 1979 by requesting the Department to implement steps to permit construction of the aqueduct extension. On August 13, 1979, San Gorgonio Pass Water Agency secured from its Board of Directors a resolution urging the Department to take prompt action to permit early construction of the "pass route".

Three of the remaining four contractors have informally indicated preference for the "pass route" while the Mojave Water Agency favored the "desert route". In the absence of a unanimous decision on the final aqueduct route, the Mojave Water Agency continued its negotiations with the Department of the Navy, Twentynine Palms Marine Corps Base, and the Southern California Edison Company for possible participation in the "desert route" or a modification thereof.

Until the participating contractors reach a decision on the final route of the Coachella Aqueduct, the Department will take no action leading to the construction of the aqueduct extension.

Interagency Drainage Program

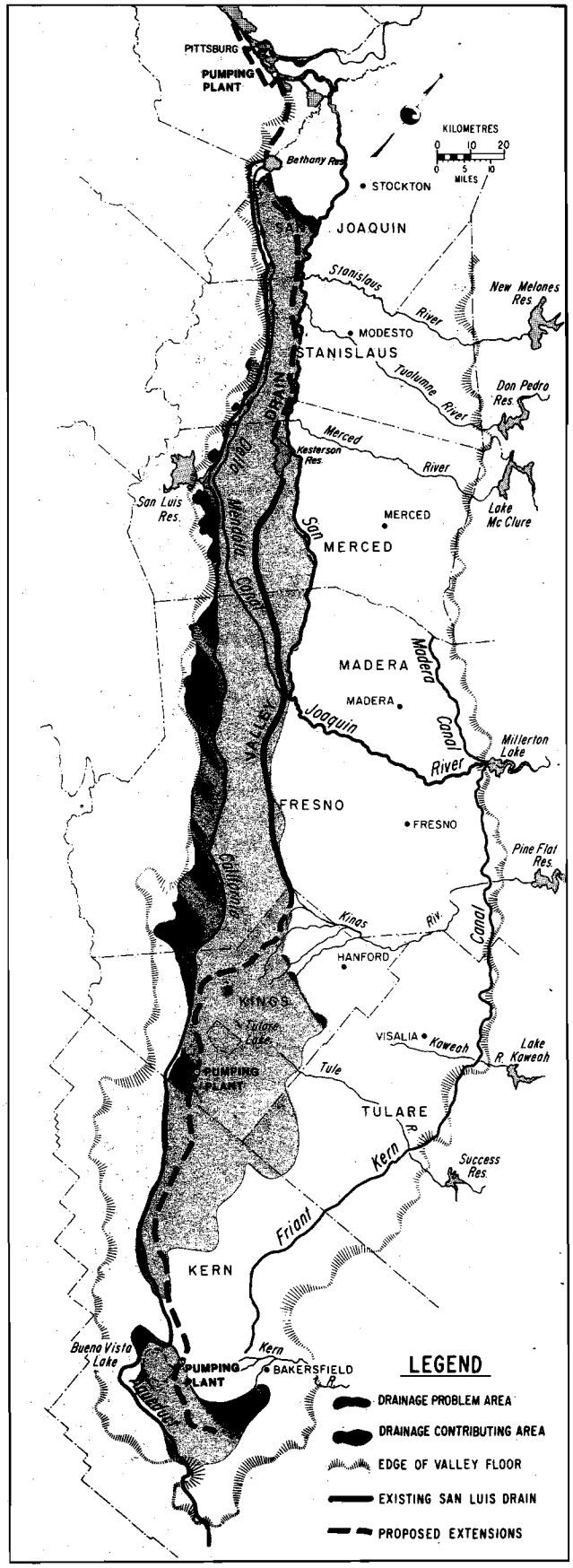
The need for agricultural drainage facilities in the San Joaquin Valley has been recognized by state and federal agencies for many years. Natural drainage is inadequate to maintain permanent productivity on certain valuable irrigated lands in the San Joaquin Valley. These lands require the installation of subsurface drainage systems that can collect shallow-lying brackish ground water and carry it away from the fields for disposal.

The San Joaquin Valley Interagency Drainage Program (IDP) was organized as a combined effort of WPRS, SWRCB and the Department to plan an environmentally, economically, and politically acceptable drainage program that would meet the needs of the San Joaquin Valley.

A report prepared by IDP entitled "Agricultural Drainage and Salt Management in the San Joaquin Valley" was completed in June 1979. This report presented a Recommended Plan for conveyance and disposal of saline agricultural subsurface drainage effluent, with recommendations for implementing and financing the plan. The Recommended Plan illustrated calls for construction of a State and Federal drainage canal--the Valley Drain--along the length of the San Joaquin trough.

The Valley Drain would collect the saline effluent of on-farm subsurface drainage systems for eventual disposal in the tidal water of Suisun Bay near Chipps Island west of Pittsburg, where the bay water would not be adversely affected by water from the Drain. The area served by the drainage canal and recommended alignment of the canal is shown in the following illustration. Included in the report are a first-stage environmental impact report on the plan,

SAN JOAQUIN VALLEY DRAIN



information on how the plan was developed, and background information. The plan, including its environmental enhancement features, is proposed to become a basis for State and Federal policy regarding agricultural drainage in the San Joaquin Valley and for more detailed planning of drainage facilities prior to construction.

Synopsis of Recommendations. The IDP Recommended Plan consists of a comprehensive drainage and salt management program for San Joaquin Valley. Specifically the Plan proposes the following:

1. A drainage canal (the Valley Drain) along the San Joaquin Valley trough, discharging in Suisun Bay near Chipps Island.

2. A total of 25 800 hectares (64,300 acres) of new or restored wetland wildlife habitat, of which 18 200 hectares (45,300 acres) would be brackish marshes and 7 600 hectares (19,000 acres) would be reservoirs or holding ponds. The marshes, supplied with drain water, would help protect the wildlife resource of the Pacific Flyway. Six sites would be involved, five in the San Joaquin Valley and one on the south shore of Suisun Bay in Contra Costa County.

3. Stages of construction of drainage facilities. The existing 132-kilometre (82 mile) segment of the San Luis Drain, approximately in the middle of the proposed 467 kilometre (290 mile) Valley Drain alignment, would serve as the Valley Drain's first segment.

   By 1985, an additional 42 kilometres (26 miles) would be added to the southern end of the San Luis Drain. By 1991, the Drain would be extended northward to Suisun Bay. If future environmental studies indicate that drainage effluent from the southern part of the valley would cause no unacceptable effects in the receiving waters, the Drain would be extended southward by about the year 2000 to a point near the southern extremity of the valley trough.

Recommendations for financing and implementation include the following:

1. That responsibilities for financing project costs associated with implementation of the Recommended Plan be shared by the Federal and State governments in these proportions: 58 percent Federal, 42 percent State.

2. That project costs allocated to agricultural drainage and water conservation be reimbursable and that costs allocated to the other two project purposes, marshes and water quality, be nonreimbursable. Costs allocated to the environmental quality (EQ) objective under the Principles and Standards of the National Water Resources Council would also be nonreimbursable.

3. That the Federal and State governments contract with local entities for repayment of costs allocated to agricultural drainage and that local entities meet their contractual commitments by collecting charges from: (a) those who, by irrigating, contribute to the drainage problem; and (b) those who discharge into facilities of the valleywide drainage system.

4. That costs allocated to water conservation be recouped by selling drain water for such purposes as power plant cooling.

5. That local entities contracting with the State and Federal governments for drainage and disposal service meet their contractual commitments by (a) levying per-unit fees on effluent discharged to collector facilities, and (b) by per-unit charges on irri-

gation water applied in both the drainage problem areas and the areas that contribute to the drainage problem. The recommended applied water charges are $1.00 per acre-foot in Federal areas and $2.00 per acre-foot in State areas. The recommended discharge fees for Federal areas range from $2.50 to $4.30 per acre-foot; in State areas they range from $17.00 to $23.00 per acre-foot.

6. That the U. S. Congress authorize: (a) conversion of the San Luis Drain and Kesterson Reservoir to joint use, Federal-State facilities; and (b) completion of the San Luis Drain as a joint use, Federal-State facility (the Valley Drain) discharging near Chipps Island.

Synopsis of First Stage EIR. A primary objective of the planning process was to minimize unavoidable adverse impacts. The environmental impact report discloses potential adverse impacts of the Recommended Plan and describes how they would be avoided or mitigated. It also discloses unavoidable, unmitigable adverse impacts. The major conclusions are:

1. Discharge of year 2000-level drainage at Chipps Island (drainage from Tulare Lake Drainage District and Kern County excluded) would not cause widespread salinity increases in the western Delta-Suisun Bay area. Minor salinity increases near the discharge point may require mitigation.

2. Implementation of the Recommended Plan would not cause significant impacts on algal growth in the Delta or Suisun Bay, although nitrate removal might prove necessary to ensure this.

3. A drain serving areas north of the Tulare Lake Drainage District is not expected to affect aquatic life of the receiving waters. Due to arsenic content, drainage from certain areas in the Tulare Lake Drainage District and Kern County may not be acceptable for discharge.

4. The Valley Drain would cause small reductions in streamflow and salinity of the San Joaquin River compared to existing conditions. The Recommended Plan would prevent further water quality degradation caused by subsurface drainage.

5. Minor impacts would result from the siting of canals, pipelines, evaporation ponds, regulation reservoirs, and marshes. Indirect impacts might result from future reuses of the drain water, such as for power plant cooling.

Costs. Total estimated capital costs (not considering future inflation or escalation) for implementation of the Recommended Plan are:

Disposal System (entire Valley Drain, pumping plants, and regulating reservoirs)	$ 471.3 million
Marshes and Storage Ponds	516.0 million
Collector Drains	273.3 million
Total	$1,260.6 million

Costs of implementing the Recommended Plan would be high -- an estimated $1.26 billion over a 100-year period -- but estimated benefits exceed these costs by a ratio of about two to one.

SWP contractors have indicated little interest in solving the San Joaquin Valley drainage problem. Kern County interests have been particularly negative. The Department does not intend to begin construction of these facilities until a repayment program is assured, following Governor Edmund G. Brown's contracting principles of 1960, which

stated that no construction of SWP drainage facilities will be undertaken until "...water service contracts have been executed which will insure recovery of at least 75 percent of the cost of such facility".

Immediate implementation of the DWR desalting program (page 15) will help meet some of the immediate drainage needs.

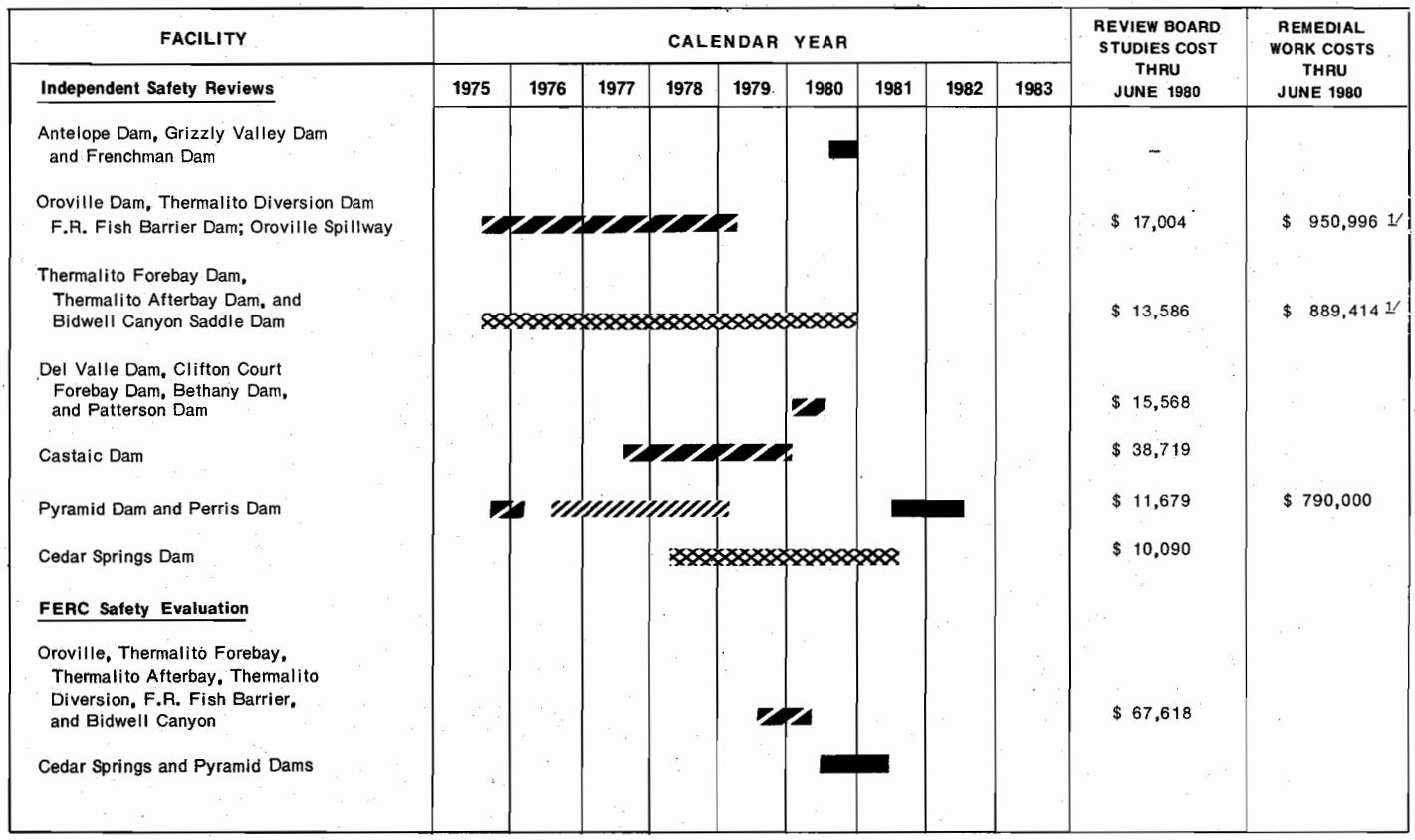
Safety of Department-Owned Dams

In 1975 the Department, as required by Water Code Section 6056, initiated a revised program for review of the safety of Department-owned dams. Under this program, a consulting board is convened to conduct independent safety reviews every five years of each dam. The Department participates in the safety review process by providing technical engineering support to the various consulting boards.

The Department's Independent Safety Review Board for Antelope, Grizzly Valley, and Frenchman Dams has been retained and the first meeting of the Board is scheduled for September 1980. These are the last of the Department-owned dams to undergo their first evaluation under the safety review program.

Members of the Special Consulting Board for the August 1, 1975 Oroville Earthquake are performing the independent safety review function for Thermalito Forebay, Thermalito Afterbay, and Bidwell Canyon Saddle Dams. It is anticipated that final analyses and presentations to the Board will be made this fall and that the Board will conclude its evaluation in 1981. Technical engineering analyses of Oroville, Thermalito

SCHEDULE FOR REVIEW OF DEPARTMENT-OWNED DAMS



1/ *Design costs for remedial work*

Diversion, and the Oroville Fish Barrier Dams were presented by Department staff in November 1978 to the Board for their consideration.

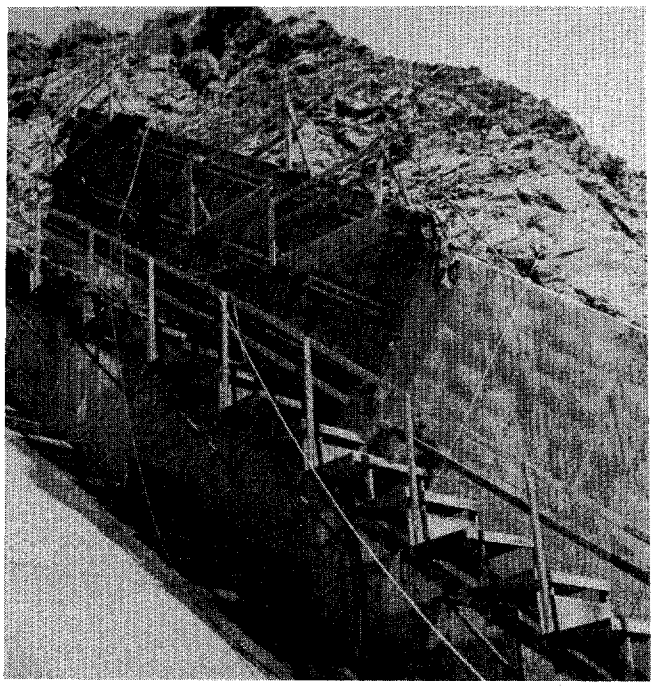
The Department's Independent Safety Review Board completed its safety evaluation of Del Valle, Clifton Court, Patterson, and Bethany Dams in 1979. The Board's report declares the dams to be safe but recommended additional work or studies for each.

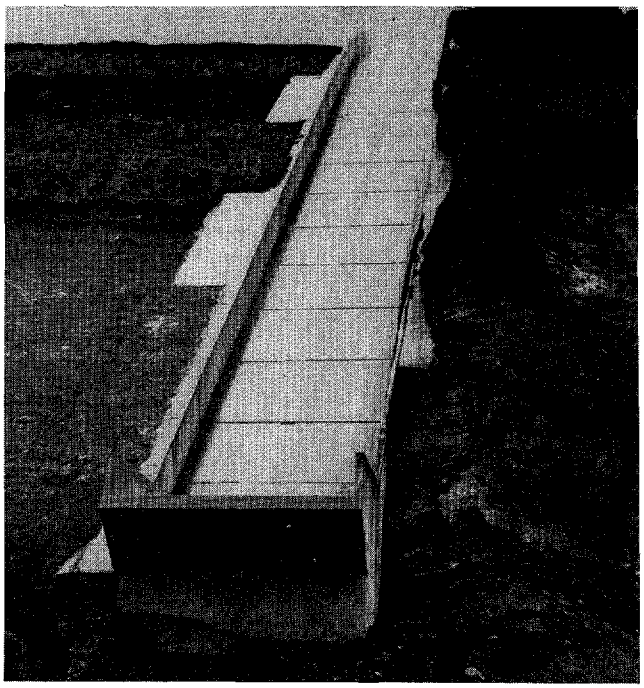
On April 17, 1979 the Department's Independent Safety Review Board for Cedar Springs Dam requested additional foundation exploration and a dynamic analysis of the dam. The investigation is expected to continue through the next year.

The Safety Review Board for Castaic Dam submitted its report in January 1980. The Board reported that the dam could withstand an earthquake of 8.5 magnitude if it occurred on the nearby San Andreas fault. However, it recommended additional analyses of the left abutment and installation of more pressure-sensing devices; correction of movement between some of the concrete slabs in the spillway; and recalculation of the probable maximum flood hydrograph. This work is presently being accomplished.

A consulting engineer has been retained to complete a safety evaluation under requirements of the Federal Energy Regulatory Commission (FERC). Under this review, Oroville Dam, Bidwell Canyon Saddle Dam, Parish Camp Saddle Dam, Thermalito Diversion Dam, Feather River Fish Hatchery and Barrier Dams, Thermalito Forebay Dam, Cedar Springs Dam and Pyramid Dam will be analyzed. The evaluation and report is scheduled for completion in 1980.

The safety review and evaluation schedule, beginning in 1975, of Department-owned dams is shown below together with the Board's review costs and costs of remedial work incurred by the Department through mid-1980. Activity in this safety review program prior to 1979 and a list of the members of the various consulting boards is discussed in Chapter I of Bulletin 132-79.





Above are two views of some of the remedial work performed on Pyramid Dam Spillway Chute at a total cost of $790,000; (left) extension of the walls of the chute, (right) the chute after remedial work had been completed.

REMARKS BY GOVERNOR EDMUND G. BROWN JR.

Signing of SB 200
July 18, 1980

Good evening. My fellow citizens, tonight I want to talk to you about our own State and about its lifeblood--water.

Few controversies excite such passion as those connected with the use of water. The world for centuries has seen people fight over water. In the west and in California, the disputes have been bitter and they've gone on from one generation to the next.

Twenty years ago, the Legislature and my father, when he was Governor, presented to the people a water project that was one of the most ambitious in the world. By a slim majority, the people of California accepted the project and work soon commenced bringing necessary water to the parched areas of Central and Southern California and parts of the San Francisco Bay area.

In the San Joaquin Valley, deserts were turned green and crops were shipped all over the world, helping to maintain California as the number one agricultural state. Water was also provided to urban areas in Southern California.

The Water Project was not only placed into law, but was ratified by binding contracts to deliver water. Although the aqueducts have been built, only half of the water committed has been delivered. Since no one seriously has proposed repealing the Water Project and attempting to default on those binding contracts, the basic question remains, how do we meet the State's water needs in a responsible environmentally sound way.

After six years of study, struggle, and debate, SB 200 passed the Legislature and is now before me for signature. This bill, far from adding entirely new water facilities, actually imposes strict and unprecedented environmental safeguards on all water facilities built to satisfy existing legal commitments. In truth, SB 200 significantly restricts the power of the State to move water from one part of the State to another.

In this respect, there is nothing unusual in transferring water from one part of the State to another, just as farmers in the San Joaquin Valley receive water from areas in the north, so do people in San Francisco obtain their water from Yosemite National Park, several hundred miles away. People in Oakland and the Bay area receive water from Calaveras County, many miles to the east.

Basically we're one state. We're interdependent and we're working together to assure prosperity for ourselves and for the generations to come.

What is unusual is that Senate Bill 200 revamps and restricts existing State water authority to develop water projects and it recognizes the fundamental need to protect the environment of Northern California. Since the original authorization of the Water Project 20 years ago, a much deeper sense of the environment has evolved in the hearts of our people.

I'm deeply aware of the fears and the distrust that are widespread in Northern California regarding the Peripheral Canal, regarding SB 200, and regarding sharing water with southern parts of the State.

Statements have been made that this bill will destroy the San Francisco Bay, ruin the Delta and the Suisun Marsh, destroy fish and wildlife, and ultimately open up the wild rivers for new dams.

This is simply not the case. In fact, Northern California stands to gain by SB 200:

(1) Contra Costa County will receive better quality water and a more secure supply.

(2) Alameda and Santa Clara Counties will obtain State Water Project water.

(3) The water quality of the San Francisco Bay and the Suisun Marsh will be protected in law for the first time from any adverse effect of the State Water Project.

(4) For the first time, the State will be legally obligated to add additional water to protect the Delta from any adverse effect because of the operation of federal water projects.

(5) The fragile ecology of the Delta will be specifically protected. In fact, the Peripheral Canal will not be built and cannot be built unless it is proven that the fish and the wildlife are protected and brought back to historic standards.

And in this connection and to allay some of the fears that have been expressed, I want to read from the bill itself. Section 11256 states as follows:

> "Construction of the facilities shall commence only if a permanent agreement for the protection and enhancement of fish and wildlife provides as follows: the restoration and maintenance of adult populations of fish and wildlife at historic levels in the Delta and Suisun Marsh and the San Francisco Bay."

Those are very solid protections and for the first time a water project already authorized is now constrained by a deep commitment to environmental values. In that respect, I'm going to explain a chart that graphically displays just what kind of protection we will have in SB 200.

Historically, the fish in the Delta represented a figure about here on the chart--call it a hundred for purposes of discussion. And because of the passage of time, those historic levels in the fisheries of the Delta have been declining and degrading to the point where we are right now. If we do nothing, these fish resources will continue to decline as you see on the graph. With the Peripheral Canal, the fisheries will be enhanced and will reach toward the historic levels. Those historic levels are measured, they are stated in the Fish and Game Department and if they are not attained because of some defect in the Peripheral Canal or in the fish screens that are connected with it, then the Peripheral Canal will be stopped and no further construction will proceed.

(6) I supported legislation that has placed before you Proposition 8 for the November ballot. And what that Proposition will do is to lock into the California Constitution all of the protections that I have been referring to. This is something the north fought for 20 years ago and was unable to obtain. We are now on the verge of putting it into our constitutional framework.

(7) That same Proposition 8 will give constitutional protection to the 1,100 miles of wild rivers in Northern California. Again, a very divisive struggle whether to dam up the wild rivers or to leave them for posterity. Proposition 8 will allow the people of this State to vote to lock those rivers in perpetuity for the benefit of those who will come after us. In the decades to come, people will appreciate those scenic and wild rivers as they see around them the millions of people and the very highly developed state that California will be at the turn of the century.

In that respect, I wish to refer to a second chart that summarizes these protections in SB 200 and Proposition 8.

The wild rivers in the northern part of our State, these will all be protected if Proposition 8 is passed.

The Suisun Marsh, for the first time, will also be protected.

The San Francisco Bay, for the first time in law, is given protection as to its water quality.

The Delta, also protected in law, protected against the operations of the federal project. With Proposition 8, if it passes, and I will strongly support its passage, they will be locked up even further in legal safeguards.

And finally, at the bottom of the chart, you see ground water storage authorized, a way of storing water, not with new dams, but under the ground at a savings in cost and energy as well.

All of these indicate that what we have before us is a real beginning in the water field. But these protections are not enough. I believe that those in our cities and those who grow our food can and must use water more effectively. Because of that I am signing the following Executive Order and expressly asking the Federal Government to join in a massive conservation program. I will read you the three salient points of the Executive Order:

(1) The Department of Water Resources is directed to prepare a plan of water conservation, reclamation and management for the State Water Project to be submitted to the State Water Resources Control Board, such plan to recommend actions that could be undertaken by the State and its water service contractors to reduce the demand for water, to reclaim urban and agricultural waste water, to store water underground in order to provide for dry years, and to provide for consideration of pricing changes, water exchanges, and other methods for reducing the demand for new water facilities.

(2) The Department of Water Resources is hereby directed to implement as quickly as possible a program to desalt 400,000 acre-feet of agricultural waste water.

(3) And finally, the State Water Resources Control Board is urged to require water conservation plans in the exercise of their water rights authority.

I will sign that to give further impetus to this conservation effort.

But, there is unfinished business. For that reason, I am asking that SB 1361 be enacted as soon as possible. It's pending in the State Senate. That will give new impetus to the protection of our water, to use it more efficiently, to save money, and to protect future generations. In that respect, local districts must develop their own ground water management plans and their own methods of conservation. If local people and local districts will work with those in State Government, all of us will be providing for the future.

We all have to work together, not in an ethic of throw-away and waste, but in an ethic of stewardship.

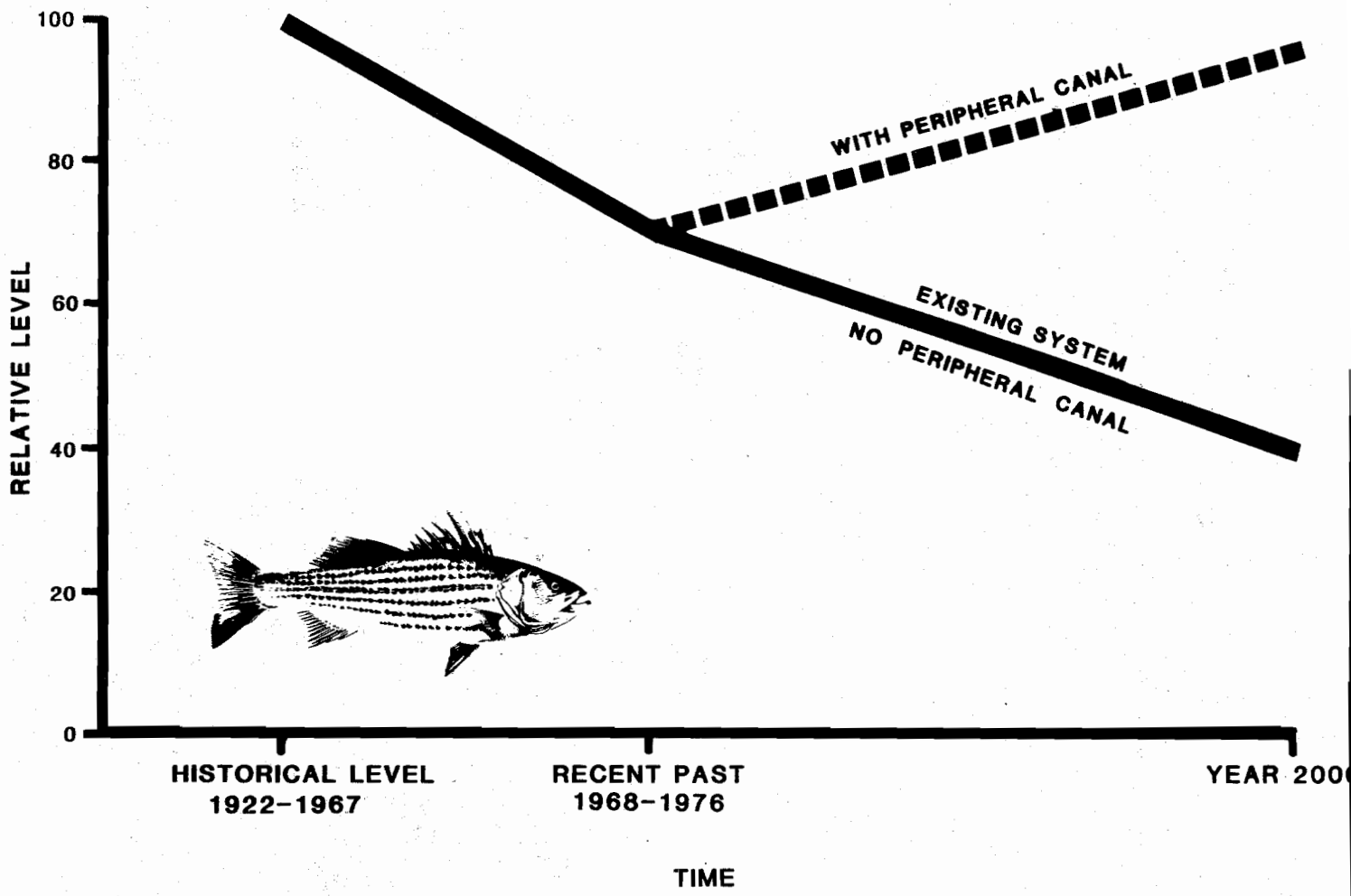
I'm going to sign SB 200. I appreciate the very fine work of Senator Ayala and Assemblyman Kapiloff who have steered this bill through its very tortuous passage. It's been a long time in coming. I think it is a reasonable balance of the competing interests.

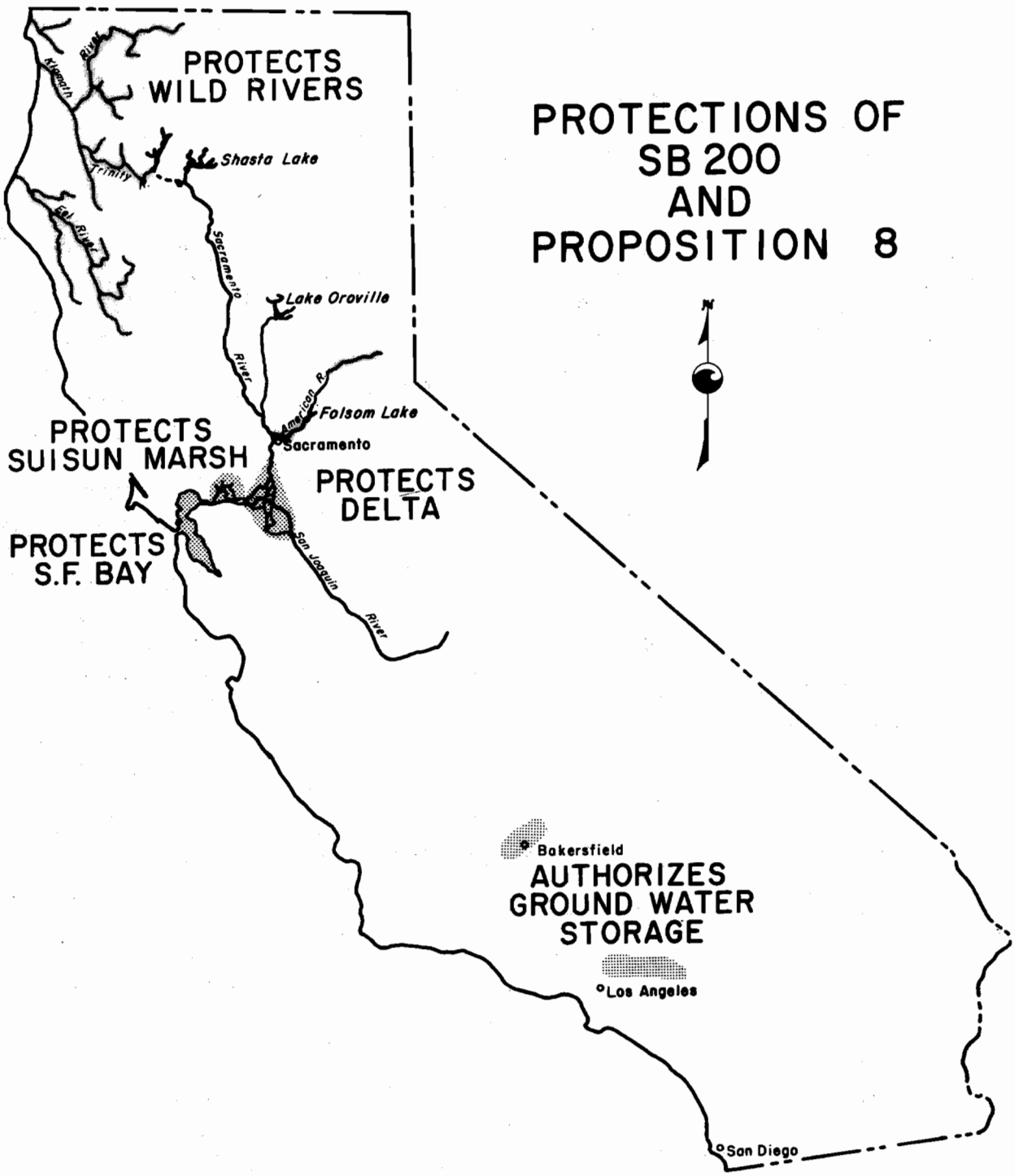
I would also have to say the signing of this bill is an end of an era--an era of growth without strict conservation. And the beginning of a period where we will enhance our natural systems: soils, forests, fisheries, water and air; as good stewards of those natural resources and for those who will come after us.

As I sign this bill, I would just say that this bill, together with the federal guarantees of our wild rivers, together with the passage of Proposition 8, and the commitment required by our Executive Order, will bring us values of unity and interdependence. Values that will endure for decades to come.

Thank you and good night.

RESTORATION OF DELTA FISHERY




PROTECTIONS OF
SB 200
AND
PROPOSITION 8
PROTECTS
WILD RIVERS
Klamath River
Trinity
Eel River
Shasta Lake
Sacramento River
Lake Oroville
American R.
Folsom Lake
Sacramento
PROTECTS
SUISUN MARSH
PROTECTS
DELTA
PROTECTS
S.F. BAY
San Joaquin River
Bakersfield
AUTHORIZES
GROUND WATER
STORAGE
Los Angeles
San Diego

Senate Bill No. 200

CHAPTER 632

An act to amend Section 11460 of, to add Sections 11108, 11109, 11110, 11456, 11457, 11458, and 11915.2 to, to add Article 9.4 (commencing with Section 11255) to Chapter 2 of Part 3 of Division 6 of, the Water Code, relating to water.

[Approved by Governor July 18, 1980. Filed with Secretary of State July 20, 1980.]

LEGISLATIVE COUNSEL'S DIGEST

SB 200, Ayala. Water facilities.

(1) Existing law provides for the design, construction, operation, and maintenance of specified water development facilities by the state. Such facilities include, among others, the facilities specified or authorized as additional facilities in the state Central Valley Project, and specified facilities in the Sacramento-San Joaquin Delta including facilities for transfer of water across the delta, flood and salinity control, and related functions.

This bill would designate as additional facilities of the Central Valley Project, subject to specified conditions, a specified peripheral canal to be built in specified stages, relocation of the intake to the Contra Costa Canal, the Los Vaqueros Unit as described, specified south delta water quality improvement facilities, Suisun Marsh protection facilities as specified, specified facilities for utilizing ground water storage space in specified locations, the Glenn Reservoir-River Diversion Unit as specified, the Colusa Reservoir-River Diversion Unit as specified subject to specified conditions, waste water reclamation programs as specified, water conservation programs as specified, the Mid-Valley Canal as specified, the Western Delta Overland Water Facilities as specified, and facilities to provide for the transportation of water to San Joaquin, San Francisco, San Mateo, Alameda, and Contra Costa Counties as specified.

The bill would provide that construction of the peripheral canal or the Mid-Valley Canal are conditioned upon the Department of Water Resources and the Department of Fish and Game entering into a permanent agreement for the protection of fish and wildlife, as specified. The bill would prohibit the transportation of water for the federal Central Valley Project through state project facilities, including the peripheral canal, with specified exceptions, until the enactment of federal legislation or the Secretary of the Interior entering into a permanent contract with the department which requires operation of the federal Central Valley Project in coordination with the State Water Resources Development System and in compliance with water quality standards and permit and

license conditions adopted by the State Water Resources Control Board, as specified, and in conformity with a permanent agreement between the United States and the state for the protection and enhancement of fish and wildlife, as specified, and until federal agreement to the transportation of water of the federal Central Valley Project through the peripheral canal. The bill would require the department to enter into contracts with specified delta agencies as prescribed and would require differences between the state and such delta agencies, if contracts have not been executed by the effective date of the bill, to be resolved by arbitration in accordance with specified provisions.

The bill would provide that authorizations of the Los Vaqueros, ground water storage, Glenn Reservoir-River Diversion, Colusa Reservoir-River Diversion, and Mid Valley Canal units are conditioned upon completion of specified favorable feasibility reports.

(2) Under existing federal law, before federal authorization of a project and if nonfederal public bodies indicate their intent in writing to administer project land and water areas for recreation and fish and wildlife enhancement, as specified, and to bear not less than one-half the separable costs of the project allocated to such purposes and all of the costs of operation, maintenance, and replacement, the federal project may take into account such benefits in determining the economic benefits of the project, allocate such costs as specified and provide that not over one-half of such separable costs and all joint costs of the project allocated to such enhancement purposes shall be borne by the United States and be nonreimbursable.

The bill would authorize the Secretary of the Resources Agency to make such indication in writing for any federal multiple-purpose water project land and water areas of the Mid-Valley Canal Unit.

(3) Existing law prohibits the Department of Water Resources from depriving a watershed or area wherein water originates, as specified, of the prior right to the water required therein, as specified.

This bill would also require the project to be operated in compliance with water quality standards set forth as conditions in permits or licenses and in water quality control plans, as specified or as established by contract. The bill would require specified state agencies to take all necessary actions to assure that the federal Central Valley Project is operated in compliance with such standards.

The bill would require the costs of benefits in the delta as a result of a project operation, in excess of any detriments caused by the project, to be repaid, to the extent properly allocable, to the department by the beneficiaries and not by the contractors of the project who do not receive those benefits.

The bill would require the department to make an allocation of specified costs to the project to compensate for historic upstream

depletion and diversions, and would specify that public agencies which have contracted for water supplies shall not be responsible for such allocated costs.

(4) The bill would also authorize the Department of Fish and Game to administer, as specified, a comprehensive study to determine the interrelationship between delta outflow, including flushing flows, and fish and wildlife resources in the San Francisco Bay System westerly of the delta and waste discharges into the San Francisco Bay System. The bill would require the Department of Water Resources to study the possible interconnection between the State Water Resources Development System and water supply systems serving the Counties of Alameda, Contra Costa, San Francisco, San Joaquin, and San Mateo. The bill would also authorize the department to participate in an investigation of the need to enlarge Shasta Dam and Reservoir or other existing federal reservoirs.

The people of the State of California do enact as follows:

SECTION 1. Section 11108 is added to the Water Code, to read:

11108. "Delta" means the Sacramento-San Joaquin Delta as described in Section 12220.

SEC. 2. Section 11109 is added to the Water Code, to read:

11109. "Suisun Marsh" means the area defined in Section 29101 of the Public Resources Code.

SEC. 3. Section 11110 is added to the Water Code, to read:

11110. "Historical level" means the average annual abundance from 1922 through 1967 of the adult populations of fish and wildlife estimated to have lived in or been dependent on any area, as determined by the Department of Fish and Game.

SEC. 4. Article 9.4 (commencing with Section 11255) is added to Chapter 2 of Part 3 of Division 6 of the Water Code, to read:

Article 9.4. Additional Facilities and Programs

11255. The project includes the units authorized in this section, subject to the conditions specified in Sections 11256 and 11257, and in compliance with the California Environmental Quality Act (commencing with Section 21000 of the Public Resources Code) and which may be constructed, operated, and financed as joint-use facilities with the United States:

(a) A peripheral canal unit, around the eastern and southern rim of the delta. This unit shall be designed, constructed, and operated to meet the provisions of this part in the most effective manner, and shall consist of canals, pumping plants, intake and outlet structures, siphons and fish screens. The department shall design and construct the unit so as to optimize its usefulness for the protection of the resources of the delta and the augmentation of water supplies. The

department may provide for joint use or delivery of water from the unit with local agencies or with the United States upon the execution of agreements with local agencies or with the United States concerning operation, financing, and sharing of benefits of the unit. This unit shall be constructed in three stages, with the work on the first and second stages proceeding concurrently. Stage one shall consist of construction of the facility from the town of Hood to Shima Tract on the northwest outskirt of Stockton. Stage two shall consist of preconsolidation from the San Joaquin River to Clifton Court Forebay of the California Aqueduct. Stage three shall consist of the completion of the facilities from Shima Tract to Clifton Court Forebay. When stage one is completed, it shall be operated for a period of two years to establish adequate fish screen and operational criteria. Thereafter, stage three shall be constructed when the Director of Water Resources and the Director of Fish and Game both determine from the results of the trial period that the fish screen and operational criteria will adequately protect fish populations. The state water facilities referred to in paragraph (3) of subdivision (d) of Section 12934 are defined to include this unit.

(b) Relocation of the intake to the Contra Costa Canal to divert water from the state water facilities, subject to the terms of a contract between the department and beneficiaries.

(c) The Los Vaqueros unit, to be located in eastern Contra Costa County about eight miles west of the Clifton Court Forebay. Other offstream storage reservoirs may be located south or west of the delta, as determined by the Director of Water Resources, to be served by existing project facilities.

(d) South delta water quality improvement facilities, consisting of pumping plants, discharge canals, flow control structures, and channelization of sloughs to provide improved circulation, distribution, and quality of water in the southeastern delta and to meet the needs of the south delta area, to be completed no later than the facility described in subdivision (a) of this section. Such facilities may include a turnout from the California Aqueduct to the Westley Wasteway of the federal Delta-Mendota Canal or other facilities to deliver water to the San Joaquin River or in lieu thereof the director may agree with the Bureau of Reclamation to exchange equivalent water between the Delta-Mendota Canal and the California Aqueduct. The portion of the facilities not integrally connected with the facility described in subdivision (a) of this section, or its operation, shall be constructed only if a contract between an appropriate agency representing the beneficiaries and the department is executed.

(e) As mitigation for the past, present, and future adverse impacts of reduced delta outflows on the wildlife resources of the Suisun Marsh, the department shall construct, maintain, and operate or contract with the Suisun Resources Conservation District for the construction, maintenance, or operation of the Suisun Marsh overall

protection facilities in accordance with a plan to be developed by the department in cooperation with the Suisun Resources Conservation District and the Department of Fish and Game. The facilities shall be completed no later than stage one of the facilities described in subdivision (a) of this section.

(f) Facilities for utilizing ground water storage space determined by the director to be feasible for the purpose of providing yield for the State Water Resources Development System based upon estimates by the department that ground water storage can yield 400,000 acre-feet annually, in conjunction with existing and future surface water supplies, by the recharge and extraction of ground water and including the capitalized cost of delivering water for filling or refilling ground water storage space, in one or more of the following locations within the service area of the State Water Resources Development System:

(1) The south San Francisco Bay area in the Counties of Santa Clara and Alameda, served by the South Bay Aqueduct.

(2) San Joaquin Valley, served by the California Aqueduct.

(3) Southern California, served by the California Aqueduct, including enlargement of the Devil Canyon Power Plant and the Mojave Division (East Branch) from the proposed Cottonwood Power Plant to Silverwood Lake.

None of the facilities described in this subdivision shall be constructed or operated within the boundaries of an agency that has contracted for water from the State Water Resources Development System without a contract with such agency.

(g) Glenn Reservoir-River Diversion Unit on the west side of the Sacramento Valley in the vicinity of Stony Creek and Thomes Creek watersheds. This unit may be constructed in stages.

(h) If the Glenn Reservoir-River Diversion Unit authorized in subdivision (g) is not feasible, as determined by the Director of Water Resources, the Colusa Reservoir-River Diversion Unit on the west side of the Sacramento Valley in the western portion of the Counties of Glenn and Colusa. This unit may be constructed in stages. The Sites Reservoir portion of the unit may be developed at any time hereafter by the federal government as a facility of the federal Central Valley Project to serve the Tehama-Colusa Canal and any extension thereof into Yolo and Solano Counties.

(i) Waste water reclamation programs to provide yield for the State Water Resources Development System, provided such facilities are economically competitive with alternative new water supply sources. None of the facilities described in this subdivision shall be constructed or operated within the boundaries of any agency that has contracted for water from the State Water Resources Development System without a contract with such agency.

(j) Water conservation programs within the boundaries of agencies that have contracted for water from the State Water Resources Development System, provided, that the implementation

of such programs is contingent upon contracts between such agencies and the Department of Water Resources. Based on estimates of the department, waste water reclamation and water conservation in urban areas served by the State Water Resources Development System are projected to total 700,000 acre-feet annually by year 2000.

(k) The Mid-Valley Canal Unit, which shall be constructed primarily for the purpose of alleviating the ground water overdraft and providing water supplies for the state and federal water fowl management areas in the canal service area; provided, that the water delivered through its facilities shall be water developed by facilities other than those of the project, and provided further, that such water shall be transported through the facilities described in subdivision (a) of this section and, provided further, that the full cost of the unit incurred by the state and allocated to agricultural, municipal, and industrial contractors shall be repaid by them.

The Secretary of the Resources Agency is authorized to indicate in writing the state's intent to agree to administer any federal multiple-purpose water project land and water areas of the Mid-Valley Canal Unit for recreation and fish and wildlife enhancement as provided in Public Law 89-72 if constructed by the United States.

(*l*) Western Delta Overland Water Facilities, to supply water to agricultural areas on Sherman Island, Jersey Island, Hotchkiss Tract, and adjacent areas.

(m) (1) Facilities to provide for the transportation of water to termini to serve the Counties of San Joaquin, San Francisco, and San Mateo.

(2) Facilities to provide for the transportation of a supplemental water supply to areas in Alameda and Contra Costa Counties not served through the Contra Costa Canal or the South Bay Aqueduct, provided that the water to be delivered shall be water developed by facilities of the federal Central Valley Project.

11256. (a) Construction of the facilities described in subdivision (a) or (k) of Section 11255 shall commence only if the department enters into a permanent agreement with the Department of Fish and Game for the protection and enhancement of fish and wildlife which shall provide for the following:

(1) The restoration and maintenance of adult populations of fish and wildlife at historical levels in the delta and the Suisun Marsh and the San Francisco Bay system westerly of the delta. Maintenance at historical levels shall consider natural fluctuations in annual water supply and populations of fish and wildlife. The agreement shall include those limitations on exports and diversions to storage which are necessary to restoring and maintaining historical levels of fish and wildlife.

To the extent practicable, fresh water needed to restore and maintain fish and wildlife in the San Franciso Bay System westerly

of the delta shall be provided from unregulated flows, and

(2) The realization of the potential of the project for increasing these resources above the levels in paragraph (1) consistent with the contracts for water delivery and with other purposes of the projects.

(b) The department shall immediately proceed with activities prerequisite to the construction of the facilities provided for in subdivision (a) of Section 11255 and shall complete the design and commence construction as soon as possible.

11257. The authorizations contained in subdivisions (c), (f), (g), (h), and (k) of Section 11255 are conditional upon the completion of engineering, economic, environmental, and financial feasibility reports found favorable by the Director of Water Resources.

Each financial feasibility report shall contain:

(a) An initial allocation of project costs to project purposes.

(b) The proposed method of financing.

(c) An estimate of the method of repayment.

(d) A designation of the water and power contractors that are proposed to repay the allocated reimbursable water development costs, including interest if any, on upstream storage, conveyance, operations, maintenance, and replacement.

(e) An estimate of the impact upon retail water prices in the various service areas of the project.

11258. The environmental impact report on the peripheral canal shall include a discussion of the sources of the mineral, nutrient, and biological components of the Sacramento River and shall evaluate the possible impacts to such components resulting from the operation of the proposed peripheral canal.

If the department determines that there will be significant adverse mineral, nutrient, or biological effects caused by the operation of the peripheral canal, the department shall:

(a) Evaluate mitigation measures in the environmental impact report.

(b) Propose cost allocation principles for the mitigation.

(c) Prepare trial cost allocation.

To the extent praeticable, the department shall mitigate adverse impacts upon mineral, nutrient, or biological effects caused by the operation of the canal.

SEC. 5. Section 11456 is added to the Water Code, to read:

11456. The department shall enter into permanent and enforceable contracts, with the delta agencies specified in this section, for the purpose of recognizing the right of users to make use of the waters of the delta and establishing criteria for the minimum quality of water which shall prevail within the delta before water may be exported therefrom, such quality to be adequate to permit the preservation of present delta agricultural, domestic, and environmental uses, all as provided in Part 4.5 (commencing with Section 12200) of this division. Such contracts shall provide for reasonable payment to be made for any benefits which may be

received through the water supply or quality provided in such contracts in excess of that which would have been available in absence of the operations by the State Water Resources Development System and by the federal Central Valley Project, and offset by any detriments caused thereby. If contracts have not been executed by the effective date of this section, differences between the state and such agencies shall be resolved by arbitration upon the written request of either party to the proposed contract identifying the issues upon which arbitration shall be held, which arbitration shall be conducted in accordance with Title 9 (commencing with Section 1280) of Part 3 of the Code of Civil Procedure. The agencies with which such contracts shall be entered into are the following:

(a) North Delta Water Agency.
(b) Central Delta Water Agency.
(c) South Delta Water Agency.
(d) East Contra Costa Irrigation District.
(e) Byron-Bethany Irrigation District.
(f) Contra Costa County Water Agency.
(g) Contra Costa County Water District.
(h) Suisun Resource Conservation District.

When binding determinations have been made involving two-thirds of the total acreage within the delta and Suisun Marsh located within the foregoing agencies, the department or the remaining agencies may withdraw from the arbitration proceedings. The provisions of this section shall not supersede any requirement for elections to approve such contracts, reached by negotiation or arbitration, as may be required by the act authorizing creation of the agency.

SEC. 6. Section 11457 is added to the Water Code, to read:

11457. The costs of providing any benefits received by agricultural, municipal, and industrial water users in the delta as a result of project operations, in excess of any detriments caused thereby, shall, to the extent properly allocable be repayable to the department by the beneficiaries. The costs of providing such benefits shall not be reimbursable by any State Water Resources Development System water service contractor who does not receive those benefits.

SEC. 7. Section 11458 is added to the Water Code, to read:

11458. (a) Except as provided for in subdivision (b) of this section, the department shall not transport water for the federal Central Valley Project through project facilities, including the peripheral canal, until the following events occur:

(1) The Congress of the United States enacts legislation or the Secretary of the Interior enters into a permanent contract with the department which requires operation of the federal Central Valley Project:

(A) In full coordination with the State Water Resources Development System and in compliance with water quality

standards adopted pursuant to Section 13170 and as set forth as conditions in permits and licenses as provided for in Part 2 (commencing with Section 1200) of Division 2; provided, that actions of the State Water Resources Control Board in establishing water quality standards and conditions in permits and licenses shall be a combined action meeting all the applicable requirements of Part 2 (commencing with Section 1200) of Division 2.

(B) In conformity with a permanent agreement between the United States and the state for the protection and enhancement of fish and wildlife which shall provide for the following:

(i) The restoration and maintenance of adult populations of fish and wildlife at historical levels in the delta and the Suisun Marsh and the San Francisco Bay System westerly of the delta. Maintenance at historical levels shall consider natural fluctuations in annual water supply and populations of fish and wildlife. The agreement shall include those limitations on exports and diversions to storage which are necessary to assist in restoring and maintaining historical levels of fish and wildlife.

To the extent practicable, fresh water needed to restore and maintain fish and wildlife in the San Francisco Bay System westerly of the delta shall be provided from unregulated flows: and

(ii) The realization of the potential of the project for increasing these resources above the levels in paragraph (i), consistent with the contracts for water delivery and with other purposes of the projects.

(2) The federal government agrees to the transportation of water of the federal Central Valley Project through the facilities described in subdivision (a) of Section 11255.

(b) The department may transport water for the federal Central Valley Project through project facilities: (1) under contracts between the department and the United States existing on the effective date of this section, (2) and in accordance with the requirements of any decision of the State Water Resources Control Board, and (3) for the San Felipe Unit of the federal Central Valley Project in implementation of the principles of the agreement between the department and the Santa Clara Valley Water District as follows: if operation of the federal Central Valley Project to meet delta water quality standards requires proportionate reduction in deliveries of water to the San Felipe Unit, such reductions will be made.

SEC. 8. Section 11460 of the Water Code is amended to read:

11460. (a) In the construction and operation by the department of any project under the provisions of this part a watershed or area wherein water originates, or an area immediately adjacent thereto which can conveniently be supplied with water therefrom, shall not be deprived by the department directly or indirectly of the prior right to all of the water reasonably required to adequately supply the beneficial needs of the watershed, area, or any of the inhabitants or property owners therein.

(b) The project shall be operated in compliance with water quality standards set forth as conditions in permits or licenses as provided for in Part 2 (commencing with Section 1200) of Division 2 and in water quality control plans as provided for in Section 13170 or as established by contract, including rectifying failure of the United States to operate the federal Central Valley Project in accordance with such standards; provided that actions of the State Water Resources Control Board in establishing water quality standards and conditions in permits and licenses shall be a combined action meeting all the applicable requirements of Part 2 (commencing with Section 1200) of Division 2.

(c) The department, the Attorney General, and other state agencies shall take all necessary actions, including initiating or participating in judicial, administrative, and legislative proceedings, to assure that the federal Central Valley Project is operated in compliance with standards established by the State Water Resources Control Board as specified in subparagraph (A) of paragraph (1) of subdivision (a) of Section 11458.

SEC. 9. Section 11915.2 is added to the Water Code, to read:

11915.2. The department shall make an allocation of the costs to the project which provide water for water quality, fish and wildlife, and recreation in the delta, Suisun Marsh, or San Francisco Bay, to compensate for historic upstream depletions and diversions which have reduced the amount of water naturally available in the delta, Suisun Marsh, and San Francisco Bay. Public agencies that have contracted for water supplies from the project shall not be responsible for such allocated costs.

SEC. 10. (a) The Department of Fish and Game is authorized to administer a comprehensive study to determine the interrelationship between delta outflow, including flushing flows, and fish and wildlife resources in the San Francisco Bay System westerly of the delta and waste discharges into the San Francisco Bay System. The State Water Resources Control Board shall be responsible for the portions of the study relating to waste discharges. Such study and the work plan for it shall be reviewed by a committee composed of representatives of the San Francisco Bay Conservation and Development Commission, the State Water Resources Control Board, and the Department of Water Resources. The Department of Fish and Game shall report progress on such study annually to the Legislature. Such report shall include recommendations for coordination with any other ongoing related study and for adjustment in funding and the report shall include independent statements of review from each agency on the review committee.

(b) The primary purpose of the study is to provide data to aid the State Water Resources Control Board in its consideration of the need to set standards to protect San Francisco Bay to assure that planning for future projects will not appreciably reduce unregulated delta outflows before the State Water Resources Control Board

determines the need for water quality standards to protect the San Francisco Bay System westerly of the delta.

(c) The study need not be completed before the final environmental impact report on the peripheral canal authorized by subdivision (a) of Section 11255 of the Water Code is adopted.

(d) Nothing in this section shall affect the obligation of the Department of Water Resources under the California Environmental Quality Act (Division 13 (commencing with Section 21000) of the Public Resources Code).

SEC. 11. The Department of Water Resources shall study the possible interconnection between the State Water Resources Development System and water supply systems serving the Counties of Alameda, Contra Costa, San Francisco, San Joaquin, and San Mateo.

SEC. 12. The Department of Water Resources may participate in an investigation of the need to enlarge Shasta Dam and Reservoir or other existing federal reservoirs for joint use of the State Water Resources Development System and the federal Central Valley Project, if a contract therefor is executed between the Secretary of the Interior and the Department of Water Resources. The study shall be subject to the provisions of Section 11257 of the Water Code.

O

Assembly Constitutional Amendment No. 90

RESOLUTION CHAPTER 49

Assembly Constitutional Amendment No. 90—A resolution to propose to the people of the State of California an amendment to the Constitution of the state, by adding Article X A, relating to water.

[Filed with Secretary of State June 26, 1980.]

LEGISLATIVE COUNSEL'S DIGEST

ACA 90, Kapiloff. Water resources development.

The California Water Resources Development Bond Act, which was approved by the voters in 1960, provided for the issuance of $1,750,000,000 in general obligation bonds to help finance the immediate construction of specified water facilities, as part of a State Water Resources Development System, including a multiple-purpose dam and reservoir on the Feather River in the vicinity of Oroville and an aqueduct system for the transportation of water to various parts of the state. Existing law provides for the design, construction, operation, and maintenance of additional water development facilities by the state as part of the State Water Resources Development System.

This measure would provide that no statute amending or repealing, or adding to, specified provisions enacted by SB 200 of the 1979–80 Regular Session of the Legislature relating to the protection of fish and wildlife resources in the Sacramento-San Joaquin Delta, Suisun Marsh, and San Francisco Bay system westerly of the delta, the protection of existing water rights in the delta, and compliance with water quality standards and water quality control plans by the State Water Resources Development System shall become effective unless approved by the electors in the same manner as initiative statutes are approved, except that the Legislature may amend such provisions by ⅔ vote if the statute does not in any manner reduce the protection of the delta or fish and wildlife. The measure would make related findings.

The measure would specify that no water shall be available for appropriation by storage in, or by direct diversion from, any of the components of the California Wild and Scenic Rivers System, as such system exists on January 1, 1981, where such appropriation is for export of water into another major hydrologic basin of the state as defined in Department of Water Resources Bulletin 160-74, unless such export is expressly authorized by an initiative statute approved by the electors or a ⅔ vote of the Legislature prior to such appropriation.

The measure would provide that no statute amending, or adding to, or repealing specified provisions of the Water Code relating to protection of the Sacramento-San Joaquin Delta shall become

effective unless approved by the electors in the same manner as initiative statutes are approved, except that the Legislature may amend such provisions by a ⅔ vote if the statute does not in any manner reduce the protection of the delta or fish and wildlife.

The measure would prohibit any public agency from utilizing eminent domain proceedings to acquire water rights, which are held for uses within the Sacramento-San Joaquin Delta, or any contract rights for water or water quality maintenance in the delta, for the purpose of exporting such water from the delta.

The measure would, with respect to specified actions or proceedings arising under SB 200 of the 1979–80 Regular Session or actions which would have the effect of attacking, reviewing, preventing, or substantially delaying construction of the peripheral canal, require venue in any superior court action to be in Sacramento County, provide for Sacramento County to be reimbursed for actual costs imposed by such requirements, require such actions to be brought within specified periods, require such actions to be given preference over other civil actions and proceedings and for the hearing to be commenced within a specified period, prescribe a remedy for certain of such actions, and would require the Supreme Court, in accordance with prescribed requirements, to transfer to itself before a decision in the court of appeal of any appeal or petition for extraordinary relief from any such action, unless the Supreme Court determines that the action is unlikely to substantially affect specified matters.

The measure would require state agencies to exercise their authorized powers in a manner consistent with the protections provided by the measure.

The measure would have no force or effect unless SB 200 of the 1979–80 Regular Session is chaptered and takes effect.

Resolved by the Assembly, the Senate concurring, That the Legislature of the State of California at its 1979–80 Regular Session commencing on the fourth day of December, 1978, two-thirds of the members elected to each of the two houses of the Legislature voting therefor, hereby proposes to the people of the State of California that the Constitution of the state be amended, by adding Article X A thereto, to read:

Article X A

Water Resources Development

SECTION 1. The people of the State hereby provide the following guarantees and protections in this article for water rights, water quality, and fish and wildlife resources.

SEC. 2. No statute amending or repealing, or adding to, the provisions of the statute enacted by Senate Bill No. 200 of the 1979–80

Regular Session of the Legislature which specify (1) the manner in which the State will protect fish and wildlife resources in the Sacramento-San Joaquin Delta, Suisun Marsh, and San Francisco Bay system westerly of the delta; (2) the manner in which the State will protect existing water rights in the Sacramento-San Joaquin Delta; and (3) the manner in which the State will operate the State Water Resources Development System to comply with water quality standards and water quality control plans, shall become effective unless approved by the electors in the same manner as statutes amending initiative statutes are approved; except that the Legislature may, by statute passed in each house by roll call vote entered in the journal, two-thirds of the membership concurring, amend or repeal, or add to, these provisions if the statute does not in any manner reduce the protection of the delta or fish and wildlife.

SEC. 3. No water shall be available for appropriation by storage in, or by direct diversion from, any of the components of the California Wild and Scenic Rivers System, as such system exists on January 1, 1981, where such appropriation is for export of water into another major hydrologic basin of the state, as defined in the Department of Water Resources Bulletin 160-74, unless such export is expressly authorized prior to such appropriation by: (a) an initiative statute approved by the electors, or (b) the Legislature, by statute passed in each house by roll call vote entered in the journal, two-thirds of the membership concurring.

SEC. 4. No statute amending or repealing, or adding to, the provisions of Part 4.5 (commencing with Section 12200) of Division 6 of the Water Code (the Delta Protection Act) shall become effective unless approved by the electors in the same manner as statutes amending initiative statutes are approved; except that the Legislature may, by statute passed in each house by roll call vote entered in the journal, two-thirds of the membership concurring, amend or repeal, or add to, these provisions if the statute does not in any manner reduce the protection of the delta or fish and wildlife.

SEC. 5. No public agency may utilize eminent domain proceedings to acquire water rights, which are held for uses within the Sacramento-San Joaquin Delta as defined in Section 12220 of the Water Code, or any contract rights for water or water quality maintenance in the Delta for the purpose of exporting such water from the Delta. This provision shall not be construed to prohibit the utilization of eminent domain proceedings for the purpose of acquiring land or any other rights necessary for the construction of water facilities, including, but not limited to, facilities authorized in Chapter 8 (commencing with Section 12930) of Part 6 of Division 6 of the Water Code.

SEC. 6. (a) The venue of any of the following actions or proceedings brought in a superior court shall be Sacramento County:

(1) An action or proceeding to attack, review, set aside, void, or annul any provision of the statute enacted by Senate Bill No. 200 of

the 1979–80 Regular Session of the Legislature.

(2) An action or proceeding to attack, review, set aside, void, or annul the determination made by the Director of Water Resources and the Director of Fish and Game pursuant to subdivision (a) of Section 11255 of the Water Code.

(3) An action or proceeding which would have the effect of attacking, reviewing, preventing, or substantially delaying the construction, operation, or maintenance of the peripheral canal unit described in subdivision (a) of Section 11255 of the Water Code.

(4) An action or proceeding to require the State Water Resources Development System to comply with subdivision (b) of Section 11460 of the Water Code.

(5) An action or proceeding to require the Department of Water Resources or its successor agency to comply with the permanent agreement specified in subdivision (a) of Section 11256 of the Water Code.

(6) An action or proceeding to require the Department of Water Resources or its successor agency to comply with the provisions of the contracts entered into pursuant to Section 11456 of the Water Code.

(b) An action or proceeding described in paragraph (1) of subdivision (a) shall be commenced within one year after the effective date of the statute enacted by Senate Bill No. 200 of the 1979–80 Regular Session of the Legislature. Any other action or proceeding described in subdivision (a) shall be commenced within one year after the cause of action arises unless a shorter period is otherwise provided by statute.

(c) The superior court or a court of appeals shall give preference to the actions or proceedings described in this section over all civil actions or proceedings pending in the court. The superior court shall commence hearing any such action or proceeding within six months after the commencement of the action or proceeding, provided that any such hearing may be delayed by joint stipulation of the parties or at the discretion of the court for good cause shown. The provisions of this section shall supersede any provisions of law requiring courts to give preference to other civil actions or proceedings. The provisions of this subdivision may be enforced by mandamus.

(d) The Supreme Court shall, upon the request of any party, transfer to itself, before a decision in the court of appeal, any appeal or petition for extraordinary relief from an action or proceeding described in this section, unless the Supreme Court determines that the action or proceeding is unlikely to substantially affect (1) the construction, operation, or maintenance of the peripheral canal unit described in subdivision (a) of Section 11255 of the Water Code, (2) compliance with subdivision (b) of Section 11460 of the Water Code, (3) compliance with the permanent agreement specified in Section 11256 of the Water Code, or (4) compliance with the provisions of the contracts entered into pursuant to Section 11456 of

the Water Code. The request for transfer shall receive preference on the Supreme Court's calendar. If the action or proceeding is transferred to the Supreme Court, the Supreme Court shall commence to hear the matter within six months of the transfer unless the parties by joint stipulation request additional time or the court, for good cause shown, grants additional time.

(e) The remedy prescribed by the court for an action or proceeding described in paragraph (4), (5), or (6) of subdivision (a) shall include, but need not be limited to, compliance with subdivision (b) of Section 11460 of the Water Code, the permanent agreement specified in Section 11256 of the Water Code, or the provisions of the contracts entered into pursuant to Section 11456 of the Water Code.

(f) The Board of Supervisors of the County of Sacramento may apply to the State Board of Control for actual costs imposed by the requirements of this section upon the county, and the State Board of Control shall pay such actual costs.

(g) Notwithstanding the provisions of this section, nothing in this Article shall be construed as prohibiting the Supreme Court from exercising the transfer authority contained in Article VI, Section 12 of the Constitution.

SEC. 7. State agencies shall exercise their authorized powers in a manner consistent with the protections provided by this article.

SEC. 8. This article shall have no force or effect unless Senate Bill No. 200 of the 1979–80 Regular Session of the Legislature is enacted and takes effect.

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CHAPTER II

CONTINUING HISTORY OF PROJECT CONSTRUCTION, MANAGEMENT, OPERATIONS, AND LITIGATION, JANUARY 1979 - JUNE 1980

Chapter II is a summary of SWP construction, management, operations, and litigation from January 1979 through June 1980.

A. PROJECT CONSTRUCTION

The main emphasis in the Department's design and construction program during January 1979 through June 1980 centered on construction of the Pyramid hydroelectric facilities on the West Branch of the California Aqueduct, construction of the initial facilities of the Suisun Marsh, and modifications to existing Project facilities. In addition, the Department design staff continued work on the design of the future power generating facilities. Following are highlights of the Department's work in preparing plans and specifications and acquiring land, along with a summary of activities by the SWP construction divisions. The construction divisions are shown in Figure 3.

Plans and Specifications

During 1979 and continuing through the first half of 1980, the Department prepared plans and specifications for 40 SWP-related construction and procurement contracts, 35 of which were awarded by June 30, 1980. Following is a summary of the Department's activities within each SWP construction division, since last reported in Bulletin 132-79.

Oroville Division. The Department participated in a feasibility study of Thermalito Afterbay River Outlet Powerplant conducted by International Engineering Company under contract to Aerojet Manufacturing Company. This project is expected to be scheduled for design beginning in 1982.

Evaluation of the defective instrumentation system in Oroville Dam began, and seismic performance studies of Oroville Project facilities are partially completed.

Delta Facilities. Design of the Suisun Marsh Initial Facilities continued, and construction of the facilities began in 1979. (See a detailed description and map of these facilities under "Delta Entitlement Negotiations" section of Chapter II.) Design activities and associated hydraulic model investigations by the University of California at Davis continued in support of the Fish Facility studies for the Peripheral Canal. Design plans and specifications for Phase II of the John E. Skinner Delta Fish Protective Facility were also continued. (The Delta Pumping Plant Fish Facility was renamed in early 1979 in memory of John E. Skinner, a longtime employee with the Department of Fish and Game.) Additionally, design of access facilities to some of the I-5 borrow pits for recreation use began in 1979.

An evaluation of the safety of Del Valle, Bethany, Clifton Court, and Patterson Dams also began during the year.

North San Joaquin Division. Modifications to the Delta O&M Center began in 1979.

South San Joaquin Division. Plans and specifications for repair of the canal lining in the South San Joaquin Division were completed in 1979.

Tehachapi Division. The Department began work to provide contract drawings and specifications for construction of the 2nd barrel of Pastoria Siphon. The

2nd barrel of the siphon will provide the capacity to accommodate operation of all 14 pumps at the A. D. Edmonston Pumping Plant.

West Branch. Castaic Dam Spillway Slope Stabilization design commenced. Construction of the project is scheduled to begin in September 1980.

In 1979, the Department prepared plans for repair of the damaged portion of Lower Quail Canal and continued design work for the completion of Pyramid Powerplant contracts. Pyramid Powerplant incorporates energy conservation features including solar heating in its design. This design program was essentially completed by June 1980.

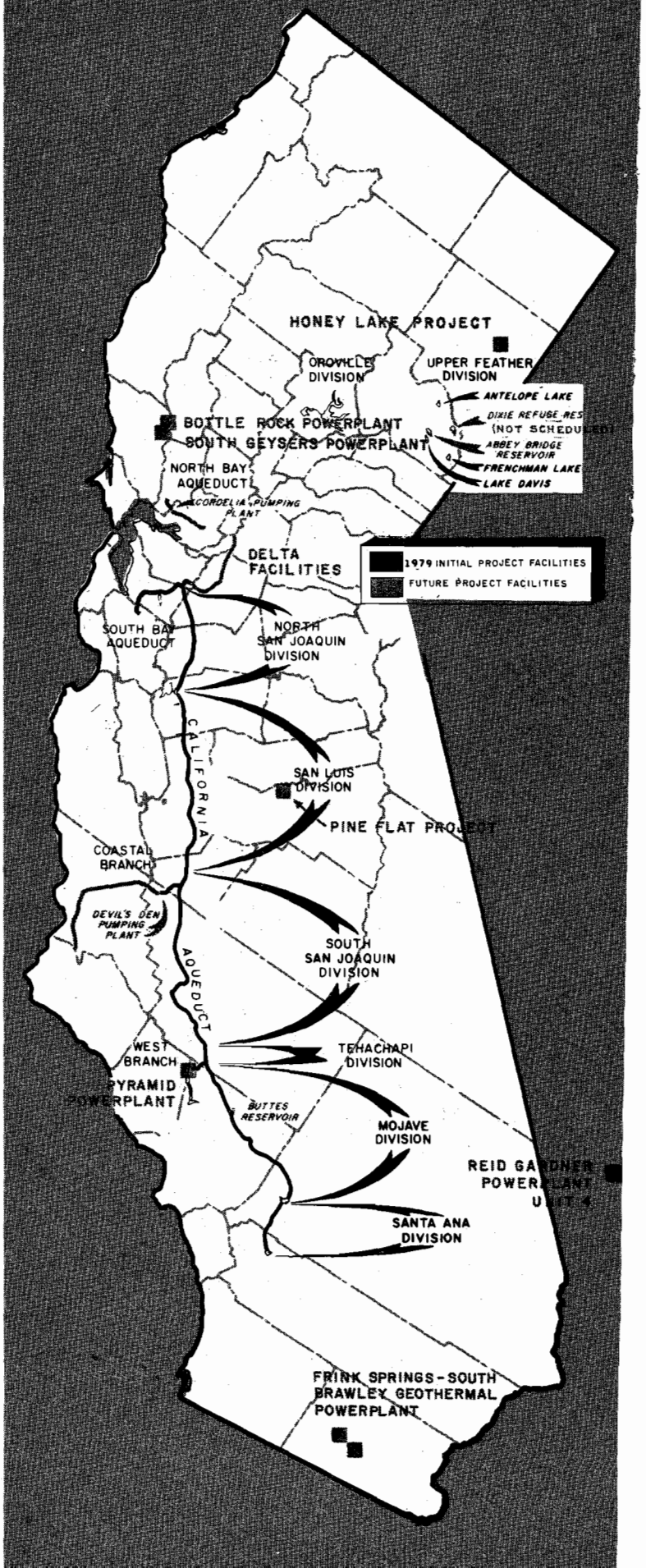
Design studies for seismic modifications for Project Switchyards also commenced. The new seismic isolator system will be installed in Pyramid Powerplant Switchyard.

Mojave Division. Following a feasibility study of Cottonwood Powerplant, the Department recommended that the power plant be constructed with two generating units, one unit at 46.5 m3/s (1642 cfs) capacity and one at up to 34.0 m3/s (1200 cfs). Design of Cottonwood Powerplant was resumed in 1979 and the plant is scheduled to be completed and operational in 1984.

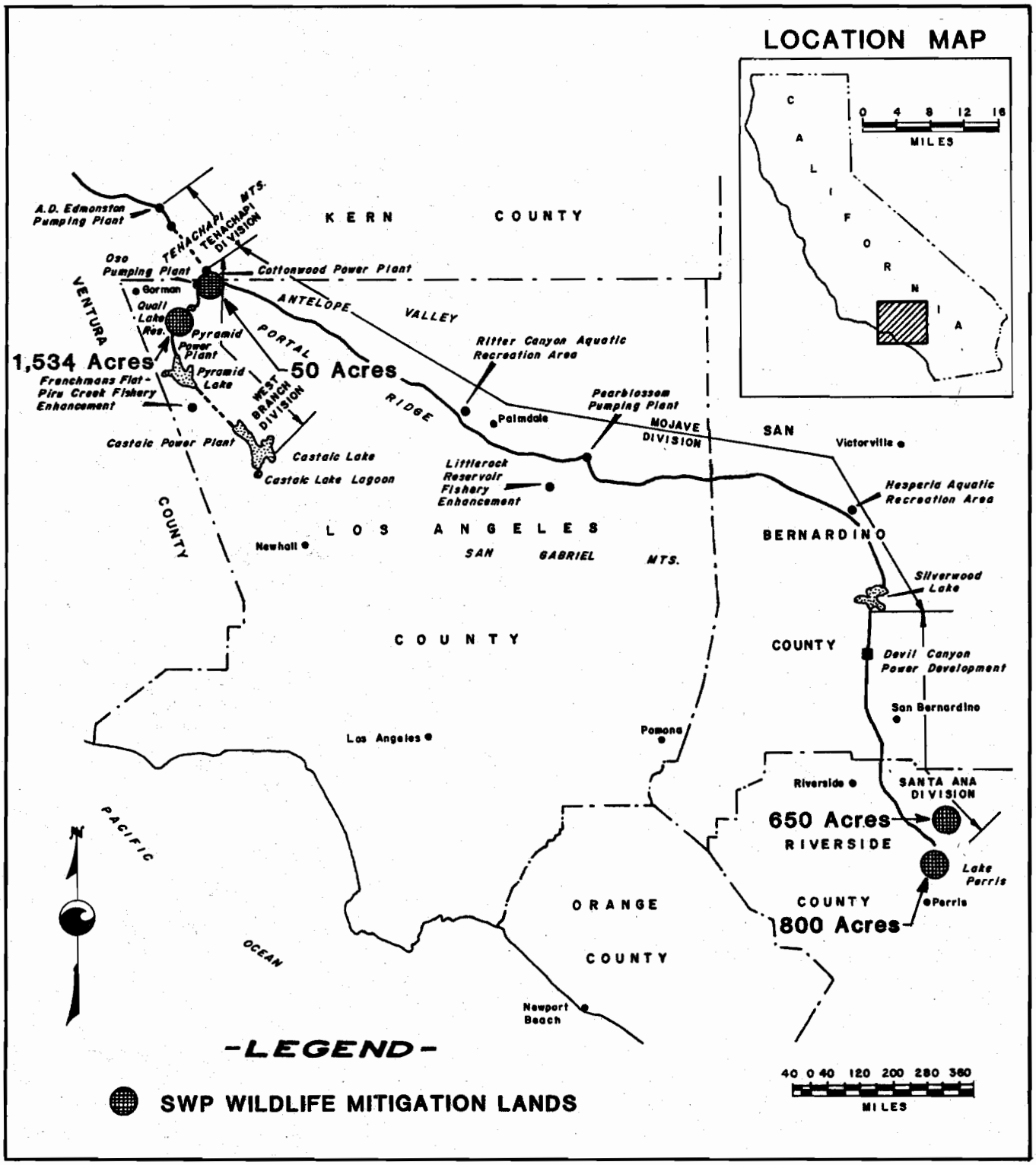
Future Water Supply Facilities. Work continued on preliminary design, exploration, and cost estimating of two conservation facilities, Los Vaqueros Reservoir project and Glen Reservoir Complex.

Energy Supply Facilities - Bottle Rock Powerplant. Final design of Bottle Rock Powerplant facilities began in 1979. The work included structural building design, electrical and mechanical design, and preparation of final site development plans. Work on the Powerplant is scheduled in early 1981.

Figure 3. PROJECT FACILITIES AND CONSTRUCTION DIVISIONS



STATE WATER PROJECT
LOCATIONS OF WILDLIFE MITIGATION LANDS



Land Acquisition

The Department's current program includes land and right of way acquisition for the following projects:

- Bottle Rock Powerplant Project.
- An enlarged program for the West Branch including seismic protection, provision of a buffer against intrusion from the off-road vehicle park, and establishment of a 3-mile strip of riparian development.
- Entry permits for Phase II of the North Bay Aqueduct to complete the EIR.
- Recreation developments associated with project facilities at Orestimba Creek, Ritter Canyon,4/ Gorman Creek, and Grizzly Creek.
- Transfer of mitigation lands in Southern California required by an agreement reached between the Department and the United States Forest Service.
- Suisun Marsh lands necessary to accommodate the construction of facilities to reduce salt water intrusion and provide for fresher water in critical areas.
- Several hundred entry permits required to accommodate numerous study programs and water measurement facilities in the Delta.
- Entry permits to allow DWR staff to perform mapping, geologic exploration, and environmental studies for the Future Water Supply program.

From January 1979 thru June 1980 approximately $1.3 million was spent for land acquisition by the Department in excess of credits for sales of surplus property and returns of condemnation deposits. This brings the total net expenditure through June 1980 to $113.3 million, approximately 62 percent of the $182.4 million estimated total cost of the current program. A total of 982.5 hectares (2,417 acres), comprising 89 parcels of land, was acquired from January 1979 through June 1980. Three parcels of excess land, 248.9 hectares (6,115 acres), were sold, bringing the cumulative total of such excess lands sold through June 1980 to 827 parcels, 2,617 hectares (11,163 acres).

Twenty-nine encroachment permits were issued during the period of January 1979 thru June 1980, for which $7,670 in fees was received.

Thirty-three leases, made up of new and existing leases through June 1980 were monitored; revenues received totaled about $164,000.

A mitigation agreement between the Department of Water Resources, Department of Fish and Game, and Metropolitan Water District was approved. Analyses began regarding underlying property rights and transfer of rights to Fish and Game for portions of 105 Southern California parcels of land.

Five relocation agreements at a cost of about $121,000 were approved, and 18 land exchange agreements concerning 31 installations were processed.

One inverse condemnation suit for about $750,000 was settled in early 1980. This suit concerned a parcel of land which the Department originally condemned six years ago for the Peace Valley Aquatic Recreation Area. The land was not purchased due to lack of project funds. This abandonment lead to an inverse condemnation action tried in February 1980 and decided in favor of DWR. A second suit, resulting from storm damage, is presently under investigation.

The number of land parcels required under the current land acquisition program is shown in the tabulation following for each facility or construction division of the Project, together with the total number of parcels acquired through June 1980.

4/ Project has been abandoned by Department of Parks and Recreation.

Facility or Construction Division	Parcels Acquired Jan 1979 thru June 1980	Total Parcels Acquired	Total Parcels Acquired
Feather River Facilities:			
Upper Feather Division	0	22	29
Oroville Division	11	966	982
Delta Facilities	6	38	159
Emergency Drought Facilities	1	3	4
Suisun Marsh Facilities	27	27	43
North Bay Aqueduct	0	34	81
South Bay Aqueduct	3	206	206
Future Water Facilities	0	0	14
California Aqueduct:			
North San Joaquin Division	0	209	221
San Luis Division	0	22	22
South San Joaquin Division	4	576	579
Tehachapi Division	1	2	2
Mojave Division	4	1,638	1,739
Santa Ana Division	1	682	692
West Branch	31	328	349
Coastal Branch (Phase I)	0	48	48
Coastal Aqueduct	0	0	200
Energy Supply Facilities	0	0	70
Total	89	4,801	5,440

Construction Progress

At the beginning of 1979, twenty-six construction contracts in progress were carried over from 1978. Between January 1979 and June 1980, fifty-one contracts were started. Construction activities for the Suisun Marsh Facilities commenced during 1979. Construction activities on the West Branch of the California Aqueduct continued to increase in 1979 and early 1980. Following is a summary of SWP construction progress within each construction division since January 1979.

Upper Feather River Division. The contracts in this area included:

- The furnishing and delivery of Beckwourth O&M Subcenter Solar Heating System Materials and Equipment. The expected completion date of this contract is in autumn of 1980.

Oroville Division. No new construction contracts were awarded during the period; however, contracts completed in Oroville during the period were:

- The Miners Ranch Canal Replacement Tunnel
- The furnishing of the Edward Hyatt Powerplant Spherical Valve Seat Seals.
- Motor/Generator Armature Rewinding for Edward Hyatt Powerplant

Delta Facilities. During 1979 the Suisun Marsh Initial Facilities were started. The following contracts were awarded and completed by June 1980.

- Goodyear Slough Outfall
- Roaring River Slough Dredging
- Girders for Cavanaugh Crossing Bridge
- Roaring River Slough Extension
- Roaring River Slough Intake

- Wheeler Island Distribution System -- First Stage
- Goodyear Slough Outfall Modification
- Wheeler Island Drain Modification
- Repairs to Roaring River Slough Levee at Howard Slough
- Repairs to Roaring River Slough North Levee, Vicinity of Howard Slough

The following contracts to complete the initial facilities work were started in early 1980.

- Morrow Island Distribution System
- Roaring River Slough Completion

The Roaring River Fish Screen - First Stage Completion contract is scheduled to start during the latter half of 1980.

Some of the contracts involved Delta water quality monitoring activities, in progress at the beginning of the year, and those awarded and completed during the period included:

- The Mallard Island Delta Water Quality Monitoring Station
- The Antioch, Mossdale, and Rough and Ready Delta Water Quality Monitoring Station
- The Delta Water Quality Martinez Monitoring Station
- The Delta Water Quality Rio Vista Monitoring Station

The contract furnishing water quality and meteorological instrumentation systems for Delta water quality monitoring was awarded in 1979 and is projected to be completed in late 1980.

A small contract was awarded in 1979 for the annual construction and removal of a rock barrier in Old River, approximately 2 miles northwest of Interstate 5, for water pollution control during the fish migration season.

South Bay. The Department purchased a 5-kilowatt turbine generator from the Peoples Republic of China. The demonstration hydroelectric generator will be installed at Del Valle Dam in Alameda County. Design, contract plans, and specifications were completed in May 1980. The contract was advertised June 20, 1980 and awarded to the lowest bidder on July 17. The project is scheduled to be completed and operational in autumn 1980.

California Aqueduct. Most of the work on the California Aqueduct, with the exception of the West Branch facilities, involved additions, modifications, and repair work of various pumping plants and other facilities in the Field Divisions.

North San Joaquin Division. The contract to replace the impellers in Units No. 1 and 2 at the Delta Pumping Plant started in 1977 was completed during 1979.

During the period a contract for sealing primary operating roads in the Division was awarded and completed. A contract awarded for modification of the Delta O&M Center was completed in the spring of 1980.

San Luis Division. The contracts completed during the period in the San Luis Division include:

- San Luis Pumping/Generating Plant, Furnishing Wearing Rings
- Dos Amigos Pumping Plant Trashrack Assembly
- San Luis Division, Sedimentation, Sedimentation Basin Debris Removal

Work on the Romero Overlook Wind

Energy Project began in early 1980. The project was halted in March 1980 because the rotor and rotor blades were unsatisfactory. Subsequent Department activities regarding this project are discussed in the Power Contracts Management and Long Range Energy Program Section of Chapter II.

South San Joaquin Division. Construction contracts awarded during the period for this Division included:

- Furnish Pipe Fittings and Appurtenances for Buena Vista and Wheeler Ridge Pumping Plants - completed February 1980.

- Lining Repair of the California Aqueduct at Kilometre Posts 419.09, 419.14 and 440.11 (Mile Posts 260.42, 260.45 and 273.48) - completed March 1980.

- Debris Removal, Pleitito Creek, Coal Oil Canyon and Salt Creek - completed December 1979.

- Check Structures Cathodic Protection Facilities - completion December 1980.

Tehachapi Division. Contracts beginning during the period were:

- Furnish and install three vertical pumps at A. D. Edmonston Pumping Plant - completion April 1984.

- Fasteners for East Wing Pumps, A. D. Edmonston Pumping Plant - completion August 1980.

- Maintenance Repairs in the Discharge Line Adit at A. D. Edmonston Pumping Plant - completion July 1980.

Mojave Division. The following construction contract for Mojave Division was awarded and completed during the January 1979 through June 1980 period:

- Furnishing Spare Wearing Rings for Pearblossom Pumping Plant

Santa Ana Division. Following are contracts this Division awarded and completed during this period.

- Modification of the San Bernardino Tunnel Intake Tower

- Reroofing Perris Visitors Center

West Branch. Construction activities on the West Branch comprised the major part of the workload during this period. Contracts completed during the period were:

- Pyramid Powerplant Penstock

- Pyramid Dam Spillway Modification

- Oso Intake Canal Emergency Repair

- Pyramid Dam and Castaic Dam Outlet Modification

- Oso Canal Interceptor Drain

- Oso Pumping Plant Roof Repair

- Box Culvert Modification - Quail Canal

- Gate Stem Flange Bolts - Angeles Tunnel Intake

The following construction contracts were in progress as of June 1980:

- Quail Lake Enlargement and Outlet Structure

- Peace Valley Pipeline

- Peace Valley Pipeline Intake Facilities and completion of Quail Lake and Lower Quail Canal

- Dust Collection System, So. California O&M Center

- Six-Pyramid Powerplant contracts in-

cluding: Site Development and structure, Vertical Impulse Turbines, Bridge Crane, Turbine Shutoff Plug Valves, Generator, and Control Switchboards.

Energy Supply - Reid Gardner Unit No. 4. Final approvals were received for construction of Reid Gardner Unit No. 4 in March 1980.

Work is under way on contracts, amounting to approximately $68 million, for engineering and construction management, steam and turbine generators, air pollution control equipment, foundation work, site development and plant construction.

The plant, scheduled for completion in early 1983, will provide a major portion of the energy needed to operate the SWP.

B. PROJECT MANAGEMENT

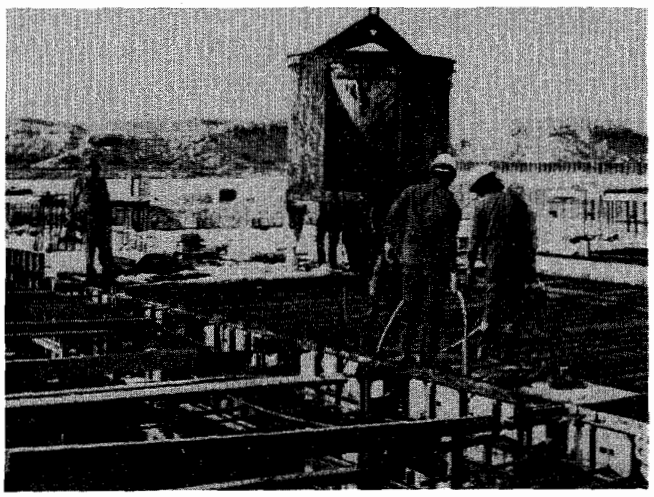
This section summarizes management of the Project's water and power utility from January 1979 through mid-1980, covering arrangements for (1) securing water rights, (2) marketing available water supplies, (3) developing electrical power for pumping, and (4) generating Project power.

WATER RIGHTS MANAGEMENT

Delta Water Quality Monitoring and Reporting

Decision 1485 of the SWRCB (August 1978) established water quality standards for the Delta as a condition of appropriation permits issued to the Department and the U. S. Water and Power Resources Service (WPRS) for the SWP and CVP. Decision 1485 requires control of the level of exports and releases from upstream storage reservoirs to meet minimum Delta water quality at specified locations in the Delta. The decision also requires the Department to establish a Delta water quality monitoring program. In addition, as part of the Decision, the SWRCB reserved jurisdiction to revise or formulate additional terms and conditions in the water rights permits.

During 1979, the SWP was operated to comply with D-1485 standards. The Secretary of the Interior, Cecil D. Andrus, announced in January, 1979 that the Central Valley Project would voluntarily be operated to meet the SWRCB's Delta standards (D-1485), except in drought years, until the legal



Placing foundation concrete during construction at Reid Gardner Unit No. 4 (picture taken in August 1980).

question of mandatory Federal compliance is resolved by Congress or the Courts.

A new water quality study mandated by D-1485, the Freshwater Outflow Needs of the San Francisco Bay Ecosystem Study, began with the objective of separating the effects of Delta outflow from some of the other major changes in the Bay, such as waste discharges and reduction of marshes by filling. The DWR is coordinating with the Department of Fish and Game, which is the lead agency for the study. Other ecological studies are being conducted through efforts of the interagency study group with participants including WPRS, U. S. Fish and Wildlife Service, the SWRCB, and the San Francisco Bay Conservation and Development Commission.

Water quality information and data on Delta water conditions are stored in the Department's Water Data Information System and are available from the Department to any State or Federal agency. The data for 1979 was published and transmitted to the SWRCB. Copies of the 1975 through 1978 data reports are available. The Department is cooperating with the SWRCB in an analysis of existing State and Federal data systems to adopt an electronic data processing system common to all State agencies.

In 1979, the Department sampled an average of 32 parameters at each of 28 sites throughout the Delta estuary on a biweekly basis. On alternate weeks, continuous water quality profiles of the main channels of the estuary were recorded with the automated instrumentation aboard the Department's water-quality work boat, M. V. San Carlos. In addition, the surveillance of San Pablo Bay was expanded to include a series of special sampling runs in the shallow shoal areas, and measurements of the horizontal and vertical salinity gradients from the Golden Gate to the interior Delta were taken at various outflow levels. This provided a substantial amount of information on water quality conditions throughout the Delta.

Delta Water Entitlement Negotiations

Feather River. In 1979 there were no negotiations of entitlement agreements with major appropriators or with riparian water users in the Feather River area.

Suisun Resources Conservation District (SRCD). In 1979, the Department, SRCD, and the Department of Fish and Game negotiated an agreement setting forth the responsibility and commitments of each agency for the Suisun Marsh Initial Facilities. These facilities were designed to protect those areas of the Marsh most affected by salinity intrusion, including wetlands directly adjacent to Suisun, Grizzly, and Honker Bays. Essentially, the Initial Facilities consist of dredging and improvements on Roaring River Slough, Goodyear Slough, and adjacent channels. Construction of the Initial Facilities, independently undertaken by DWR, began in 1979.

Operation of the Roaring River Unit of the Initial Facilities began in October 1979. The Facilities will provide better quality water than has been available to wetlands south of Roaring River Slough. Completion of the Unit and construction of the first stage of a fish screen at Roaring River Slough is scheduled to be completed by October 1980. The Goodyear Slough Outfall Channel, also part of the Initial Facilities, has been completed and will be operated to flush poor quality water from the south "dead end" of Goodyear Slough. Construction of the Morrow Island Distribution System has been delayed to allow importing of materials to rebuild levees since material from nearby wetlands is not adequate. Construction is scheduled to be complete by October 1980.

Operation of both the SWP and the Federal CVP have adversely affected water quality in the Marsh. Increased pumping by the projects can reduce outflow of fresh water through the Marsh allowing

earlier salt water intrusion during some periods of the year, which in turn adversely affects the Marsh ecological balances. The Department believes both the SWP and the CVP should share the cost of facilities necessary for mitigation of the salinity intrusion.

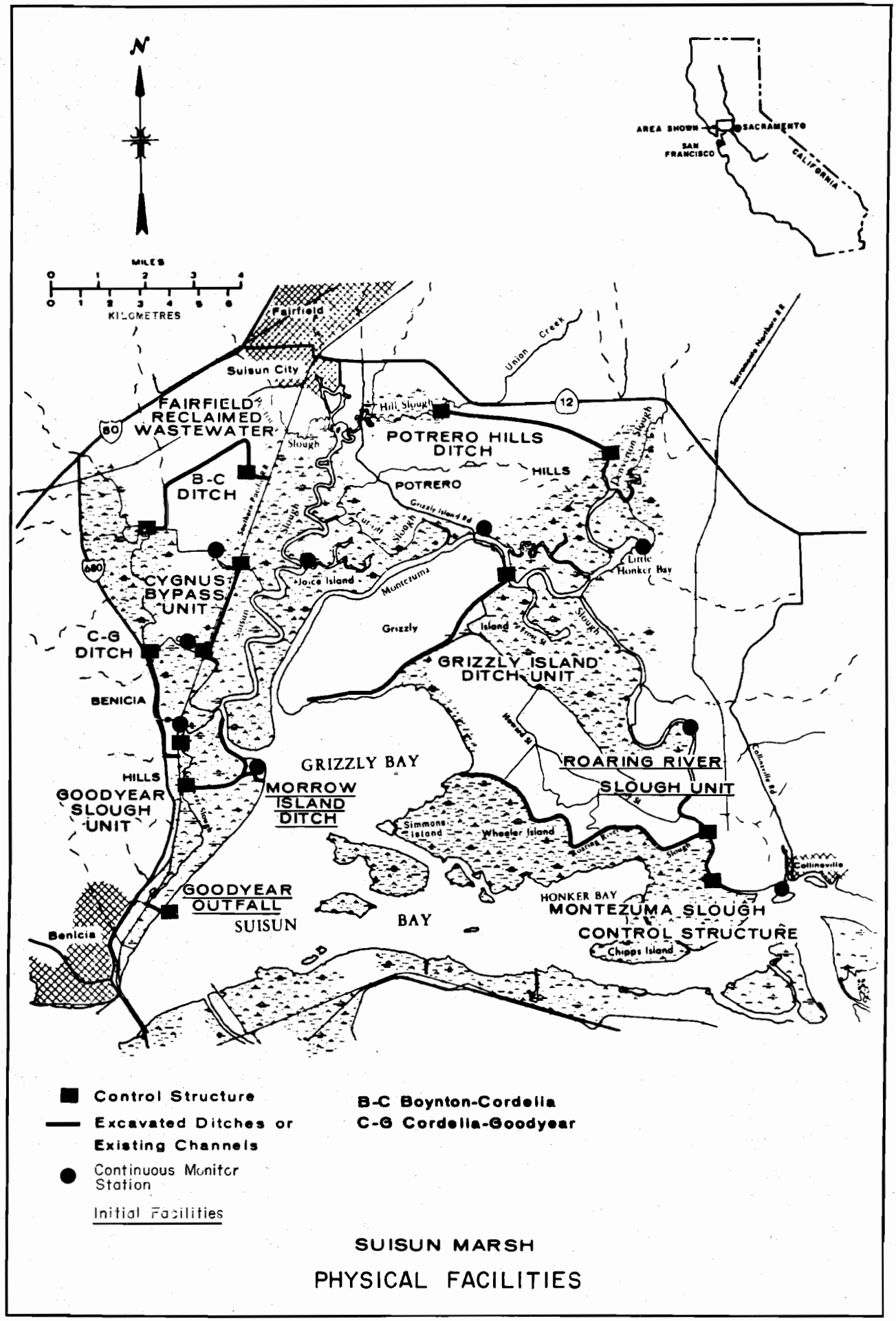
Department staff participated in drafting HR 13250, a bill introduced by Congressman Leggett in 1978 to support WPRS' participation in Suisun Marsh protection; however, funding of the Initial Facilities will be from the SWP funds since Federal legislation was not approved before the Congress adjourned. The current legislation, HR 4084, by Congressman Vic Fazio to direct Federal participation in the Initial Facilities passed the House of Representatives on December 10, 1979, and passed the Senate on October 1, 1980. House concurrence in minor technical Senate amendments is expected soon after Congress reconvenes in November 1980. A key provision of the bill calls for retroactive adjustments of the included 50-50 State-Federal cost sharing if final studies indicate that there are differing shares of responsibility for the costs of the Overall Facilities.

A draft Plan of Protection for Suisun Marsh, including an environmental impact report, was sent to the SWRCB as required by D-1485 on October 1, 1979. The report was compiled by the Department from information prepared by the U. S. Water and Power Resources Service, the Fish and Wildlife Service, the Department of Fish and Game, and DWR all as members of the Suisun Marsh Technical Committee of the Interagency Ecological Study Program. The proposed Plan of Protection is based on SWP-provided supplemental Delta outflows to give adequate water quality at the eastern end of Montezuma Slough, where a series of control facilities will distribute the water throughout the Marsh. A report will be prepared for the Overall Facilities in the Marsh and will be released for review as a draft EIR in 1980.

In May 1980, a draft agreement for the Suisun Marsh Overall Facilities was submitted to the Suisun Resources Conservation District, the Department of Fish and Game, and the U.S. Water and Power Resources Service for their review and approval. Negotiations are scheduled for autumn of 1980. These facilities are planned to be completed by 1984.

The Overall Facilities include water distribution facilities to be constructed, which, together with Delta outflow, will provide water throughout the Marsh to meet the water quality standards ordered by the SWRCB in D-1485. They consist of inchannel control structures that can act as tidal pumps or closures, new or enlarged channels that will distribute water throughout the Marsh and the following:

- The Initial Facilities.
- Montezuma Slough Control Structure to pump water by tidal action from the Sacramento River near Collinsville through Montezuma Slough. The structure will operate when water quality in the Marsh requires improvement (about 25 percent of the time).
- Potrero Hills Ditch to pump water by tidal action from Luco Slough on the east to Hill Slough on the west.
- Cygnus Ditch to transport water from Chadbourne Slough south to Cordelia Slough, serving adjacent managed wetlands while enroute.
- Boynton-Cordelia Ditch - a channel to move water from Boynton Slough and from the Fairfield Regional Sewage Treatment Plant to the upper reaches of Cordelia Slough to provide circulation and better quality water in Cordelia Slough.
- Cordelia-Goodyear Ditch - a channel from Cordelia Slough near I-680 to Goodyear Slough south of Pierce Harbor. This channel would pump better



SUISUN MARSH

PHYSICAL FACILITIES

quality water by tidal action to Goodyear Slough.

- Goodyear Slough Control Structure - a structure in Goodyear Slough south of Pierce Harbor would operate to control Cordelia-Goodyear Ditch deliveries.

- Grizzly Island Distribution System to distribute better quality water from Montezuma Slough to lands on the upper part of Grizzly Island.

Western Delta Municipal Water Users. Periodic discussions with municipal and industrial interests near Antioch and Pittsburg have resulted in two contracts for replacement of municipal water supplies. The first is with Contra Costa County Water District for replacement of their municipal water diversions near Pittsburg and the second covers use by the City of Antioch. Each agreement documents the loss of the District's entitlement to Delta water and the State's responsibility therefor, due to operation of the State Water Project. Under the contracts, the State agrees to reimburse the District for the costs of a substitute water supply to replace Delta water lost due to Project operation.

At the beginning of 1979, the District had an accumulated balance of 21 days during which offshore water supplies were above average conditions as defined in their contracts. The City of Antioch had an accumulated balance of 181 days. Both agencies had below-average offshore water supplies during the 1979 water year. During the year, the District accumulated a deficit of 71 days where water supply was below average conditions and the City a deficit of 40 days. Including the credits accumulated in previous years, at the end of 1979 the City had a total credit of 141 days. After offsetting credits from previous years, the District received a payment of $6,537.23 as compensation for additional water costs resulting from the 1979 deficit. Credits for above-average offshore water supplies may be used to offset below average days in the future.

Negotiations for the Contra Costa Canal Intake Relocation. Negotiations with the Contra Costa County Water District for a contract to relocate the Contra Costa Canal Intake began in 1979. Agencies represented in the negotiations included the Department, the U. S. Water and Power Resources Service (WPRS), and the East Contra Costa County Irrigation District.

The canal currently takes water from Old River near Rock Slough, where it is subject to salinity intrusion and local drainage of very poor quality. The severity of this problem was clear in 1977, when the Department spent a considerable amount of money and time building two rock barriers and a pumping plant to improve water quality to meet criteria set for the SWP by the SWRCB. The Department believes that relocating the Contra Costa Canal Intake to Clifton Court Forebay will help meet the SWRCB's criteria, and will provide better water for the District. The proposed relocation will cross East Bay Municipal Utility District's Mokelumne Aqueduct and East Contra Costa Irrigation District's intake channel. The degree of involvement of these districts in the relocation is currently under negotiation.

Western Delta Industrial Water Users. Near Antioch and Pittsburg, several industries use offshore water for both processing and cooling. Each year, when the offshore quality degrades to a level below the industries' requirements for process water, they use the Contra Costa Canal as a substitute supply. In the past, industries have not agreed to participate in a contract similar to that signed by the municipal interests for several reasons, including: 1) The industries believe the SWP should provide compensation for the entire loss of offshore water regardless of who is responsible; and 2) industries want the SWP to guarantee the quality and quantity of the water from the Contra Costa Canal when it is used as a substitute supply. Some industries also want compensation for degradation of cooling water sup-

The DWR-North Delta Water Agency contract signing for Project services in the Delta. The permanent contract includes specific assurances of water quality and quantity for the Northern Sacramento-San Joaquin Delta. (Front Row), Gus Olson, Jr., NDWA Board Member; Russell Graham, Jr., NDWA Board Member; William R. Darsie, NDWA Board President; Ronald B. Robie, Director DWR; Henry Kuechler III, NDWA Board Member; Edward G. Bryan, NDWA Board Member; George Bayse, NDWA Counsel. (Back Row), John Payne, DWR; George Deatherage, DWR; Porter Towner, Chief Counsel, DWR; Russell Kletzing, Assistant Chief Counsel, DWR; Gleason Renound, NDWA General Manager; Don Kienlen, NDWA, Consulting Engineer; Robert W. James, Deputy Director, DWR; Anne J. Schneider, NDWA Counsel.

plies, since cooling water is usually taken from offshore throughout the year regardless of its quality. Although the Department has determined that future average offshore water quality will decline, it is unable to conclusively determine the amount of the loss to be expected for such average degradation of cooling water. If a loss becomes determinable in the future, the Department will participate in discussions to provide just compensation.

On May 2, 1980 the Department wrote Fibreboard and Crown-Zellerbach Corporation suggesting that talks resume regarding offsetting effects of the water projects on the availability of offshore water. The Department's 1978 proposal was rejected by the industries because it did not guarantee full-year supplies of water of adequate quality, either offshore or from the Contra Costa Canal. The Department indicated that such a guarantee is integrally connected with the relocation of the Contra Costa Intake. Water quality studies detailing the quality advantage of the relocation from Rock Slough to Clifton Court Forebay have been cited to the industries. When the relocation is completed, the Department will be able to furnish water of about 100 milligrams per litre (parts per million) of chlorides for a longer period each year -- 92 percent of the time versus 80 percent at Rock Slough. With relocation and the Peripheral Canal completed, the Department can offer the industries water with 10-20 mg/l (ppm) of chlorides all year.

Delta Agricultural Water Users. The Department has proposed contracts with the agricultural agencies that would require the SWP to meet water quality standards necessary for reasonable beneficial uses throughout each respective agency's area, with relaxation of such standards during the dry and critical years when water supplies are limited. The agencies would make annual payments for such project services that are in excess of any project mitigation obligations.

Beginning in 1974, six agencies representing agricultural water interests in the Delta succeeded the overall interest of the Delta Water Agency, which ceased to exist December 31, 1973. These are the North Delta, Central Delta, South Delta, the Contra Costa County Water Agencies, and the East Contra Costa and Byron-Bethany Irrigation Districts (see Figure 4). Negotiations continued in varying degrees. Progress in the negotiations since January 1979 are discussed below:

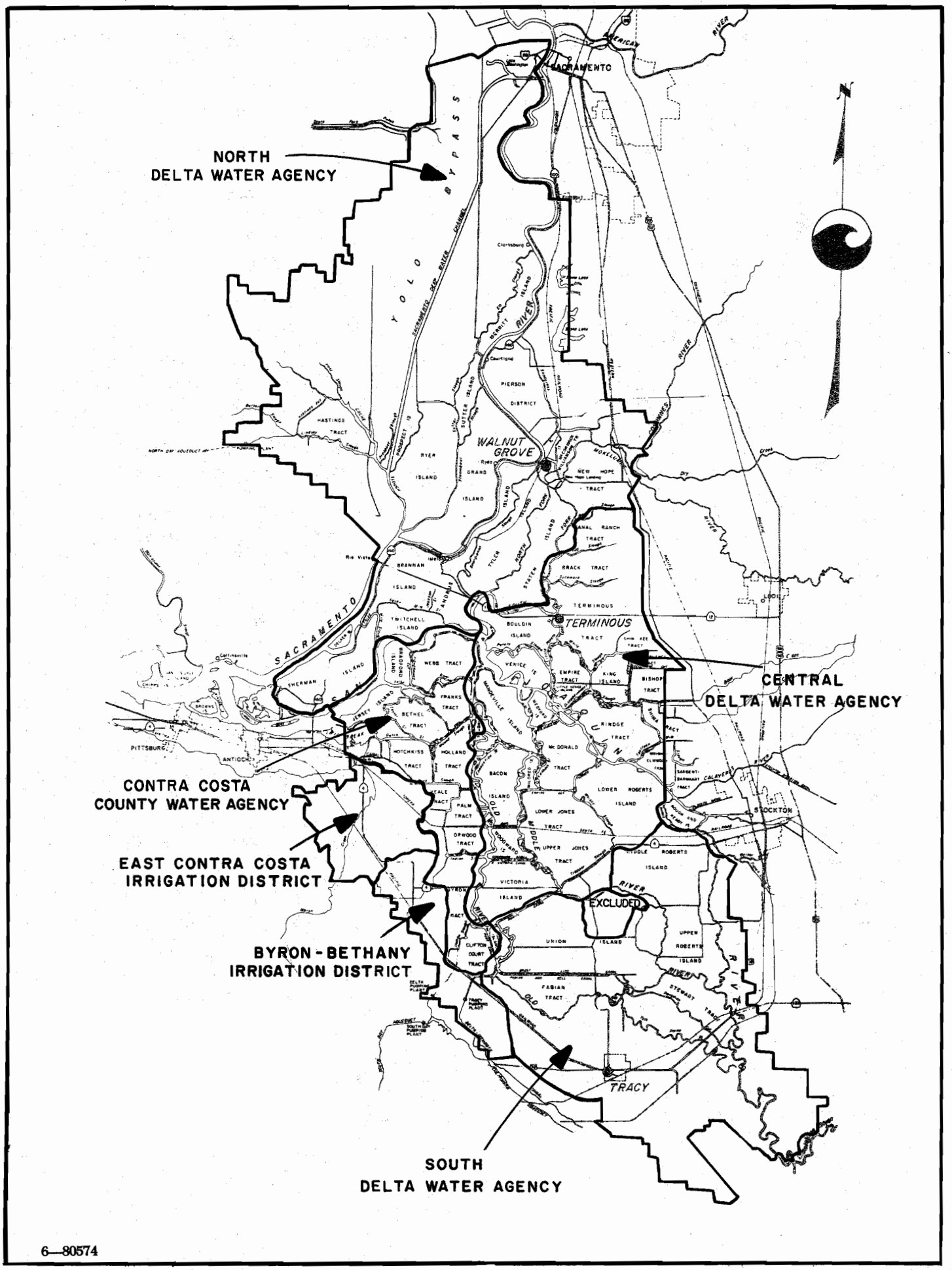
° North Delta Water Agency (NDWA)

A contract with the NDWA for Project services in the Delta was signed by the Director on January 17, 1980, culminating 25 years of negotiations. Execution by the Agency now depends on landowner approval through an election to be held in December 1980. NDWA staff is continuing to hold informational meetings with landowners in the north Delta, on the DWR-Agency approved contract. These meetings have resulted in both the NDWA and the Department agreeing to some changes to the original contract language and criteria. The contract includes specific assurances that the northern Sacramento-San Joaquin Delta will receive water of adequate quality and quantity, for which the Agency will pay $170,000 a year. Annual payments can escalate once every five years in the future. The contract is permanent with a review every 40 years. Both parties have now agreed to work for U. S. participation in the contract.

° South Delta Water Agency (SDWA)

Several contract proposals have been submitted and negotiated in recent years with the SDWA: 1) the Agency's proposal of July 1975 and February - August 1977, 2) the DWR - WPRS proposal of January 1977, and 3) DWR's proposal of October 1978. The latest proposal submitted to SDWA and the WPRS is based on a three-stage development plan that includes specific

Figure 4: SACRAMENTO-SAN JOAQUIN DELTA AGENCIES



performance levels corresponding to project capabilities as facilities are developed. Briefly, the levels of development comprise: 1) prior to the operation of New Melones, 2) after New Melones is operational but before operation of the Peripheral Canal, and 3) after the Peripheral Canal is operational.

The SDWA has indicated that the proposal is unacceptable. In March of 1980, the Department proposed to reopen negotiation such that any differences remaining between the Agency and the Department after September 30 be submitted to arbitration. The SDWA also rejected that proposal. Before negotiations resume, SDWA wants to complete its joint study with WPRS. The study concerns the CVP and SWP impacts on south Delta water supplies.

- Central Delta Water Agency and Contra Costa County Water Agency.

  No current negotiations are in progress with either entity.

- Byron-Bethany Irrigation District (BBID)

  The Department has drafted a preliminary contract based on the North Delta Water Agency contract. The draft contract is presently being reviewed by BBID.

- East Contra Costa Irrigation District (ECCID).

  During late 1979 and early 1980, meetings were held with ECCID to determine mutually acceptable contract qualities. Substantial agreement has been reached, and it is anticipated that a contract will be completed during 1980. This contract will assure ECCID of specified qualities at their present intake in Indian Slough. The contract will not require landowner ratification, since the District is the holder of the water rights. If the Contra Costa Canal should be relocated along a low-level alignment in the future, the question of ECCID involvement will be considered at that time.

SB 200, when implemented, will amend the California Water Code to include provision that issues between the State and the delta water agencies concerning the rights of users to make use of the waters of the Delta may be resolved by arbitration.

WATER CONTRACTS MANAGEMENT

Thirty-one water agencies have entered into long-term contracts with the State for annual water supplies from the State Water Project. A list of these agencies, along with other information concerning each water agency and their service areas, is shown in Figure 5. As noted in Figure 5, cumulative deliveries (Column 2 of the Figure) include both Project and nonproject water deliveries from SWP facilities. (Annual water entitlement deliveries through 1979 are shown for each agency in Table B-5B of Appendix B.)

Project water supplies in 1979, were sufficient to meet all water contractor requests for SWP water deliveries. Although runoff in the Sacramento and Feather River basins during the 1979 water year (October 1, 1978 through September 30, 1979) was somewhat below normal, storage in SWP reservoirs was above normal as a result of a large holdover from the wet year of 1978. Actual use of Project water by contractors in 1979 was below September 1978 projections of use in 1979 for Southern California, South Bay, and Feather River service areas but slightly greater in the San Joaquin Valley. Overall, 1979 Project water deliveries, totaling over 2.9 million cubic dekametres (2.36 million acre-feet) during the year, were highest of record since the SWP began operations in 1962.

Table 3 of this and previous Bulletins in the 132 series shows annual delivery amounts of Project and nonproject water to both long-term contractors and all other agencies which received water deliveries from facilities of the State Water Project. Actual and projected annual deliveries of both Project and nonproject water to contractors and noncontractors are summarized in Table 1. Column 2 of Figure 5 shows that seven contractors have yet to receive water from Project water facilities. An eighth contractor, Napa County Flood Control and Water Conservation District, has received only nonproject water, which was pumped and delivered through the SWP facilities. The water contract of one of the eight contractors, Palmdale Water District, calls for deliveries of Project water beginning in 1972. However, the District has elected not to take water deliveries at this time. Contracts of the other seven specify initial deliveries to be made after 1979.

Several contractors have obtained far less water than the amount contracted for, because current needs are less than those projected at the time their contracts were signed in the early and mid-1960's. Differences between contracted amounts (annual entitlements) and actual deliveries through 1979 may be determined by comparing the annual entitlement values shown in Table B-4 to the actual delivered amounts shown in Table B-5B. In 1979, fourteen contractors took less Project water than their contracted 1979 entitlement amount (see Table 3). Overall cumulative State deliveries of all types of water since 1962, including deliveries of SWP surplus water to the 31 contractors, exceed the cumulative total of all annual contract entitlements through 1979.

Figure 5 also contains maximum annual entitlement amounts for each contracting agency, total payments by agencies through 1979, gross area assessed valuation and population served by the SWP. The population totals, when compared to statewide amounts, show that the SWP accounts for a substantial part of the statewide totals.

Water Deliveries in 1979

During 1979, the SWP provided water service to 36 agencies. These agencies included 23 long-term contractors and 13 noncontractors. Monthly deliveries to each of the 36 are shown in Table 3 and summarized as follows:

- 1 728 494 cubic dekametres (1,401,292 acre-feet) of 1979 entitlement water to 23 long-term contractors.

- 247 455 cubic dekametres (200,604 acre-feet) of entitlement makeup water, under Article 12(d) of the long-term contracts, resulted from reduced water deliveries during the 1977 drought.

- 8 635 cubic dekametres (7,000 acre-feet) of entitlement makeup water under Article 14(b) of the long-term contract.

- 62 908 cubic dekametres (51,000 acre-feet) of entitlement water to two contractors under delivery rights acquired pursuant to the "wet weather" provisions in Article 45 of their long-term contracts.

- 799 788 cubic dekametres (648,389 acre-feet) of surplus water to six long-term contractors and two noncontractors.

  24 732 cubic dekametres (20,050 acre-feet) of emergency relief water to one long-term contractor and one noncontractor.

- 6 285 cubic dekametres (5,095 acre-feet) of preconsolidation repayment water to Belridge Oil Company.

- 33 862 cubic dekametres (27,452 acre-feet) of local water to three long-term contractors and two noncontractors.

- 37 005 cubic dekametres (30,000 acre-feet) of 1978 exchange water conveyed to Southern California storage in ground water basins within the Metropolitan Service area.

- 129 588 cubic dekametres (105,033 acre-feet) of Federal CVP water wheeled for eight San Joaquin Valley agencies.

Entitlement Water Deliveries. Every fall the State obtains from each contractor an estimate of its future requirements for Project water. Estimates received in the fall of 1978 showed that 23 contractors projected need for 2 288 746 cubic dekametres (1,855,003 acre-feet) of entitlement water in 1979 plus substantial quantities of surplus and entitlement makeup water. The approved report, entitled "Operational Criteria for the State Water Project in 1979" (The Rule Curve), showed that on the basis of water supply conditions as of December 1, 1978 and Project water then in storage, all requested entitlement and entitlement makeup water could be delivered in 1979. Based on this, schedules approving the 1979 delivery of 2 261 632 cubic dekametres (1,833,508 acre-feet) of entitlement water were issued on December 15, 1978. Approved scheduled amounts were the same as the amounts requested in the fall, except for two schedules that were reduced at the water contractors' request.

Total 1979 deliveries of entitlement water, as shown in Tables 2 and 3, were 2 132 097 cubic dekametres (1,401,292 acre-feet). The substantial difference between the amounts initially approved and actual entitlement deliveries was mainly because local water supplies in Southern California in 1979 were well above normal as a result of above-normal rainfall during the spring of 1979. Therefore, the need for project water in that area, especially for maintaining ground water basins, was well below that anticipated in the fall of 1978. Statewide, 12 contractors in 1979 took a total of 533 138 cubic dekametres (432,216 acre-feet) less entitlement water than they had been initially scheduled to receive.

Makeup Water Deliveries. Each of the contractors scheduled to receive Project entitlement water during 1977, with the exception of Butte County and Plumas County Flood Control and Water Conservation District, acquired rights under Article 12(d) of the water supply contract to the future delivery of Project water. The future delivery amount equalled the reduction in the initially scheduled 1977 entitlement delivery amounts made due to the drought. In addition, two contractors, Antelope Valley-East Kern Water Agency and The Metropolitan Water District of Southern California, acquired future delivery rights to 5 905 cubic dekametres (4,787 acre-feet) pursuant to Article 14(b); and 32 872 cubic dekametres (26,649 acre-feet) pursuant to Article 12(b) of their water contract as a result of a 1976 nondelivery.

During 1979, 5 contractors (shown in Column 3 of Table 2) took delivery of a total of 247 455 cubic dekametres (200,604 acre-feet) of Article 12(d) water. In addition, Kern County Water Agency took delivery of the 8 635 cubic dekametres (7,000 acre-feet) of Article 14(b) water.

Rights to the future delivery of previously undelivered entitlement water acquired under contract articles 12(d) and 14(b) as of January 1, 1980, are shown in Column 9 of Table 2. Twelve contractors have such rights in a total of 182 100 cubic dekametres (147,629 acre-feet).

Deliveries Under Wet Weather Provisions. At the beginning of 1979, four contractors had acquired credits totaling 262 158 cubic dekametres (212,532 acre-feet) for future delivery of entitlement water under the wet weather provisions of their contracts; these water agencies can acquire credits to future deliveries if above-normal supplies of local water are available within their service areas during the year. Two contractors, Hacienda Water District and Tulare Lake Basin Water Storage District, took delivery of 4 441 cubic dekametres (3,600 acre-feet) and 58 468 cubic dekametres (47,400 acre-feet), respectively, of such water during 1979, as shown in Tables 2 and 3. In both cases, the amount taken was limited by the contract to the difference between the Districts' 1979 annual entitlement and their maximum annual entitlements. Tulare's 1979 entitlement was increased after 1979 deliveries were completed, due to the amount of Project surplus water obtained. The restriction on the "wet weather" water, however, was based on the District's initial 1979 entitlement amount rather than the revised amount.

Devil's Den Water District and Empire West Side Irrigation District requested that they be permitted to carry over unused entitlement water to a drier year because of wet local conditions. Since both contractors are scheduled to receive their maximum annual entitlement, contract "wet weather provisions" cannot be utilized. (Under the "wet weather" provisions, deliveries in any year of water carried over from a wet year, plus the annual entitlement for that year, cannot exceed the maximum annual entitlement). Special agreements were developed for Devil's Den and Empire Westside I. D. to allow for this situation. The agreements provide that entitlements that cannot be used by the contractor can be stored in project reservoirs for up to three years, with the contractor paying a use-of-facilities charge for such storage. At the beginning of 1980, 1 555 cubic dekametres (1,261 acre-feet) of 1979 entitlement water was in storage for Empire (see Table 2).

Repayment Water Deliveries. The State entered into two contracts in 1964 to obtain water to preconsolidate land within the alignment of the California Aqueduct. The contracts included provisions to repay the two contractors with Project water prior to 1985. The contracts, which have changed hands over the years, are currently held by the Belridge Oil Company and the J. G. Boswell Company. During 1979, 6 285 cubic dekametres (5,095 acre-feet) were delivered to Belridge with no deliveries to Boswell. The balance of water to be delivered under the contracts as of January 1, 1980, was 104 718 cubic dekametres (84,895 acre- feet) to Boswell and 65 230 cubic dekametres (52,882 acre-feet) to Belridge. An extension to both contracts beyond 1984 has been requested. The Department is analyzing the request. Substantial economic windfalls will accrue to the parties if extensions are granted.

Emergency Relief Water Deliveries. At the end of 1977, the State had 117 400 cubic dekametres (95,176 acre-feet) of emergency relief water in storage. This water was being retained for emergency relief in 1978. When it became apparent that the 1976-77 drought was over, the stored water was sold (see pages 88 and 89 of Bulletin 132-79). Tracy Golf and Country Club purchased 62 cubic dekametres (50 acre-feet) of the stored water and took delivery of it in 1979. Kern County Water Agency purchased 116 598 cubic dekametres (94,256 acre-feet) of the stored water. During 1979 the Agency took delivery of 24 670 cubic dekametres (20,000 acre-feet) of this water. The remainder must be taken by the end of 1983. The amount of emergency relief water still remaining to be delivered to Kern as of January 1, 1980 was 91 928 cubic dekametres (74,526 acre-feet).

TABLE 1: ANNUAL

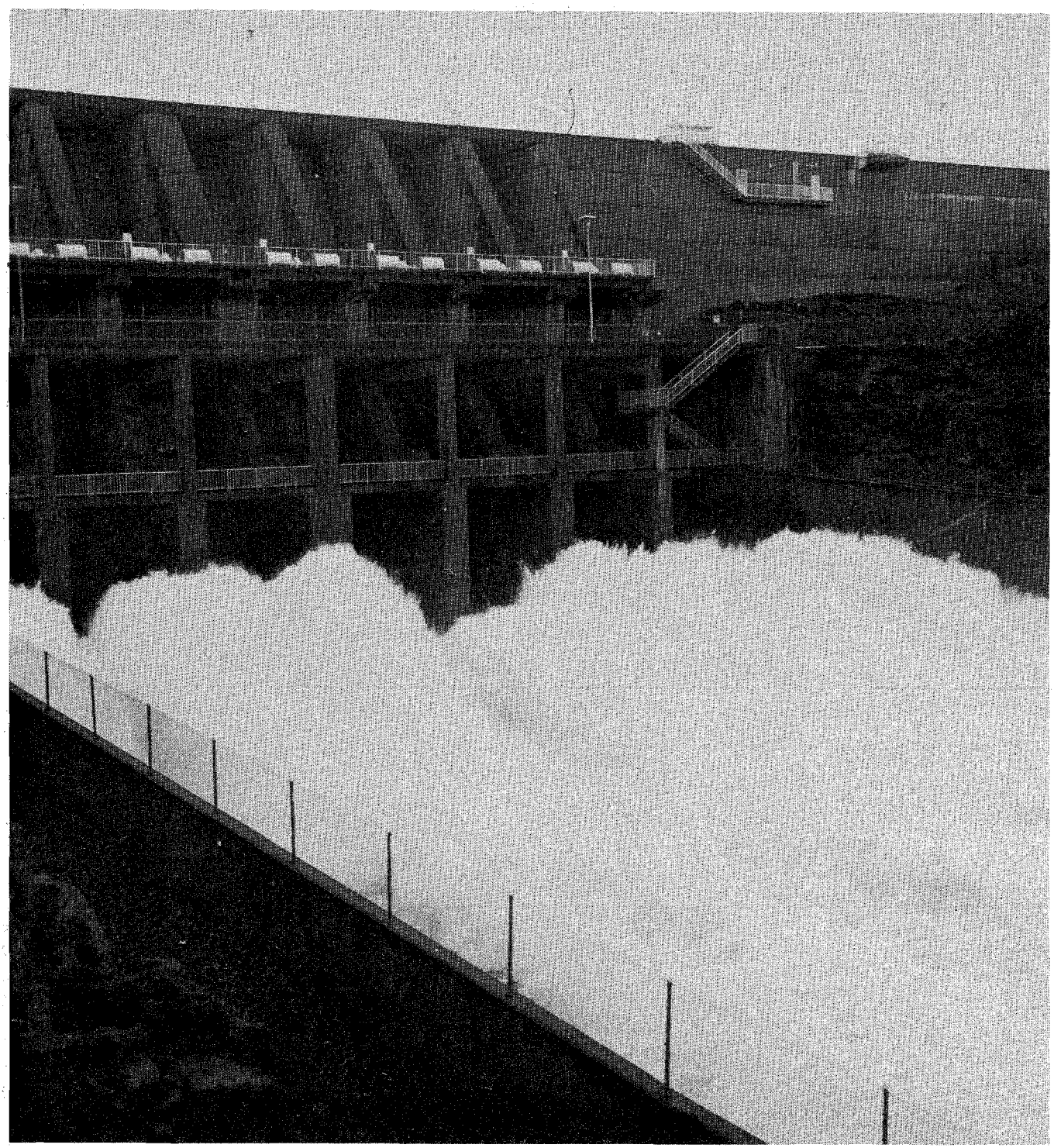
(in acre-

Calendar Year	Annual Entitlements Under Long-term Water Supply Contracts						
	Feather River Area	North Bay Area	South Bay Area	San Joaquin Valley Area	Central Coastal Area	Southern California Area	Total
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
1962	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0
1967	0	0	11,538	0	0	0	11,538
1968	550	0	109,900	81,050	0	0	191,500
1969	620	0	98,700	168,075	0	0	267,395
1970	700	0	114,200	207,700	0	0	322,600
1971	890	0	116,200	258,500	0	0	375,590
1972	970	0	118,300	420,766	0	201,723	741,759
1973	1,100	0	120,400	392,352	0	472,400	986,252
1974	1,230	0	122,400	470,350	0	588,220	1,182,200
1975	1,610	0	124,500	556,509	0	704,250	1,386,869
1976	1,990	0	126,500	555,117	0	824,780	1,508,387
1977	2,420	0	128,600	594,100	0	942,201	1,667,321
1978	1,850	0	130,700	647,262	0	1,060,722	1,840,534
1979	2,130	0	132,700	715,385	0	1,177,873	2,028,088
Subtotal, 1962-1979	16,060	0	1,454,638	5,067,166	0	5,972,169	12,510,033
1980	2,310	13,000	134,800	770,800	2,200	1,304,914	2,228,024
1981	6,840	14,400	137,000	828,500	3,300	1,425,865	2,415,905
1982	7,470	15,800	139,200	889,200	6,600	1,546,806	2,605,076
1983	8,150	17,200	141,400	955,500	9,900	1,668,557	2,800,707
1984	8,830	29,600	143,600	1,017,900	14,900	1,790,398	3,005,228
1985	9,510	32,750	145,800	1,079,100	24,800	1,912,549	3,204,509
6 years, 1980-1985	43,110	122,750	841,800	5,541,000	61,700	9,649,089	16,259,449
10 years, 1986-1995	252,920	587,500	1,650,200	13,032,300	688,000	23,869,646	40,080,566
10 years, 1996-2005	386,460	670,000	1,878,000	13,550,000	827,000	24,975,000	42,286,460
10 years, 2006-2015	393,170	670,000	1,880,000	13,550,000	827,000	24,975,000	42,295,170
10 years, 2016-2025	398,000	670,000	1,880,000	13,550,000	827,000	24,975,000	42,300,000
10 years, 2026-2035	398,000	670,000	1,880,000	13,550,000	827,000	24,975,000	42,300,000

a) Metric conversion is acre-feet times 1.2335 equals cubic dekametres.
b) Includes 1,401,292 acre-feet of 1979 entitlement water; and 258,604 acre-feet of deferred deliveries pursuant to contract articles 12(d), 14(b), and 45(e).
c) Includes 1,843,669 acre-feet 1980 entitlement water and 35,712 acre-feet of deferred deliveries pursuant to Article 12(d) and 45(e) of contracts.
d) Values include deliveries to short-term contractors (Mustang Water District, 1970-71; Tracy Golf and Country Club, 1974, and 1979; Green Valley Water District 1974-75 (1978, and 1979).
e) Includes Emergency Relief Water, Repayment Water, Kern River Intertie Water, Exchange Water, Regulated Delivery of Local Supply and Conveyance of Federal CVP Water.

feet)

Estimated Annual Water Demands								
Deliveries to Contracting Agencies								
Entitlement Water	Surplus Water	Other Water	Total	Initial Fill	Operational Losses and Storage Changes	Recreation Water	Total	Calendar Year
(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	
0	0	18,289	18,289	9	272	0	18,570	1962
0	0	22,456	22,456	71	185	0	22,712	1963
0	0	32,507	32,507	171	152	0	32,830	1964
0	0	44,105	44,105	93	729	0	44,927	1965
0	0	67,928	67,928	0	1,746	0	69,674	1966
11,538	0	53,605	65,143	8,328	4,212	0	77,683	1967
171,709	121,534	14,777	308,020	498,926	117,906	0	924,852	1968
193,020	72,397	18,829	284,246	510,614	72,196	0	867,056	1969
233,993	133,024	38,080	405,097	23,947	2,435	0	431,479	1970
357,340	296,019	44,119	697,478	7,853	5,812	8	711,151	1971
611,801	423,964	66,638	1,102,403	100,274	53,062	6,489	1,262,228	1972
694,388	296,416	42,511	1,033,315	204,638	53,798	1,155	1,292,906	1973
874,077	417,676	46,224	1,337,977	237,554	10,657	2,118	1,588,306	1974
1,223,990	622,902	63,793	1,910,685	103,352	-94,606	3,377	1,922,808	1975
1,373,002	580,110	115,217	2,068,329	61,122	-681,025	1,745	1,450,171	1976
574,155	0	389,065	963,220	0	-131,151	1,111	833,180	1977
1,452,699	16,914	121,225	1,590,838	64,443	717,370	1,177	2,373,828	1978
1,659,896[b]	648,389	187,630	2,495,915	12,302	-83,401	1,398	2,426,214	1979
9,431,608	3,629,345	1,386,998	14,447,951	1,833,697	50,349	18,578	16,350,575	18 years, 1962-1979
1,879,381[c]	597,797	347,277	2,824,455	0	69,505	7,744	2,901,704	1980
2,007,341	871,321	281,157	3,159,819	0	106,548	14,883	3,281,250	1981
2,117,309	723,000	194,077	3,034,386	0	67,902	17,027	3,119,315	1982
2,195,603	509,000	279,692	2,984,295	0	160,141	19,427	3,163,863	1983
2,359,063	457,000	162,832	2,978,895	0	65,500	20,077	3,064,472	1984
2,428,014	290,000	124,632	2,842,646	0	115,311	20,077	2,978,034	1985
12,986,711	3,448,118	1,389,667	17,824,496	0	584,907	99,235	18,508,638	6 years, 1980-1985
29,424,976	-	-	29,424,976	0	938,998	232,452	30,596,426	10 years, 1986-1995
32,107,280	-	-	32,107,280	0	914,016	240,300	33,261,596	10 years, 1996-2005
36,255,070	-	-	36,255,070	0	934,417	240,300	37,429,787	10 years, 2006-2015
39,255,300	-	-	39,255,300	0	925,983	240,300	40,421,583	10 years, 2016-2025
40,546,290	-	-	40,546,290	0	894,816	240,300	41,681,406	10 years, 2026-2035



Controlled flood releases were made in January 1980 from Lake Oroville for the first time since 1974. The peak spillway release of 2 000 cubic metres per second (70,000 cfs)exceeded the previous high of 1 700 cubic metres per second (59,000 cfs). In addition to the spillway release, 420 cubic metres per second (15,000 cfs) was passed through Hyatt Powerplant for a total peak release rate of 2 420 cubic metres per second (85,000 cfs). Inflow to the lake peaked at 4 400 cubic metres per second (155,000 cfs): the previous record inflow as 4 100 cubic metres per second (144,000 cfs) in 1970.

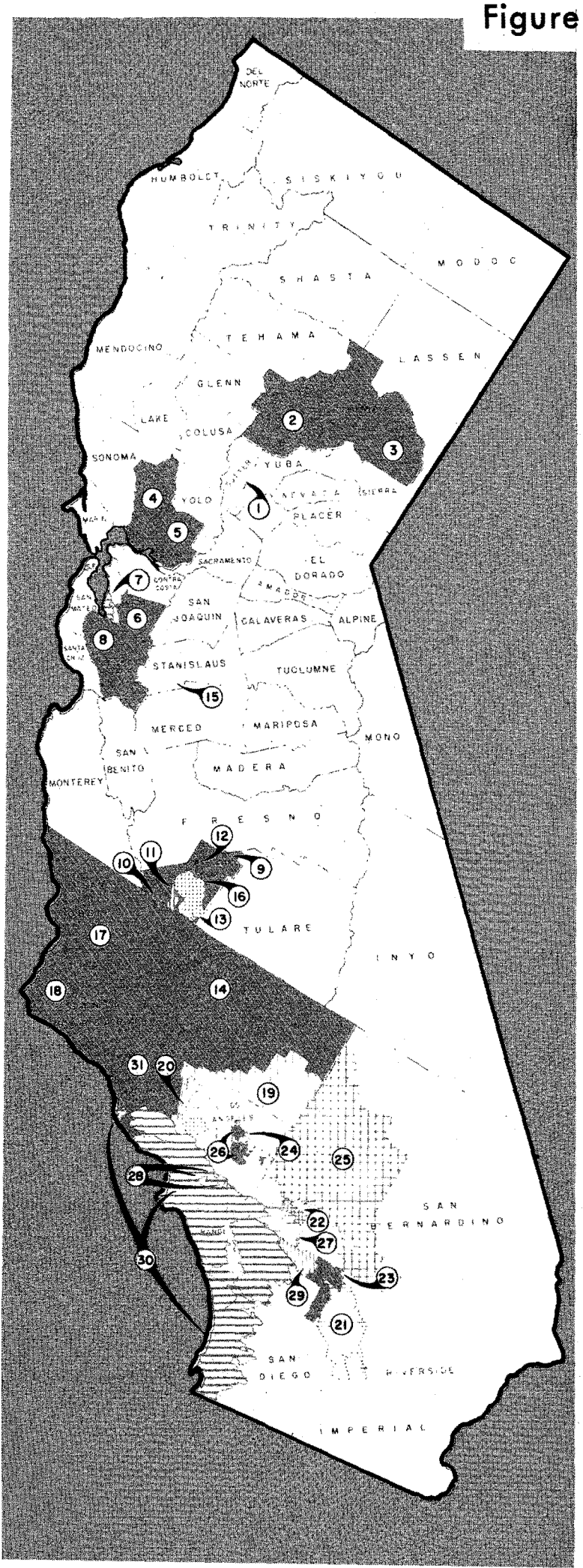
TABLE 2: SUMMARY OF 1979 ENTITLEMENT AND SURPLUS WATER SERVICE TO LONG-TERM CONTRACTORS

(acre-feet)[a]

Long-Term Contractor	Entitlement Water Deliveries				Surplus Water	Total Deliveries	Future Entitlement Delivery Credit as of 1/1/80			Future Entitlement Reduction Credit-Article 7 or 45
	1979 Entitlement	Article 12(d)	Other	Total			Article 7 or 45	Articles 12(d) and 14(b)	Total	
(1)	(2)	(3)	(4)	(5)=(2)+(3)=(4)	(6)	(7)=(5)+(6)	(8)	(9)	(10)	(11)
UPPER FEATHER RIVER										
Butte County	302	0	-	302	0	302	-	0	0	-
Plumas County	329	0	-	329	0	329	-	0	0	-
SOUTH BAY AREA										
Alameda County FC&WCD, Zone 7	19,325	0	0	19,325	0	19,325	53,741	2,438	56,179	0
Alameda County WD	10,874	0	0	10,874	0	10,874	96,609	2,220	98,829	0
Santa Clara Valley WD	88,000	3,991	0	91,991	15,998	107,989	0	0	0	0
SAN JOAQUIN VALLEY AREA										
County of Kings	2,000	0	-	2,000	0	2,000	-	0	0	-
Devil's Den WD	12,700	6,438	0	19,138	0	19,138	-	1,182	1,182	-
Dudley Ridge WD	38,544	0	-	38,544	38,545	77,089	0	0	0	-
Empire West Side ID	1,739	0	0	1,739	0	1,739	1,261[f]	1,800	3,061	-
Hacienda WD	4,900	0	3,600[c]	8,500	1,000	9,500	1,000	0	1,000	0
Kern County WA	583,900	155,146	7,000[d]	746,046	544,247[e]	1,290,293	-	0	0	-
Oak Flat WD	4,000	2,149	0	6,149	698	6,847	0	0	0	2,466
Tulare Lake Basin WSD	66,341	32,880	47,400[c]	146,621	66,342	212,963	10,182	0	10,182	74,852
SOUTHERN CALIFORNIA AREA										
Antelope Valley-East Kern WA	60,493	0	-	60,493	0	60,493	-	31,372[g]	31,372	-
Castaic Lake WA	7	0	-	7	0	7	-	500	500	-
Coachella Valley WD	10,063	0	-	10,063	0	10,063	-	0	0	-
Crestline-Lake Arrowhead WA	1,260	0	-	1,260	0	1,260	-	151	151	-
Desert WA	15,000	0	-	15,000	0	15,000	-	0	0	-
Littlerock Creek ID	133	0	-	133	0	133	-	438	438	-
Mojave WA	4,000[b]	0	-	4,000	0	4,000	-	20	20	-
Palmdale WD	0	0	-	0	0	0	-	0	0	-
San Bernardino Valley MWD	18	0	-	18	0	18	-	4,269	4,269	-
San Gabriel Valley MWD	290	0	-	290	0	290	-	1,000	1,000	-
The Metropolitan Water District of SC	477,074	0	-	477,074	0	477,074	-	102,239	102,239	-
TOTAL	1,401,292	200,604	58,000	1,659,896	666,830	2,326,726	162,793	147,629	310,422	77,318

a) Metric conversion is acre-feet times 1.2335 equals cubic dekametres.
b) This water was acquired from project water which was stored during 1978 in a ground water basin underlying the Agency.
c) Delivered pursuant to Article 45(e)(4) of the water supply contract (wet weather provisions).
d) Delivered pursuant to Article 14(b).
e) Includes 20,000 acre-feet of Emergency Relief Water.
f) At end of 1979 this water was being held in storage for later delivery under an agreement with District dated October 1, 1979.
g) Made up of 4,787 acre-feet acquired under contract Article 14(b) and 26,585 acre-feet under Article 12(d).

Figure 5: LONG-TERM WATER SUPPLY



Location No.	Contracting Agency	Total Cumulative Deliveries through Dec. 31, 1979 (acre-feet)(a	Maximum Annual Entitlement (acre-feet)(a
	(1)	(2)	(3)
	UPPER FEATHER AREA		
1	City of Yuba City	0	9,600
2	County of Butte	2,925	27,500
3	Plumas County Flood Control and Water Conservation District	3,663	2,700
	Subtotal	6,588	39,800
	NORTH BAY AREA		
4	Napa County Flood Control and Water Conservation District	57,132	25,000
5	Solano County Flood Control and Water Conservation District	0	42,000
	Subtotal	57,132	67,000
	SOUTH BAY AREA		
6	Alameda County Flood Control and Water Conservation Dist., Zone 7	188,293	46,000
7	Alameda County Water District	272,711	42,000
8	Santa Clara Valley Water District	1,170,331	100,000
	Subtotal	1,631,335	188,000
	SAN JOAQUIN VALLEY AREA		
9	County of Kings	17,900	4,000
10	Devil's Den Water District	160,869	12,700
11	Dudley Ridge Water District	591,961	57,700
12	Empire West Side Irrigation District	45,567	3,000
13	Hacienda Water District	69,695	8,500
14	Kern County Water Agency	6,578,031	1,153,400
15	Oak Flat Water District	67,791	5,700
16	Tulare Lake Basin Water Storage District	1,244,520	110,000
	Subtotal	8,776,334	1,355,000
	CENTRAL COASTAL AREA		
17	San Luis Obispo County Flood Control and Water Conservation District	0	25,000
18	Santa Barbara County Flood Control and Water Conservation District	0	57,700
	Subtotal	0	82,700
	SOUTHERN CALIFORNIA AREA		
19	Antelope Valley-East Kern Water Agency	175,166	138,400
20	Castaic Lake Water Agency	7	41,500
21	Coachella Valley Water District	46,947	23,100
22	Crestline-Lake Arrowhead Water Agency	6,885	5,800
23	Desert Water Agency	72,300	38,100
24	Littlerock Creek Irrigation District	3,092	2,300
25	Mojave Water Agency	4,733	50,800
26	Palmdale Water District	0	17,300
27	San Bernardino Valley Municipal Water District	105,350	102,600
28	San Gabriel Valley Municipal Water District	29,190	28,800
29	San Gorgonio Pass Water Agency	0	17,300
30	The Metropolitan Water District of Southern California	2,911,968	2,011,500
31	Ventura County Flood Control District	0	20,000
	Subtotal	3,355,638	2,497,500
	TOTAL STATE WATER PROJECT	13,827,027	4,230,000
	NET TOTALS, STATE WATER PROJECT SERVICE AREA		
	TOTAL, STATE OF CALIFORNIA		
	PERCENT, STATE WATER PROJECT OF TOTAL		

a) Metric conversion is acre-feet times 1.2335 equals cubic dekametres.
b) Metric conversion is acres times 0.040469 equals hectares.
c) Total for Plumas County Flood Control and Water Conservation District, including Last Chance Creek Water District.
d) Total for County of Kings, including Dudley Ridge Water District, Empire West Side Irrigation District, Hacienda Water District, most of Tulare Lake Basin Water Storage District, and about 40% of Devil's Den Water District.

CONTRACTING AGENCIES

Total Payments through Dec. 31, 1979 (dollars)	Gross Area as of July 1, 1979 (acres)[b]	Assessed Valuation 1979-1980 (dollars)	Estimated Population (July 1, 1979)	Location No.
(4)	(5)	(6)	(7)	
0	3,290	76,700,000	17,600	1
242,403	1,066,000	618,700,000	133,600	2
225,817	1,644,000[c]	153,000,000[c]	15,400[c]	3
468,220	2,713,290	848,400,000	166,600	
3,035,636	512,000	478,511,307	94,000	4
239,884	558,000	1,068,000,000	218,500	5
3,275,520	1,070,000	1,546,511,307	312,500	
9,247,010	272,000	520,000,000	108,000	6
11,173,206	63,000	1,016,000,000	188,000	7
42,760,439	849,000	7,588,000,000	1,247,000	8
63,180,655	1,184,000	9,124,000,000	1,543,000	
330,731	893,000[d]	324,551,300[d]	71,900[d]	9
3.407,681	8,500	1,258,700	50	10
7,084,911	29,900	3,539,600	50	11
564,295	7,500	744,600	50	12
836,460	15,300	244,800	50	13
120,102,706	5,057,200[e]	3,553,978,700[e]	375,300[e]	14
605,628	4,000	275,000	50	15
13,517,650	193,000	24,333,500	50	16
146,450,062	6,208,400	3,908,926,200	447,500	
2,241,491	2,131,300	1,045,739,903	147,200	17
5,269,941	1,756,900	1,596,436,593	295,100	18
7,511,432	3,888,200	2,642,176,496	442,300	
30,400,320	1,524,900	632,413,655	97,500	19
11,985,509	125,000	415,829,058	69,600	20
7,642,399	637,500	658,423,676	86,900	21
2,250,702	55,100	116,972,410	10,900	22
12,445,081	208,900	472,054,946	49,000	23
553,885	43,300	9,271,630	1,600	24
13,866,893	3,160,400	590,842,960	91,600	25
3,714,805	73,800	83,499,064	25,700	26
43,686,373	209,400	1,132,364,528	326,500	27
11,645,403	16,300	626,151,563	148,000	28
6,325,840	140,600	113,460,854	32,300	29
713,697,130	3,268,310	64,117,662,775	11,387,000	30
5,023,411	1,179,500[f]	2,868,580,095[f]	499,500[f]	31
863,237,751	10,643,010	71,837,527,214	12,826,100	
1,084,123,640	25,706,900[g]	89,907,541,217[g]	15,738,000[g]	
	24,620,000[h]	87,910,483,371[h]	15,403,600[h]	
	100,314,000	132,821,000,000	22,694,000	
	24.5	66.2	67.9	

e) Total Kern County Water Agency, including about 60% of Devil's Den Water District, and about 50% of Antelope Valley-East Kern Water Agency.
f) Total for Ventura County Flood Control District, including portion of Antelope Valley-East Kern Water Agency, The Metropolitan Water District of Southern California, and Castaic Lake Water Agency.
g) Includes duplicate values. Some areas which are within two or more agencies are included in each agency's total.
h) Excludes duplicate values where agencies have overlapping boundaries.

TABLE 3: WATER

(in acre

Line No.	Contracting Agency and Type of Service	Month					
		Jan.	Feb.	Mar.	Apr.	May	June
	FEATHER RIVER SERVICE AREA						
	County of Butte:						
1.	Entitlement Water	36	7	75	36	20	2
	Last Chance Creek Water District:						
2.	Regulated Delivery of Local Supply	0	0	0	0	2,791	2,711
	Plumas County Flood Control & Water Cons. District:						
3.	Entitlement Water	6	6	3	1	27	71
	Thermalito Irrigation District:						
4.	Regulated Delivery of Local Supply	1	6	1	21	138	193
5.	AREA TOTAL	43	19	79	58	2,976	2,977
	NORTH BAY SERVICE AREA						
	Napa County Flood Control & Water Cons. District:						
6.	Regulated Delivery of Local Supply	483	297	389	458	518	675
	SOUTH BAY SERVICE AREA						
	Alameda County Flood Control & Water Cons. Dist., Zone 7:						
7.	Entitlement Water	276	0	27	745	1,276	2,967
8.	Regulated Delivery of Local Supply	726	863	952	491	482	0
9.	Agency Total	1,002	863	979	1,236	1,758	2,967
	Alameda County Water District:						
10.	Entitlement Water	465	0	0	716	929	2,357
11.	Regulated Delivery of Local Supply	539	659	1,005	489	735	855
12.	Agency Total	1,004	659	1,005	1,205	1,664	3,212
	Santa Clara Valley Water District:						
13.	Entitlement Water	6,792	5,200	6,010	4,500	7,000	8,924
14.	Surplus Water	0	743	170	2,625	1,041	500
15.	Article 12(d) Make-up Water	260	0	1,290	1,000	1,000	441
16.	Agency Total	7,052	5,943	7,470	8,125	9,041	9,865
17.	AREA TOTAL	9,058	7,465	9,454	10,566	12,463	16,044
	SAN JOAQUIN VALLEY SERVICE AREA						
	Belridge Oil Company:						
18.	Repayment Water	0	398	388	440	480	457
	County of Kings:						
19.	Entitlement Water	200	200	200	200	0	200
	Devil's Den Water District:						
20.	Entitlement Water	1,471	762	1,270	1,582	69	1,397
21.	Article 12(d) Make-up Water	297	920	784	0	336	750
22.	Agency Total	1,768	1,682	2,054	1,582	405	2,147
	Dudley Ridge Water District:						
23.	Entitlement Water	787	500	1,500	3,667	5,703	6,220
24.	Surplus Water	0	221	5,629	0	2,402	6,589
25.	Agency Total	787	721	7,129	3,667	8,105	12,809
	Empire West Side Irrigation District:						
26.	Entitlement Water	659	246	106	11	12	0
	Green Valley Water District:						
27.	Surplus Water	0	0	0	0	0	149
	Hacienda Water District:						
28.	Entitlement Water	400	300	400	300	300	400
29.	Surplus Water	0	0	0	400	0	0
30.	Article 45(e) Wet Weather Water	0	0	0	0	0	0
31.	Agency Total	400	300	400	700	300	400
	Kern County Water Agency:						
32.	Entitlement Water	11,911	21,358	41,458	38,068	51,481	99,420
33.	Surplus Water	0	0	0	0	22,770	61,217
34.	Article 12(d) Make-up Water	12,992	22,587	20,315	26,592	29,264	30,789
35.	Article 14(b) Make-up Water	0	0	0	3,000	3,000	1,000
36.	1977 Emergency Relief Water *(b*	330	1,035	2,495	810	875	2,805
37.	Agency Total	25,233	44,980	64,268	68,470	107,390	195,231

a) Metric conversion is acre-feet times 1.2335 equals cubic dekametres.
b) Water acquired in 1977 for emergency relief purposes and later sold when drought ended.

DELIVERIES IN 1979

feet)[a]

Month							1979 Contract Entitlement	1979 Entitlement Not Delivered	Net Cumulative Entitlement Not Delivered Thru		Line No.
July	Aug.	Sept.	Oct.	Nov.	Dec.	Total			1978	1979	
9	5	30	26	26	30	302	1,450	1,148	6,127	7,275	1.
2,045	629	316	0	0	0	8,492	-	-	-	-	2.
67	65	43	29	5	6	329	680	351	1,846	2,197	3.
212	211	196	87	72	45	1,183	-	-	-	-	4.
2,333	910	585	142	103	81	10,306	2,130	1,499	7,973	9,472	5.
721	714	700	579	416	611	6,561	-	-	-	-	6.
2,909	2,759	2,602	2,716	1,814	1,234	19,325	20,800	1,475	61,111	62,586	7.
0	0	0	0	98	472	4,084	-	-	-	-	8.
2,909	2,759	2,602	2,716	1,912	1,706	23,409	-	-	-	-	9.
1,635	1,518	1,165	871	425	793	10,874	23,900	13,026	118,095	131,121	10.
1,258	1,046	546	0	0	0	7,132	-	-	-	-	11.
2,893	2,564	1,711	871	425	793	18,006	-	-	-	-	12.
10,513	10,527	10,286	9,554	6,139	2,555	88,000	88,000	0	42,767	38,776	13.
0	0	0	1,000	3,793	6,126	15,998	-	-	-	-	14.
0	0	0	0	0	0	3,991	-	-	-	-	15.
10,513	10,527	10,286	10,554	9,932	8,681	107,989	-	-	-	--	16.
16,315	15,850	14,599	14,141	12,269	11,180	149,404	132,700	14,501	221,973	232,483	17.
486	501	465	494	502	484	5,095	-	-	-	-	18.
200	200	200	200	0	200	2,000	2,000	0	0	0	19.
1,905	2,900	390	0	400	554	12,700	12,700	0	7,625	1,187	20.
1,165	432	0	0	432	1,322	6,438	-	-	-	-	21.
3,070	3,332	390	0	832	1,876	19,138	-	-	-	-	22.
6,220	6,220	2,549	1,318	1,752	2,108	38,544	38,544	0	0	0	23.
10,534	7,320	669	1,319	1,752	2,108	38,545	-	-	-	-	24.
16,754	13,542	3,218	2,637	3,504	4,216	77,089	-	-	-	-	25.
0	0	0	0	91	614	1,739	3,000	1,261	1,808	3,069	26.
490	559	81	0	0	0	1,279	-	-	-	-	27.
600	600	500	400	300	400	4,900	4,900	0	4,600	1,000	28.
0	0	500	0	0	100	1,000	-	-	-	-	29.
1,000	2,500	100	0	0	0	3,600	-	-	-	-	30.
1,600	3,100	1,100	400	300	500	9,500	-	-	-	-	31.
124,739	116,430	34,438	15,282	11,046	18,269	583,900	583,900	0	162,146	0	32.
97,893	101,111	55,653	61,298	61,259	63,046	524,247	-	-	-	-	33.
12,607	0	0	0	0	0	155,146	-	-	-	-	34.
0	0	0	0	0	0	7,000	-	-	-	-	35.
4,615	4,555	1,145	405	445	485	20,000	-	-	-	-	36.
239,854	222,096	91,236	76,985	72,750	81,800	1,290,293	-	-	-	-	37.

TABLE 3: WATER

(in acre-

Line No.	Contracting Agency and Type of Service	Month					
		Jan.	Feb.	Mar.	Apr.	May	June
	Oak Flat Water District:						
38.	Entitlement Water	133	0	43	720	720	720
39.	Surplus Water	0	0	0	0	0	0
40.	Article 12(d) Make-up Water	0	0	0	485	638	508
41.	Agency Total	133	0	43	1,205	1,358	1,228
	Tracy Golf and Country Club						
42.	Surplus Water	0	0	0	0	16	77
43.	1977 Emergency Relief Water *(b*	0	6	6	8	30	0
44.	Agency Total	0	6	6	8	46	77
	Tulare Lake Basin Water Storage District:						
45.	Entitlement Water	3,800	2,400	0	2,400	0	7,400
46.	Surplus Water	3,509	0	10,404	0	0	0
47.	Article 12(d) Make-up Water	2,000	1,400	0	1,400	0	5,283
48.	Article 45(e) Wet Weather Water	0	2,958	0	3,063	2,274	0
49.	Agency Total	9,309	6,758	10,404	6,863	2,274	12,683
	United States Water and Power Resources Service:						
50.	Conveyance of Federal CVP Water	0	0	0	0	0	5,313
51.	AREA TOTAL	38,489	55,291	84,998	83,146	120,370	230,694
	SOUTHERN CALIFORNIA SERVICE AREA						
	Antelope Valley-East Kern Water Agency:						
52.	Entitlement Water	363	358	773	4,541	8,310	9,617
	Castaic Lake Water Agency :						
53.	Entitlement Water	1	0	0	0	1	1
	Coachella Valley Water District:						
54.	Entitlement Water	838	838	838	838	838	838
	Crestline-Lake Arrowhead Water Agency:						
55.	Entitlement Water	94	86	86	69	74	121
	Desert Water Agency:						
56.	Entitlement Water	1,250	1,250	1,250	1,250	1,250	1,250
	Littlerock Creek Irrigation District:						
57.	Entitlement Water	0	0	0	0	1	0
	Mojave Water Agency:						
58.	Entitlement Water *(c*	0	0	0	1,000	1,000	1,500
59.	Palmdale Water District	0	0	0	0	0	0
	San Bernardino Valley Municipal Water District:						
60.	Entitlement Water	0	0	0	0	0	0
	San Gabriel Valley Municipal Water District:						
61.	Entitlement Water	0	0	0	290	0	0
	The Metropolitan Water District of Southern California						
62.	Entitlement Water	27,419	12,517	14,257	15,053	29,907	63,621
63.	1978 Emergency Relief Water *(d*	2,903	2,447	2,782	2,309	2,554	2,762
64.	Agency Total	30,322	14,964	17,039	17,362	32,461	66,383
65.	AREA TOTAL	32,868	17,496	19,986	25,350	43,935	79,710
	ALL AGENCIES						
66.	Entitlement Water	56,901	46,028	68,296	75,987	108,918	207,026
67.	Surplus Water	3,509	964	16,203	3,025	26,229	68,532
68.	Article 12(d) Make-up Water	15,549	24,907	22,389	29,477	31,238	37,771
69.	Article 14(b) Make-up Water	0	0	0	3,000	3,000	1,000
70.	Article 45(e) Wet Weather Water	0	2,958	0	3,063	2,274	0
71.	1977 Emergency Relief Water	330	1,041	2,501	818	905	2,805
72.	1978 Emergency Relief Water	2,903	2,447	2,782	2,309	2,554	2,762
73.	Repayment Water	0	398	388	440	480	457
74.	Subtotal	79,192	78,743	112,559	118,119	175,598	320,353
75.	Regulated Delivery of Local Supply	1,749	1,825	2,347	1,459	4,664	4,434
76.	Conveyance of Federal CVP Water	0	0	0	0	0	5,313
77.	TOTAL WATER	80,941	80,568	114,906	119,578	180,262	330,100

a) Metric conversion is acre-feet times 1.2335 equals cubic dekametres.
b) Water acquired in 1977 for emergency relief purposes and later sold when drought ended.
c) This entitlement water was put in storage by the State in a ground water basin underlying the Agency in 1978 and pumped from that basin by the Agency for its use during 1979.
d) This water was acquired by the State in early 1978 for emergency relief purposes and later sold to Kern County Water Agency (25,000 acre-feet) and Dudley Ridge Water District (5,000 acre-feet). In 1979 it was conveyed to Metropolitan for storage in local ground water basins. By 1983 equivalent deliveries will be made to Kern County Water Agency, and Dudley Ridge Water District, under the 1978 emergency drought relief program.

DELIVERIES IN 1979

feet)[a]

Month							1979 Contract Entitlement	1979 Entitlement Not Delivered	Net Cumulative Entitlement Not Delivered Thru		Line No.
July	Aug.	Sept.	Oct.	Nov.	Dec.	Total			1978	1979	
720	720	211	13	0	0	4,000	4,000	0	2,149	0	38.
81	67	0	178	118	254	698	-	-	-	-	39.
518	0	0	0	0	0	2,149	-	-	-	-	40.
1,319	787	211	191	118	254	6,847	-	-	-	-	41.
58	54	51	0	14	10	280	-	-	-	-	42.
0	0	0	0	0	0	50	-	-	-	-	43.
58	54	51	0	14	10	330	-	-	-	-	44.
11,000	11,000	11,200	7,200	0	9,941	66,341	66,341	0	90,462	10,182	45.
267	3,458	0	11,974	15,580	21,150	66,342	-	-	-	-	46.
7,317	5,800	4,626	5,054	0	0	32,880	-	-	-	-	47.
10,163	8,842	400	1,600	8,600	9,500	47,400	-	-	-	-	48.
28,747	29,100	16,226	25,828	24,180	40,591	212,963	-	-	-	-	49.
26,780	54,151	12,117	4,424	718	1,530	105,033	-	-	-	-	50.
319,358	327,422	125,295	111,159	103,009	132,075	1,731,306	715,385	1,261	268,790	15,438	51.
11,489	10,646	8,221	4,429	928	818	60,493	63,000	2,507	168,479	170,986	52.
1	1	0	1	1	0	7	15,300	15,293	52,436	67,729	53.
838	838	838	838	838	845	10,063	10,063	0	12,779	12,779	54.
151	143	140	108	95	93	1,260	2,610	1,350	4,471	5,821	55.
1,250	1,250	1,250	1,250	1,250	1,250	15,000	15,000	0	19,700	19,700	56.
81	0	0	33	18	0	133	1,040	907	1,382	2,289	57.
500	0	0	0	0	0	4,000	24,900	20,900	107,951	128,851	58.
0	0	0	0	0	0	0	10,260	10,260	38,860	49,120	59.
0	0	18	0	0	0	18	62,500	62,482	203,345	265,827	60.
0	0	0	0	0	0	290	16,600	16,310	52,622	68,932	61.
64,781	63,415	58,499	48,352	37,170	42,083	477,074	956,600	479,526	1,024,974	1,504,500	62.
3,446	3,881	3,354	3,024	538	0	30,000	-	-	-	-	63.
68,227	67,296	61,853	51,376	37,708	42,083	507,074	-	-	-	-	64.
82,537	80,174	72,320	58,035	40,838	45,089	598,338	1,177,873	609,535	1,686,999	2,296,534	65.
239,608	229,237	132,580	92,620	62,298	81,793	1,401,292	2,028,088	626,796	2,185,735	2,553,927	66.
109,323	112,571	56,954	75,769	82,516	92,794	648,389	-	-	-	-	67.
21,607	6,232	4,626	5,054	432	1,322	200,604	-	-	-	-	68.
0	0	0	0	0	0	7,000	-	-	-	-	69.
11,163	11,342	500	1,600	8,600	9,500	51,000	-	-	-	-	70.
4,615	4,555	1,145	405	445	485	20,050	-	-	-	-	71.
3,446	3,881	3,354	3,024	538	0	30,000	-	-	-	-	72.
486	501	465	494	502	484	5,095	-	-	-	-	73.
390,248	368,319	199,624	178,966	155,331	186,378	2,363,430	-	-	-	-	74.
4,236	2,600	1,758	666	586	1,128	27,452	-	-	-	-	75.
26,780	54,151	12,117	4,424	718	1,530	105,033	-	-	-	-	76.
421,264	425,070	213,499	184,056	156,635	189,036	2,495,915	2,028,088	626,796	2,185,735	2,553,927	77.

1978 Exchange Water Deliveries. During 1978, the State acquired 37 005 cubic dekametres (30,000 acre-feet) of Project water from the Metropolitan Water District through an exchange agreement. Under the agreement, Metropolitan pumped additional Colorado River water for its use in lieu of taking delivery of the Project water in January of that year. The exchange water was intended for use in meeting 1978 emergency needs in case the 1976-77 drought continued. Arrangements had been made to obtain up to 246 200 cubic dekametres (200,000 acre-feet) for such purposes. The radical change in weather conditions in California beginning in early February 1978 ended the need to acquire further exchange water as it became apparent that the drought had ended.

Under an agreement between the State, Metropolitan, and Kern County Water Agency and another agreement between the State, Metropolitan, and Dudley Ridge Water District, Kern purchased 30 838 cubic dekametres (25,000 acre-feet) and Dudley purchased 6 168 cubic dekametres (5,000 acre-feet) of the exchange water. The agreements provide that Kern and Dudley must utilize the water prior to March 31, 1983.

Ground Water Demonstration Deliveries. The State and Mojave Water Agency entered into a contract in 1978 establishing a ground water demonstration project involving the storage of project water in a ground water basin within Mojave's boundaries (see page 89 and 90 of Bulletin 132-79). In 1978, 29 214 cubic dekametres (23,684 acre-feet) of water was transported to the basin for storage. In 1979, 4 934 cubic dekametres (4,000 acre-feet) of entitlement water was withdrawn from the basin for Mojave's use.

In accordance with the guidelines for funding costs under the ground water demonstration program, the agency paid Transportation Charges for this project water as though it had been delivered through SWP facilities from the Delta with the payment credited to Project conservation costs.

A second ground water demonstration project was established in 1978 under agreements between the State and the San Bernardino Valley Municipal Water District (see page 90 of Bulletin 132-79). Activities in connection with this program in 1979 included conveying 4 970 cubic dekametres (4,029 acre-feet) of SWP water from the Delta to Reach 26A for delivery to San Bernardino and the transportation by the District to local ground water recharge areas. Total water stored as of January 1, 1980 under the project was 16 375 cubic dekametres (13,275 acre-feet). All State costs and District incremental costs incurred in connection with the storage of this water, including the power costs incurred by the State in transporting the water from the Delta to Reach 26A and the Delta Water Charge on each acre-foot stored, have been assigned as project conservation costs. During 1979, applicable District costs under this project totaled $20,145. The District was issued credits for this amount plus a Delta Water Charge credit of $46,058.

Surplus Water Deliveries. Seven contractors estimated in September 1978 that they could use 904 798 cubic dekametres (733,521 acre-feet) of surplus water during 1979. When initial schedules of 1979 water deliveries were approved in late December 1979, based on Rule Curve Criteria for 1979 and December 1, 1979 water conditions, there was no assurance that surplus water would be available on a scheduled basis during 1979. However, extra surplus water was available, and some of this water was scheduled and delivered on an informal basis. At the same time, efforts were made to develop a comprehensive program that would provide for the utilization of extra surplus water without adversely affecting the cost or quantity of other Project water deliveries. Extra surplus water

is deliverable water available in the Delta in excess of that needed to meet Project storage requirements, scheduled delivery requirements, and Delta water quality requirements.

Monthly meetings between contractor and Department representatives were held from December 1978 through March 1979 to discuss the Rule Curve monthly updates on water supply conditions for 1979. At the March 12 meeting, the Department was able to announce that surplus water would be available in an amount necessary to satisfy all their current requests. Approved schedules calling for surplus water deliveries totaling 488 767 cubic dekametres (396,244 acre-feet) were issued about April 1, 1979. This total included deliveries of 25 504 cubic dekametres (20,626 acre-feet) made during the first 3 months of the year.

In May 1979, Kern County Water Agency formally requested an additional 395 596 cubic dekametres (260,000 acre-feet) of surplus water. The request stated that 111 000 cubic dekametres (90,000 acre-feet) of this amount would be used for local ground water replenishment programs. An approved schedule issued in early June provided for delivery of the total quantity of surplus water requested by the Agency. Delivery of an additional 56 741 cubic dekametres (46,000 acre-feet) of surplus water was approved late in the year. Also, increased surplus water deliveries to Tulare Lake Basin Water Storage District and Oak Flat Water District totaling 19 674 cubic dekametres (15,950 acre-feet) were approved at this time. Approvals were made only after it had been determined that the increased deliveries would not adversely affect 1980 entitlement water deliveries.

Due to the quantity of project water obtained, the 1979 annual entitlements of two contractors, Dudley Ridge Water District and Tulare Lake Basin Water Storage District, had to be increased pursuant to Section (g)(3) of amended Article 21 of their long-term water supply contracts. Dudley's entitlement amount was increased by 4 865 cubic dekametres (3,944 acre-feet) and Tulare's by 4 615 cubic dekametres (3,741 acre-feet). Statements of charges reflecting these increased entitlements were sent to the contractors in January 1980.

Two noncontractors, Green Valley Water District and Tracy Golf and Country Club, requested surplus water deliveries in 1979 and subsequently entered into agreements with the State for such service. Green Valley was charged $45,057, including a late payment charge for the surplus water it received, while Tracy was charged $5,973 including a late payment charge.

Local Water Deliveries. Project facilities are used to deliver nonproject water to both contractors and noncontractors under executed agreements. These deliveries are shown in Line 75 Table 3 as "Regulated Delivery of Local Supply".

Requested releases of Project water and water rights water have been made from Frenchman Lake since the initial filling. These releases have been made in accordance with annual contracts with Last Chance Creek Water District. Under contracts through 1978, the annual charge to Last Chance Creek for use of Project facilities was $14,000 each year. In 1979, a new contract providing service during the five-year period of 1979 through 1983 was developed. The contract contains provisions to compute the charges to Last Chance Creek reflecting future annual escalation of State incurred operation and maintenance costs at Frenchman Dam and Lake.

Wheeling of Federal Water

The State has entered into contracts with nine agencies to wheel Federal CVP water through SWP facilities to Kern

County Water Agency's Cross Valley Canal. Under another contract between the State and the United States, the WPRS provides the water as well as the electrical energy needed for wheeling. The contracts provide that up to 155 214 cubic dekametres (125,832 acre-feet) per year may be wheeled.

The State's charges for the wheeling service under the nine contracts are for use of SWP facilities to transport water from the Delta to the Cross Valley Canal. The contracts assume that in the San Luis Division, where aqueduct capacity is shared by both the State and the United States, Federal rather than State capacity is used and the agencies are not charged for transportation of water through those portions of the California Aqueduct.

The Department has reevaluated this assumption and has determined to charge for wheeling through the Joint-Use Facilities when the water is transported from the Delta and the wheeling involves use of State facilities upstream of O'Neill Forebay. Charges associated with all future wheeling contracts will use this concept in determining acceptable charges for wheeling service.

During 1979, 129 558 cubic dekametres (105,033 acre- feet) of CVP water was wheeled. Under a special agreement applicable to 1979 only, CVP water allocated to Kern-Tulare Water District and Rag Gulch Water District, a total of 65 746 cubic dekametres (53,300 acre-feet), was delivered to the Westlands Water District. Wheeling rates for the water were higher than the rates specified in the Kern-Tulare and Rag Gulch

O'Neill Forebay with San Luis Pumping Generating Plant in the foreground. The Forebay is used in conjunction with San Luis Reservoir to regulate water by the SWP and the federal CVP.

contracts, as they included a charge for the use of State capacity in the joint-use San Luis Division facilities, whereas the initial nine wheeling contracts assumed use of Federal capacity. Another special wheeling agreement, also applicable to 1979 only, was made with Pixley Irrigation District. Under this agreement, 6 167 cubic dekametres (5,000 acre-feet) of Pixley's CVP water was wheeled to the Lakeside Irrigation Water District. Again the wheeling charges were increased for the same reason applied to the Westlands' wheeling. The following table shows the maximum amount of wheeling for which each of the nine agencies has contracted and a summary of 1979 wheeling services.

Agency	Maximum Annual Contractual Amount in Acre-feet	Wheeled During 1979 in Acre-feet	Charge for 1979 in Dollars
County of Fresno	3,000	38	216
County of Tulare	3,000	3,000	17,009
Ducor I. D.	1,200	0	0
Hills Valley I. D.	2,146	2,146	12,168
Kern-Tulare River W.D.	40,000	0	0
Lower Tule River I. D.	31,102	20,400	115,669
Pixley I. D.	31,102	20,167	114,347
Rag Gulch W. D.	13,300	0	0
Tri-Valley W. D.	982	982	5,567
TOTAL	125,832	46,733	264,976
Westlands W. D.	0	53,300 1/	306,475
Pixley I. D. for Lakeside Irrigation W. D.	0	5,000 1/	32,850
GRAND TOTAL	125,832	105,033	604,301

1/ Wheeled under special agreements applicable to 1979 only.

In early 1980, the Department and the WPRS executed an interim agreement for the Department to wheel Federal CVP water through the California Aqueduct. The principal WPRS user involved in the wheeling arrangement was the Westlands Water District. As part of the same contract, WPRS agreed to provide its share of Delta outflow during the period of the wheeling agreement to meet the Delta water quality requirements, as mandated by Decision 1485 of the State Water Resources Control Board. On January 24, 1980, the SWRCB approved a temporary permit for WPRS to appropriate water necessary to carry out this agreement.

The Department began wheeling from the Delta in January, February, and March of 1980. This water replaced part of the water which the WPRS was unable to convey through the Delta-Mendota Canal when the canal was down for maintenance in late 1979. The Department wheeled replacement water from the Delta to joint-use San Luis Facilities for the WPRS during July and August 1980 to make up for curtailments in Federal pumping at Tracy during May and June. These curtailments in pumping, required by Decision 1485, are to protect the striped bass fishery in the Sacramento River during the critical spawning period.

Looking southerly from the start of the California Aqueduct (shown in the lower left hand corner of the picture). The aqueduct extends to Bethany Reservoir then continues southerly through the San Jôaquin Valley to Southern California.

With this contract the Department has adopted a new policy to enter into two-party wheeling-water contracts with WPRS rather than three-party agreements where WPRS users are also parties. This will simplify the contracting program, especially after the permanent DWR-WPRS coordinated operating agreement is executed. Passage of SB 200 greatly limits the Department's authority to wheel Federal CVP water (see further discussion in Chapter I under the section titled, "Negotiations for Joint Operating Agreement of SWP and CVP".)

Project Water Delivery Plans

In September 1979, Project contractors submitted their estimated monthly project water delivery requirements for the 6-year period 1980 through 1985. Their estimates included delivery of entitlement, surplus, makeup (Article 12(d), Article 45, and Article 14(b)) emergency relief, local, and ground water demonstration water.

Entitlement Water. Estimated entitlement plus makeup water needs submitted in 1979, as well as estimates submitted in the five previous years, are shown in the following tabulation.

Year Estimate Submitted	Delivery Amount in Acre-feet[a/][b/] by Year[c/]					
	1980	1981	1982	1983	1984	1985
1979[d/][e/]	1,880,386	2,033,243	2,179,251	2,272,782	2,461,223	2,617,594
1978[d/]	2,026,174	2,164,013	2,300,401	2,408,652	2,495,503	
1977[f/]	2,170,409	2,374,135	2,574,831	2,371,140	2,482,275	
1976[f/]	2,026,880	2,168,335	2,273,925	2,376,990		
1975[f/]	1,931,067	2,027,770	2,131,960			
1974[f/]	2,022,548	2,112,251				

a/ Metric Conversion is acre-feet times 1.2335 equals cubic dekametres.
b/ Includes project entitlement water recaptured from ground water storage pursuant to Mojave demonstration project agreement.
c/ Future estimates of needs must reflect water conservation and reclamation goals in accordance with SB 200 requirements.
d/ Submitted requests covered the following six years.
e/ Above 1979 amounts for the years 1983 through 1985 have been reduced to reflect future conservation and reclamation goals for use in this Bulletin.
f/ Submitted request covered the following seven years.

Note that the 1979 estimate reflects a lower use of Project water than had been estimated in the previous two submittals. For 1980 this is primarily a reflection of the above-normal precipitation in Southern California in both 1978 and 1979. For the remaining years it is a reflection of a decreased population growth for Southern California than was estimated in earlier years and a reduction in need as a result of conservation programs initiated during the 1976-77 drought.

In August 1979, the Department sent a letter to each contractor requesting (1) estimates of monthly Project water requirements during 1980 through 1985 and (2) annual requirements for 1986 through 1990, or (3) if later, the year the maximum annual entitlement would be used on a regular basis. This request was consistent with delivery requests made in prior years. In addition, however, contractors were asked to provide estimates of how much they expect to reduce their future Project water requirements through conservation and reclamation. The letter assumed that conservation and reclamation reductions to meet the objectives outlined in the Department's Bulletin 76 "Delta Water Facilities", dated July 1978, could be accomplished voluntarily. It appears that most State Water Contractors only verbally acknowledged presence of these requirements and did not respond to this request with reduced estimates. However, consistent with SB 200, Bulletin 132-80 does reflect conservation and reclamation reductions in requested deliveries. These reductions were developed by the Department and were applied only to that water estimated to be needed for municipal and industrial uses.

For the third year, water deliveries for 1980 were scheduled on the basis of the Department's Rule Curve criteria. On the basis of December 1, 1979 water supply conditions, the Department determined through use of the criteria that all requested entitlement and makeup water, as well as a limited quantity of other water, could be safely scheduled for delivery. In mid-December 1979, approved schedules calling for delivery of entitlement and makeup water in the then current requested amounts was issued. These initial schedules called for delivery of 2 269 232 cubic dekametres (1,839,669 acre-feet) of 1980 entitlement water and 44 051 cubic dekametres (35,712 acre-feet) of make-up water. Total approved delivery was only slightly changed from the September requested total shown in the preceding tabulation.

Application of the 1979 Rule Curve Criteria to May 1, 1979 water conditions showed that, after meeting all 1979 delivery requests, water stored in Project reservoirs at the end of 1979 would exceed the minimum requirements. Based on this finding, it was decided that increases in 1980 entitlement amounts of up to 246 700 cubic dekametres (200,000 acre-feet) would be allowed. (Several contractors using project water for agriculture previously had requested increases). Contractors were told of this decision at the May 17, 1979 Water Contractors Council meeting. Dudley Ridge Water District and Oak Flat Water District requested increases; unnumbered contract amendments with the two water districts were executed to increase their 1980 entitlement amounts by 5 304 cubic dekametres (4,300 acre-feet) and 1 850 cubic dekametres (1,500 acre-feet), respectively. Revised 1980 Statements of Charges were then issued to the two contractors.

Surplus Water and Extra Surplus Water. At the beginning of 1980, approximately 92 513 cubic dekametres (75,000 acre-feet) of surplus water could be scheduled. Because of this availability and the likelihood that considerably more water would become available as the winter progressed, surplus water contracts for 1980 service were prepared and later signed by eight contractors.

By the end of 1979, an extra surplus water program had been developed and implemented. Extra surplus water is deliverable water available in the Delta, which is in addition to that needed to meet Delta water quality requirements, scheduled deliveries, and Project storage requirements. The extra surplus water program has been developed primarily to assist in reducing ground water overdraft by direct recharge or through agricultural use in lieu of ground water pumping, and as a second priority for pre-irrigation to increase soil moisture prior to planting. Extra surplus water is scheduled by telephone for two-week periods, and only when water supply conditions do not allow sufficient regularly-scheduled surplus water to satisfy all contractor requests.

Each contractor interested in acquiring extra surplus water under the program executed an amendment to the long-term water supply contract, which added provisions to Article 21 necessary to define and provide for extra surplus water. Scheduling of 1980 deliveries of extra surplus water was initiated on December 28, 1979.

Miscellaneous Project Water Deliveries. Schedules were also issued near the beginning of 1980 for ground water demonstration water, emergency relief water, recreation water and pre-consolidation repayment water. A total of about 61 675 cubic dekametres (50,000 acre-feet) of such water was scheduled.

Contract Amendments

Each of the 31-long-term water supply contracts has been amended. The number of amendments to individual contracts varies from 1 to 17; amendments to all contracts as of April 1, 1980 total 313.

Figure 6 shows by number and general subject matter the amendments to each of the contracts. In addition to the numbered amendments shown in Figure 6, annual entitlement (Table A) amounts of some contracts have been revised by either unnumbered amendments or notices of Table A revisions.

Several amendments to the contracts sent out for signature prior to 1977 have never been signed. These include:

- Amendment to the City of Yuba City contract concerning calculation of the Project interest rate and the Delta Water Charge. All other contracts have been amended to include the change in interest-rate calculation provided for in this proposed amendment.

- An amendment to the contract with Solano County Flood Control and Water Conservation District concerning calculation of the Delta Water Charge. All other contracts except the Yuba City contract have been amended to include this provision.

- An amendment to contracts with the City of Yuba City and Solano County Flood Control and Water Conservation District which deletes the surcharge, surcharge credit, and power credit provisions. All other contracts reflect the amendment.

- An amendment to realign and clarify the surplus water provisions. The amendment has been signed by 24 contractors. Those that have not signed it are City of Yuba City, County of Butte, Mojave Water Agency, Napa County Flood Control and Water Conservation District, San Bernardino Valley Municipal Water District, and San Gorgonio Pass Water Agency.

As of April 1, 1980, amendments signed since the Bulletin 132-79 report on this subject are as follows:

- Kern County Water Agency signed an amendment providing a procedure for delaying payment of all or a portion

Figure 6: WATER SUPPLY CONTRACT AMENDMENDMENTS AS OF April 1, 1980

Contracting Agency	Minimum Project Yield Increased	Supplemental Conservation Facilities Costs Delayed			Project Interest Rate Modified	Surcharge and Surcharge Credit Provisions						"Wet Weather" Provisions Added	"A & R" Surplus Water Provisions		Turnout Construction by Agency	Peaking Service		Annual Entitlements Revised	Excess Capacity Purchased	Article 28 Revised	Project Repayment Period and Term of Contract Revised	Special Conditions
		1970	1971	1972 till construction		Added	Revised	Moratorium Declared Thru 1969	1970	1971	Deleted		Added	Revised		Increased	Decreased					
FEATHER RIVER AREA																						
City of Yuba City	1	2P	2P	2P	2P		1							1				1		NA	3	
County of Butte	1	3	3	3	3		1	2		4	5			1				6		NA	6	
Plumas County Flood Control and Water Conservation District	1	3	5	6	3		1	2	4	7	8			10						9	11	
NORTH BAY AREA																						
Napa County Flood Control and Water Conservation District	1	3	4	5	3		1				6			1							7	1,2
Solano County Flood Control and Water Conservation District	1	2	3P	3P	2		1							1,5		1		6			6	6
SOUTH BAY AREA																						
Alameda County Flood Control and Water Conservation District, Zone 7	2	6	8	9	6	2		5	7	10	11	1		2,12	3			1,4			13	1
Alameda County Water District	1	4	5	7	4	1		3		8	9	S		1,11,12	2					10	13	1,6
Santa Clara Valley Water District	2	6	8	10	6	2		5	7	11	12	1		1,2,14,15	3			1,4		13	16	1,9
SAN JOAQUIN VALLEY AREA																						
County of Kings		2	3	4	2			1		5	6	S	S	8						7	9	
Devil's Den Water District	1	5	7	8	5			4	6	9	10			1,12,13				1,3		11	14	2
Dudley Ridge Water District	1	6	8	9	6			5	7	10	11			1,13,14				1,2 3,4		12	15	
Empire West Side Irrigation District	1	4	6	7	4			3	5	8	9	S		1,11,12				2		10	13	
Hacienda Water District	1	4	6	7	4			3	5	8	9	S		1,11,13				2		10	12	7
Kern County Water Agency	1	4	6	8	4			3	5	9	10			1,12,14				1,2		11	15	7,13
Oak Flat Water District		3	5	6	3			2	4	7	9	S	S	12,11	1			8		10	13	
Tulare Lake Basin Water Storage District	2	5	6	7	5			4		8	10	S		2,13,14				1,3,9 12		11	15	
CENTRAL COASTAL AREA																						
San Luis Obispo County Flood Control and Water Conservation District	2	3	4	5	3	1	2				6		1	2,8						7	9	
Santa Barbara County Flood Control and Water Conservation District	2	3	4	5	3	1	2				6		1	2,7				2			8	
SOUTHERN CALIFORNIA AREA																						
Antelope Valley-East Kern Water Agency	1	5	6	7	5	1					8		1	10		3	2	1	4	9	12	2,3,4
Castaic Lake Water Agency	2	4	5	6	4	1	2				7		1	2,10		2		2,3 9		8	11	
Coachella Valley Water District	2	3	4	5	3	1	2				6		1	2,8				2		7	9	
Crestline-Lake Arrowhead Water Agency	2	5	6	7	5	1	2				8		1	2,11	4	3		2,10		9	12	
Desert Water Agency	2	3	4	5	3	1	2				6		1	2,8				2		7	9	
Littlerock Creek Irrigation District	2	3	4	5	3	1	2				6		1	2,7				2			8	
Mojave Water Agency	2	4	5	6	4	1	2				7		1	2			3	2		8	9	3
Palmdale Water District	2	3	4	5	3	1	2				6		1	2,8				2		7	9	
San Bernardino Valley Municipal Water District	2	4	5	6	4	1	2				7		1	2				1,2 3,9		8	10	
San Gabriel Valley Municipal Water District	2	4	5	6	4	1	2				7		1	2,10		2		2,9	3	8	11	
San Gorgonio Pass Water Agency	2	4	5	6	4	1	2				7		1	2		2					8	2,3
The Metropolitan Water District of Southern California	1	9	10	11	9	1					13		1	16				1,3 8V,15	2,6 7	14	17	(a
Ventura County Flood Control District	1	2	3	4	2		1				5			1,7						6	8	

P = Pending
S = Special provisions of basic contract.

V = Amendment voided by subsequent actions.
a) Amendment Numbers 2, 3, 4, 5, 7, 8V, 12.

of the Capital Components of the Delta and Transportation Charges. Before the amendment was executed, all contractors were asked to comment on it and to notify the State if a similar amendment was desired. No adverse comments were received, and only one other contractor expressed an interest in the amendment.

- An amendment expanding Article 21 to include provisions providing for the delivery of extra surplus water was developed and distributed for signature to contractors who might have a need for such surplus water. The amendment was signed by Alameda County Water District, Santa Clara Valley Water District, Devil's Den Water District, Dudley Ridge Water District, Empire West Side Irrigation District, Hacienda Water District, Kern County Water Agency, Oak Flat Water District, Tulare Lake Basin Water Storage District, and San Gabriel Valley Municipal Water District.

- The Metropolitan Water District of Southern California signed the amendment to Article 21, which was first distributed in 1974 to all contractors. This is the amendment executed to realign and clarify the surplus water provisions previously in effect.

- During 1979, an amendment was developed establishing the Project repayment period as extending to the end of 2035 or, if later, to the date of the latest maturity of any bonds issued to finance the construction of project facilities. Article 2, which specifies the term of the contract, was also amended to coincide with the revised repayment period definition. This amendment was sent to all contractors for signature and has been signed by all contractors.

- Solano County Flood Control and Water Conservation District's contract calls for initial delivery of Project water in 1980. Its contract stipulates that the District may obtain Project water directly from the Delta through District constructed delivery structures, as well as the existing delivery structure on Cache Slough through which the City of Vallejo obtains a water supply. The District requested that its Table A be amended to reduce annual entitlements for 1980 through 1983 to the annual amounts expected to be taken from the Delta during those years. Since the North Bay Aqueduct will not be operational until at least 1984, the requested reductions were approved and executed.

Recently developed amendments, not previously discussed herein, which have been sent out for signatures but have not been signed and returned as of April 1, 1980 include:

- An amendment to the County of Butte Contract, which reduces annual entitlements for the years 1980 through 1990.

- An amendment to the Napa County Flood Control and Water Conservation District Contract, which would reduce the Disrict's annual entitlements during the entitlement build-up period; change the year of initial delivery from 1980 to 1984; and reduce the District's maximum annual entitlement.

At the beginning of 1979, proceedings were underway on the transfer of Hacienda Ranch lands (which essentially comprise the Hacienda Water District) to Tulare Lake Drainage District for drainage disposal and the associated transfer of Hacienda Water District's State water supply contract to Tulare Lake Basin Water Storage District. In connection with these proceedings, the Department,

on February 16, 1979, executed an interim agreement[5/] with the Tulare Lake interests (party to the land and water supply transfers) providing for delivery of Hacienda Water District's State water supply to lands in Tulare Lake Basin Water Storage District prior to consummation of the land and water supply transfers. The term of the interim agreement was from the date of execution to December 31, 1979. Near the end of 1979, the term of the agreement was extended to December 31, 1980 by amendment dated December 28, 1979, in response to the prediction of the Tulare Lake interests that the land and water supply transfers could probably not be completed before mid-1980. After completion of the requisite land transfers, Tulare's long-term water supply contract will be amended to permanently transfer Hacienda's project water supply to Tulare.

Negotiation of Water Charge Settlements

A task force consisting of representatives of the State Water Contractors Audit Committee, MWD, and the Department's Water Service Contract Cost Negotiation Committee continued its discussions and negotiations during 1979.

Protests of Water Contractor Charges

The water supply contracts require water contractors to give the State notices of contest of accuracy of statements of charges, 10 days prior to the date payments of the stated amounts are due. Substantially all of past contractors' charges, since 1962 have remained open to challenge because of the blanket extensions of time granted by the Department for contesting these charges. Such a policy is contrary to all principles of management and fiscal responsibility. As a result, in 1976 the Department adopted a policy to bring contested charges to final resolution within two years of the end of the fiscal year, the maximum time permitted for adjustments to general fund expenditures.

As part of the transition to the new process, it was decided to give two specific dates for contractors to file notices of contest and to pursue all remedies available to them on statements of charges submitted prior to those dates were given:

- June 20, 1980: A contractor must file a notice of contest with the State by this date or make its payments under protest for all amounts due which are not included within the items listed below:

  1. All costs incurred after June 30, 1976.

  2. All costs affected by the procedures for allocation to project purpose.

  3. All costs affected by the procedures for allocating transportation variable charges for fluctuations in reservoir storage.

- December 21, 1980: A contractor has until this date to file notices of contest with the State or to make its payments under protest on charges for all costs incurred between June 30, 1976 and December 31, 1978.

Beginning with charges for calendar year 1979, the cut-off time for protests will be June 20, 1981. Thereafter June 20 of each year will be the cut-off time to protest charges for the calendar year which ended two years prior. This pol-

5/ *The agreement provides that Tulare Lake Basin WSD will use the new water supply within its service area boundaries exclusive of the lands owned by Tulare Lake which lie within Hacienda's boundaries and, after the transfer of lands to Tulare, the new lands will be used for storage of excess floodwater flows and not for new crop irrigation.*

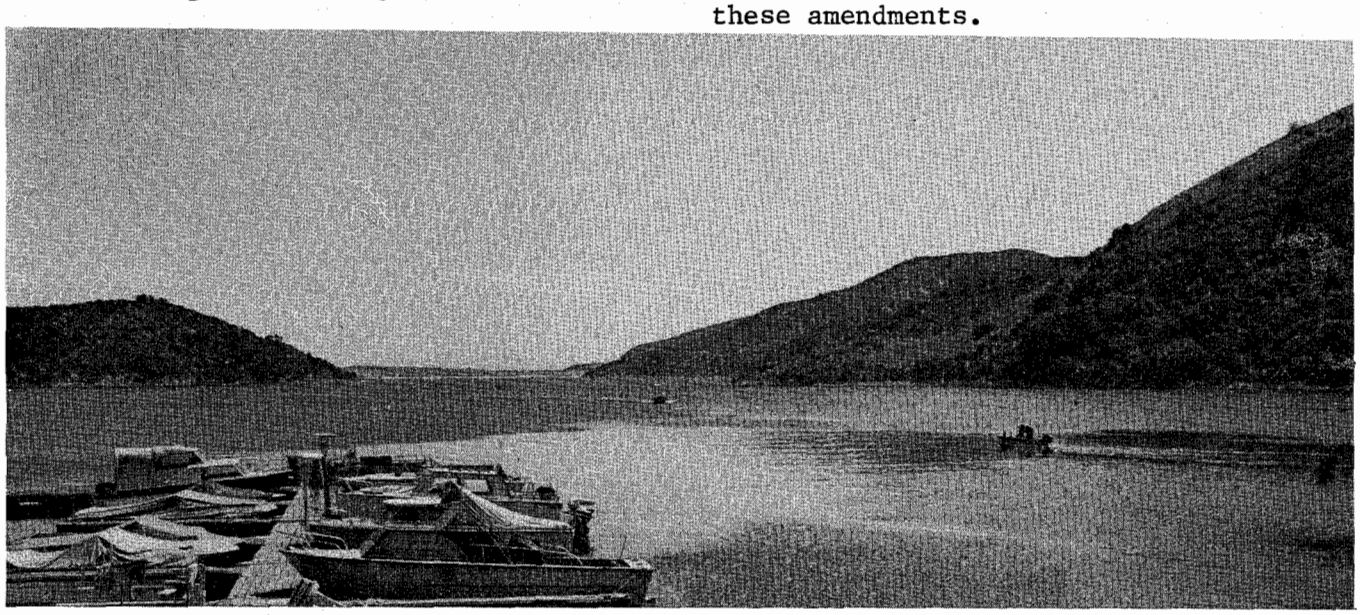
icy, assures review of contested costs within a realistic time after the charges were incurred. The policy requires that the water contractors audit reports be submitted to the Department by December 1 of the calendar year following the year of audit. This means that the audit report for 1979 is due by December 1, 1980 in order to complete the review by the cut-off date of June 20, 1981. The time provided is well within established procedures for such audits.

Project Purpose Cost Allocation - California Aqueduct

In October 1979, the Department of Finance issued a staff report on the project purpose cost allocation methods used by DWR. The Finance report includes recommendations that (1) projected future recreation benefits to be determined by the data for past years (linear regression) and (2) justifiable costs for recreation and enhancement be redefined. Finance's definition of justifiable costs would reduce the magnitude of project costs allocated to recreation and enhancement for most project facilities. The Finance report is now being reviewed by DWR. Once this review is complete, the cost allocation for the California Aqueduct reported in Appendix D to Bulletin 132-80, and any or all allocations previously reported to the Legislature, may be revised.

For the first time, the cost allocation for the California Aqueduct, Dos Amigos Pumping Plant to the terminal facilities was reported to the Legislature in Appendix D to Bulletin 132-80. Previously, cost allocations for project facilities north of Dos Amigos had been reported.

Assembly Bill 927 was introduced by Assemblyman John Thurman at the request of the Department in 1979, to approve SWP costs allocated to recreation and fish and wildlife enhancement and costs of recreation land acquisition that had previously been financed by SWP funds. In May 1980, AB 927 was amended to add the capital costs of the California Aqueduct, Dos Amigos to termini, which the Department had allocated to recreation and enhancement--$107,644,210. AB 927 was further amended in the Senate in August 1980 to require Department of Finance approval of allocations and expenditures under the Davis Dolwig Act. The Legislature approved AB 927 with these amendments.



Looking north from the Sawpit Canyon Area at Silverwood Lake.

POWER CONTRACTS MANAGEMENT AND LONG-RANGE ENERGY PROGRAM

This section reports the Department's continuing activities to obtain electrical energy for Project pumping. The discussion is presented in two parts:

1. The management of current power purchase-sale contracts and development of power loads and resources data for (a) administration of power contracts and (b) compliance with the reporting requirements of energy regulatory agencies.

2. A significant redirection of the Department's Long-Range Energy Program to obtain environmentally sound cost-effective power supplies for Project operations beyond March 31, 1983, when current firm power contracts will terminate. Under this redirection of the energy program, the Department will pursue such energy sources as (a) cogeneration, (b) small hydroelectric projects, and (c) renewable resource projects, including geothermal, solar, and biomass. All of these sources are reasonably attainable, at costs well below those that electrical utilities would have to charge. The Long-Range Energy Program is described in detail following a brief discussion of power contracts management.

Power Contracts Management

Periodic updates on the status of power contract management and energy matters are included in the bimonthly meetings of the Water Service Contractors Council, the Director's monthly report to the California Water Commission, and the regular quarterly meetings of the Energy Committee. The latter forum is made up of technical representatives of the water contractors and the DWR's energy staff (see p. 72, Bulletin 132-77).

By Resolution No. 79-20, adopted December 7, 1979, the California Water Commission commended the DWR for its comprehensive energy program and the progress it has made towards meeting the future energy requirements of the SWP. The resolution also requested that the DWR:

- Make maximum practical use of solar energy for heating and cooling of SWP facilities;

- Continue to investigate solar electrical generation;

- Obtain Federal and State grants and other funding to finance research and development activities, including those related to energy generation with possible future power sale availability; and

- Report to the Commission as new energy funding becomes available for alternative energy development with a yearly summary in January of each year to be presented on the status of work in progress.

Power contract management activities were essentially "normal" for 1979. There were no water exchanges for which special power arrangements were made, as occurred during 1976, 1977, and 1978 -- and no flood operations affecting SWP pumping loads, as occurred in 1978 (and 1980).

However, there were special concerns regarding projected reserve margins of California electric utilities during the peak demand months of the summer of 1979. These concerns emanated indirectly from the Three-Mile Island (TMI) nuclear power plant accident in Pennsylvania in March 1979.

Babcock-Wilcox, which constructed the TMI plant, also constructed the Rancho Seco Plant of the Sacramento Municipal Utility District. When Ranch Seco, as well as other plants, were shut down for safety inspection for an indefinite period following the TMI accident, there was particular concern regarding reserve margins of the Pacific Gas and Electric (PGandE) system during the coming summer months. A joint hearing of the California Public Utility Commission and California Energy Commission was held. Special arrangements were entered into by the utilities. The Department was involved in two of these arrangements, and actual operation of the State Water Project was affected to a minor extent as described in the following section:

Use of DWR Pacific Northwest Intertie Capacity. To help maintain utility reserves, the Department committed 150 MW of its EHV (extra high voltage) transmission-line capacity to PGandE for the company's scheduling of firm power imports from the Pacific Northwest between June 4 through August 1979. PGandE paid DWR $181,250 for use of this assurance.

Firm Service to PGandE for Limited Periods. At the Company's request, on June 11, 1979, the Project dropped 176 MW of pumping load and increased the generation from the San Luis and Devil Canyon power recovery plants for about two hours; on July 12, the Project dropped 276 MW of pumping load for about two minutes, and dropped a small amount of load briefly on June 6.

Compensation for the above ($285,178) was made under the "Agreement for the Sale and Purchase of Firm Services for Limited Periods" signed by the Company and DWR January 18, 1980, but effective June 1, 1979. The termination of this agreement is April 1, 1983, or until a comprehensive interconnection and transmission agreement becomes effective, whichever occurs first.

The agreement provides the Company with emergency electric system service when the DWR, in its sole judgment, is able to provide such service. In general, compensation is based on a negotiated rate of 10 cents per kilowatt-day for load dropping and $2.00 per kilowatt-month for additional recovery generation, or the rate of Short-Term Firm Service as set forth in Rate Schedule "A" of the California Power Pool Agreement, whichever is greater.

Adjustment of Suppliers Firm Capacity Order for 1982. Under the Suppliers Contract, firm capacity is ordered six years in advance. On the basis of projections furnished by the water contractors in the fall of 1976, the DWR ordered 375 MW of firm capacity for 1982:

(a) 125 MW for the Project's basic entitlement water operation.

(b) 250 MW for potential surplus water deliveries.

The latter was the DWR's estimate of capacity needed, additional to (a), for pumping surplus water amounts specifically requested by certain contractors -- with DWR payments to the suppliers guaranteed by the committed contractors.

Under Article 15(a)(ii) of the Suppliers Contract, the DWR could, by December 1, 1979, adjust the 1982 order by ± 37.5 MW (± 10%).

On the basis of (1) projections furnished by the water contractors in the fall of 1979 and (2) updated operational considerations (a two-month outage scheduled for the fall of 1982 for Pastoria and Cottonwood construction), the DWR determined that:

(a) 125 MW is still adequate for the basic entitlement water operation.

(b) 210 MW is sufficient to deliver the original surplus water amounts requested by certain contractors.

On the preceding basis, the DWR notified the Suppliers, December 1, 1979, to reduce the order for 1982 by 37.5 MW. As a consequence, the DWR reduced the payment commitments of the surplus water contractors by 15 percent. However, projections of surplus water needs for 1982 were reduced significantly during the interim. Only 80 MW, in addition to the 125 MW needed for entitlements, would be required to deliver all surplus water amounts, as estimated by the contractors in the Fall of 1979:

Surplus Water Contractor	Requested Delivery of 1982 Surplus Water (in acre-feet)		1982 Payment Commitment by Surplus Water Contractors	
	Fall '76 Submittals (Basis for Commitments	Fall '79 Submittals (Total Per Contractor)	Original	Revised (includes 15% Overall Reduction)
	(1)	(2)	(3)	(4)
Santa Clara	12,000	12,000	$ 95,700	$ 81,300
AVEK	43,216	13,255	668,300	568,100
KCWA	777,073	552,304	2,863,200	2,433,700
Hacienda	5,900	16,100	17,800	15,100
Dudley Ridge	42,805	40,875	126,400	107,400
Tulare	154,800	168,800	452,600	384,700
Empire	3,000	3,000	8,900	7,600
Devil's Den	4,000	7,300	18,100	15,400
	1,042,794	813,634	$4,251,000	$3,613,300

Although some of the above contractors indicated revised amounts of surplus water needs (Column 2), the basis of the commitment (Column 1) remains the same. Only the estimated degree of on-peak operation required to deliver the original estimated amounts has changed.

Los Angeles Department of Water and Power (LADWP) Litigation. In 1979, the LADWP attempted a to unilaterally modify the Suppliers Contract by charging the DWR a higher price than that fixed in the Contract. LADWP further indicated that it would consider the DWR's failure to pay the higher charges as grounds for terminating its performance under the Contract. The DWR rejected LADWP's bill for additional compensation, and LADWP set October 21, 1979, as the date it would no longer perform under the Supplier Contract.

On October 18, the Southern California Edison Company obtained a restraining order against LADWP in the Los Angeles County Superior Court. A hearing was held November 6 and Edison's request for a preliminary injunction was granted. This injunction requires LADWP to continue under the Contract until the disputes are settled at trial. As a condition to issuing the preliminary injunction, the court required Edison to post a $14 million bond and to make the DWR a party to the action (PGandE and San Diego Gas and Electric were already parties to the action).
The Department deplores the breach of contract by the LADWP and is committed to a vigorous defense of the contract and committments.

Summary of Major Power Contracts

By the end of 1979, a total of 15 major electric power contracts had been executed for the State Water Project. Certain of these contracts will terminate on March 31, 1983. The service provisions under certain contracts will not become effective until after March 31, 1983. A brief summary of these 15 contracts is shown on page 102.

Long-Range Energy Program

During 1979, the Department achieved a significant milestone in its long-range energy planning to satisfy all of the SWP energy requirements to year 2000. For the first time, Project planners were able to identify reasonably firm energy sources at estimated costs well below those that electrical utilities would have to charge. The sources are shown in the following tables and charts and are discussed in this section.

The successful effort to identify new energy sources resulted in a major redirection of the Department's Long-Range Energy Program; the redirection was approved by the Director on March 5, 1980. The expanded program was needed in view of the ever increasing cost of electrical energy and the many obstacles confronting any proposed construction. For example, prior to 1978 the Department had initially planned a simplistic solution to meet energy needs. It planned to meet most of future energy needs through nuclear energy supplies. Nuclear energy, however, has now been eliminated from the Department's long-range energy planning.

With the major breakthroughs in negotiations with California utilities (the purchase and exchange agreements under the Edison contract of October 1979--see page 109, Bulletin 132-79), the future energy outlook changed significantly. For the first time, the total identified energy resources began to exceed the forecast need between now and 2000. Plans for a major construction program by DWR to develop future energy supplies--to guarantee SWP generation and transmission capability--have now given way to a more desirable plan for integration and coordinated use of Project energy resources with the State's overall energy resources.

Signing of historic agreements on October 11, 1979, between DWR and Southern California Edison to provide for future SWP energy supplies. Seated are DWR Director Ronald B. Robie and Glen Bjorklund of SCE. Also present (left to right) are: Porter Towner, Chief Counsel, DWR; Deputy Director Gerald H. Meral; Steven Cohen, DWR; Deputy Director Robert W. James; Deputy Director Charles R. Shoemaker; Deputy Director Mary Anne Mark; Larry Mortensen, SCE; Don Coltrain, SCE; Lloyd Harvego, DWR; Gary Steenhoek, DWR; and Ed Terhaar, DWR.

TABLE 4: ANNUAL PROJECT

(in millions

PROJECT PUMPING PLANTS/ PROJECT ENERGY RESOURCES	CALENDAR								
	1962-1979	1980	1981	1982	1983	1984	1985	1986	1987
PUMPING PLANTS:									
Glenn Complex	0	0	0	0	0	0	0	0	0
Calhoun-Travis	0	0	0	0	0	3	2	3	3
Cordelia	31	3	4	4	4	6	6	6	6
Hood	0	0	0	0	0	0	0	0	0
South Bay & Del Valle	1,289	140	139	140	133	132	132	131	128
Los Vaqueros	0	0	0	0	0	0	0	0	0
Delta	4,660	928	1,001	959	1,014	1,015	1,054	1,104	1,087
San Luis	1,448	107	274	307	245	207	232	218	185
Dos Amigos	1,743	433	411	401	422	425	436	459	465
Buena Vista	1,413	353	387	362	397	400	406	430	439
Wheeler Ridge	1,274	312	352	326	361	363	365	391	399
Wind Gap	2,684	697	797	737	819	824	825	873	907
Pearblossom	1,223	476	529	482	568	601	588	579	596
Edmonston	9,286	2,468	2,846	2,621	2,947	2,967	2,974	3,136	3,247
Oso	596	85	107	99	113	101	104	128	135
Las Perillas & Badger Hill	367	38	38	43	43	44	44	44	44
System Losses (3%) (a	0	0	0	0	164	221	215	233	237
TOTAL PUMPING LOADS	26,013	6,040	6,885	6,481	7,230	7,309	7,383	7,735	7,878
PROJECT POWERPLANTS AND OTHER ENERGY RESOURCES:									
Glenn Complex	0	0	0	0	0	0	0	0	0
Hyatt-Thermalito	0	0	0	0	1,612	2,260	2,260	2,260	2,260
Los Vaqueros	0	0	0	0	0	0	0	0	0
San Luis	795	131	162	194	151	132	134	137	135
Devil Canyon	1,940	831	906	802	924	1,006	922	970	974
Castaic	1,789	286	367	336	387	343	341	441	463
Project Small Hydro:									
Cottonwood	0	0	0	0	0	80	99	101	104
Other	0	0	0	0	33	154	175	183	229
Pyramid	0	0	0	179	233	208	207	267	280
SCE Exchange	0	0	0	0	1,389	1,462	1,402	1,350	1,301
Pine Flat	0	0	0	0	362	423	423	423	423
MWD Hydro, Phase I	0	0	0	0	159	198	207	207	208
Reid Gardner	0	0	0	0	795	1,081	1,081	1,081	1,081
Bottle Rock	0	0	0	0	0	279	372	372	372
South Geysers	0	0	0	0	0	0	279	372	372
Honey Lake	0	0	0	0	0	0	0	215	215
Purchases (b	21,489	4,792	5,450	4,970	1,185	0	0	0	0
TOTAL RESOURCES (c	26,013	6,040	6,885	6,481	7,230	7,309	7,383	7,735	7,878

a) Pumping plant shares of losses are specified by contract through 3/31/83 only.
b) Through 3/31/83, purchases will be and have been made from the Pacific Northwest and the California suppliers (and from the Federal CVP during the mid-1960's). After 3/31/83, purchases will be made from the Southern California Edison Company under an executed contract--and other utilities under future arrangements.
c) Excess resources during the period 1984 through 1988 under this analysis would either be sold or exchanged.

ENERGY LOADS AND RESOURCES

of kilowatthours)

YEARS												
1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
0	0	0	0	0	0	0	0	81	81	81	81	81
5	6	8	8	8	8	8	8	8	8	8	8	8
6	7	7	7	8	8	9	9	9	9	10	10	11
3	32	32	32	39	47	48	48	47	49	48	48	48
128	121	116	119	125	126	127	121	128	128	127	125	124
0	0	0	0	166	249	283	284	287	287	287	287	287
1,120	1,088	1,074	1,066	1,226	1,144	1,175	1,171	1,149	1,213	1,163	1,162	1,175
222	197	179	195	247	181	204	212	163	220	171	158	173
466	470	471	464	486	498	496	497	500	496	498	497	501
455	497	523	535	523	546	542	544	549	542	545	544	551
415	457	484	496	484	508	504	505	511	503	507	506	513
942	1,041	1,106	1,133	1,105	1,161	1,152	1,155	1,168	1,151	1,160	1,156	1,173
594	599	598	604	570	586	555	559	547	547	546	528	515
3,365	3,721	3,948	4,050	3,947	4,151	4,120	4,132	4,177	4,115	4,148	4,134	4,197
149	189	215	224	224	242	249	248	257	248	252	255	266
44	43	38	43	44	44	44	44	44	44	44	44	44
245	262	272	277	284	293	293	294	297	297	296	294	298
8,159	8,730	9,071	9,253	9,486	9,792	9,809	9,831	9,922	9,938	9,891	9,837	9,965
0	0	0	0	0	0	0	0	40	40	40	40	40
2,260	2,260	2,260	2,260	2,260	2,260	2,260	2,260	2,260	2,260	2,260	2,260	2,260
0	0	0	0	0	0	73	82	82	82	82	82	82
137	144	140	144	116	133	137	135	125	127	127	119	127
991	975	984	978	958	956	904	895	896	894	890	852	834
512	651	741	775	776	837	862	857	890	859	870	882	921
104	106	106	107	102	105	101	102	100	101	101	99	98
230	230	231	231	229	231	224	225	219	226	221	221	218
310	394	449	469	470	507	522	519	539	520	527	534	559
1,260	1,220	1,180	1,143	1,110	1,076	1,044	1,016	989	966	946	921	900
423	423	423	423	423	423	423	423	423	423	423	423	423
206	231	257	263	268	272	275	277	278	278	277	276	275
1,081	1,081	1,081	1,081	1,081	1,081	1,081	1,081	1,081	1,081	1,033	968	903
372	372	372	372	372	372	372	372	372	372	372	372	372
372	372	372	372	372	372	372	372	372	372	372	372	372
215	215	215	215	215	215	215	215	215	215	215	215	215
0	56	260	420	734	952	944	1,000	1,041	1,122	1,135	1,201	1,366
8,159	8,730	9,071	9,253	9,486	9,792	9,809	9,831	9,922	9,938	9,891	9,837	9,965

8—80574

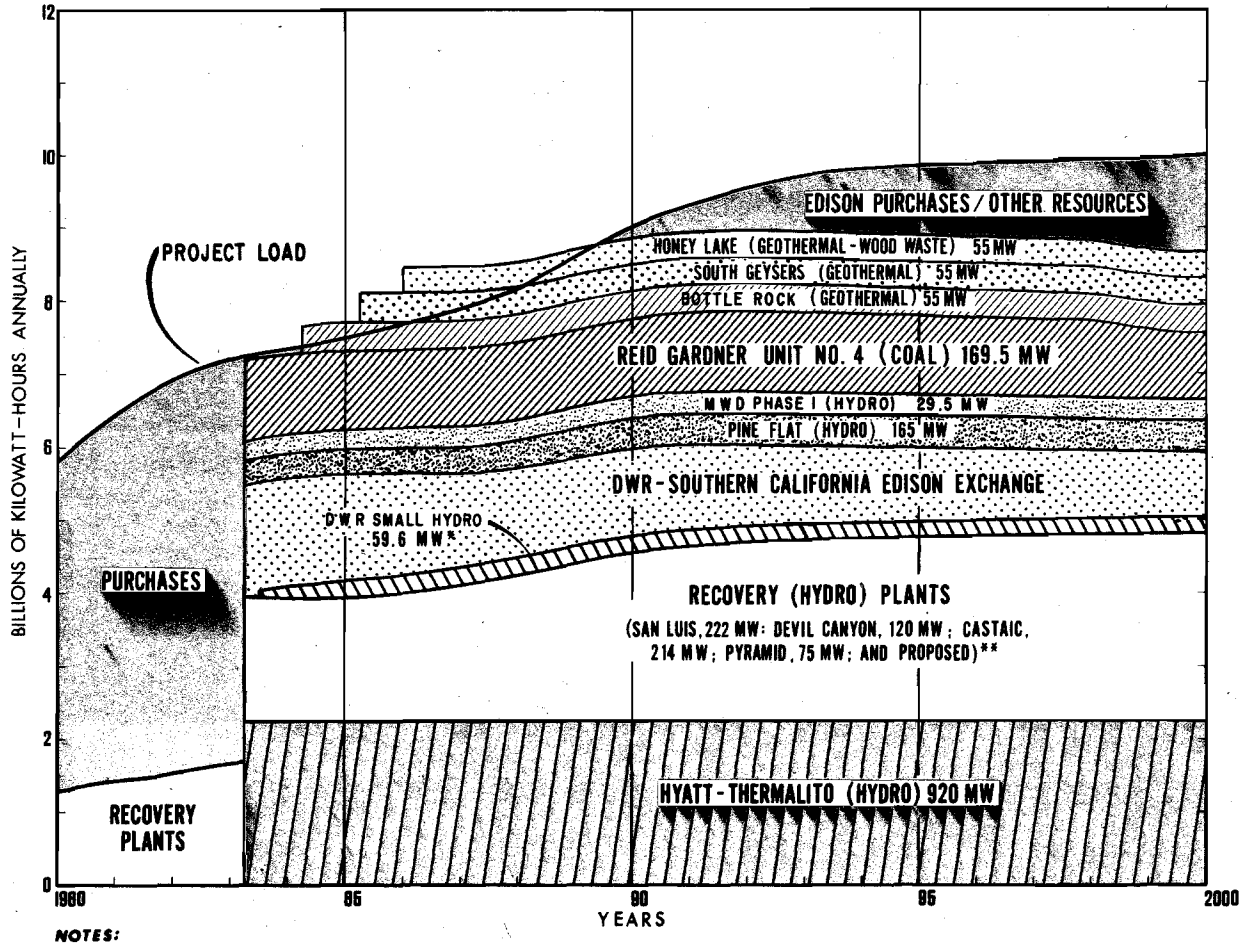
SUMMARY OF MAJOR ELECTRIC POWER CONTRACTS FOR THE CALIFORNIA STATE WATER PROJECT

Contract Title (short-form)	Signed	With:	Providing:	To:
1. West Branch Cooperative Development	September 2, 1966	Los Angeles Department of Water and Power	Joint Development of Castaic Powerplant on the California Aqueduct	January 1, 2042
2. Suppliers	November 18, 1966	Pacific Gas and Electric Co., Southern California Edison Co., Los Angeles Department of Water and Power, San Diego Gas & Electric Co.	Purchase of all capacity and energy required for SWP not available from other sources and transmission service for all power used by SWP plants	Cancelled effective April 1, 1983
3. Extra High Voltage Intertie	August 1, 1967	Pacific Gas and Electric Co., Southern California Edison Co., San Diego Gas and Electric Co.	Transmission from the Oregon border to specific points in California, sale of Canadian Entitlement Power not needed by SWP, and purchase of off-peak energy to the extent of purchased transmission capacity	January 1, 2005
4. Bonneville Power Administration	September 5, 1967	Bonneville Power Administration	Purchase of surplus BPA energy at Oregon–California border	August 30, 1986
5. Canadian Entitlement Power Contracts (3)	October 30, 1967	City of Seattle, City of Tacoma, Puget Sound Power and Light Co.	Purchase of specified amounts of power (now 150 MW) with associated energy	April 1, 1983
6. Oroville–Thermalito Power Sale	November 29, 1967	Pacific Gas and Electric Co., Southern California Edison Co., San Diego Gas & Electric Co.	Sale of entire output of Hyatt Thermalito Powerplants for a firm annual payment to support Oroville Revenue Bonds	Cancelled effective April 1, 1983
7. Fourth Supplemental Resolution, Oroville Revenue Bonds	September 28, 1977	Department of Water Resources' Resolution	Replacement of Power Sale Contract, effective April 1, 1983	Last repayment Bonds or November 29, 2017, which ever later
8. MWD Hydro	January 9, 1978	The Metropolitan Water District of Southern California	Effective April 1, 1983 provides for purchase of output from five small hydro developments totalling 29.5 MW in capacity	At least to April 1, 2008
9. Reid Gardner Unit 4 Participation	July 11, 1979	Nevada Power Company	Joint ownership of a proposed unit at an existing coal-fired plant near Las Vegas	April 1, 2009
10. Power	October 11, 1979	Southern California Edison Co.	Commencing April 1, 1983 provides: (a) Transmission service in Edison's service area (b) Rights to purchase up to 300 MW firm capacity and and/or spinning reserves (c) Rights to purchase off-peak energy (d) Exchange of off-peak energy for 485 MW of DWR's on-peak capacity	January 1, 2005
11. Firm Transmission Service	October 11, 1979	Southern California Edison Co.	Provides for service between Nevada and Edison's service area	January 1, 2005
12. Edison–DWR 1979	October 11, 1979	Southern California Edison Co.	Establishes rate for Edison's off-peak energy under the EHV contract after January 1, 1983	January 1, 2005
13. Pine Flat	November 6, 1979	Kings River Conservation District	Purchase of output from a proposed power plant to be located at Pine Flat Dam	50 years after firm operations date, estimated to be April 1, 2033

CALIFORNIA STATE WATER PROJECT

ESTIMATED ELECTRICAL ENERGY LOADS AND RESOURCES

1980-2000



NOTES:

BASED ON ESTIMATED PROJECT PUMPING DURING MEDIAN CONDITIONS OF WATER SUPPLY IN THE SACRAMENTO-SAN JOAQUIN DELTA AND PROJECT SERVICE AREAS.

MAXIMUM GENERATING CAPACITIES SHOWN IN MEGAWATTS (MW) FOR THE RESPECTIVE PLANTS DO NOT REPRESENT DEPENDABLE CAPACITIES AND ARE SUBJECT TO INTERRUPTIONS, WATER DELIVERY REQUIRMENTS, AND OTHER LIMITATIONS.

*INCLUDES 15 UNITS AT 12 SITES INCLUDING COTTONWOOD POWERPLANT.

**FUTURE RECOVERY PLANTS INCLUDE PUMPING-GENERATING PLANTS AT GLENN AND LOS VAQUEROS RESERVOIR COMPLEXES.

2000 Supply, in billions of kWh

IDENTIFIED RESOURCES

(1) Edison Purchases/Other Purchases, estimated maximum possible off-peak energy purchases from Southern California Edison Company under the Power Contract signed October 11, 1979, based on a preliminary analysis of available transmission capacity (approximately 225 MW)..... 0.7

(2) Honey Lake, a proposed 55-MW wood-waste/geothermal development. Feasibility studies are underway, jointly funded by the Department of Energy, U. S. Forest Service, GeoProducts, Inc., and DWR. 0.4

(3) South Geysers, a 55-MW geothermal development proposed to be constructed by the DWR in the Sonoma County portion of The Geysers area -- currently in the NOI process before the CEC..... 0.4

(4) Bottle Rock, a 55-MW geothermal development proposed to be constructed by the DWR in the Lake County portion of The Geysers area -- currently in the AFC process before the CEC..... 0.4

(5) Reid Gardner Unit No. 4, the estimated portion to be available to the DWR from the output of a 250-MW unit to be constructed jointly by the DWR and Nevada Power Company under an executed Participation Agreement. All construction permits have been secured and major equipment has been ordered (169.5 MW DWR share)..... 1.0

(6) MWD, the output, under an executed purchase contract, from five small hydroelectric developments being constructed by The Metropolitan Water District of Southern California on its distribution system -- totalling about 29.5 MW capacity..... 0.3

(7) Pine Flat, the output, under an executed purchase contract, from a proposed 165-MW hydroelectric plant to be constructed by the Kings River Conservation District at the base of existing Pine Flat Dam. Revenue bonds have sold by the District to finance construction costs and the primary construction contract awarded..... 0.4

(8) Small Hydro, the output of 15 small Hydroelectric powerplants located at a dozen Project sites, including proposed Cottonwood Powerplant (15 MW) with a total capacity of 60 MW..... 0.4

(9) DWR-Southern California Edison Exchange, the estimated amounts of off-peak energy to be made available to the DWR in exchange for 485 MW of SWP on-peak capacity to be provided the Southern California Edison Company, under the Power Contract signed October 11, 1979..... 1.1

(10) Recovery Plants, the DWR's share of output of constructed Castaic Powerplant (214 MW), San Luis Pumping-Generating Plant (222 MW), and Devil Canyon Powerplant (120 MW); Pyramid Powerplant now under construction (75 MW); and pumping-generating plants at the proposed Glenn and Los Vaqueros Reservoir Complexes..... 2.6

(11) Hyatt-Thermalito, the output from existing hydroelectric plants (920 MW combined capacity) located below Oroville Dam which is now sold to the California Companies under a power sale contract to be cancelled effective April 1, 1983. 2.3

TOTAL, ALL IDENTIFIED SOURCES..... 10.0

Each source's share of the total annual load is also shown below for every five years, 1980 to 2000. Shares are represented in terms of both kilowatthours and percent of total annual load. Also shown is an estimate of the project costs, in mills per kilowatthour (including allowances for future cost escalation), of the production from each source and for SWP sources as a whole. This projection does not include credit for sale, exchange, or other disposal of any energy temporarily in excess of the SWP load, under arrangements the DWR fully expects to complete in the future.

ESTIMATED ENERGY REQUIREMENTS/COSTS AT 5 YEAR INTERVALS[a]

Item	Calendar Year				
	1980	1985	1990	1995	2000
TOTAL ENERGY REQUIREMENTS (millions of kWh)	5,820	7,503	9,465	9,923	10,000
ENERGY SOURCES (millions of kWh)					
Hyatt-Thermalito	0	2,300	2,300	2,300	2,300
Recovery					
Devil Canyon	923	905	920	884	828
Cottonwood	0	99	101	100	97
Castaic	294	352	738	872	916
Pyramid	0	213	445	527	553
Other	126	152	149	234	266
SCE Exchange	0	1,451	1,291	1,178	1,098
Pine Flat	0	423	423	423	423
MWD Hydro	0	255	317	342	340
Reid Gardner	0	1,216	1,216	1,216	997
Bottle Rock	0	372	372	372	372
South Geysers	0	186	372	372	372
Honey Lake	0	361	361	361	361
Edison Purchases	0	0	459	741	981
Suppliers & CEP (to 3/31/83) / Other Purchase	4,477	0	0	0	95
Excess (Potential Sale or Exchange)	0	-782 (b	0	0	0
Total	5,820	7,503	9,465	9,923	10,000
PERCENTAGES					
Hyatt-Thermalito	0.000	30.654	24.300	23.178	23.000
Recovery					
Devil Canyon	15.859	12.063	9.720	8.909	8.280
Cottonwood	0.000	1.319	1.067	1.008	0.970
Castaic	5.052	4.691	7.797	8.788	9.160
Pyramid	0.000	2.839	4.702	5.311	5.530
Other	2.165	2.026	1.574	2.358	2.660
SCE Exchange	0.000	19.339	13.640	11.871	10.980
Pine Flat	0.000	5.638	4.469	4.263	4.230
MWD Hydro	0.000	3.410	3.351	3.456	3.408
Reid Gardner	0.000	16.207	12.847	12.254	9.970
Bottle Rock	0.000	4.958	3.930	3.749	3.720
South Geysers	0.000	2.479	3.930	3.749	3.720
Honey Lake	0.000	4.811	3.814	3.638	3.610
Edison Purchases	0.000	0.000	4.859	7.468	9.810
Suppliers & CEP (to 3/31/83) / Other Purchase	76.924	0.000	0.000	0.000	0.952
Excess (Potential Sale or Exchange)	0.000	-10.434 (b	0.000	0.000	0.000
Total	100.000	100.000	100.000	100.000	100.000
ENERGY COST / VALUE (mills/kWh) (c					
Hyatt-Thermalito	0.0	9.0	9.9	11.2	13.0
Recovery (all)	6.8	25.0	25.0	25.0	25.0
SCE Exchange	0.0	0.0	0.0	0.0	0.0
Pine Flat	0.0	24.7	27.8	31.9	37.4
MWD Hdro	0.0	36.2	40.2	45.3	52.1
Reid Gardner	0.0	48.0	62.0	84.0	117.0
Bottle Rock	0.0	50.0	52.8	64.2	88.4
South Geysers	0.0	48.6	51.4	62.9	87.1
Honey Lake	0.0	50.0	52.8	64.2	88.4
Edison Purchases	0.0	58.0	93.0	150.4	242.2
Suppliers & CEP (to 3/31/83) / Other Purchase	3.5	0.0	0.0	0.0	242.2
Excess (Potential Sale or Exchange)	0.0	19.3 (b	0.0	0.0	0.0
COMPOSITE COST (mills/kWh)	4.3	23.0	29.8	40.7	60.4
TRANSMISSION CHARGE (mills/kWh)	0.3	3.4	2.7	2.6	2.5
TOTAL COMPOSITE COST (mills/kWh) (d	4.6	26.4	32.5	43.3	62.9

a) Does not include future arrangements for the sale or exchange of energy temporarily in excess of requirements.
b) Sale shown for 1985 is estimated fuel costs for Reid Gardner (implies reduction of Reid Gardner generation).
c) Includes allowances for future cost escalation.
d) Also see Water Cost Table on page 19.

Concurrent with the growing lists of identified energy resources, forecasts of SWP energy needs show a significant decline. This came about because:

- First, there has been a slowdown in population growth in Southern California as compared with the tremendous increase in Southern California population during the 1950s and 1960s.

- Second, due to water conservation as an integral component of the SWP. Goals of the program are discussed in DWR Bulletin 76, "Delta Water Facilities" (July 1978) and SB 200. These goals have been converted into specific water contractor delivery schedules by the Department.

The combination of growing energy resources and forecasts of declining SWP energy needs made clear the need for the new direction of the Long-Range Energy Program.

Energy Resources

The resources DWR has identified to date are summarized in the following schedule. Nine major classes containing 96 individual projects, including 32 that have been eliminated from consideration, are listed, along with the Department's degree of interest in each. The paragraphs following the schedule describe the status of the identified resources in greater detail and discuss other projects considered as optional sources of energy.

Detailed discussions of various energy options follow:

Geothermal

The DWR's development of this preferred energy resource is moving along well. Throughout 1979 and into 1980, the California Energy Commission considered DWR's proposed geothermal power plants in the Geysers area.

Bottle Rock Powerplant. This plant, located on the Francisco Leasehold in Lake County (see p. 118, Bulletin 132-79) is the first of a series of 55-MW geothermal units the DWR will develop in The Geysers area.

In October 1978, the DWR filed an NOI with the California Energy Commission to site the power plant. In June 1979, the Commission approved the NOI and in July 1979 the DWR filed an AFC -- the final phase of the two-part environmental review process by the Commission. The AFC would have been completed within a nine-month period. However, to allow sufficient time to resolve air quality issues and to redesign the plant, completion of the process is not expected until October 1980. This delay necessitated cancellation of the bid advertisement for the turbine-generator, which had been scheduled for December 1979. Initial operation of the plant is now forecast for April 1, 1984 -- one year later than the original schedule.

On December 13, 1979, by a 4-0 decision, the Lake County Planning Commission denied McCulloch Geothermal Corporation's application for a full field use permit on the Francisco Leasehold for the following reasons: (1) air quality, (2) loss of revenue in the initial project phase, (3) incompatibility with land uses in Cobb Valley, and (4) potential use of the steam supply for the benefit of the Los Angeles area. This was the first time that development of a geothermal field in Lake County was denied after exploratory wells had proven the resource. McCulloch appealed the decision to the Lake County Board of Supervisors. On February 19, 1980, the Lake County Board of Supervisors unanimously (5-0) overruled its planning commission and approved the drilling of a steam field (12 to 15 wells, in three pads) for DWR's proposed Bottle Rock Powerplant.

STATUS OF DWR'S INTEREST IN POWER GENERATION PROJECTS 1972 - 1980

Option / Project Name	Terminated	Suspended	Active	Committed
Geothermal: The Geysers Area				
Bottle Rock (Francisco Leasehold)				X
South Geysers (Rorabaugh Leasehold)				X
Geothermal 3 (Newfield Leasehold)		X		
Geothermal 4 Binkley (BLM Leasehold)				X
Bid on State lands	X			
Shell Oil Company	X			
Natomas Company	X			
Aminioil	X			
Occidental Oil Company	X			
Geothermal: Imperial Valley				
South Brawley/Frink Springs			X	
Magma Max - 10 MW unit	X			
Heber Demonstration			X	
Republic Geothermal Corp.; East Mesa	X			
Hydro				
Power recovery: Pyramid				X
Cottonwood				X
MWD hydro - Phase I				X
MWD hydro - Phase II			X	
Pine Flat (KRCD)				X
Box Canyon (Siskiyou County)			X	
Isabella (Kern County) (USCE)			X	
Sly Creek (OWID)	X			
Rollins (NID)	X			
Comanche and Pardee (EMBUD)	X			
Mentone (SBVMWD)			X	
Santa Ana Low Turnout			X	
Nacimiento (Monterey Co. FCD)	X			
Dinkey Creek (DRCD)	X			
Camp Far West (So. SWD)	X			
PGandE South Canal	X			
Rio Bravo, Kern River	X			
Monticello (SID)(USBR)		X		
Cottonwood Creek Project (USCE)			X	
South Fork American River (EID)	X			
Calaveras County Water District Project	X			
Granite Creek	X			
Cottonwood #1 (California Aqueduct)				X
Cottonwood #2 (California Aqueduct)				X
Mojave Siphon #1 (Silverwood Lake Inlet)				X
Mojave Siphon #2 (Silverwood Lake Inlet)				X
Thermalito Diversion Dam (River release)				X
Thermalito Afterbay River Outlet				X
Palermo (Canal release)				X
Castaic Dam Outlet				X
Pyramid Dam Outlet				X
Frenchman Dam (Stream release)				X
Davis (Grizzly Valley Dam)(Stream release)				X
Antelope Dam (Stream release)				X
Del Valle #1 (Stream release)				X
Del Valle #2 (Stream release)				X
Las Flores Turnout (Pipeline-Mojave Siphon)				X
Hydro potential (SB 1834)			X	
Utilities (Purchase, Sale, and/or Exchange)				
Southern California Edison Company				X
Pacific Gas and Electric Company			X	
San Diego Gas and Electric Company			X	
Los Angeles Department of Water and Power			X	
Others			X	

Option / Project Name	Terminated	Suspended	Active	Committed
Importations				
Salt River Project	X			
British Columbia Power			X	
Bonneville Power Administration			X	
City of Seattle			X	
Pacific Power and Light			X	
Puget Sound Power and Light			X	
Additional PNW-PSW Intertie Lines			X	
Navajo Power in 1985		X		
Boulder Power in 1987			X	
Biomass				
Geothermal/Wood Waste Powerplant (Honey Lake)			X	
Sanitary Fill Co. refuse (SF)			X	
Humboldt Bay Power Co. woodwaste		X		
Louisiana Pacific, woodwaste			X	
Georgia Pacific woodwaste		X		
Diamond-Sunsweet, walnut shells	X			
Biomass fuel conversion, (rice hulls and wood chips)		X		
Cogeneration				
Kern Oil fields (Ki Consultants)		X		
State facilities			X	
Coop canners			X	
Kaiser Fontana	X			
Wind				
Pacheco Pass (U.S. Windpower)				X
NASA - Westinghouse MOD-OA	X			
Wind Gap			X	
Tehachapis			X	
Moses Lake-Schachle			X	
Romero Visitor Center				X
Coal				
Coronado	X			
Boardman	X			
Kaiparowits	X			
Reid Gardner Unit No. 4				X
Montezuma 1 and 2 (PGandE)		X		
California Coal Project (SCE)	X			
Allen Warner Valley	X			
DWR Coal Project		X		
Nuclear				
San Joaquin (LADWP)	X			
Sundesert (SDG&E)	X			
Stanislaus (PGandE)		X		
Washington Public Power Supply System:				
No. 3 and 4 (Hanford)	X			
No. 5 and 6 (Stasop)	X			
Palo Verde Units 4 and 5 (replication contract)	X			
TOTALS (96)	32	10	28	26

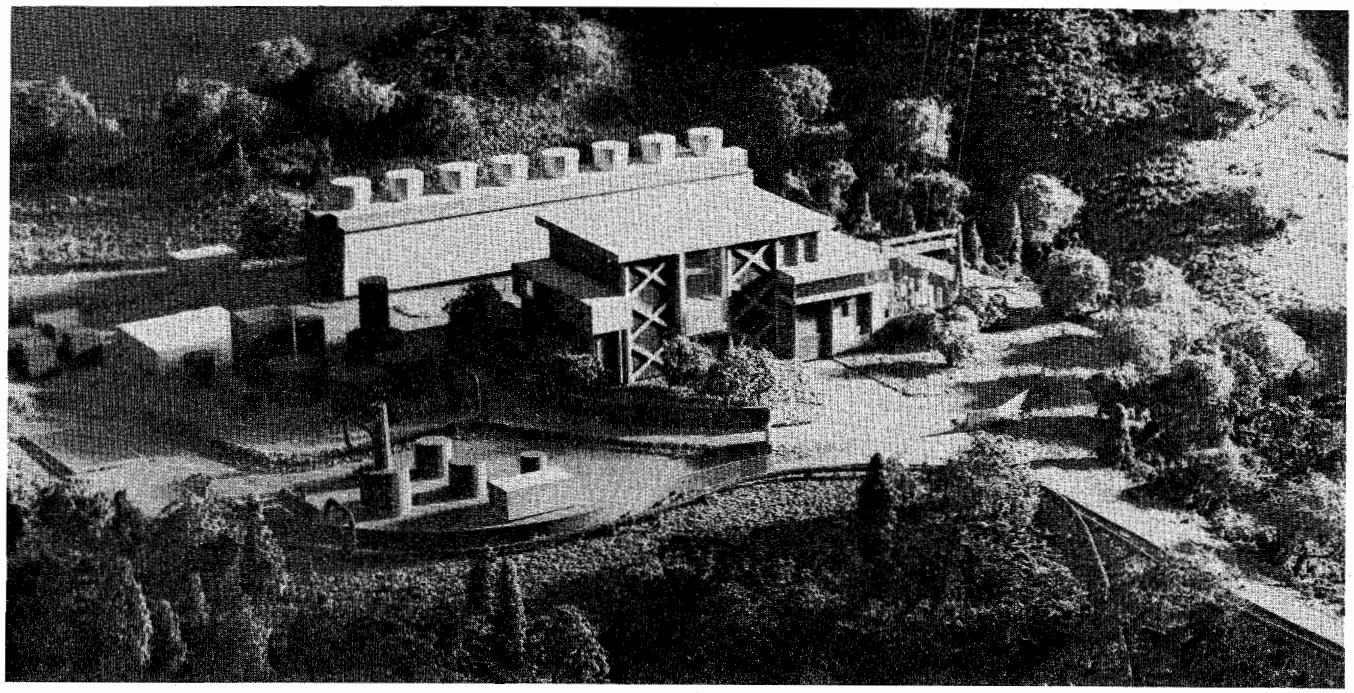
The DWR's staff continues to confer with McCulloch and the Lake County Air Pollution Control Officer regarding air quality problems arising from the proposed power plant. The initial design of the plant has been changed from that included in the DWR's Application for Certification (AFC) filing to the Energy Commission in order to abate hydrogen-sulfide emissions. The H_2S content of the steam is higher than originally anticipated. As a result Bottle Rock Powerplant will be the cleanest in the Geysers area.

The DWR and Lake County signed a memorandum of understanding on September 23, 1980, under which the DWR is committed to, among other things, (1) submit its plans and specifications to the County for review prior to advertising of construction contracts, (2) work cooperatively with the County in the operation of the plant, (3) retrofit the power plant under certain circumstances to improve the quality of the plant's air emissions, (4) provide an air monitoring network or study, (5) provide an extensive streamflow measurement program, and (6) provide a surface water quality monitoring program.

In addition, on January 29, 1980, the Department and County signed an agreement under which the DWR will improve portions of the Bottle Rock Road, a road that will be used by the Department in the construction and operation of the Bottle Rock Powerplant. Under the agreement, the DWR will pay all costs of right of way acquisition, design, relocation, realignment and modification. The Department has tentatively agreed with Lake County to construct a small flood control dam on Kelsey Creek. Release from the dam will be used to recharge a local groundwater basin.

South Geysers Powerplant. This plant, to be located on the Rorabaugh Leasehold in Sonoma County (see p. 118, Bulletin 132-79), is the second of a series of 55-MW units the DWR will build in The Geysers area.

The DWR filed its NOI on the proposed plant with the Energy Commission on October 22, 1979. Workshops and processing of the NOI extended for the remainder of 1979 and into 1980. Approval from the Energy Commission was granted in June 1980. Areas discussed included



Nestled amid miniature oak and pine trees is a scale model of the recently approved Bottle Rock Power Plant. The model was constructed to illustrate how little the completed power plant will interfere with lush Lake County surroundings.

site selection, fill disposal, transmission, and air quality. Because of air quality considerations, the DWR decided to model the air basin and secure all necessary air data prior to filing the AFC for the proposed plant. As a consequence, the DWR requested, and the Commission approved, a four-month delay in the NOI proceeding. This will cause a delay of one construction season. Initial operation of the plant is now projected for 1985.

Newfield Leasehold. The DWR has a "right-of-first refusal" with McCulloch concerning the potential steam supply from Newfield Leasehold in Lake County (see p. 76-77, Bulletin 132-78). Development of this supply would provide a third DWR power plant in the Geysers area.

Early in 1979, the Lake County Planning Commission denied McCulloch's request for a conditional use permit for an exploratory well on the Leasehold. The Lake County Board of Supervisors upheld the Commission's decision on May 22, 1979; the decision was based on several factors: noncompliance with The General Plan, air quality, aesthetics, and traffic on Bottle Rock Road.

McCulloch sought relief in the courts on the basis that Lake County's 12-year-old General Plan was inadequate and that the County could not use the Plan as a reason for denial. However, on November 21, 1979, Judge Richard Patton of Colusa ruled in favor of Lake County.

McCulloch had decided to look for another site on the Leasehold for exploration. However, since the alternate site is within one-half mile of a recorded subdivision, a Lake County ordinance requires that 75 percent of the adjacent property owners approve the project. At the end of 1979, McCulloch was in the process of obtaining the necessary signatures.

The DWR was concerned whether McCulloch would be allowed to drill a sufficient number of wells to support a power plant -- and, if siting of the wells is so difficult, siting and constructing a plant itself could be almost impossible. Therefore, in late December 1979, the DWR decided that it will not exercise its "right-of-first refusal", even if McCulloch were able to develop the field.

Binkley (BLM) Leasehold. This geothermal steam source for an additional 55-MW power plant in The Geysers area was also described in last year's report (see p. 120, Bulletin 132-79). The Leasehold is located adjacent to the Francisco Leasehold in Lake County.

Exploratory drilling on the Leasehold was deferred during 1979 pending the outcome of the environmental review process for the Bottle Rock Powerplant.

Imperial Valley. The successful testing of an exploratory well on the South Brawley prospect was referred to in last year report (see p. 120, Bulletin 132-79), as was the dry hole drilled on the Frink Springs prospect.

In May 1980, the U. S. Department of Energy announced a $49 million loan guarantee, the largest for any geothermal plant to date, to the developer of the South Brawley Prospect. The Developer is CU I Venture, a joint venture of wholly owned subsidiaries of McCulloch Oil of Los Angeles and Geothermal Kinetics of Phoenix. With the DOE guarantee, CU I will borrow funds from the Bank of Montreal (California) and the Bank of America to develop the resource. The total estimated project cost will be about $79 million, with the additional capital to be provided by CU I and the DWR. DWR has the right-of-first refusal to purchase the steam to operate the electrical generating plant.

Two years ago, CU I Venture received a $1.8 million DOE guarantee under the same program to confirm the geothermal resource. A successful discovery well and initial production tests led to the current project. At the rate the first well tested, six or seven wells would be needed for a 45-MW plant. In July, McCulloch reported that its second geothermal test well at South Brawley produced an average of 360,000 kilograms (800,000 pounds) of 260° Celsius (500° Fahrenheit) fluid per hour during testing. This rate compares favorably with the 450,000 kilograms (1 million pounds) per hour flow of the first well -- which is one of the best producers in the Imperial Valley.

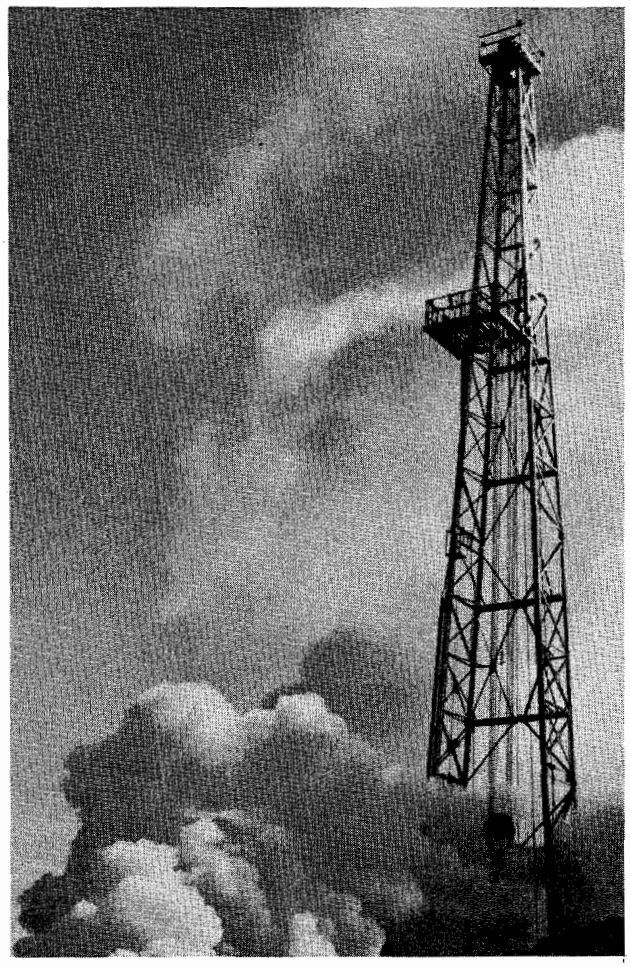


Photo taken at the time drill struck geothermal fracture. This is the first well at the South Brawley Prospect in Imperial Valley. DWR has a 25% interest in this project.

Heber Demonstration Project. Development of the hot geothermal water underlying the Imperial Valley as a cost-effective energy source depends on future technological advances. The DWR agreed to participate in the San Diego Gas and Electric's proposed Heber Geothermal Demonstration Project to the extent of 3 percent of costs. The 45-MW plant would demonstrate the "binary cycle", in which heat from the hot geothermal water would be transferred to a working fluid, such as isobutane or propane, which in turn would drive a turbine.

Hydroelectric

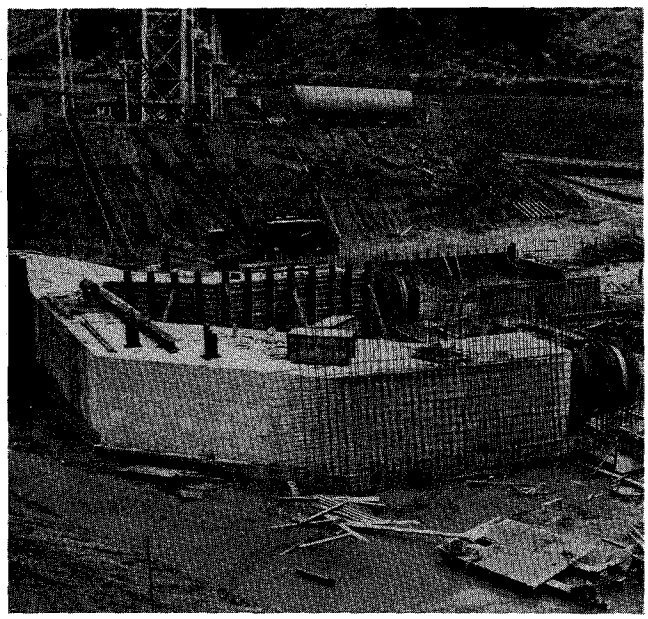
The Department has an agressive program to develop small hydroelectric projects on existing water facilities.

Pyramid Powerplant. Facilities of the Pyramid Hydroelectric Project include (1) Quail Lake and Lower Quail Canal; (2) Peace Valley Pipeline (Phase I), with one 3.65-metre (12-foot) diameter pipe; and (3) Pyramid Powerplant (Phase I), with two 37.5-megawatt generators and appurtenant facilities.

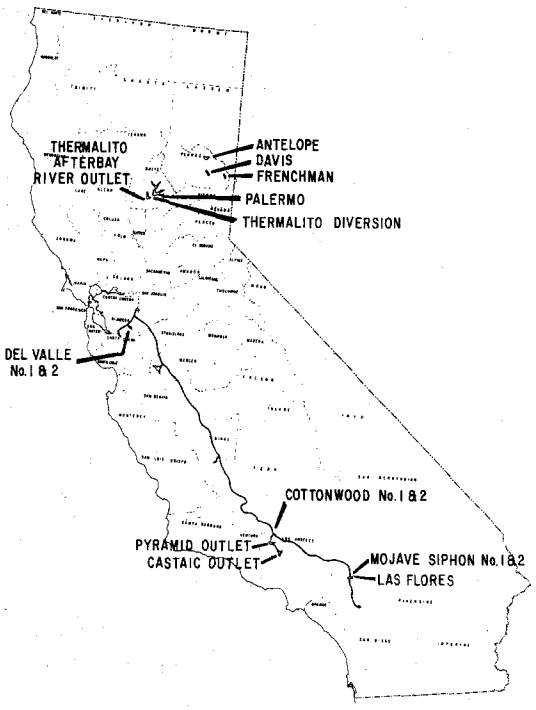
Quail Lake and Lower Quail Canal are essentially completed. Construction of the Peace Valley Pipeline started in April, 1978. Construction of Pyramid Powerplant started in November 1978, although fabrication of components for the plant, such as impulse turbines, bridge crane, and penstock, was begun earlier in 1978. The Phase I facilities are expected to be operational in 1982 and will be adequate to convey water deliveries until at least the mid 1990's.

Small Hydro Projects at SWP Sites. In June 1980, the Department announced plans to install 15 small hydroelectric units, with a total capacity of about 60,000 kilowatts (59.6 megawatts), at a dozen State Water Project sites.

Design of one plant, at the Mojave Siphon near Silverwood Lake in San Bernardino County, is already underway. Design and construction of the 15 plants will be spread over the next eight years, with the last plant to be completed in mid-1988. Total cost of the project is an estimated $88 million. The plants will produce about 370 million kilowatthours per year, enough to meet the annual needs of a city the size of Santa Rosa, California.



Construction photo at Pyramid Hydroelectric Project taken February 1980. The penstocks sections, enclosed in concrete, will attach to twin 37.5 megawatt generators to be located within the power plant.



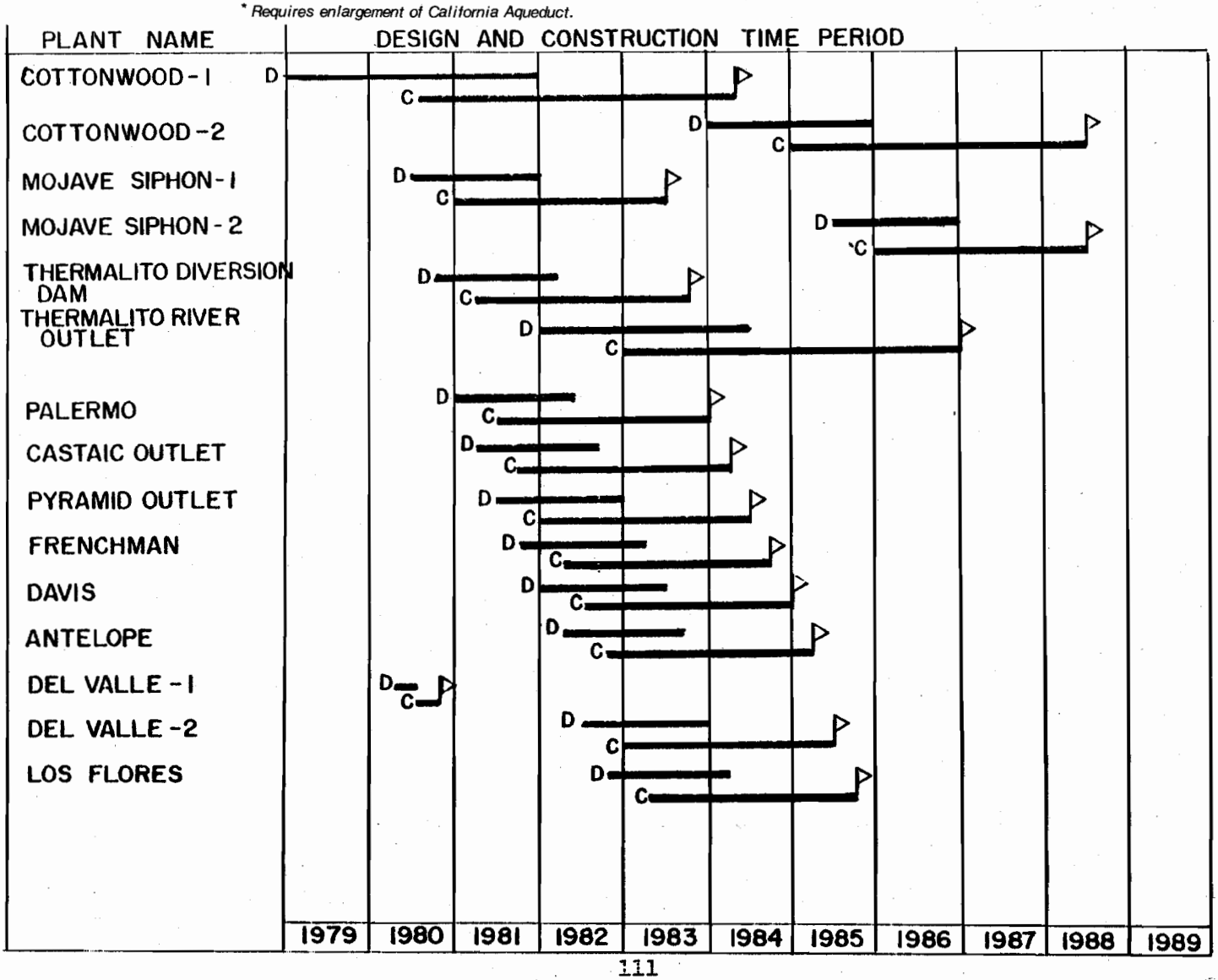
DWR SMALL HYDROELECTRIC POWERPLANTS

Phase II, consisting of a parallel pipeline and additional generating units at the power plant, may be required, depending on Metropolitan Water District's requirement for water deliveries from the West Branch.

DWR SMALL HYDROELECTRIC POWERPLANTS

Site	Location	Capacity MW	Annual Generation GWH	Estimated Contract Cost - 1/80 Millions of Dollars
Cottonwood #1 (California Aqueduct)	Los Angeles County	17	115	32.0
* Cottonwood #2 (California Aqueduct)	Los Angeles County	12	90	
Mojave Siphon #1 (Silverwood Lake inlet)	San Bernardino County	5	42	17.0
* Mojave Siphon #2 (Silverwood Lake inlet)	San Bernardino County	5	42	
Thermalito Diversion Dam (River release)	Butte County	4	23	4.0
Thermalito Afterbay River Outlet	Butte County	13	43	28.0
Palermo (Canal release)	Butte County	0.4	2	0.9
Castaic Dam Outlet	Los Angeles County	0.3	1	0.6
Pyramid Dam Outlet	Los Angeles County	1.0	4	1.3
Frenchman Dam (Stream release)	Plumas County	0.4	1.1	1.0
Davis (Grizzly Valley Dam) (Stream release)	Plumas County	0.5	1.5	1.0
Antelope Dam (Stream release)	Plumas County	0.4	1.4	1.3
Del Valle #1 (Stream release)	Alameda County	0.005	0.04	0.03
Del Valle #2 (Stream release)	Alameda County	0.4	1.1	0.8
Las Flores Turnout (Pipeline-Mojave siphon)	San Bernardino County	0.2	0.7	0.5
Totals		59.6	367.8	88.4

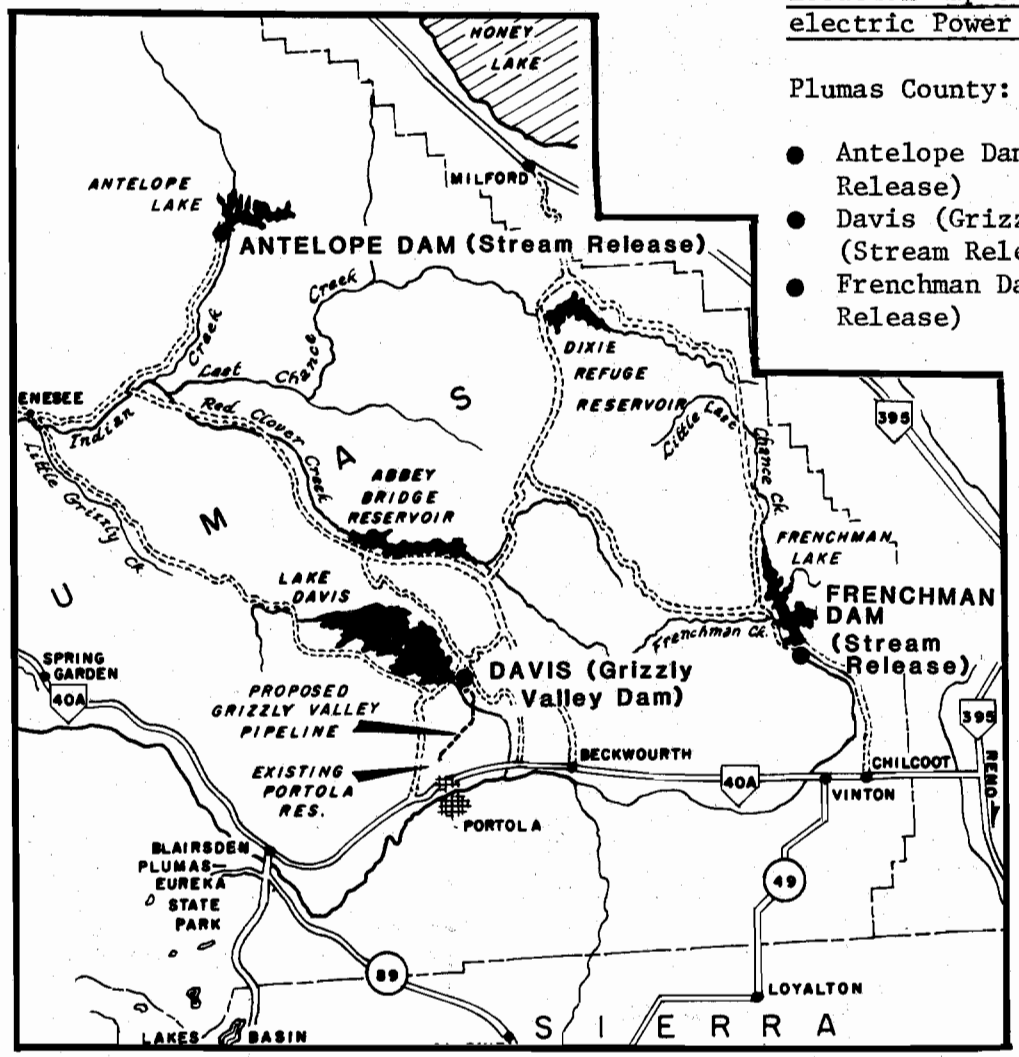
* *Requires enlargement of California Aqueduct.*

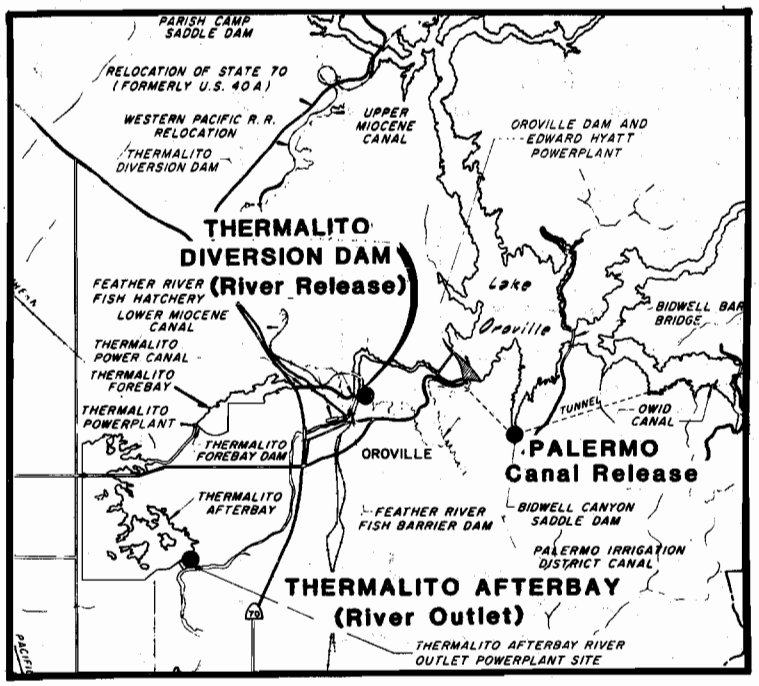


Location Map of DWR Small Hydroelectric Power Plants

Plumas County:

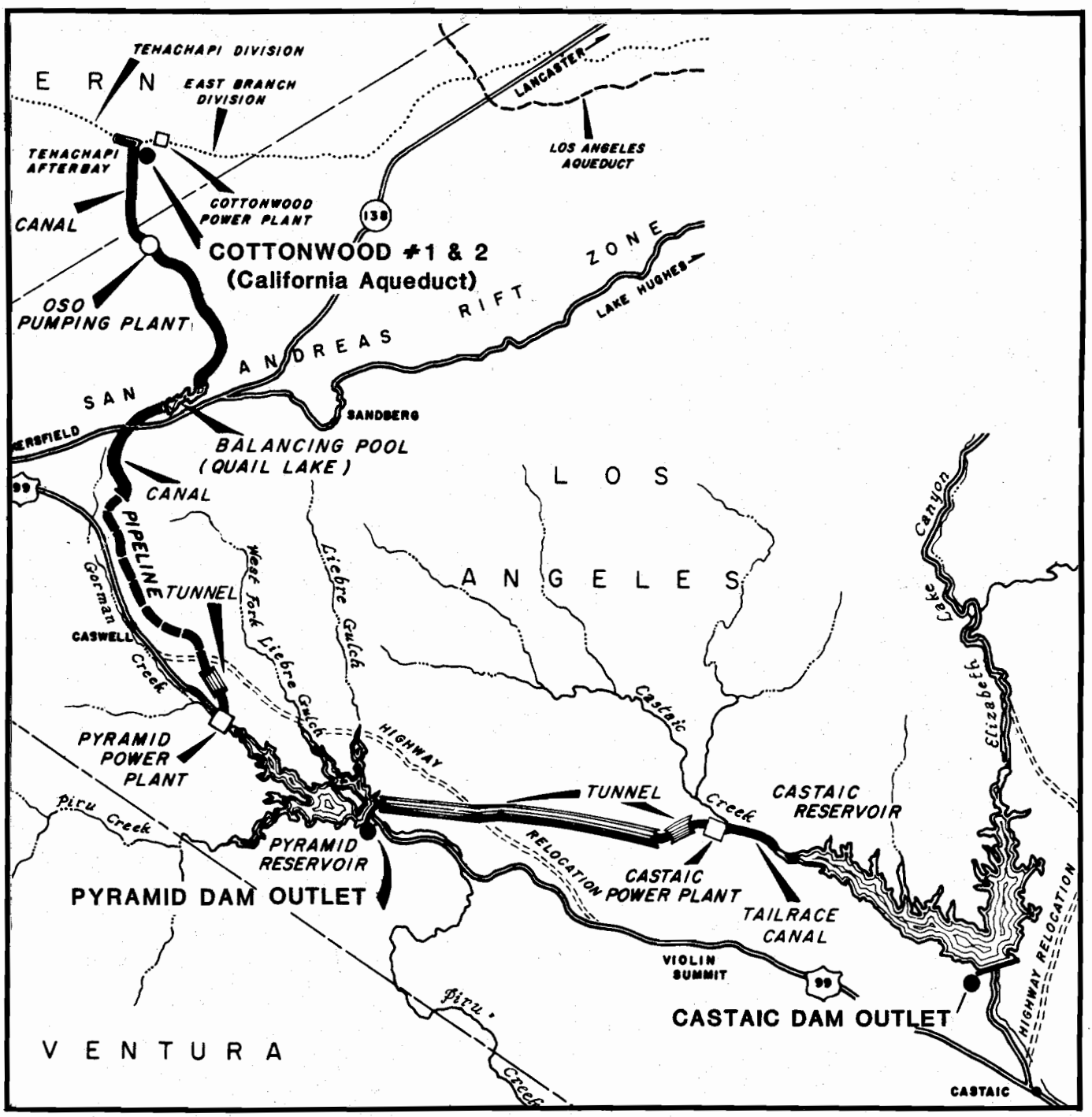
- Antelope Dam, (Stream Release)
- Davis (Grizzly Valley Dam), (Stream Release)
- Frenchman Dam, (Stream Release)





Butte County:

- Thermalito Diversion Dam, (River release)
- Palermo, (Canal Release)
- Thermalito Afterbay, (River Outlet)

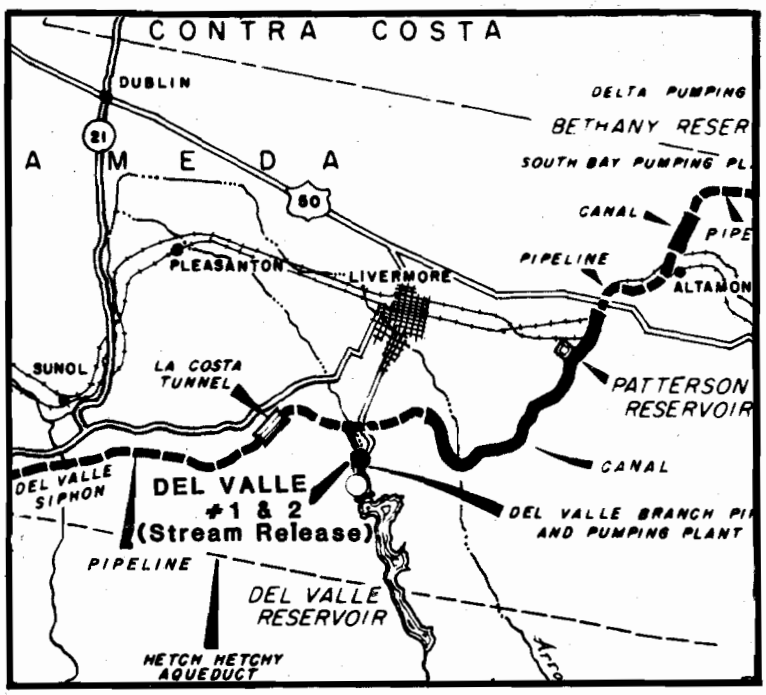


Location Map of DWR Small Hydroelectric Power Plants

Los Angeles County:

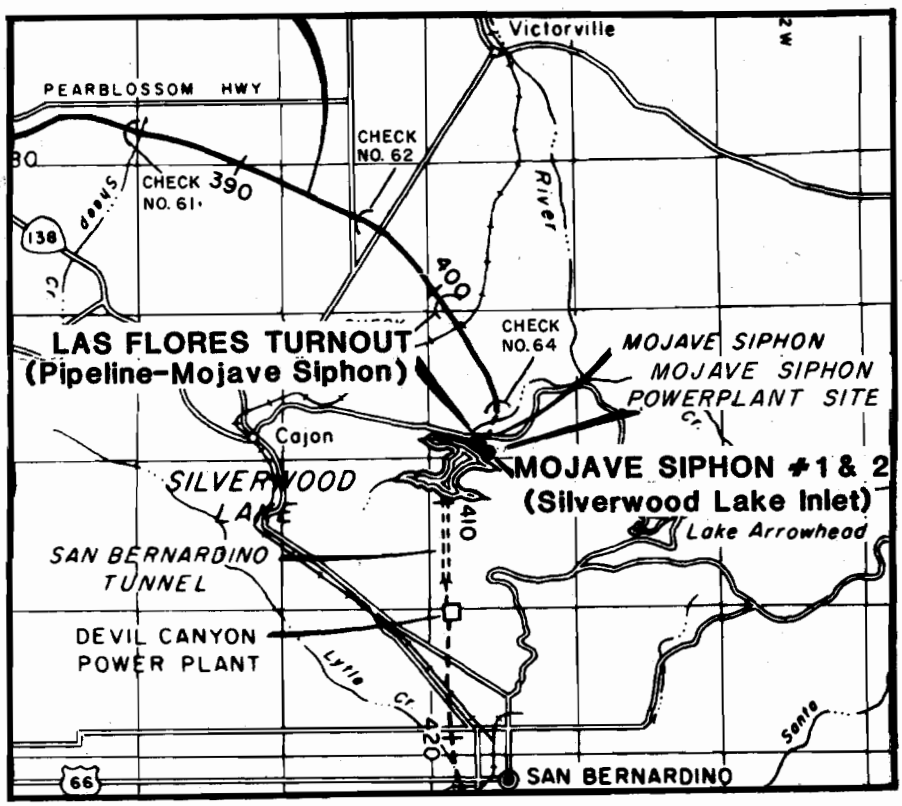
- o Cottonwood #1 & #2, (California Aqueduct)
- o Pyramid Dam Outlet
- o Castaic Dam Outlet

Location May of DWR Small Hydro-electric Power Plants



Alameda County:

- Del Valle #1 & #2, (Stream release)



San Bernardino County:

- Las Flores Turnout, (Pipeline-Mojave Siphon)
- Mojave Siphon #1 & #2, (Silverwood Lake Inlet)

Pine Flat. The DWR will purchase the power generated by this 165-MW hydroelectric plant now under construction by the Kings River Conservation District at the base of existing Pine Flat Dam.

On November 6, 1979, the DWR executed a long-term contract with the District. The project is to commence operations in April 1983. The District will build and operate the project, with guaranteed annual payments by the DWR for bond service and operating costs. The DWR will also make energy benefit payments to the District.

On January 8, 1980, the District sold $57 million in Pine Flat Revenue Bonds. Paine Webber Inc. submitted the lowest of five bids with a 7.67 percent interest rate.

By spring, major equipment contracts were awarded for turbines and generators.

On March 24, 1980, the Federal Energy Regulatory Commission (FERC) issued a license to the DWR for 0.8 miles of 230 kV transmission line from the Pine Flat Powerplant to PGandE's existing Balch McCable #2-230 kV transmission line. DWR will construct the line.

The District was granted a 50-year license by FERC on September 27, 1979, to construct, operate, and maintain the Pine Flat power project (No. 2741). On December 13, 1979, FERC issued an order specifically giving approval for the District's sale of power for a period extending beyond the term of the license. (The term of the contract begins on the date that the last of the generating units becomes commercially operable and ends 50 years later. Since project construction will require at least two years, the contract would extend at least two years beyond the maximum 50-year license term.)

Recently, two contracts were awarded for the Pine Flat Hydroelectric plant. One to buy a turbine generator (The turbine is under construction in Japan), and the other for civil works. The plant will be completed by 1983. Construction will be monitored by the department's Division of Design and Construction.

Signing of a long-term contract (11/6/79) between DWR and Kings River Conservation District for purchase of power from a 165-MW hydroelectric plant to be built by Kings RCD at the base of the existing Pine Flat Dam. Seated are DWR Director Ronald B. Robie and Jeff Taylor, Manager and Chief Engineer, Kings River Conservation District. Standing left to right: Deputy Director Robert W. James; Ed Howe, Chairman of the Board, Kings River Conservation District; Deputy Director Charles R. Shoemaker; Edward Terhaar and Dick Ferriera of DWR's Energy Division.

MWD Hydro. The DWR's contract to purchase the output from five small hydro developments of MWD's system (Phase 1) was described in last year's report (see p. 106, Bulletin 132-79). Purchases will commence April 1, 1983.

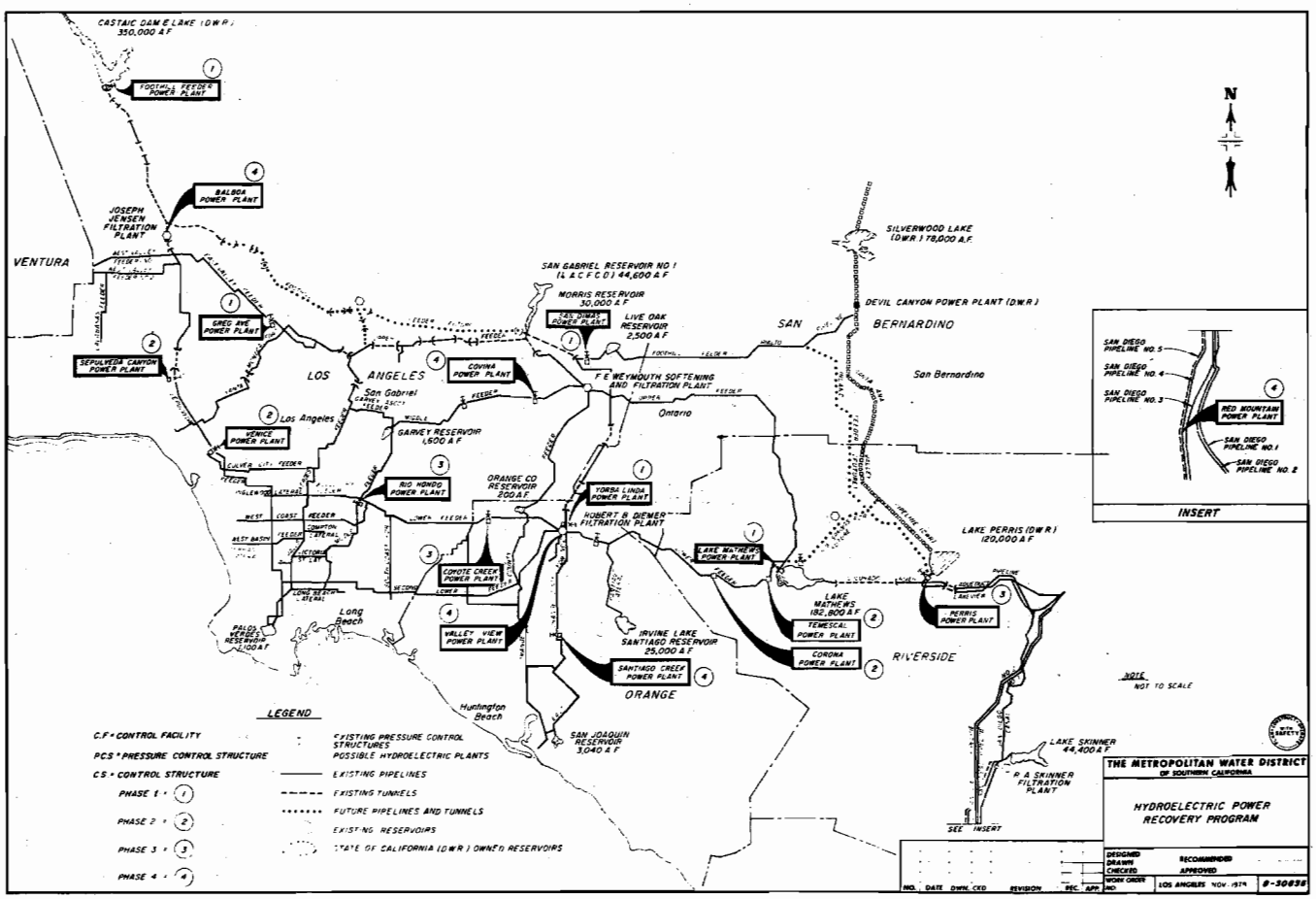
In early November 1979, MWD began generation testing of its Greg Avenue Generating Unit -- one of the smallest (0.7 MW) of the Phase 1 development. The Greg and Lake Mathews Plants were dedicated in Spring 1980. Also, the DWR and MWD have agreed to enter into a contract for sale of MWD's Phases 2 and 3 developments to DWR. Under its full development of small hydro potential, MWD envisions some 17 plants with a total capacity of 83.4 MW.

Metropolitan Water District
Small Hydroelectric
Power Recovery Program

Powerplants

Phase 1	Phase 3
Greg Avenue *	Perris
Lake Mathews *	Rio Hondo
Foothill Feeder	Coyote Creek
San Dimas	
Yorba Linda	**Phase 4**
Phase 2	Red Mountain
	Valley View
Sepulveda Canyon	
Venice	**Phase 5**
Temescal	
Corona	Balboa
	Santiago Creek
	Covina

*Completed



Governor's Small Hydroelectric Task Force. Early in 1980, a task force was established by Governor Brown with the goal:

> "To promote small hydropower to achieve maximum utilization of the energy now being wasted at existing dams and other hydraulic structures."

The Task Force was also to encourage the rapid development of small hydropower projects as a non-polluting renewable source of electric energy.

The high-level task force includes as its members the Directors of the Department of Parks and Recreation, Department of Fish and Game, Office of Planning and Research, Department of General Services, State Lands Commission and Department of Water Resources (Chairperson of the task force), together with the Executive Directors of the California Energy Commission and the California Public Utilities Commission; and the Chairperson of the State Water Resources Control Board.

The task force plans to meet through 1980. Following is a digest of major accomplishments to mid-1980.

Department of Water Resources

- Compiled a list of 300 potential small hydro sites at existing facilities in California for public distribution. The total potential capacity of the 300 sites is 500 MW.

- Scheduled the design and construction of 12 small hydro power plants with a combined capacity of 60 MW on the State Water Project. The Department has purchased and installed a 5 KW turbine/generator unit from the China National Machinery and Equipment Corporation. This demonstration project, located at Del Valle Dam, will determine the suitability and reliability of this equipment for use in California.

- Currently preparing feasiblity studies to determine the cost effectiveness of equipping existing dams and hydraulic structures with electric power-generating facilities (SB 1834). The report on this study will contain sufficient information on 28 sites suitable for filing loan applications with the U. S. Department of Energy (DOE) for feasibility or licensing studies and for some sites, a Federal Energy Regulatory Commission (FERC) license.

- In cooperation with DOE, DWR has established a program to provide assistance and technical information to encourage owners to develop their sites.

California Energy Commission

- Provided $121,000 in grants for feasibility studies for 36 potential small hydro sites.

- Represents the Task Force in support of legislation to improve "wheeling" cooperation over transmission lines owned by major utilities.

State Water Resources Control Board

- Prepared a report on the types of facilities requiring water rights permit applications.

- Simplified its regulations so that incidental power can be added to an existing permit or license by petition.

- Adopted procedures to process applications and petitions for power development as top priority items.

Department of Fish and Game

- Identified beneficial and adverse impacts to fish and wildlife resources resulting from power plant construction.

9—80574

Office of Appropriate Technology

- Took the lead in producing a public pamphlet describing the permitting and approval process for small hydro projects. The pamphlet provides the names, addresses and telephone numbers of contacts required for small hydro development.

California Public Utilities Commission

- Authorized utilities to purchase energy and capacity from cogenerators and small power producers with generation from such sources as wind, solar, hydro, and geothermal, and pay the full avoided cost to the electric utility.

The task force is coordinating its work with the appropriate federal agencies having regulatory authority over small hydro projects and plans to prepare a program Environmental Impact Report (EIR) for all small hydro sites.

Bulletin 205. In August 1979, the DWR released Bulletin 205, "A Survey of Small Hydroelectric Potential at Existing Sites in California". The bulletin identifies 212 sites where power plants could be added. With subsequent information, the DWR has now identified over 400 sites in California where turbine generators in the 100 to 30,000 kW range could be installed to produce about 2.5 billion kWh of electrical energy annually.

The DWR is now evaluating the feasibility and cost-effectiveness of the 400 sites. The evaluations will be reputed to the California Legislature by January 1981, pursuant to 1978 legislation (Ch. 933, Calif. Stats. of 1978).

The Department of Energy is providing $80,000 in funding support for the study.

Utilities (Purchase, Sale and/or Exchange)

Considering how the vagaries of nature affect water supply, water demands, and hydroelectric generation, SWP power energy resources will never match SWP energy demands exactly. To date, the financial consequences of this mismatch have not been significant because of the extremely favorable terms of the Suppliers Contract (low capacity price and energy purchases determined by actual use) which provides for the electrical energy needs for the SWP. However, this situation will change markedly after March 31, 1983, when the Suppliers Contract terminates. After that date, supplementary power will have to be purchased to make up for temporary deficits; temporary power surpluses will be either sold or exchanged. Such flexibility will depend on the future contracts and arrangements the DWR fully expects to complete. As an interconnected electric utility, DWR expects to take advantage of the spot market with regard to energy sales, purchases, and exchanges with utilities served by the interconnected systems of the Western States and Canada.

On October 11, 1979, Director Ronald Robie signed three key contracts with Southern California Edison Company (SCE). The contracts are critical in meeting future energy needs of the SWP, for they provide a firm supply of power for SWP pumping after March 31, 1983.

The first contract provides 235 megawatts of firm transmission service needed to deliver the Department's share of the output of Reid Gardner Unit No. 4 near Las Vegas. This service will be provided between Nevada and an SCE substation in the Antelope Valley.

The second contract provides for the transmission required to serve State Water Project pumping and recovery plants in SCE's service area. It also

provides for interconnecting the SWP plants with SCE and other utilities. On-peak and off-peak capacity and energy will be obtained from SCE's system. This agreement also provides that the Department will make available to SCE 350 megawatts of capacity from the Hyatt-Thermalito Powerplants, 120 megawatts from the Devil Canyon Powerplant, and up to 15 megawatts from the future Cottonwood Powerplant. SCE will return specified amounts of energy to DWR. This exchange arrangement is expected to provide an additional 1.5 billion kWh a year for the SWP.

The third agreement provides for partial settlement of several of the matters outstanding between the Department and SCE before the Federal Energy Regulatory Commission, the Public Utilities Commission and the Nuclear Regulatory Commission.

While the Edison contracts signed October 11, 1979, are a major step in securing such flexibility, other arrangements are needed. Transmission and interconnection agreements are needed for project facilities located outside of Edison's service area; namely, within the area of the PGandE.

In April 1980, a joint letter of agreement and principles for a comprehensive interconnection and transmission agreement was signed by PGandE and DWR. Included are principles for flexible purchase and sales or exchanges -- including the possible sale and/or exchange of up to 300 MW of capacity from the SWP. However, the DWR received much greater interest than anticipated from other California utilities regarding any SWP capacity available for sale. Therefore, in August 1980, DWR distributed a formal proposal solicitation with plans for signing final contracts in the latter part of 1980.

Importations

The DWR is maintaining its rights to 300 MW of import line capacity in the Pacific Northwest EHV Intertie under a contract that terminates in the year 2005. At the minimum, the DWR expects to import surplus energy from the Bonneville Power Administration when available after March 31, 1983. However, other possibilities exist for interim power supplies from the Pacific Northwest, which the DWR is pursuing. In addition, there are possibilities for supplies from the Pacific Southwest in addition to the Reid Gardner Unit 4 arrangement.

Biomass

The DWR made definite offers to purchase the generation from biomass-fueled power developments proposed by others. Currently, such offers have been made to the Sanitary Fill Company regarding the Brisbane refuse-fueled power plant and to the Louisiana Pacific Company regarding wood-fueled developments. In addition, the proposed hybrid Geothermal Wood Waste Powerplant (Honey Lake Project) may be considered a biomass-fueled plant.

Geothermal Wood Waste Powerplant (Honey Lake). Last year's bulletin referred to the three-party agreement signed September 1979 regarding feasibility studies for this unique hybrid plant (Bulletin 132-79, p. 123). The studies will be jointly funded by DWR, the U. S. Forest Service, GeoProducts Corporation, and the U. S. Department of Energy (DOE). The agreement, signed by DWR, GeoProducts, and the Forest Service, provides for studies including geothermal exploration, drilling a deep well to test the geothermal resource, a detailed study of wood waste supply and cost, and a total plant engineering cost estimate. Also, on September 26, 1979, DOE awarded a $200,000 grant to DWR to help fund initial phase studies. This

award, along with funds of the other three parties, provides the money needed to start the first phase of the studies.

The power plant, to be located in the Honey Lake area near Susanville in Lassen County, would be the first to combine low-temperature geothermal energy with a wood waste burner to provide steam for a power plant. The 55-megawatt power plant will generate electricity, using geothermal heat to dry wood waste and preheat the boiler feedwater. The dried wood waste will then be burned to superheat the feedwater, producing steam for the turbine, which generates the electricity. DWR and GeoProducts signed a separate agreement to construct and operate the plant if it is shown to be feasible. The plant would be owned and operated by GeoProducts, and the energy generated would be sold to DWR to help run the pumps of the State Water Project.

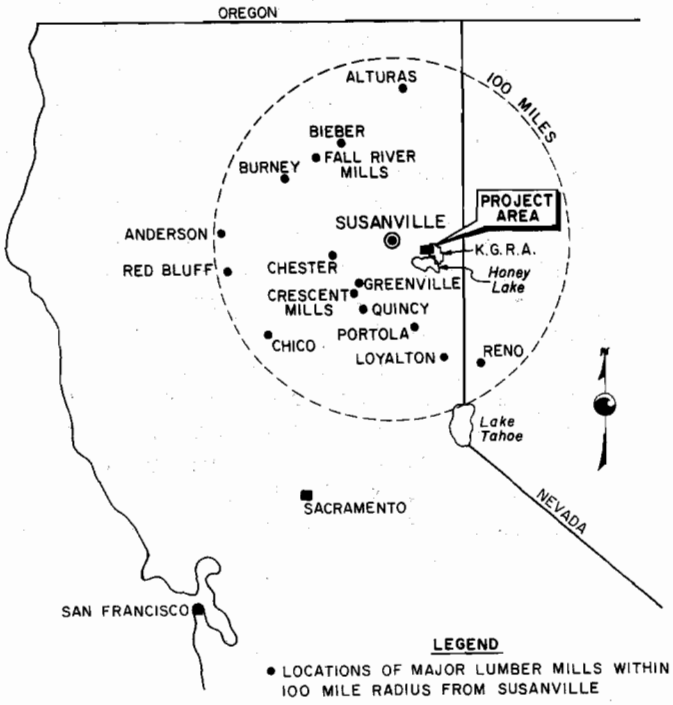
Contracts have been issued for drilling thermal gradient wells (estimated cost, $103,000) and for conducting a wood-fuel study (estimated cost, $200,000). Other activities to date include:

1. Drilling and testing shallow geothermal temperature gradient wells.
2. Execution of a contract with Resource Management Service, Inc. (a part of Sverdrup/ARO, Inc., an engineering firm), for a wood resource study.
3. Receipt of eleven bid proposals on July 10 for an engineering study of the project. They are being evaluated and a contract is expected to be awarded before September 1.

The study is to be completed in April 1981. If feasible, the project will be built by the end of 1985.

Indications are the Department of Energy (DOE) will approve a $225,000 grant to the Department, which, with DOE's previous $200,000 grant and funds from other cooperating parties, will be enough to complete the necessary studies except for drilling a deep geothermal confirmation well. The Department is exploring several options to secure the funds needed for the well.

Feasibility study total costs are estimated to be $2,177,000. Requested DOE funding would cover about 35 percent of these costs, with the DWR, GeoProducts Corporation, and U. S. Forest Service providing the remainder.



HONEY LAKE

PROJECT LOCATION

Cogeneration

Cogeneration is the simultaneous production of electricity and heat, cooling, or other useful work from the same source. In a cogeneration system, a gas turbine, steam turbine, or reciprocating engine is used to drive a generator to produce electricity. When generating electricity, all thermal power plants produce heat, which is usually dissipated to the environment.

Cogeneration systems convert this otherwise wasted heat to provide space heating, hot water or steam, special-process heating (as for laundries or kitchens), or space cooling. Because the electricity and heat are produced simultaneously from the same fuel, the overall cycle efficiency (the amount of useful energy produced per unit of fuel burned) of a cogeneration plant is more than twice that of a conventional power plant. Thus, cogeneration not only saves fuel but also reduces air pollution, as compared with individual heating systems and electric generating plants operating separately.

Opportunities for cogeneration exist at state office buildings, universities and colleges, prisons, and hospitals. Cogeneration at such facilities could provide water heating, space conditioning, and process heat to meet on-site thermal energy requirements and to generate electrical energy for the State Water Project. For example, the heat can be used to satisfy on-site thermal energy needs, i.e., for heating, cooling, or both, at buildings where the cogeneration facilities are installed. The electricity could be "wheeled" (by transmission line) to a State Water Project facility where it is needed.

The Department contracted with a private firm, Energy Systems Planning, Inc. (of Palo Alto) to assess the potential at state-owned facilities--specifically,

55 MW HYBRID GEOTHERMAL-WOOD WASTE CO-GENERATION PROJECT

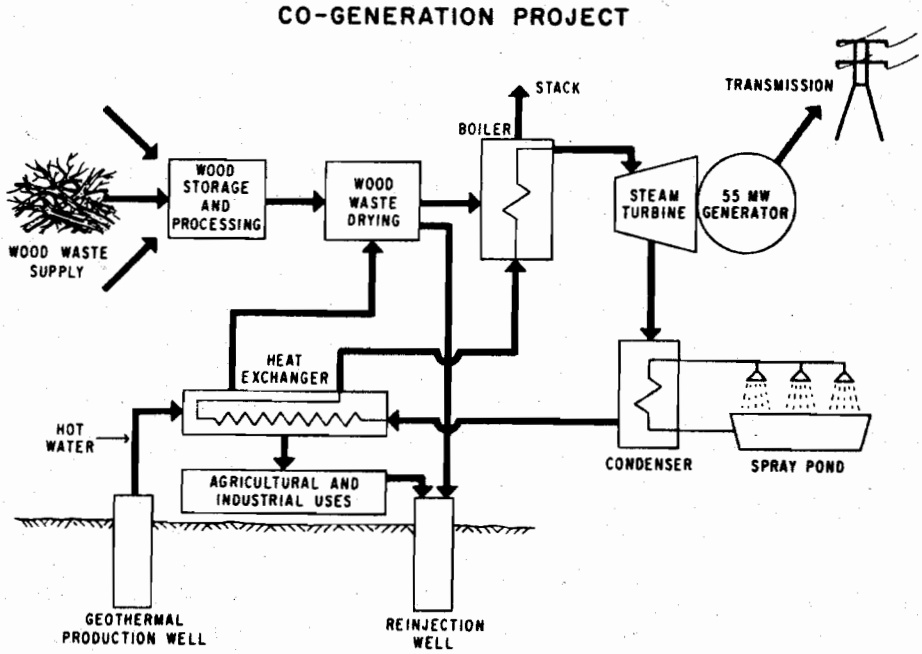


Diagram of project showing utilization of geothermal energy to dry wood pulp used for burning to produce steam for generation of electricity.

educational and correctional facilities, prisons and hospitals, and buildings owned by the Department of General Services.

The Consultant's report, "Cogeneration Potential in Facilities Owned by the State of California" (May 1980) includes the overall estimate that 189 state-owned facilities possess sufficient thermal energy requirements to generate 700 MW of electrical power with cogeneration. However, only about one-half of this potential may be technically feasible and cost-effective. The Department will proceed to study and develop the more feasible of these cogeneration possibilities. An initial goal of up to 50 MW has been set.

On June 3, 1980, Governor Edmund G. Brown Jr. challenged California utilities and industries to develop 6,000 megawatts of electricity in California during the 1980s through cogeneration -- "the most efficient means of utilizing fuels to produce power". He also announced that state government will take the lead in developing cogeneration projects.

In a letter to Director Ronald B. Robie on June 3, 1980, the Governor recognized the Department's progress in identifying cogeneration potential at SWP facilities. The Governor said "I am particularly interested in assuring that the State's cogeneration program continue to move ahead rapidly and effectively. Accordingly, I am asking the Department of Water Resources, the Department of General Services, and the Office of Appropriate Technology to prepare a blueprint for action to bring at least 400 megawatts of State cogeneration projects on line as soon as possible. The plan, which I am asking be submitted within 90 days, should identify feasible cogeneration projects that can be implemented without delay, establish an overall timetable for additional planning, feasibility studies, design, and construction, and discuss potential sources of construction funds."

Wind

For several years the Department has been studying wind as a possible future energy source for the Project. In early 1974, a study sponsored by the Federal Energy Research and Development Administration indicated several areas with favorable wind energy potential along the California Aqueduct. In 1976, the Department installed two wind-measuring stations in one of these areas near the aqueduct -- one near the future Cottonwood Powerplant site and the other at the top of Wheeler Ridge near Windgap Pumping Plant. Also, the Department started collecting wind data near Pacheco Pass above San Luis Reservoir.

The Department plans to obtain a large prototype wind turbine (200 to 500 kilowatts) when commercially available and install it at Pacheco Pass. The purpose of this project would be to gain operating experience and familiarize Department personnel with large wind-turbine equipment in preparation for large-scale commercial developments.

Following the wind resources studies and the testing of the prototype machine, and subject to the availability of the large (1.5 MW to 3.0 MW) wind turbine units, the Department's plans include construction of a multiple-unit demonstration installation with an aggregate capacity of about 10 MW. The system will be installed in either the Pacheco Pass- San Luis area or the Wheeler Ridge-Cottonwood-Tehachapi area, depending on the wind survey results.

During 1979, the Department began a wind-turbine demonstration project near San Luis Reservoir. An Aluminum Company of America (ALCOA) vertical-axis wind turbine, rated at 57 kilowatts, had been purchased and was being installed about 100 meters from Romero Visitors Center. It was to be the first operational medium-scale wind power development in California and would have had statewide significance in demonstrating the feasi-

bility of wind power. On May 28, however, ALCOA reported serious design defects in the turbine blades. Vibrations during operation cause equipment failure through fatigue. This occurred in the test turbine at the ALCOA Center in March. ALCOA is committed to a major research and development effort to correct the design; however, results are not expected in less than 18 or 20 months. Also, their efforts will be focused on the larger 500-kilowatt model rather than the 57-kilowatt model. The DWR is negotiating a settlement with ALCOA and will return the equipment delivered to date. At the same time, the DWR investigated the availability of another machine suitable for installation at Romero Visitors Center. Negotiations with Dominion Aluminum Fabrication Company were completed for a 50 kW vertical (axis) turbine to replace the ALCOA machine. The California Energy Commission and PGandE agreed to continue participation and funding for the project. The project will be operated early in 1981.

Power generated by this project would be wheeled by Pacific Gas and Electric Company for use at the San Luis Operation and Maintenance Center, and the Company will interconnect the wind turbine to its system. The California Energy Commission is contributing $100,000 to the demonstration project.

Another wind-energy project being considered for the Pacheco Pass area is the private development of a wind-energy generating system. This project was initiated when the Department reached an agreement on the principles with U. S. Windpower, Inc., of Boston. Under the proposed arrangement, U. S. Windpower would finance, construct, operate a field of wind turbines to generate up to 100 MW of power. The estimated cost of the project is 75 million dollars. The project would consist of a field of three-bladed, medium-size [15 metres (50 feet)] wind turbines in the 50 KW range supported on towers about 30 metres (100 feet) high. In 1981, U. S. Windpower plans to install up to two-hundred 50-kW machines, totaling 10 MW in 1981. The Department will purchase all wind energy generated by the project.

On February 20, 1980, the Federal Department of Energy gave notice that the Romero Visitors Center area near San Luis Reservoir had been selected as a candidate site for future wind turbine systems and that they plan to install wind-measuring equipment. This equipment will consist of wind-measuring and recording gages mounted at three levels on a 50-metre (164 feet) tower, which may be erected during the summer of 1980. Their tower will be located at or near the top of Pacheco Pass, where the wind and terrain power appears most suitable for large wind-turbine generators. The data will be analyzed by the Pacific Northwest Laboratory operated by Batelle Memorial Institute.

Detailed discussions of various energy options follow:

Coal

The coal-fired energy option was markedly affected by the March 1980 redirection of the Department's long-range energy effort. Specifically:

1. Current studies of the DWR Coal-Fired Project were terminated, but a final decision to remove the project from the Department's planning was deferred until March 1, 1981.

2. The Reid-Gardner Unit 4 Project continues on schedule, with initial operation expected in 1983.

3. Consideration of DWR participation in the Pacific Gas and Electric Company's Montezuma 1 and 2 Project has been deferred.

4. DWR participation in the Southern California Edison Company's Cal Coal Project has been terminated.

Those four projects are discussed further in the following paragraphs.

DWR Coal-Fired Project. The Department's plan to construct a 1,000 MW coal-fired plant was reported in Bulletin 132-79 (see pages 112-115). Under the March 1980 redirection of the Long-Range Energy Program, however, studies were suspended, and a final decision on whether to continue with the Coal-Fired Project was deferred until March 1, 1981.

Studies had progressed to a point whereby three alternative sites had been selected for purposes of filing a Notice of Intention (NOI) with the California Energy Commission, contemplated for September 1981. The following three sites were announced in January 1980:

- M-1, Buttonwillow in western Kern County
- R-5, El Mirage, west of Victorville
- P-3, east of Barstow

A Fontana site would have provided an opportunity to demonstrate the emission-offset concept of the Air Resources Board. The site was finally rejected because of concern that it would be difficult to convince area residents and their local governments that the offset concept would truly improve air-quality conditions -- a concern confirmed by extensive discussions with County and State representatives.

Before the studies ended, the schedule for the DWR project had been extended for about two years to take into account possible DWR participation in the Montezuma 1 and 2 and Cal Coal projects, other potential energy sources, and the desirability of less stringent time-constraints for orderly development of the DWR project.

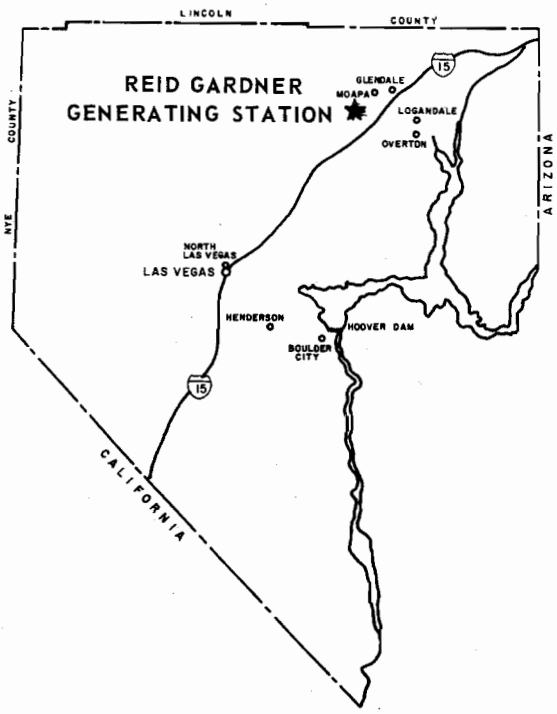
Formal notice was issued by DWR for termination of all work on March 7, 1980 under the environmental and preliminary engineering consultant contract -- the Black & Veatch/EDAW-ESA contract. The "generation options" study portion of the contract was an exception, however, to be completed by April 30, 1980. All DWR staff charges to the program also ended March 7, 1980, except for those directly involved in documenting completed work. However, formal termination of the contract was not effective until mid-1980.

The Black and Veatch/EDAW-ESA Contract was approved early in November 1979, and certain studies had commenced prior to selection of the three alternative sites. Previous consultant contracts regarding the Siting Study, and a Coal Source and Transportation Study, were essentially complete.

Reid Gardner Unit 4. The DWR's interest in this 250-MW addition to the existing 330-MW Reid Gardner Generating Station was described in last year's report (see pp. 115-116, Bulletin 132-79). That description covered events leading to the signing of the Participation Agreement with the Nevada Power Company in July 1979.

All construction permits have been secured by the Company. Design and construction management of the Unit are by Fluor Power Services, Inc., under the supervision of the Company. The DWR is reviewing and monitoring the work and is providing funds under terms of the Agreement. Contracts have been awarded for the boiler, turbine-generator, water pipeline, and soil exploration work, as well as the general construction contract.

Reid Gardner Contract - Director Ronald B. Robie officially signing a contractual agreement between DWR and the Nevada Power Company for joint ownership of a 250-MW coal-fired power plant. Behind Director Robie are Kevin P. Miller, and Deputy Director Mary Anne Mark. (Back row) Edward J. Terhaar; Deputy Director Gerald H. Meral; Deputy Director Charles R. Shoemaker; Lloyd H. Harvego; Steven R. Cohen and Deputy Director Robert W. James.



LOCATION OF EXISTING REID GARDNER
GENERATING STATION
OF THE NEVADA POWER COMPANY
CLARK COUNTY

Montezuma 1 and 2. The possible 10 percent participation by the DWR in this proposed coal-fired development (formerly called Fossil 1 and 2) by the Pacific Gas and Electric Company was also referred to in last year's report (see p. 118, Bulletin 132-79).

The DWR, as one of the potential participants in PGandE's project, conducted a coal source and transportation study for its share of the project's fuel supply. The study was conducted through an amendment of the consultant contract for the DWR Coal-Fired project. The cost of the study was $19,233.42; $14,707.90 of this was borne by other potential participants, the Sacramento Municipal Utility District, Modesto Irrigation District, Turlock Irrigation District, and Northern California Power Agency.

Under the redirection of the Long Range Energy Program, however, a decision regarding the DWR's participation was deferred. In addition, also in March 1980, Pacific Gas and Electric Company announced a deferral in the planned initial operations date of the project. The date is now being set for the late 1980s instead of 1986.

Forecasts of lower growth rates in the Company's electric demand indicated that a delay in scheduling the proposed 1,600-MW coal-fired project was feasible. According to the Company, the delay allows additional time to assess the potential impact of inflation on the financial requirements, investigate various means of meeting environmental requirements, and explore alternative fuel sources that may become available as a result of the proposed federal synfuel program. The Company did not meet the June 1980 filing deadline it had set for itself early in the year for filing the Application for Certification (AFC) with the California Energy Commission.

On March 27, 1980, Governor Brown signed AB 2062 (Hannigan), which permits the Company to become a member of the Solano County Flood Control and Water Conservation District. This clears the way for PGandE to use SWP water for cooling; since State policy generally does not permit use of fresh water for power plant cooling, this is an unusual situation. An alternative source would not result in a depletion of freshwater Delta flows. For instance, diversion of reclaimed water would not deplete Delta outflows to the same extent as diversion of fresh water.

Cal Coal Project. Possible DWR participation in the California Coal Project also was referred to in last year's report (see page 118, Bulletin 132-79). The 1,500 MW coal fired development is proposed by the Southern California Edison Company. In August 1979, DWR signed a letter of understanding with the Company and other utilities to share in certain study costs preparatory to the Company's filing the Notice of Intention (NOI) with the California Energy Commission. DWR's obligations under the agreement were about $75,000. In late December 1979, the Company filed the NOI with the Commission, and the DWR's obligations terminated under the agreement.

Under the March 1980 redirection of the Long Range Energy Program, consideration of the DWR's participation in the project was deferred indefinitely until an additional financial commitment to maintain the DWR's interest in the project could be obtained. The commitment was not long in coming. In a March 6, 1980, letter, and draft of 1980 Letter Agreement, the Company proposed sharing of the costs of processing the NOI during 1980. The DWR's share in 1980 would have been about $88,000. The Company was subsequently notified that the DWR would not share under the proposed agreement and that the DWR's interest in the project was terminated.

C. PROJECT OPERATIONS

WATER OPERATIONS IN 1979

This section summarizes SWP operations during 1979, including (1) water conditions, (2) water deliveries, and (3) other 1979 activities.

Water Conditions

Statewide precipitation during the 1978-79 water year (October 1, 1978 through September 30, 1979) was about 90 percent of normal, compared with 155 percent of normal for the 1977-78 water year. In the 1978-79 water year, local precipitation ranged from (1) about 60 percent of normal in Northern California, (2) normal in the San Joaquin Valley, to (3) over 250 percent of normal in Southern California. Runoff followed a similar pattern, with all streams north of the American River producing below-normal flows and San Joaquin Valley tributaries producing normal or above-normal runoff for the water year.

Streamflows in California totaled 75 percent of normal for the 1978-79 water year. In the Feather River Basin, the primary water supply for the SWP runoff was 66 percent of the 50-year average.

At the end of 1979, reservoir storage at the four Southern California SWP reservoirs totaled 746 263 cubic dekametres (605,000 acre-feet). This total, although slightly less than the 1978 year-end amount, assured that all 1980 entitlement requests could be met.

Electrical energy used by Project pumping plants was about 20 percent less than in 1978, the highest year of record for SWP. In 1978, water supplies were abundant, and surplus water in the Delta, together with flood water diverted from the Kern River, was pumped to Southern California to refill the reservoirs depleted during the 1976-77 drought.

The 1978-79 water year was a "dry" year as classified by the SWRCB's system for Sacramento Watersheds (Decision 1485). This classification is based on computations of the unimpaired runoff measured for the Sacramento River near Red Bluff, Feather River into Lake Oroville, Yuba River at Smartville, and American River into Folsom Reservoir. Total runoff was 15 230 888 cubic dekametres (12,347,700 acre-feet) for the 1978-79 water year.

Details of water supply conditions during the 1978-79 water year are available in Department of Water Resources' Bulletin 202-79, "Water Conditions and Flood Events in California".

Water Deliveries

The Department uses a decision tool ("Rule Curve"), developed in 1977, to forecast water supplies and schedule water deliveries to contractors each year. The 1976-77 drought, coupled with increasing needs for water by Project contractors, emphasized the need for a timely procedure by which SWP operational criteria could be analyzed and water delivery schedules approved.

The "Rule Curve" helps ensure that there will be sufficient water to meet quality requirements in the Delta, provide exports during the year, and end the year with water in storage, which will be available for entitlement delivered during the following year. The operational criteria used in the "Rule Curve" relates project carryover storage and projected runoff of the Four Basin Index for the water year precipitation to contractor water delivery requests. The four basins included in this index are the Sacramento, Feather, Yuba, and American Rivers.

The general procedure is that in December the initial schedule, based on a conservative projection of runoff, is approved. Actual reservoir storage and

snowpack conditions are reviewed early in each of the next several months, and the estimate of project water availability is revised. The revised estimates indicate that if the available supply will be greater than previously estimated, scheduled deliveries are increased up to the limit of requests.

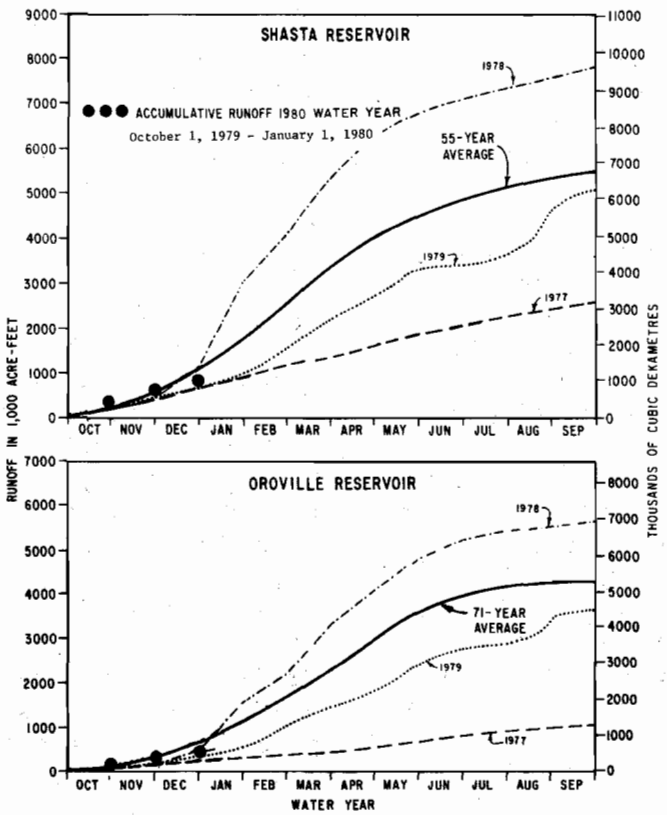
In 1979, the Project was able to deliver all requests for entitlement water. In addition, after it was determined that available water supplies would meet "Rule Curve" requirements, surplus water was delivered to agricultural contractors. The Department delivered a total of 2 949 127 cubic dekametres (2,390,882 acre-feet) to project and nonproject contractors and conveyed 129 557 cubic dekametres (105,033 acre-feet) of Federal CVP water through Project facilities during the year. The various categories, amounts of water, and contracting agencies who received water service in 1979 are shown in Table 3.

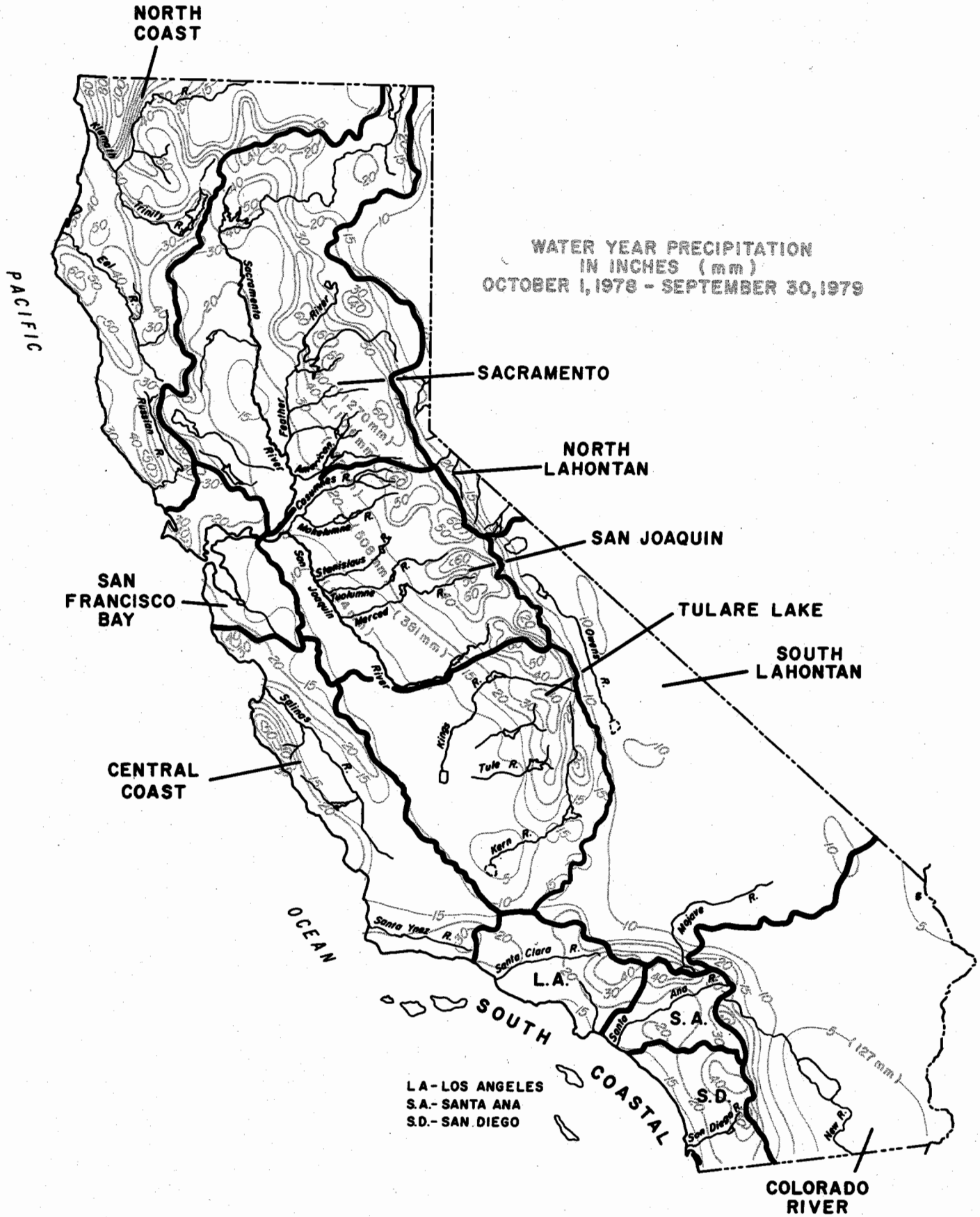
The curves shown below give cumulative natural runoff to Shasta and Oroville Reservoirs for the last three years, runoff in the basins for 1923-24, and a multiyear average for the basins. The above-average runoff in northern California during the early months of 1978 allowed a quick recovery of water storage in the State Water Project reservoirs. Storage at the end of 1977 had reached the lowest levels since the initial filling of the reservoirs.

The precipitation as a percentage of normal during water year 1978-79 is shown on the map of California (a water year begins October 1 and extends through September 30 of the following year). The 1978-79 water year was about normal on the basis of Statewide precipitation and streamflow amounts.

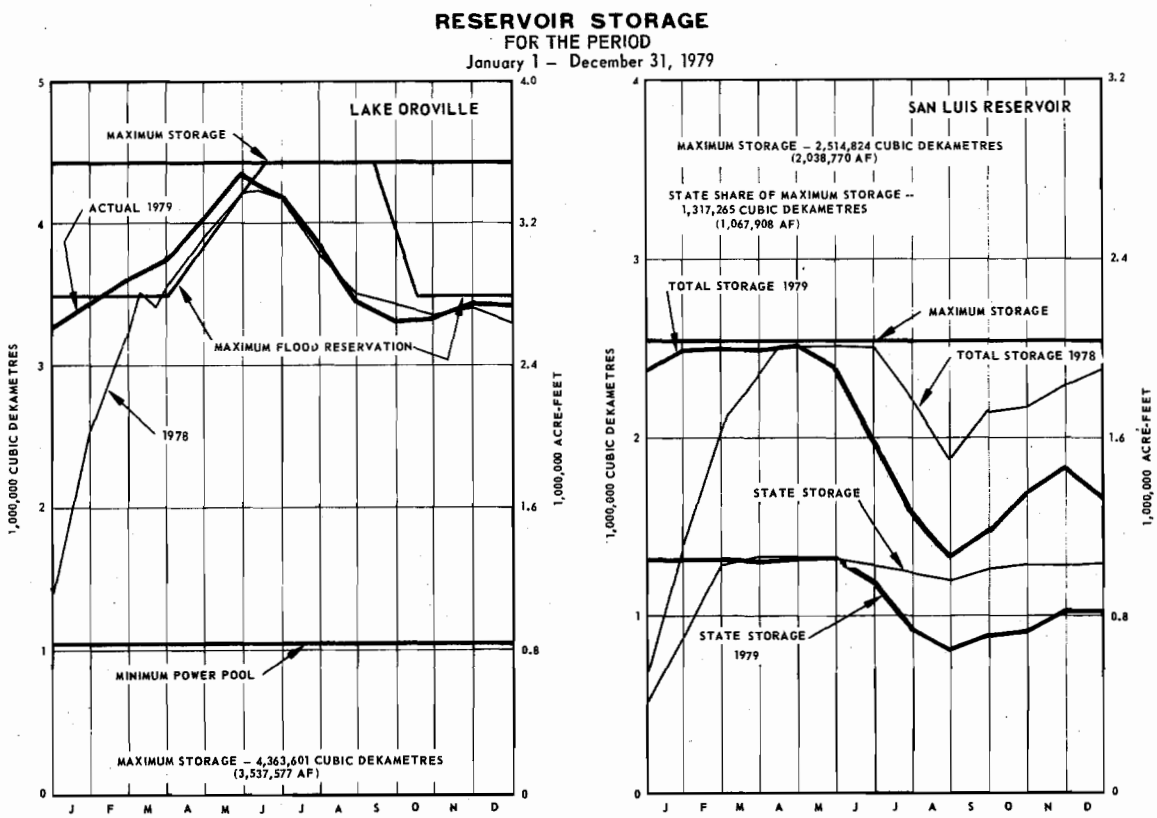
However, precipitation during the water year was below normal in Northern California, about normal in the San Joaquin Valley, and well above normal in Southern California.

ACCUMULATIVE NATURAL RUNOFF TO SELECTED RESERVOIRS




NORTH COAST
WATER YEAR PRECIPITATION
IN INCHES (mm)
OCTOBER 1, 1978 - SEPTEMBER 30, 1979
PACIFIC
SACRAMENTO
NORTH LAHONTAN
SAN JOAQUIN
SAN FRANCISCO BAY
TULARE LAKE
SOUTH LAHONTAN
CENTRAL COAST
OCEAN
SOUTH COASTAL
L.A.
S.A.
S.D.
LA - LOS ANGELES
S.A. - SANTA ANA
S.D. - SAN DIEGO
COLORADO RIVER
Klamath R.
Trinity R.
Eel R.
Russian R.
Sacramento River
Feather River
American R.
Cosumnes R.
Mokelumne R.
Stanislaus R.
Tuolumne R.
Merced R.
San Joaquin River
Salinas R.
Kings R.
Tule R.
Kern R.
Owens R.
Mojave R.
Santa Ynez R.
Santa Clara R.
Santa Ana R.
San Diego R.
New R.
(127 mm)
(361 mm)
(508 mm)
(270 mm)

The following graphs illustrate the storage in Oroville and San Luis Reservoir during 1979. Overall, storage in the Project's seven major reservoirs decreased about 458 000 cubic dekametres (371,000 acre-feet) during the 1978-79 water year.



In 1979, this 37 005 cubic dekametres (30,000 acre-feet) of water was pumped to Southern California and stored in a ground water basin in MWD's service area. MWD has agreed to store the 37 005 cubic dekametres (30,000 acre-feet) of water, which is to be delivered to Kern County Water Agency (KCWA) and Dudley Ridge Water District (DRWD) prior to March 31, 1983, under the 1978 water exchange agreements. This water can be substituted for entitlement deliveries to MWD from the SWP and an equal amount of water scheduled for MWD delivered to KCWA or DRWD when they request delivery of such water.

Precipitation has been well above normal for the State in the 1979-80 water year. With the water supply available this year, the Project will be able to meet all contractors' water requests, including those for surplus water.

The chart below shows the actual storage of Project water in SWP reservoirs at the end of 1979. The chart also compares the end of year storage amounts to the projected plan of operations which defined the minimum requirements for carryover storage into 1980. This plan was developed by the Department in early 1979 through application of 1979 Rule Curve Criteria.

COMPARISON OF ACTUAL STORAGE WITH PLAN OF OPERATIONS

(in 1,000 acre-feet)

Reservoir	Plan of Operations	Actual Storage on Dec. 31, 1979	Difference
Oroville	2,425	2,792	367
Del Valle	25	25	0
San Luis (State)	871	913	42
Pyramid	168	165	-3
Castaic	266	284	18
Silverwood	71	69	-2
Perris	105	87	-18
Totals	3,931	4,335	404

During the year the Department prepares weekly reports (which include information similar to the chart above) on the status of Project operations through its monitoring of Project water supplies, reservoir storage quantities and water deliveries. This enables the Department to closely control its SWP operations to meet the approved Rule Curve Criteria and assures water contractors that minimum supplies will be available for the following years water deliveries if normal wintertime rainfall occur.

Other Activities

Water right Decision 1485, adopted in 1978, sets water quality objectives, export limitations, and outflow requirements for the Sacramento-San Joaquin Delta. All of these requirements were met in 1979. 6/ Although 1979 was classed as a dry year, the more stringent water quality objectives for a wet year were met at Contra Costa Canal Intake, San Andreas Landing, Terminous, and Chipps Island. At Emmaton the standards for an above-normal water year were nearly met. While Delta Outflow Index and other flow requirements were not met consistently with such latitude, all dry-year flow requirements associated with year types in the "Above, and Below Normal" range.

Decision 1485 sets limits on pumping by the SWP to a mean monthly flow of 85 cubic metres per second (3,000 cfs) during May and June and 130 cubic metres per second (4,600 cfs) in July. This is to provide protection to the striped bass in the Sacramento-San Joaquin Delta during a time when the larvae, fish eggs, and young fish are susceptible to cross-Delta water flows that would occur if the pumps were operated at higher levels. The actual mean flows for these three months of 1979 were maintained essentially at the D 1485 requirements.

With regard to water quality standards, the following illustrates how they were met with a large margin of safety. The wet-year standards require provision of a mean daily chloride concentration of 150 mg/l or less at the Contra Costa Canal intake for at least 240 days.

6/ *See Bulletin 132-80, Appendix E for details.*

Actually 313 such days were provided. The dry-year standard requires provision of only 165 days at 150 mg/l or less.

At San Andreas Landing on the San Joaquin River, Terminous on the Mokelumne River, and Emmaton on the Sacramento River, the wet-year standards call for a maximum 14-day running average of mean daily Electrical Conductivity (EC) of 0.45 milli-siemens (millimhos) to be provided from April 1 to August 15. Maximum EC values for the period were 0.37 and 0.17 milli-siemens(mS) respectively at San Andreas Landing and Terminous, thus being well below the requirements of the wet-year standards. At Emmaton, the limit of 0.45 mS was maintained from April 1 to July 15, after which the EC did not exceed 0.67 mS through August 15, thereby essentially meeting the requirements of an above-normal year.

The SWRCB's Decision 1485 required protection, both in Delta outflow and operational constraints, for striped bass. The bass standards went into effect in 1979. Table 5 shows summary data on the quality of water delivered during 1979 as measured at selected stations. Also shown at the bottom of Table 5 are the corresponding monthly average objectives for maximum concentrations of constituents as set forth in long-term water contracts. (Note that the mineral analyses are based on one each month, while the objectives are stated in terms of average conditions within a month.) Figure 7 presents a pictorial summary of Project water opeations during 1979. Also shown on Figure 7 are the areas of the Project's five field divisions, which have the responsibility for operations and maintenance activities.

Project power operations for each generating plant during each month of 1979 are summarized in Table 6.

STATE WATER PROJECT BENEFITS THROUGH 1979

The quantitative benefits of project operations through 1979 are summarized in the tabulation below:

Year	Water Delivered (acre-feet)(a						Recreation Supported (Recreation days) (c	Electrical Energy Generated (Megawatt-hours)(d
	Entitlement Water			Other Deliveries		Total Delivery		
	Municipal and Industrial Use	Agricultural Use	Total	Surplus	Other Water (b			
1962					18,289	18,289	30,000	
1963					22,456	22,456	105,000	
1964					32,507	32,507	331,600	
1965					44,105	44,105	499,800	
1966					67,928	67,928	482,700	
1967	5,747	5,791	11,538		53,605	65,143	455,200	
1968	46,472	125,237	171,709	121,534	14,777	308,020	931,300	628,000
1969	34,434	158,586	193,020	72,397	18,829	284,246	1,554,800	2,614,000
1970	47,996	185,997	233,993	133,024	38,080	405,097	1,804,800	2,679,000
1971	85,286	272,054	357,340	296,019	44,119	697,478	2,085,900	3,302,000
1972	181,066	430,735	611,801	423,964	66,638	1,102,403	1,971,200	1,922,000
1973	293,824	400,564	694,388	296,416	42,511	1,033,315	2,502,000	3,298,000
1974	418,521	455,556	874,077	417,676	46,224	1,337,977	4,073,600	4,672,000
1975	641,621	582,369	1,223,990	622,902	63,793	1,910,685	4,189,300	3,159,000
1976	818,588	554,414	1,373,002	580,110	115,217	2,068,329	4,239,600	2,131,000
1977	280,919	293,236	574,155	0	389,065	963,220	3,951,900	958,000
1978	742,385	710,314	1,452,699	16,914	121,225	1,590,838	5,773,700	2,882,000
1979	690,659	969,237	1,659,896	648,389	187,630	2,495,915	5,298,700	2,485,000
Total (e	4,287,518	5,144,090	9,431,608	3,629,345	1,386,998	14,447,951	40,281,100	30,730,000

a) Metric conversion is acre-feet times 1.2335 equals cubic dekametres.
b) Includes Emergency Relief Water, Kern River Intertie Water, Exchange Water, Repayment Water, Regulated Delivery of Local Supply, and Conveyance of Federal CVP Water.
c) A recreation day is the visit of one person to a recreation area for any part of one day.
d) Includes State's share of generation from Hyatt-Thermalito, San Luis, Castaic and Devil Canyon Powerplants.
e) In addition, dams of the State Water Project have prevented millions of dollar's worth of flood damage.

TABLE 5: WATER QUALITY MEASUREMENTS AT SELECTED STATIONS IN 1979

Station	Monthly Samples	Concentrations (in parts per million unless otherwise noted)					
		Total Dissolved Solids	Total Hardness	Chlorides	Sulfates	(a Sodium (%)	Boron
Thermalito Afterbay, Outlet to Feather River	Minimum	42	32	0	0	17	0.0
	Average	58	35	1	1	18	0.0
	Maximum	68	39	2	3	21	0.1
Sacramento-San Joaquin Delta, Delta Pumping Plant	Minimum	155	64	29	23	45	0.1
	Average	219	88	48	40	48	0.2
	Maximum	356	136	89	90	51	0.3
South Bay Aqueduct, Santa Clara Terminal Facility	Minimum	173	69	28	25	38	0.1
	Average	247	96	46	40	44	0.2
	Maximum	398	150	75	77	45	0.3
California Aqueduct: Entrance to O'Neill Forebay	Minimum	154	66	29	23	43	0.1
	Average	212	85	45	40	47	0.2
	Maximum	342	122	83	87	52	0.3
Outlet from O'Neill Forebay	Minimum	199	83	41	32	46	0.0
	Average	248	100	60	46	50	0.2
	Maximum	289	125	93	73	53	0.3
Near Kettleman City	Minimum	212	84	44	33	47	0.1
	Average	273	110	60	65	48	0.2
	Maximum	378	150	87	122	49	0.2
Coastal Branch near Devil's Den	Minimum	203	84	42	31	46	0.1
	Average	261	99	65	46	51	0.2
	Maximum	334	116	99	66	55	0.3
Near Buena Vista Pumping Plant	Minimum	204	87	42	33	46	0.1
	Average	265	102	70	49	49	0.2
	Maximum	338	120	90	71	52	0.3
At Tehachapi Afterbay	Minimum	192	87	42	33	46	0.1
	Average	246	100	56	47	50	0.2
	Maximum	319	119	86	63	53	0.3
At Pearblossom Pumping Plant	Minimum	199	78	39	26	48	0.1
	Average	249	97	67	44	52	0.2
	Maximum	320	120	113	67	60	0.3
Silverwood Lake, Outlet to San Bernardino Tunnel	Minimum	177	78	36	29	45	0.1
	Average	235	91	62	37	51	0.2
	Maximum	313	105	97	48	57	0.2
Lake Perris, Outlet from Santa Ana Pipeline	Minimum	228	87	62	39	50	0.2
	Average	259	96	68	41	53	0.2
	Maximum	281	104	76	43	58	0.2
Pyramid Lake, Entrance to Angeles Tunnel	Minimum	250	129	38	72	36	0.2
	Average	294	142	48	87	40	0.3
	Maximum	342	158	71	103	49	0.4
Castaic Lake, Outlet Tower	Minimum	346	186	48	118	34	0.2
	Average	371	193	51	127	36	0.3
	Maximum	402	203	55	139	37	0.3
Monthly Average Quality Objectives		440	180	110	110	50	0.6

a) Amount of sodium in solution expressed as a percentage of the total sodium, calcium, magnesium and potassium in solution.

TABLE 6: MONTHLY POWER

(in millions of

Operations	MONTH						
	Jan.	Feb.	Mar.	Apr.	May	June	July
ENERGY GENERATED BY EDWARD-HYATT AND THERMALITO POWERPLANTS *(a*							
Gross Generation	87.47	155.65	164.79	84.59	119.13	203.34	279.45
Power Plant Use and Pumpback Requirements	5.22	11.96	4.96	6.36	1.74	4.48	2.35
Delivered to California Power Pool Companies	82.25	143.69	159.83	78.23	117.39	198.86	277.10
ENERGY USED BY PROJECT PUMPING PLANTS							
Interim (Cordelia)	.26	.17	.21	.26	.28	.37	.39
South Bay	7.75	7.05	8.07	12.91	11.99	14.02	15.07
Del Valle	.01	.09	.01	.26	.08	.01	.01
Tracy (State Share)	0	1.02	0	0	0	0	0
Delta	25.45	28.12	44.02	44.04	54.00	48.52	54.17
San Luis (State Share)	.02	.07	.04	5.65	.01	0	0
Dos Amigos (State Share)	10.15	12.41	15.74	15.55	22.37	37.68	48.71
Las Perillas	.44	.32	.45	.91	1.33	1.84	2.05
Badger Hill	1.12	.82	1.17	2.54	3.66	4.96	5.51
Buena Vista	11.57	10.30	9.41	11.80	16.33	19.27	26.24
Wheeler Ridge	12.80	9.89	7.87	10.94	14.29	13.78	20.17
Wind Gap	27.33	21.40	16.62	22.18	28.47	26.81	40.52
A. D. Edmonston	94.09	73.53	56.83	74.47	97.45	85.28	128.49
Oso (West Branch)	3.79	5.05	3.67	2.50	2.34	.34	1.75
Pearblossom	19.42	10.30	8.03	13.31	18.10	18.08	26.94
Devil Canyon Station Service	0	0	0	0	0	0	0
Total	214.20	180.54	172.14	217.32	270.70	270.96	370.02
SOURCES OF ENERGY FOR PROJECT							
San Luis Pumping-Generating Plant (State Share)	.02	.10	.03	0	0	31.92	42.32
Castaic Generating Plant (State Share)	11.93	18.98	13.73	6.03	6.00	.72	5.52
Devil Canyon Generating Plant	35.39	20.55	15.84	18.70	32.45	37.35	43.99
Canadian Entitlement Power	51.77	47.06	52.30	48.22	49.96	48.70	50.20
Bonneville Power Administration	0	0	0	0	0	0	0
California "Suppliers"	115.09	93.85	92.42	142.19	182.29	152.27	277.99
Total	214.20	180.54	174.32	215.14	270.70	270.96	370.02

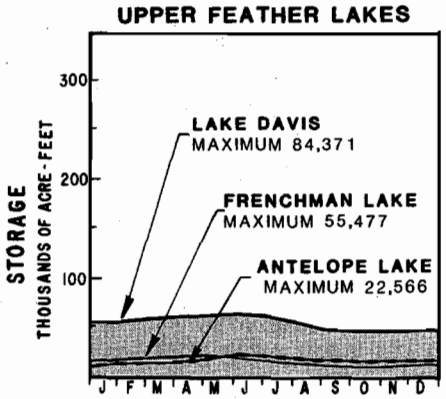
a) Sold under terms of the Oroville-Thermalito Power Sale Contract, November 29, 1967.

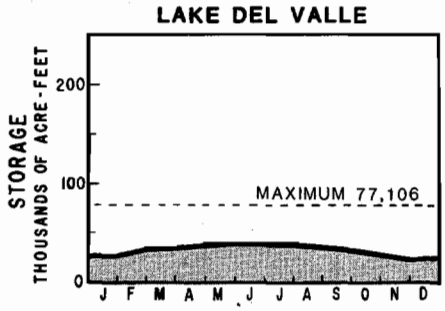
OPERATIONS IN 1979

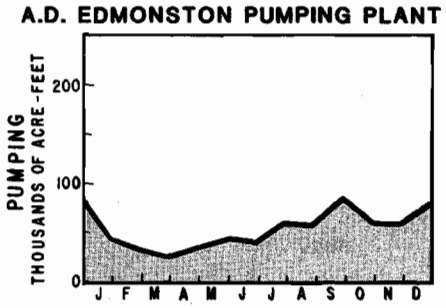
kilowatthours)

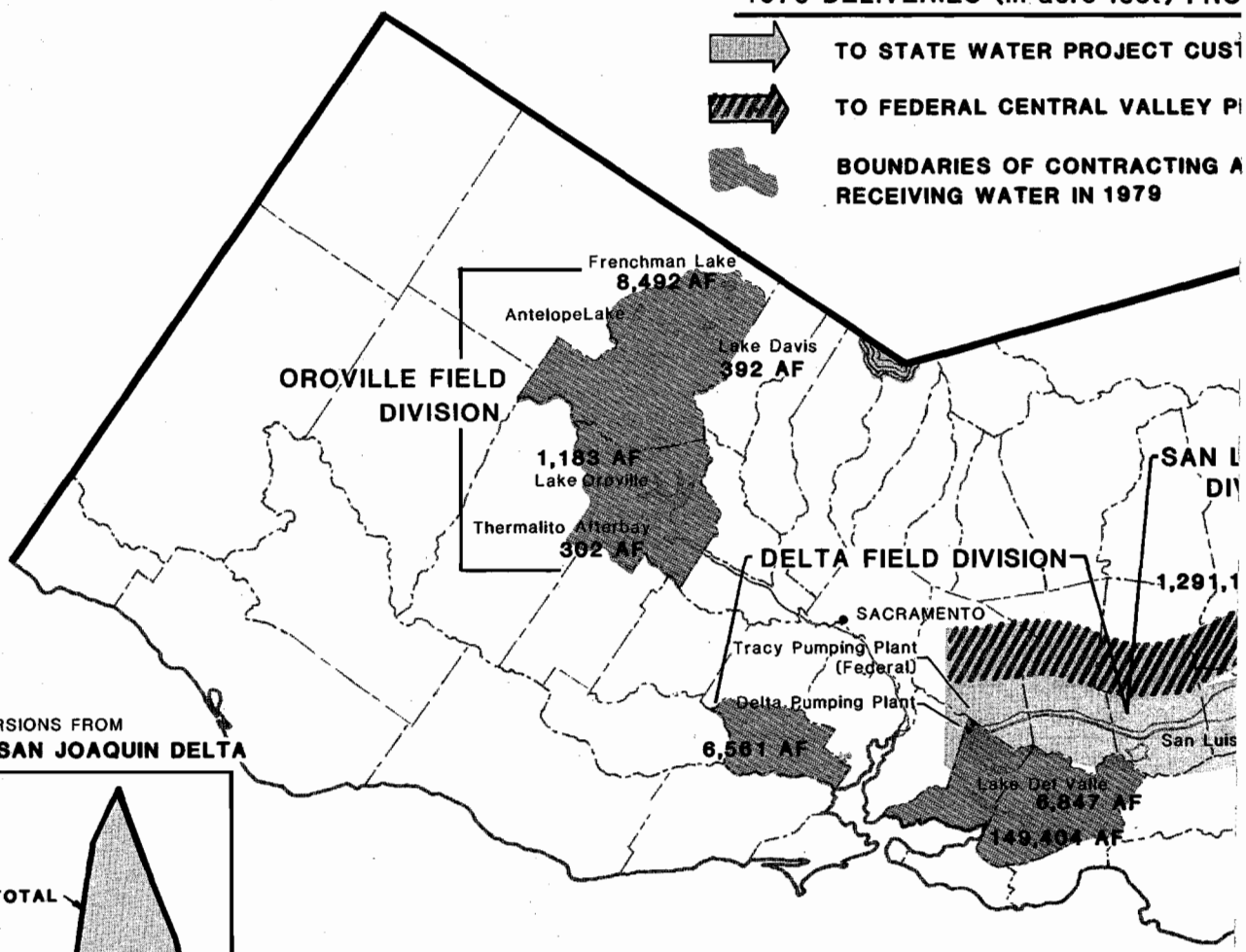
MONTH						
Aug.	Sept.	Oct.	Nov.	Dec.	Total	Operations
						ENERGY GENERATED BY EDWARD-HYATT AND THERMALITO POWERPLANTS (a
248.02	119.41	77.10	70.65	104.32	1,713.92	Gross Generation
2.92	17.63	12.23	18.45	27.67	115.97	Power Plant Use and Pumpback Requirements
245.10	101.78	64.87	52.20	76.65	1,597.95	Delivered to California Power Pool Companies
						ENERGY USED BY PROJECT PUMPING PLANTS
.40	.38	.32	.22	.34	3.60	Interim (Cordelia)
13.70	8.40	7.45	8.75	9.69	124.85	South Bay
.01	.01	.01	.08	.01	.59	Del Valle
0	0	0	0	0	1.02	Tracy (State Share)
75.83	78.68	59.97	76.98	93.70	683.48	Delta
1.95	18.95	15.32	18.22	5.45	65.68	San Luis (State Share)
45.03	28.74	20.35	23.25	26.70	306.68	Dos Amigos (State Share)
1.83	.59	.26	.40	.57	10.99	Las Perillas
4.91	1.59	.64	1.00	1.50	29.42	Badger Hill
24.88	23.79	15.58	15.52	21.85	206.54	Buena Vista
19.72	25.36	16.98	17.06	23.18	192.04	Wheeler Ridge
40.14	54.70	36.12	35.92	49.34	399.55	Wind Gap
126.55	186.69	126.40	124.31	171.49	1,345.58	A. D. Edmonston
2.68	8.47	.43	4.62	7.01	42.65	Oso (West Branch)
24.57	30.19	33.43	25.23	33.52	261.12	Pearblossom
0	0	0	0	0	0	Devil Canyon Station Service
382.20	466.54	333.26	351.56	444.35	3,673.79	Total
						SOURCES OF ENERGY FOR PROJECT
21.58	.02	0	0	0	95.99	San Luis Pumping-Generating Plant (State Share)
9.00	30.17	0	17.86	23.59	143.53	Castaic Generating Plant (State Share)
42.76	54.30	50.58	41.98	57.31	451.20	Devil Canyon Generating Plant
50.46	48.62	49.90	48.26	50.67	596.12	Canadian Entitlement Power
0	0	0	0	0	0	Bonneville Power Administration
258.40	333.43	232.78	243.46	312.78	2,386.95	California "Suppliers"
382.20	466.54	333.26	351.56	444.35	3,673.79	Total

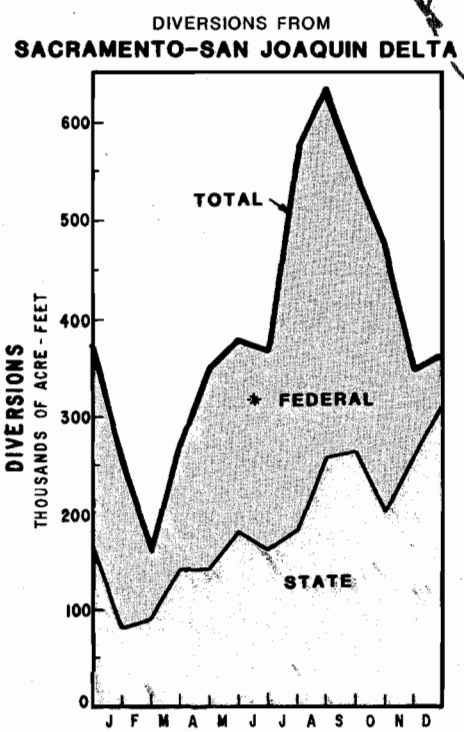
Figure 7. SUMMARY OF PROJECT



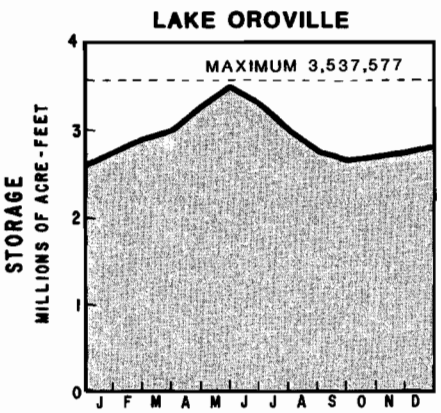


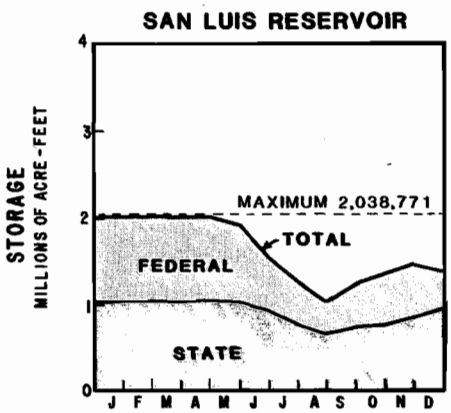




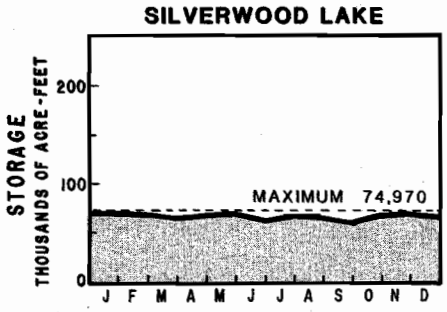


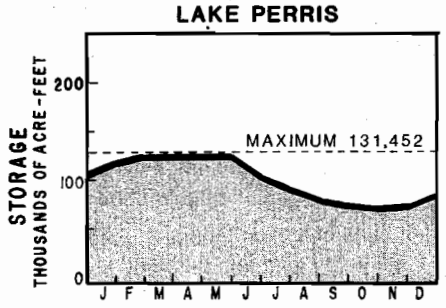
* Includes Diversions for Delta Mendota Canal and Contra Costa Canal





WATER OPERATIONS, 1979



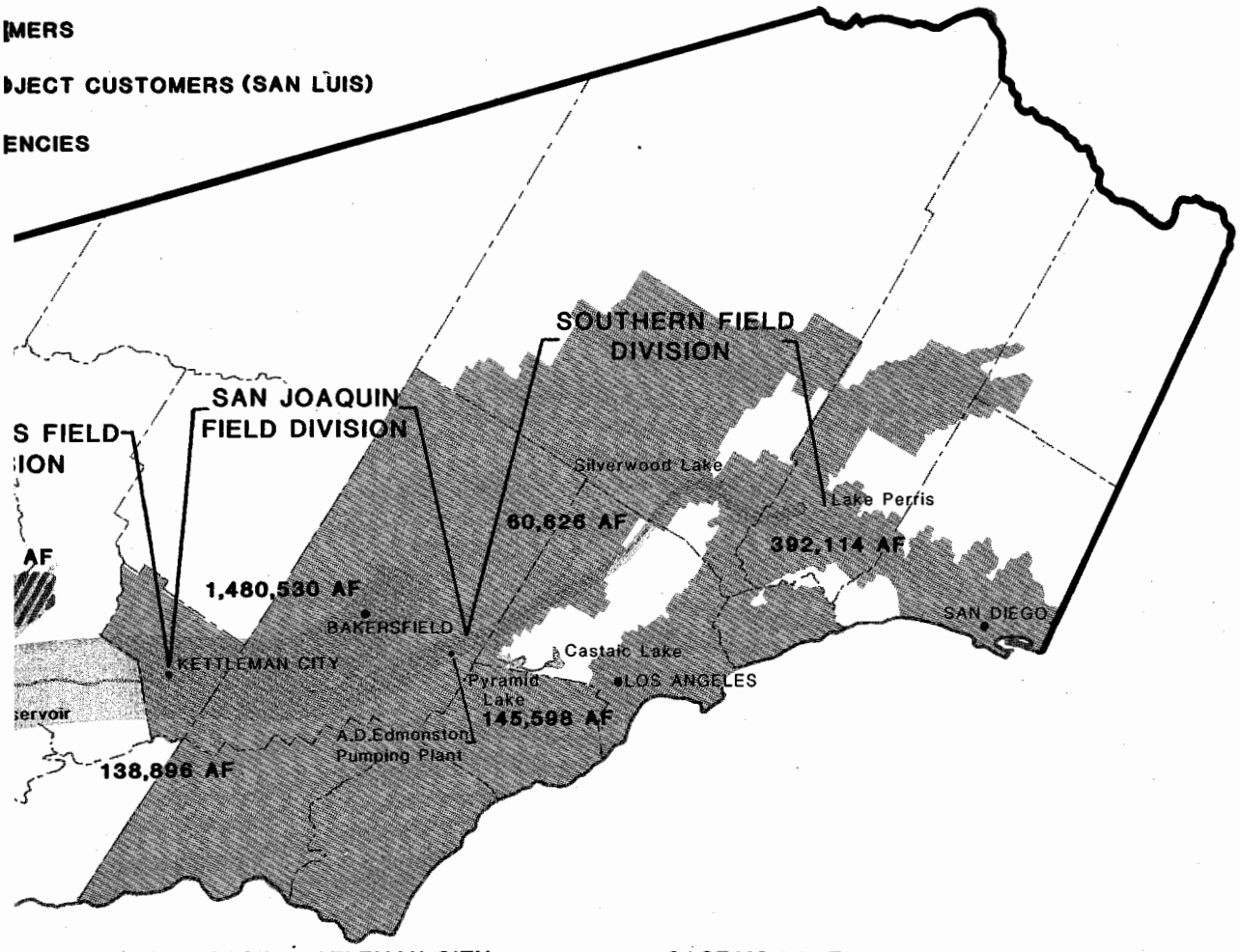


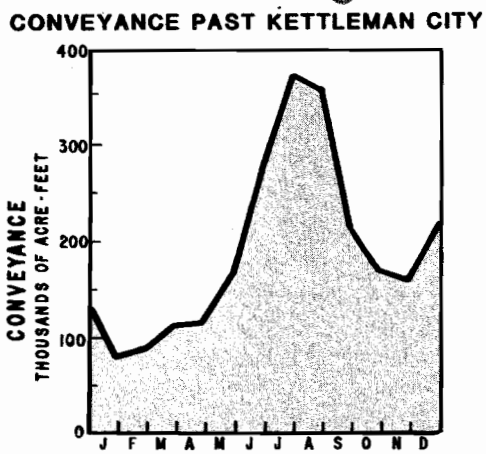
PROJECT FACILITIES

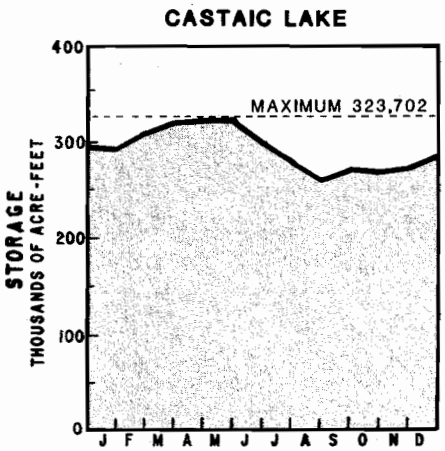
MERS

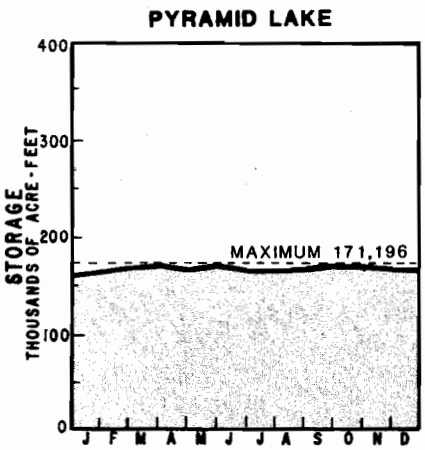
JECT CUSTOMERS (SAN LUIS)

ENCIES









RECREATION AND FISH AND WILDLIFE ACTIVITIES

About 5.3 million people used SWP facilities during 1979. This was an approximate 9 percent decrease from the 5.8 million recreationists reported in 1978. About 0.5 million visitor-days of use occurred at SWP visitor centers, a 17 percent decrease from the 0.6 million people visiting the facilities in 1978. Visitors include people entering or stopping near the visitor centers and overlooks, and those participating in guided tours of Project facilities.

Recreation use in 1978 and 1979 is shown in the following chart:

RECREATION USE AT STATE WATER PROJECT FACILITIES IN 1978 AND 1979

Facility	Recreation Use in Recreation Days		Facility	Recreation Use in Recreation Days	
	1979	1978		1979	1978
Oroville Field Division			**San Luis Field Division (Cont'd)**		
Frenchman Lake	135,900	140,900	California Aqueduct		
Antelope Lake	273,500	91,300	Walk-in fishing	5,000	3,300
Lake Davis	275,300	242,000	**TOTAL**	**747,700**	**779,300**
Lake Oroville Complex	640,700	508,600			
TOTAL	**1,325,400**	**982,800**	**San Joaquin Field Division**		
			Lost Hills F.A.S.*	2,500	1,500
Delta Field Division			Buttonwillow F.A.S.*	2,400	1,400
Lake Del Valle	310,100	390,300	Cadet Road F.A.S.*	700	400
Bethany Reservoir	47,300	3,000	Kettleman City F.A.S.*	1,400	600
Cottonwood Road F.A.S.*	400	1,000	California Aqueduct		
Niels Hansen F.A.S.*	500	1,000	Walk-in fishing	24,700	27,100
Orestimba F.A.S.*	1,200	2,100	**TOTAL**	**31,700**	**31,000**
California Aqueduct					
Walk-in fishing	18,300	41,900	**Southern Field Division**		
California Aqueduct			Castaic Lake	985,300	1,084,000
Bikeway	500	900	Silverwood Lake	485,300	530,700
TOTAL	**378,300**	**440,200**	Pyramid Lake	293,700	428,900
			Lake Perris	1,044,300	1,462,500
San Luis Field Division			77th Street, East F.A.S.*	100	8,200
San Luis Reservoir			Longview Road F.A.S.*	1,000	5,600
O'Neill Forebay, and			California Aqueduct		
Los Banos Reservoir	737,100	771,400	Walk-in fishing	4,100	18,500
Canyon Road F.A.S.*	1,100	700	California Aqueduct		
Mervel Avenue, F.A.S.*	900	700	Bikeway	1,800	2,000
Fairfax F.A.S.*	1,300	800	**TOTAL**	**2,815,600**	**3,540,400**
Three Rocks F.A.S.*	600	700			
Huron F.A.S.*	700	800			
Avenal Cutoff F.A.S.*	1,000	900	**GRAND TOTAL, SWP**	**5,298,700**	**5,773,700**

* *Fishing Access Site*

About 2,300 cyclists used the California Aqueduct Bikeway in 1979: 500 along the Aqueduct from Bethany Reservoir to O'Neill Forebay, and 1,800 in the Antelope Valley area. The total use of the bikeway decreased about 21 percent from the 2,900 cyclists reported in 1978.

The total length of bikeway now in operation is approximately 280 kilometres (174 miles): 108 kilometres (67 miles) in the San Joaquin Valley, and 172 kilometres (107 miles) in Southern California. Included are 3 kilometres (2 miles) of bikeway added in 1979 across Big Rock Creek in the Pearblossom area of Southern California.

Pictured above, in a ribbon-cutting ceremony which officially opened the Big Rock Creek Bike Trail Crossing are (left to right) Loretta Lambdin, Miss Littlerock; Ronald B. Robie, Director, DWR; Robert W. James, Deputy Director, DWR; Phillip Wyman, Assemblyman; Anthony Soza, Councilman, Palmdale; Ralph Ritter, President, AV-EK; Katheryn Giese, Miss Pearblossom. The Crossing ties together two segments of the existing bike trail along the California Aqueduct near Pearblossom.

Figure 8 shows the status of recreation developments on the California Aqueduct at the end of 1979.

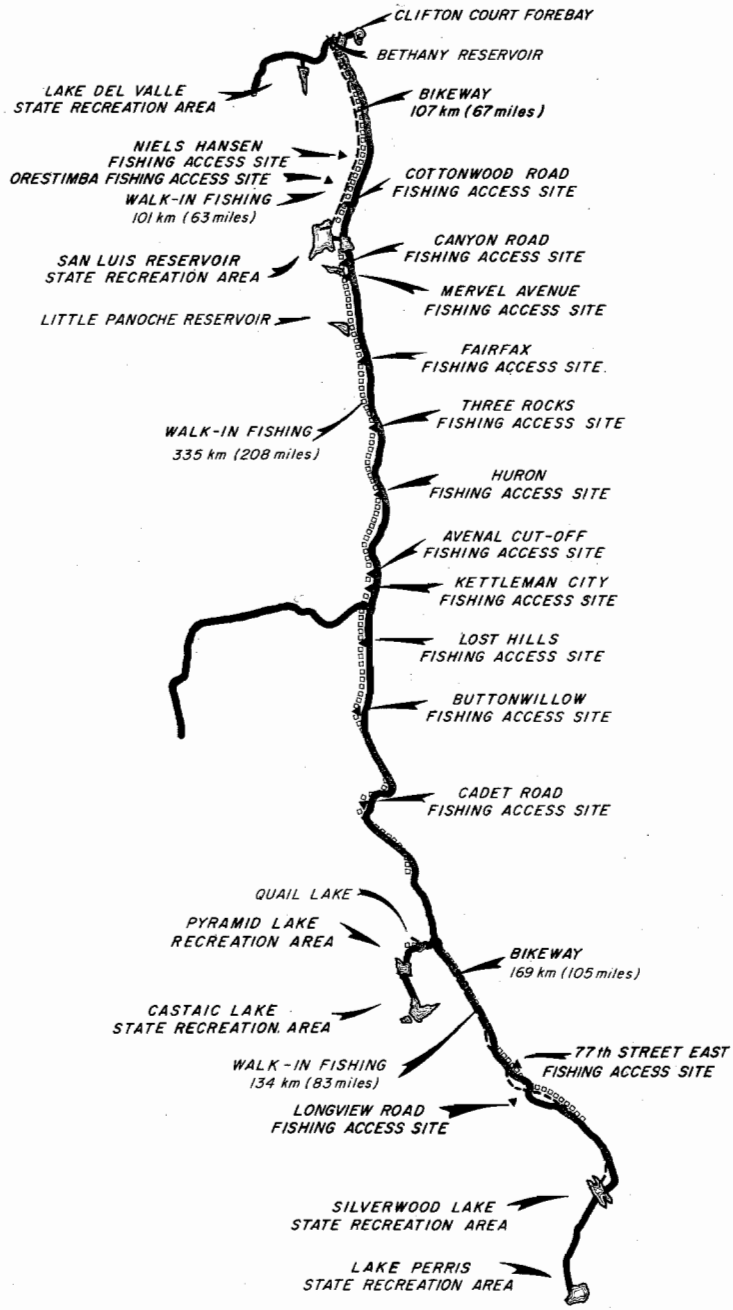


Figure 8: AQUEDUCT RECREATION DEVELOPMENTS

Fishing Access Site Program

Under legislation enacted in 1968, the Wildlife Conservation Board is responsible for planning and developing a fishing access program on SWP aqueducts (see page 2, Bulletin 132-69). In 1969, the Board and the Department embarked on a program of development at certain sites along the California Aqueduct. Under the program the Department agreed to permit use of some existing roads, furnish and install necessary safety devices prior to public use, and provide necessary access to land on which to develop the fishing access sites. In addition, the Board requires that (1) a fishery be established prior to development of a site, (2) site operation and maintenance be provided by local government, and (3) site facilities (funded by the Board) be adequate but not elaborate.

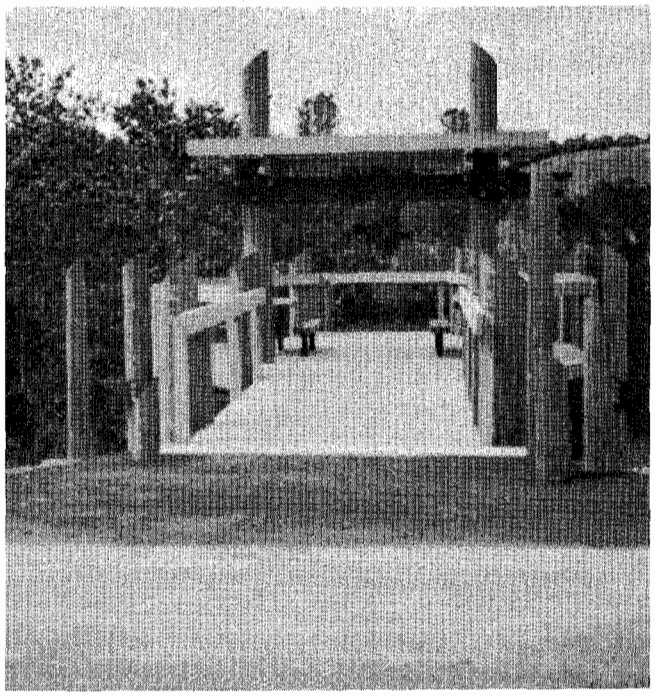
All 15 fishing access sites on the aqueduct are open and free to the public and have been well received.

Feather River Enhancement Project

The Feather River Enhancement Project is located between the north side of the town of Oroville and the Feather River, including a part of the west Highway 70 right of way. The recreation project was authorized and funded from the State's General Fund ($1,200,000) by passage of Assembly Bill 2620 in 1976. Project facilities include bike trails along the river, parking areas, lifeguard platform, picnic tables, restrooms, and other miscellaneous structures.

In mid-January 1980, construction of the Feather River Enhancement Project was near completion when the Department released a large amount of water from Lake Oroville. These releases were required to maintain flood control capacity in Lake Oroville. The releases caused damage to the Bedrock Park area of the project, including destruction of the bikeway paving, and erosion of beach sand and top soil.

Except for repair of the damage caused by the flood control releases, the contractor completed construction of the project in May 1980. Senate Bill 2050, passed by the Legislature in 1980, appropriated $141,000 for repair of damage to the project. The Department of Fish and Game wants the asphalt paving fragments from the damaged bikeway removed from the river by October 1, 1980 to avoid damage to the salmon spawning area in the fall. Also, the Feather River Recreation and Park District has requested that all other repairs be completed by June 1, 1981.



This photo shows a newly completed observation platform which overlooks a portion of the Feather River.

DWR Field Divisions

Following are additional details of recreation and fish and wildlife activities within each field division.

Oroville Field Division. In 1979, the Feather River Fish Hatchery produced 5,216,200 king salmon and 204,460 steelhead.

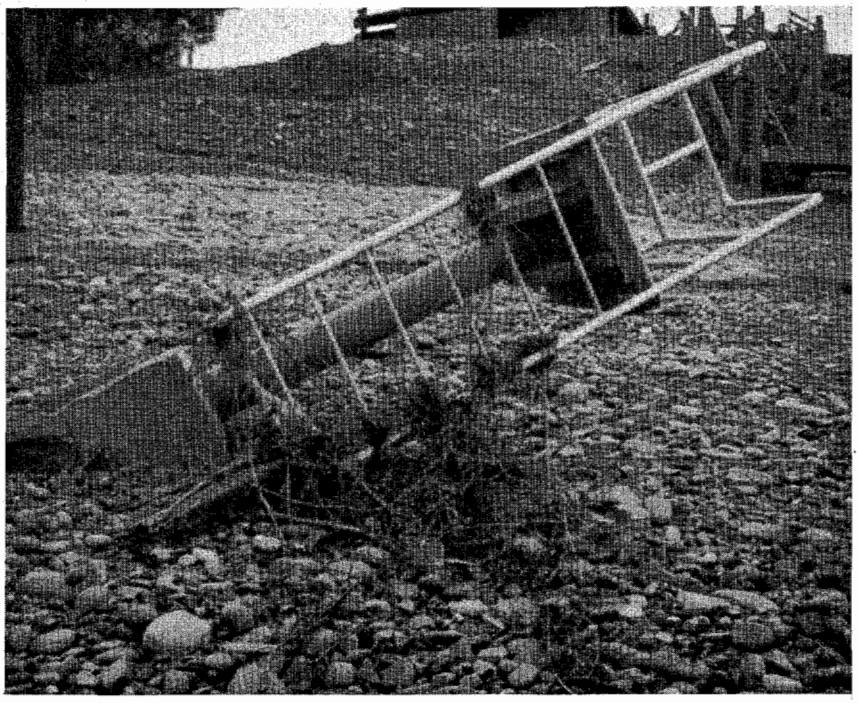
Recreation use at Antelope Lake increased approximately 200 percent over the use reported for 1978. The Department of Fish and Game planted Antelope Lake with 288,890 trout.

During 1979, at Lake Davis, a two-lane boat ramp at Honker Cove and a two-lane car-top boat access at Mallard Cove were constructed. Also, Lake Davis was planted with 75,265 trout.

During 1979, Frenchman Lake was planted with 135,847 trout.

In 1979 the Department of Fish and Game completed several projects in the Lake Oroville area: (1) the Oroville Wildlife Area boundary was surveyed and posted; (2) 75 wood-duck nest boxes were installed; five ponds, totalling approximately 2.4 hectares (6 acres), were developed; (3) approximately 350 metres (1,150 feet) of drainage ditch was deepened and widened; (4) grasses were planted on levee slopes and rocky areas; and (5) 540 tree and shrub seedlings were planted. Also, 171,134 trout were planted in Lake Oroville.

Delta Field Division. Public hunting for waterfowl was permitted at Clifton Court Forebay on Saturdays, Sundays, and Wednesdays from October 20, 1979 through January 20, 1980. A total of 681 hunters were issued permits and harvested 1,049 birds, an average of 1.54 birds per hunter. The Forebay is best suited for hunting by scull boat. Hunters using the banks or hunting from conventional boats were least successful.



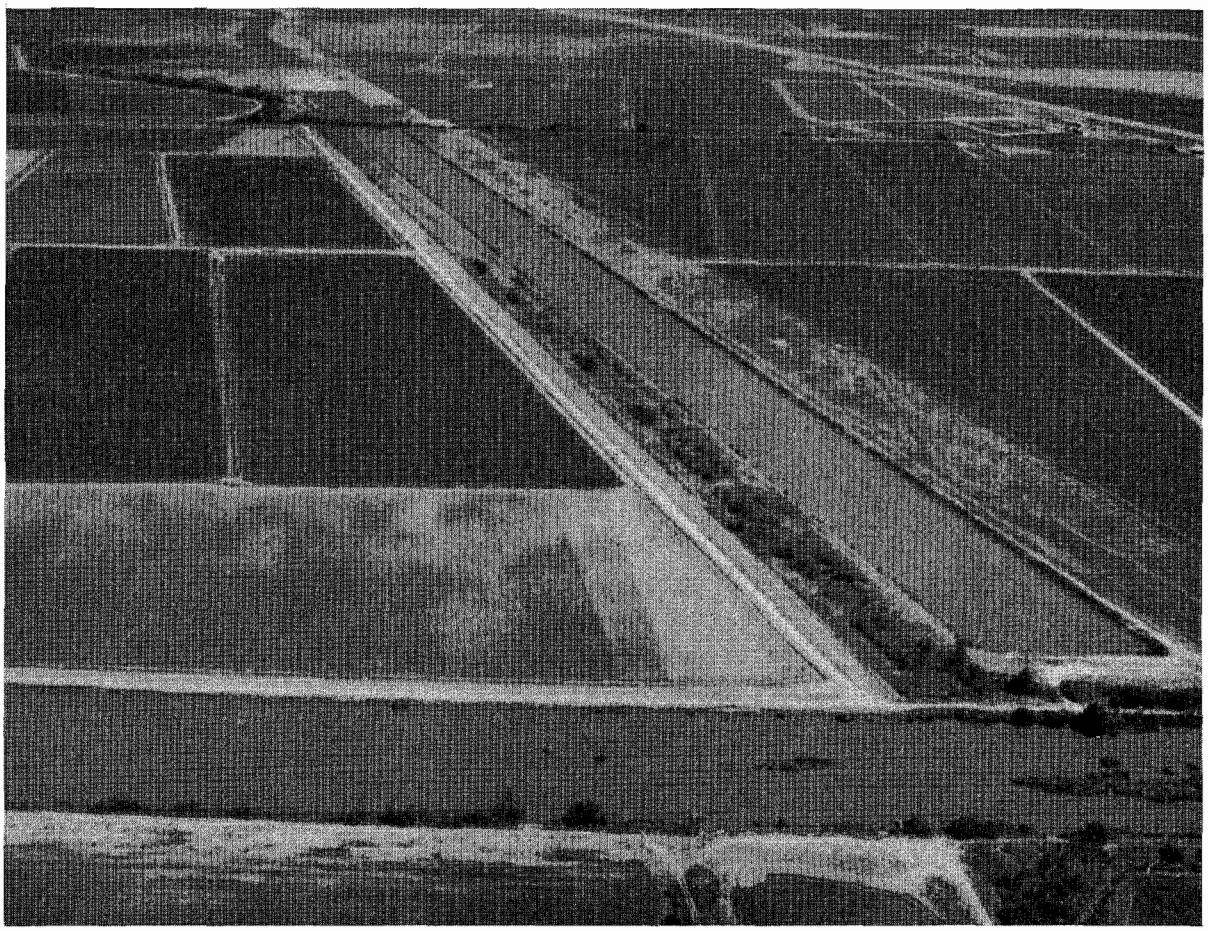
This photo shows damage to a lifeguard platform as a result of winter flooding along the Feather River Enhancement Project.

In 1979, the Department completed a study of public use at the five southernmost Interstate 5 (I-5) borrow ponds and adjacent State-owned land in San Joaquin County. These ponds were created by excavating material needed for construction of I-5 from the right-of-way of the proposed Peripheral Canal. On completion of the excavation, ground water recharged the basins. These ponds have been planted by the department of Fish and Game with large mouth bass, sunfish, perch, bluegill, and channel catfish. The area adjacent to the ponds will be planted to provide food and cover for wildlife. Development of the borrow ponds has been funded by the Wildlife Conservation Board. The Department of Water Resources will be responsible for operation and maintenance of the sites when they are opened for public use.

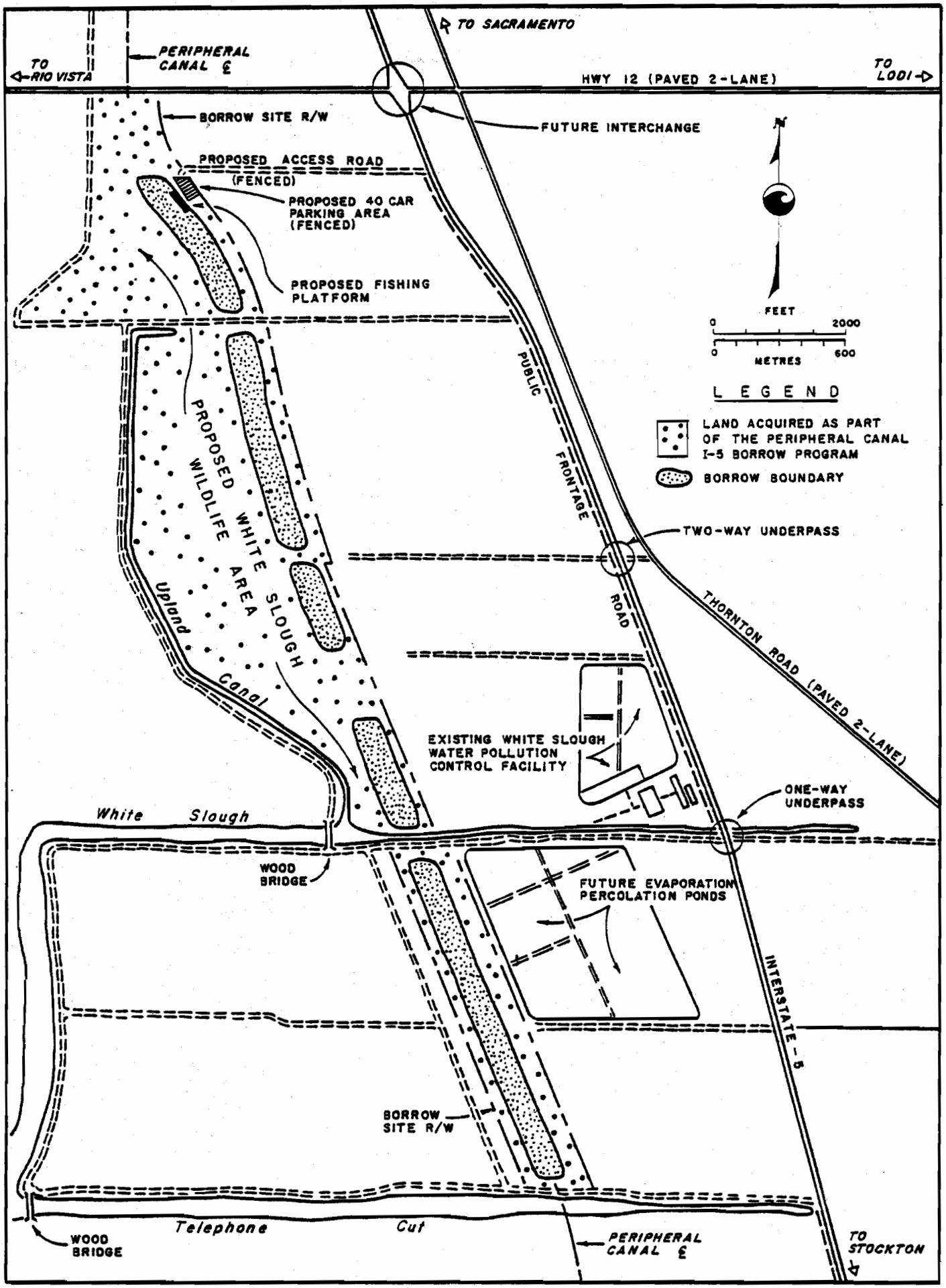
The borrow ponds are scheduled to be opened to the public in Autumn of 1980.

San Luis Field Division. At San Luis Reservoir construction of a four-lane boat ramp at Basalt Campground was compelted in 1979. A boarding float was constructed at O'Neill Forebay. Los Banos Detention Reservoir was planted with 4,140 channel Catfish.

San Joaquin Field Division. In planted areas along the California Aqueduct in the San Joaquin Valley, where mature growths of shrubs and a few trees are



Aerial view of borrow ponds created when fill material was taken for construction of Interstate 5.



LOCATION MAP OF INTERSTATE 5 (I-5) BORROW PONDS

providing protective cover and food, the heaviest use by wildlife occurs mainly from nongame songbirds, followed by cottontail rabbits, pheasants, jackrabbits, raptors (birds of prey), valley quail, and small mammals, in that order. In general, greater numbers of wildlife and more species can be observed along the planted areas than in the nonplanted areas along the Aqueduct.

Southern Field Division. The visitors center at Lake Perris had very little use by the public and was therefore closed on July 6, 1979. DWR and the Department of Parks and Recreation are currently seeking ways to utilize the visitors center.

The Department of Fish and Game planted Silverwood Lake with 241,100 trout, and 6,720 channel catfish. Lake Perris was planted with 178,105 trout and 11,176 channel catfish. Castaic Lake was planted with 211,225 trout and 10,144 channel catfish. Also, 23,910 trout were planted in Castaic Lagoon. Pyramid Lake was planted with 151,700 trout, 7,000 channel catfish, and 102 small-mouth bass. In addition, 1,700 channel catfish were planted at various locations in the Aqueduct in Southern California.

Wildlife Preservation

Both Federal and State laws require that water project developers take reasonable actions to preserve, or mitigate damage to, wildlife resources affected by their projects. For several years the Department has been developing wildlife mitigation plans for the SWP in Southern California (south of A.D. Edmonston-Tehachapi Pumping Plant). The damage these plans seek to mitigate generally consist of losses of wildlife habitat resulting from inundation or development of Project facilities.

The Departments of Water Resources and Fish and Game finalized mitigation requirements for losses of wildlife habitat attributable to the construction of SWP facilities in Southern California. The two departments and The Metropolitan Water District of Southern California signed a Memorandum of Agreement, dated October 23, 1979, that detailed the terms of a wildlife mitigation plan. Under the agreement, the Department of Fish and Game will have the right to use for wildlife purposes approximately 1 227 hectares (3,033 acres) of SWP lands at designated locations and approximately 1 038 hectares (2,565 acres) of lands owned by The Metropolitan Water District at Lake Mathews.

In addition, the Department of Water Resources will provide $7 million of SWP funds for use by the Department of Fish and Game. The funds are to be used for improving and maintaining wildlife habitat on the lands referred to above, or for acquiring and improving wildlife lands in the San Jacinto Valley area. Under the agreement, the Department of Water Resources will also assign to the Department of Fish and Game $0.5 million of its share of allocations from the Land and Water Conservation Fund, and will cooperate with Fish and Game in seeking appropriation of $0.5 million from funds allocated to the Department of Water Resources by the State, Urban, and Coastal Park Bond Act of 1976. These latter funds totalling $1 million, will be used for public use facilities within the wildlife mitigation areas.

LITIGATION

State Department of Water Resources v. Moloney, Sacramento County Superior Court No. 239121, involves the purchase of transformers for installation during construction of the Oroville Powerplant. Three of the transformers failed after a short period of use, and upon examination it was found that they did not meet original contract specifications. All six transformers have now been repaired or rebuilt, and the State is seeking to recover the costs of approximately $3,000,000.

On September 30, 1975, Central Moloney, Inc. filed a cross-complaint against the Department for $255,886 for repairs to two of the transformers.

On October 23, 1979, the Department and Moloney reached an out-of-court settlement in this case for damages to the Department resulting from the defective transformers. The amount of settlement was $755,000. Half of the payment has been made and the remaining half is due by November 15, 1980. With various insurance payments made for failure of this equipment, the Department will recover over $1,085,000.

Tulare Lake Basin Water Storage District v. State of California, et al., filed October 19, 1976, Sacramento County Superior Court No. 263582, Declaratory Relief, Preliminary and Permanent Injunctions, Undetermined amount of damages.

The Tulare Lake Basin Water Storage District and Dudley Ridge Water District, both State water project contractors, filed suit against the Department of Water Resources. The causes of action in this suit are similar to those alleged in the past by the Berrenda Mesa Water District and the Kern County Water Agency. The Berrenda Mesa Water District dismissed its action without prejudice in February 1978, after the trial court sustained the Department's demurrer. The Kern County Water Agency dismissed its action without prejudice after including, upon agreement by the parties in December 1978, the substance of its claim in its complaint in intervention in this action.

The complaint alleged that the Department of Water Resources unlawfully operated the SWP to meet salinity objectives of the water quality control plan for the Delta adopted by the State Water Resources Control Board. The Department claims that it, by law, must meet Delta water quality requirements established by the Board.

Specifically, the complaint alleged: (1) violation of the water supply contracts which obligate the Department to furnish surplus water to the plaintiffs, (2) illegal departmental action which depleted project revenues to the detriment of the holders and owners of all general obligation bonds issued under the California Water Resources Development Bond Act. Sections 12930 et seq. of the California Water Code in violation of Section 12937 of the Water Code and Section 5 of the water supply contracts, (3) impairment of the obligation of the water supply contracts between the parties to the contract and the landowners within the plaintiffs' service area who are, allegedly, third party beneficiaries of the water supply contracts, in violation of the United States Constitution (Fifth and Fourteenth Amendments) and the California Constitution (Article 1, Section 9), (4) impairment of the obligation of the contracts between the plaintiffs and their bondholders, the bonds having been issued and bought in reliance on the water supply contracts, in violation of the U. S. and California Constitutions, (5) violation of Article 10, Section 2 of the California Constitution and Section 100 of the California Water Code requiring the reasonable beneficial use of water, (6) violation of the injunction staying the operation of State Water Resources Control Board Decision 1379, (7) violation of the Department's duties to obey the injunction and to deliver surplus water to the plaintiff. The complaint asks for a preliminary and permanent injunction, declaratory relief and damages (unascertainable at this time) on both tort and contract theories.

The Department's demurrer was heard on February 28, 1977.

The plaintiff filed an amended complaint in response to the Department's demurrer, which was sustained with leave to amend. The Department filed a

demurrer which was heard in June 1978. Kern County Water Agency (KCWA) intervened and upon agreement by the parties in December 1978, included the substance of its claim in KCWA v. State of California in this complaint in intervention.

The pretrial conference was held on February 28, 1979. The parties filed a joint pretrial statement, a stipulation of facts, and a bifurcation order. The trial on the first phase of liability for entitlement water delivery was held on March 31, 1979 at which exhibits were introduced. Briefs and oral arguments have been scheduled.

Salyer Land Co. v. State of California, Department of Water Resources, filed May 9, 1977, Sacramento County Superior Court, No. 267012, $3.7 million.

The plaintiff company farms land in the service area of the Tulare Lake Basin Water Storage District, a State Water Project contractor. The plaintiff alleges that it is a third party beneficiary of the water supply contract between DWR and the Tulare Lake Basin Water Storage District and that the DWR's actions in allowing water to flow out of the Delta in 1976 until the present violated the terms of that contract. The complaints specifically allege violations of the provisions that (1) require the Department to supply water in satisfaction of the contract commitments, and (2) require the Department to furnish surplus water. The complaint alleges also that DWR violated the stay order against State Water Resources Control Board Decision 1379 and wrongfully diverted water, which allegedly belonged to the plaintiff, into the Sacramento-San Joaquin Delta.

The plaintiff is pursuing this suit on its own behalf and as a class action, on behalf of all other similarly situated landowners. The plaintiff alleges damages in the amount of $3.7 million, which includes damage to crops and soil due to the consequent use of ground water with a high sodium content, costs of energy for pumping, and cost of drilling additional wells. Additional damages, including attorneys fees, will be added when they are known.

On July 28, 1977, the Department filed a demurrer which claimed that the plaintiff failed to state a cause of action. The grounds for the demurrer were (1) that the plaintiff lacks standing to enforce the contract between the Department of Water Resources and the Tulare Lake Basin Water Storage District; (2) that the plaintiff lacks standing to seek damages resulting from a violation of an injunction issued in another action; (3) that any violation of an injunction entered in another action may be raised only in that action; (4) that a cause of action for damages cannot be stated until the court in the other action determines that an injunction has been violated; and (5) that the injunction in any case would not bind the Department or any of the defendants.

On January 9, 1978, the demurrer to the first cause of action (contractual) was sustained with leave to amend. The Court allowed the plaintiff to amend in order to allege that the purpose of the contract was to fulfill an obligation owed by the Tulare Lake Basin Water Storage District to the plaintiff (to supply water). The Court sustained the demurrer to the second cause of action (violation of the injunction) without leave to amend because it lacks jurisdiction to enforce an injunction since the action is in Federal District Court.

On January 23, 1978, the plaintiff filed a second amended complaint, alleging that Tulare Lake Basin Water Storage District owed an obligation to the plaintiff to supply water.

The demurrer was heard on May 5, 1978. On June 16, 1978, the trial court rejected the Department's demurrer, and the Department filed its answer to the complaint on August 21, 1978.

Sierra Club v. Morton, U. S. District Court of Appeals for the Ninth Circuit, No. 76-1464 (District Court Decision is found at 400 F. Supp. 610 (N.D.Cal. 1975)).

This suit seeks to enjoin federal and state defendants, including the Director of the Department of Water Resources, from constructing or continuing construction or operation of the Delta Pumping Plant, the Peripheral Canal, and certain existing or proposed federal Central Valley Project facilities because of an alleged failure to meet environmental requirements. The principal statutes involved are the National Environmental Policy Act of 1969, the California Environmental Quality Act of 1970, and the Rivers and Harbors Act of 1899.

On July 28, 1975, Judge Charles B. Renfrew issued a Memorandum of Opinion stating that the Peripheral Canal would, and the Delta and Tracy Pumping Plants did, affect the "navigable capacity" of navigable waters in the Delta. He therefore ordered the State and federal defendants to obtain permits for these facilities from the U. S. Corps of Engineers. The Corps must consider Environmental Impact Statements before issuing any permits for these facilities and may, through its permit authority, impose restrictions on the operation of the facilities.

Although the State and all other defendants have filed appeals, the Department has also begun compliance by filing for a permit to divert water through the Delta Pumping Plant. This application would be dropped if the trial court is reversed.

On October 31, 1979, the Ninth Circuit Court of Appeals held that DWR must obtain a Corps permit for the Delta Pumping Plant, unless it is covered by a Corps' "nationwide permit" regulation. This question was remanded to the trial court. The Appeals Court also vacated the trial court's order requiring preparation of an EIS, which it believed was prematurely issued. As to the Federal Government's Tracy Pumping Plant, the court held that it was congressionally authorized, and thus did not require a Corps' permit.

The State, the United States, the intervenors (four SWP contractors) and the Sierra Club have all filed petitions for certiorari. The Supreme Court has agreed to hear the issue.

United States v. California (formerly USA v. State of California, United States District Court (Sacramento) CIV S-3014, filed October 1973) Ninth Circuit Court of Appeals.

This suit arose from conditions imposed by the State Water Resources Control Board in Decision 1422 on the U.S. Bureau of Reclamation's water rights for the New Melones Dam project. The Bureau sought a declaratory judgment that the State Board does not have the authority to place operational limitations on the project. The dispute centers on whether Section 8 of the Federal Reclamation Act of 1902 gave the states authority to place conditions on federal reclamation projects.

Several other cases involving the issue of the Board's jurisdiction over the federal Central Valley Project are being held in abeyance in the U.S. District Court of Sacramento pending the outcome of this case. They are: People ex rel. SWRCB v. Morton (the action by the state to compel CVP compliance with SWRCB water rights permits); Kern County Water Agency v. SWRCB and Central Valley East Side Project Association v. SWRCB (to set aside the Delta Water Rights

Decision 1379); San Joaquin County Flood Control and Water Conservation District v. SWRCB (to set aside the Lower American River Water Rights Decision 1400).

On August 17, 1977, the State requested the U.S. Supreme Court to review the case.

The U.S. Supreme Court decided to review the case and oral argument was heard on March 28, 1978.

On July 3, 1978 the U.S. Supreme Court decided in favor of California. It held that the Bureau must comply with conditions in its water rights permits that are not directly inconsistent with Congressional directives.

The case was remanded for a determination as to whether the U.S. was estopped from attacking the Board's decision on their merits and, if so, whether any conditions in the New Melones permits are directly inconsistent with Congressional directives. The case has been transferred to Judge Renfrew in San Francisco. On March 1, 1979 he heard arguments on the State's motion for summary judgment which is based on res judicata and estoppel. On April 12, 1979, Judge Renfrew denied the motion for intervention of Northern California Power Agency from the bench. He authorized the Agency to file an amicus curiae brief on the merit of the question raised in the State's motion for summary judgment within three weeks from that date; however, Northern California Power Agency has failed to file such a brief.

On January 28, 1980, the case was transferred to Judge Edward Dean Price in Fresno.

Delta Water Cases

The petitions are seeking to (1) challenge the merits of the State Water Resources Control Board Decision 1485 establishing conditions of water rights permits of the State Water Project and federal Central Valley Project and revised water quality control plan for the Delta and Suisun Marsh or (2) invalidate the Environmental Impact Report (EIR) on which Decision 1485 and the revised water quality control plan are based.

The Department is either a real party in interest or an intervenor in these cases. The Attorney General requested coordination of the eight cases for review of Decision 1485 and the six EIR cases. The Attorney General has authorized DWR to represent itself in these cases.

The hearing on the petition for coordination was held on August 3, 1979, in San Francisco by Judge Ira Brown. On August 7, 1979, Judge Brown granted the petition and ordered the cases coordinated. The cases have been transferred for further action to Judge Colvin in San Francisco. A trial conference order was issued on March 3, 1980. The order established liaison counsel, a discovery schedule, a procedure for certifying the record, and a schedule for further actions. On May 14, 1980, the court denied motions to intervene filed by Metropolitan Water District and other Southern California contractors in several of the cases. Following is a list of the petitions:

a. The Metropolitan Water District of Southern California, Kern County Water Agency and Tulare Lake Basin Water Storage District v. State Water Resources Control Board filed October 6, 1978, Superior Court, City of Sacramento, No. 276390.

b. Contra Costa County Water District, City of Antioch, City of Pittsburgh, City of Martinez, Oakley County Water District, City of Concord, City of Clayton and City of Pleasant Hill v. State Water Resources Control Board,

filed October 6, 1978, Superior Court, County of Contra Costa No. 191277.

c. South Delta Water Agency, San Joaquin County Flood Control and Water Conservation District, Albert Muller and Alexander Hildebrand v. State Water Resources Control Board, filed October 11, 1978, Superior Court, City and County of San Francisco, No. 743341.

d. San Joaquin County Flood Control and Water Conservation District Central Delta Water Agency, Delta Farms Reclamation District No. 2030, Reclamation District No. 563 and Conrad Silva v. State Water Resources Control Board, filed October 11, 1978 Superior Court, City and County of San Francisco, No. 743342.

e. Central Valley East Side Project Assoc., Friant Water Users Assoc., County of Tulare, Westlands Water District, Central Valley Project Water Association and San Luis and Delta-Mendota Water Users Assoc. v. State Water Resources Control Board of the State of California, filed October 11, 1978, Superior Court, City of Sacramento, No. 276337.

f. Contra Costa County Water Agency v. State Water Resources Control Board, filed October 13, 1978, Superior Court, City and County of San Francisco, No. 743385.

g. Central Valley East Side Project Assoc. v. State Water Resources Control Board, filed November 13, 1978, Sacramento Superior Court No. 277506.

h. Contra Costa County Water Agency v. State Water Resources Control Board, filed November 13, 1978, Contra Costa Superior Court No. 193298.

i. Crown Zellerbach Corp. v. State Water Resources Control Board, filed November 13, 1978, Contra Costa Superior Court No. 193368.

j. Fibreboard Corp. v. State Water Resources Control Board, filed November 13, 1978, Contra Costa Superior Court No. 193313.

k. Kern County Water Agency v. State Water Resources Control Board, filed November 13, 1978, Sacramento Superior Court No 277555.

l. San Joaquin County Flood Control and Water Conservation District v. State Water Resources Control Board, filed November 11, 1978, Contra Costa Superior Court No. 193377.

m. South Delta Water Agency v. State Water Resources Control Board, filed November 13, 1978, Contra Costa Superior Court No. 193342.

n. United States v. SWRCB, filed November 13, 1978, Sacramento Superior Court No. 277544.

Seepage Suits, Sacramento and Feather Rivers. During 1975 and early 1976, several suits were filed against the State and the United States in both the state and federal courts by more than 25 landowners adjacent to the Sacramento and Feather Rivers for damages alleged to have been caused by erosion and seepage in March and April of 1974, allegedly resulting from the coordinated operation of the federal and state water projects. The plaintiffs allege damages in excess of $30,000,000.

One such case, included in the Sacramento River Seepage Cases mentioned above is H. L. Sanborn, et al. v. United States, CIV 5-76-154, a complaint in inverse condemnation, negligence, and trespass for approximately $20,000,000 based on alleged erosion and seepage damages. It was filed in Federal District Court on March 22, 1976, by a

group of landowners along the Sacramento River. Defendants are the United States (U.S.), USBR, USCE, and the State of California. Similar complaints against the State and the United States have also been filed in the Superior Courts of the counties where the affected land is situated.

The claim arises from damages allegedly caused by high flows in the Sacramento River in March and April 1974, which plaintiffs contend caused erosion and seepage and raised the ground water table. The 1973-74 winter was extremely wet, and flooding occurred along the Sacramento River due to intense storms in January and at the end of March. The levels were partially controlled by reducing releases from Shasta Dam and diversions from the Trinity project.

The complaint alleges that the Federal and State Governments, as joint venturers in the CVP, kept the river levels high for an extended period, causing excess seepage that damaged their orchards and crops.

On September 19, 1977, United States District Court Judge McBride ruled on the pending motions of the United States as follows:

1. The plaintiffs' claims against the State are dismissed because there is no independent ground for federal jurisdiction.

2. The plaintiffs' inverse condemnation claims against the United States are dismissed because they all exceed $10,000; thus, the District Court has no jurisdiction. Such claims must be filed with the United States Court of Claims.

3. The plaintiffs' tort claims against the United States are dismissed as to any damages caused by operation of the CVP for any of its purposes because of the flood control immunity provided by federal statute (United States Code, Volume 33, Section 702(c)).

The only basis plaintiffs have left to seek recovery against the United States is to show that they suffered damage that resulted from activity of the United States unrelated to operations of the CVP.

This ruling may prompt plaintiffs to more actively pursue the Superior Court actions that were filed against the State.

The State was served in Superior Court on October 21, 1977, and has filed its answer and discovery is underway.

This case and four others have been combined for a hearing before a U.S. Court of Claims referee. The hearing is expected to take place in 1980.

Brannan Andrus Levee break cases. Sixteen complaints filed and served, earliest filing date September 14, 1972, Sacramento Superior Court, various numbers, $150,000,000+.

On June 21, 1972, a levee along the north bank of the San Joaquin River failed, and large portions of Brannan and Andrus Islands including the town of Isleton were flooded. The levee is owned and maintained by the Brannan-Andrus Levee Maintenance District. The break occurred at a point where the District was excavating along the landward toe of the levee and using the material to raise and regrade the top of the levee.

Plaintiffs are property owners who were damaged by the flood. They contend that the State is liable for their damage because various local and state agencies, including DWR, were responsible for the integrity of the levee system in the Delta, and hence the State should reimburse them for their losses. Plaintiffs' theories of recovery include negligence, inverse condemnation, nuisance, and maintenance of a dangerous condition.

In a verdict rendered on August 23, 1977, the jury determined:

1. Sacramento County is not liable for inverse condemnation. (Although the work being done included widening of the county road the judge did not let the question of tort liability against the county go to the jury.)

2. The Brannan-Andrus Levee Maintenance District is liable in tort and for inverse condemnation.

3. The State is not liable in tort or for inverse condemnation but is liable, because The Reclamation Board breached its mandatory duty to review the plans for the levee maintenance work.

The Attorney General filed an appeal with the Third District Court of Appeal on behalf of The Reclamation Board, and the plaintiffs appealed that portion of the judgment absolving Sacramento County of any liability.

The Court of Appeal upheld and affirmed the trial court conclusion that the County of Sacramento had no liability under the circumstances and had engaged in no undertaking or action whereby inverse condemnation could be established. Critically important to the Department, the Court of Appeal reversed the trial court on several important issues, ruling that: (1) the State (acting through The Reclamation Board) was under no mandatory duty to review and approve or disapprove plans and specifications, and (2) the District is not a state agency for whose acts and omissions the state is liable, and thereby reversed the trial court's imposition of liability upon the Department.

The appellants petitioned the California Supreme Court for review, and the Attorney General filed his answering brief on January 2, 1980. On January 24, 1980, the Supreme Court declined to hear the matter and remanded the case to the Superior Court for execution of judgment in accordance with the decision of the Third District Court of Appeal. The net result is a final determination in favor of the Department concluding that The Reclamation Board was not liable for breach of a mandatory duty because no duty to approve the plans of the Brannan-Andrus Levee Maintenance District existed. The court also clearly established that the District and similar districts are not agencies of the State for the purpose of liability for acts or omissions.

Pacific Gas and Electric Company v. Los Angeles City Department of Water and Power, et al., filed October 12, 1979, San Francisco County Superior Court No. 759086, Injunctive Relief.

This suit was filed by PGandE to compel LADWP to continue to meet its obligations to supply DWR with power under the Suppliers Contract or, in the alternative, to restrain DWR from taking more than eighty-five percent of the power it has scheduled under the Suppliers Contract. The LADWP has claimed that under the legal doctrine of commercial impracticability it is entitled to be excused from this obligation. The LADWP gave notice to DWR that unless DWR paid a higher price than that stated in the Suppliers Contract for such power, it would no longer provide DWR with service. After DWR refused to deviate from the terms of the Suppliers Contract, LADWP set October 21, 1979, as the date it would terminate service. The Southern California Edison Company and San Diego Gas and Electric Company, which, along with PGandE and LADWP, are the suppliers under the Suppliers Contract, were also made parties to the lawsuit.

A hearing on PGandE's application for a temporary restraining order has been indefinitely postponed by PGandE pending the outcome of Southern California Edison Company v. LADWP, et al. (L.A.Sup.Ct. No. 301654, October 18, 1979).

Southern California Edison Company v. Los Angeles City Department of Water and Power, et al., filed October 18, 1979, Los Angeles County Superior Court No. C-301654, Injunctive Relief.

This suit was filed by Edison to compel LADWP to continue to meet its obligations to supply DWR with power under the Suppliers Contract. The LADWP has claimed that under the legal doctrine of commercial impracticability it is entitled to be excused from this obligation. The LADWP gave notice to DWR that unless DWR paid a higher price than that stated in the Suppliers Contract for such power, it would no longer provide DWR with service. After DWR refused to deviate from the terms of the Suppliers Contract, LADWP set October 21, 1979, as the date it would terminate service. PGandE and San Diego Gas and Electric Company, which, along with Edison and LADWP, are the suppliers under the Suppliers Contract, were also made parties to the lawsuit.

On October 18, 1979, Edison obtained a temporary restraining order (TRO) requiring LADWP to continue to supply power under the Suppliers Contract. On November 7, 1979, a preliminary injunction was issued, in place of the TRO, requiring LADWP to continue to supply power. The DWR filed its complaint in intervention on January 14, 1980. Answers to Edison's complaint and DWR's complaint in intervention have been filed. The case is now in the discovery stage.

State of California, Department of Water Resources v. Contra Costa County Water Agency, et al., filed June 22, 1979, Sacramento County Superior Court No. 282495, $6,050,000.

This suit was filed by the Attorney General on behalf of the Department of Water Resources against the Contra Costa Water Agency, North Delta Water Agency, Central Delta Water Agency, South Delta Water Agency, Byron-Bethany Irrigation District, East Contra Costa Irrigation District, City of Vallejo, Union Properties and 10,000 DOES. The suit seeks a declaratory judgment that the defendants must contract with the Department and pay for State Water Project (SWP) water used in excess of that which is available in the absence of the SWP. The suit also seeks $6,050,000 to compensate the Department for water illegally used during July and August of 1977.

The Department's actions are based on common law claims (quasi-contract and conversion) and statutory obligations (Burns-Porter Act, Central Valley Project Act, Delta Protection Act and Watershed of Origin Statutes).

On March 12, 1980, the Sacramento County Superior Court Presiding Judge granted the motions for change of venue filed by Contra Costa County Water Agency and Union Properties Inc. and ordered the case transferred to San Francisco.

The Central Delta Water Agency, the South Delta Water Agency, Contra Costa County Water Agency, and Salyer Properties have filed demurrers which are scheduled for hearing in June 1980.

State of California, Department of Water Resources v. Los Angeles City Department of Water and Power, et al., filed September 26, 1978, Los Angeles County Superior Court No. C-255991, $1,400,000+.

This suit was filed by the Department to obtain monies owed to it by LADWP under the Cooperative Development Contract for hydroelectric facilities at Castaic. In July 1975, LADWP withheld approximately $69,000 from the Peaking Capacity Foregone payment owed to the Department. In subsequent years, LADWP has withheld larger amounts of monies from the Peaking Capacity Foregone payment. LADWP has asserted that the clause, which permits a reduction in the Peaking Capacity Foregone payment if there is a 45-day or more failure to schedule water

through Angeles Tunnel, has been triggered in these instances.

To delay the statute of limitations on the first claim, the Department filed the complaint on September 26, 1978. Attempts at reaching settlement were thereafter made, but have been unsuccessful. On September 21, 1979, the complaint was amended to include all outstanding claims relating to the 45-day clause and then served upon LADWP. Both the original and amended complaints were thereafter served upon LADWP. LADWP has answered. DWR filed a motion for summary judgment, but the motion was denied.

Goodman v. County of Riverside, Riverside County Superior Court No. 133871.

On November 15, 1979, Owen and Ann Goodman filed suit in Riverside County Superior Court seeking recovery of taxes collected by the County for the Desert Water Agency. The Desert Water Agency does not receive water directly from the State Water Project, but exchanges its Project entitlement with MWD, which provides for Desert to use Colorado River water. However, Desert needs the tax revenues to meet its contract obligations with the State. The Goodmans contend that the taxes were collected in violation of Article XIII A of the California Constitution.

The Department through the Attorney General has filed a complaint in intervention seeking to preserve the financial integrity of the Project. MWD, San Gorgonio Pass Water Agency, and five banks have also intervened. At issue is an opinion, issued by the Attorney General's Office in 1978, concluding that taxes necessary for Burns-Porter Act bonds were not precluded by Proposition 13.

On May 5, 1980, the court overruled and denied all the demurrers and motions to strike that Goodman had filed in opposition to the answers and complaints of the respondents and intervenors in the action.

Myrtle L. Jones v. State of California, Department of Water Resources, Lake Marina, et al., filed March 9, 1976, San Bernardino County Superior Court Case No. 169880, unspecified damages. (Fisher)

Mrs. Jones filed suit for the wrongful death of her son, who drowned while boating on Silverwood Lake. She alleged, among other things, that the death was caused by a dangerous condition of property. A jury verdict was rendered on December 7, 1979, which awarded plaintiff $85,000. The $85,000 will be included in an appropriation bill for payment by the Legislature.

CHAPTER III

FUTURE CONSTRUCTION COSTS, OPERATING COSTS AND PROJECT FINANCING

As a result of the Delta Alternatives Review, which concluded in 1978, the Department formulated a water management plan which defined recommended additional conservation facilities to supply water for the SWP through the year 2000. This plan was approved by the Legislature with the passage of Senate Bill 200. The water management plan also reflects water conservation and waste water reclamation in the projection of future water needs. The SWP financial analysis in this chapter includes the recommended additional conservation facilities from the Delta Alternatives Review to the extent needed to meet the estimated water delivery requirements through the year 2000.

As of December 31, 1979, nearly $2.6 billion had been expended by the Department for the facilities of the State Water Project ($2.4 billion of construction expenditures and $0.2 billion for other capital requirements). These expenditures include costs of planning, design, relocations, land acquisition, and operations during the construction period of each facility.

While the initial project facilities were completed in 1973, continuing construction will be required to (1) complete staged construction of the aqueduct system; (2) develop the remaining minimum SWP yield, which will be used to satisfy future entitlement commitments; and (3) construct SWP-owned power generating facilities in order to assure an economical and reliable power supply.

Previous financial analyses in the Bulletin 132 series included the estimated costs of facilities required to meet the minimum project yield of 5.22 million cubic dekametres (4.23 million acre-feet). This analysis only includes the Department's present planning for facilities through the year 2000, which was the time frame considered for the Delta Alternatives Review. The Department's current assumptions indicate that capital requirements through year 2000 for power generation and water facilities, Davis-Grunsky Program, and special requirements for revenue bond financing would be about $7.0 billion at prices prevailing on January 1, 1980. Future cost escalation assumed would add another $3.1 billion for a total of $10.1 billion.

The significant factors which decreased the estimate of $23.3 billion of capital expenditures in the financial analysis of Bulletin 132-79 is listed below.

Capital Requirements through 2035; Bulletin 132-79	$23.3 billion
less: o post year 2000 additional conservation facilities	-6.4
o post year 2000 storage payments for additional conservation facilities (Cottonwood Creek Project)	-1.9
o decrease in construction and replacement of SWP power generating facilities	-5.2
o decrease in special capital requirements under revenue bond financing	-0.7
plus: o Increase storage in payments for additional conservation facilities through year 2000 (Cottonwood Creek Project)	+0.1
o Cost estimate increases	+0.9
Capital Requirements through 2000; Bulletin 132-80	$10.1 billion

The estimated future costs of the facilities authorized by Senate Bill 200 (1980) are shown in Lines 4, 14, and 18 of Table 7. In addition to the construction cost of these facilities ($2.1 billion) these lines contain other capitalized costs. Line 4 (Delta Facilites) includes approximately $50 million for the Delta Water Quality Program costs and general planning costs assigned to the Delta Facilities. Line 18 (Additional Conservation Facilities) include an estimate of about $30 million of "use charges" for non-SWP facilities required for the implementation of the ground water storage program - and about $187 million for the operating expenditures required for the initial filling of the ground water basins.

Excluded from the cost estimates for the financial analysis are the costs of the project-associated works which, though essential for realizing full project benefits, are financed and constructed by local and State public agencies other than the Department.

Such associated works include, onshore recreation developments at SWP facilities, which are financed and constructed by a variety of State and local agencies, and local distribution facilities.

In addition to paying their allocated share of project costs, many long-term water contractors must finance the construction of local distribution facilities needed to transport project water deliveries to local water users. It is currently estimated that the 31 long-term contractors will spend a total of $2.46 billion for such facilities. Total expentitures through 1979 are an estimated $1.08 billion.

The Department's capital expenditures for the SWP also include requirements other than those for construction, such as:

- Disbursements under the Davis-Grunsky Program (See Line 24).
- Annual principal and interest payments for additional water conservation storage capacity (Cottonwood Creek Project) assumed to be eventually constructed by the federal government. Such additional storage is required to satisfy SWP water delivery demands after 1989 in the Department's water management plan (See Line 25).
- Special capital requirements under revenue bond financing (See Line 26).

This chapter presents a detailed analysis showing a financially viable State Water Project, producing enough revenues to pay all annual costs of operations and maintenance, to meet all repayment obligations on funds used to finance construction and, eventually to produce financing for additions to the SWP that may be authorized in the future.

The financial analysis is shown in Table 7 in two spreads. Actual and projected capital expenditures and sources of financing are shown in Spread 1 and graphically in Figure 9. Actual and anticipated revenues and the application thereof to pay SWP operating expenses, principal and interest on bonds, and to repay the California Water Fund are shown in Spread 2 and graphically in Figure 10.

The financial analysis is based on the major assumption that the Department would sell revenue bonds in connection with the construction of future SWP facilities -- with proceeds sufficient to fulfill the currently estimated need for supplemental financing. (Supplemental financing refers to funds required in excess of those (1) on hand including proceeds remaining from issued Revenue Bonds; (2) anticipated under current agreements and legislative enactments; (3) authorized Water Bonds.) The analysis indicates a total need for supplemental financing of $2.6 billion, which

Figure 9: FINANCING OF CONSTRUCTION EXPENDITURES

For State Water Project Capital Requirements Thru 2000

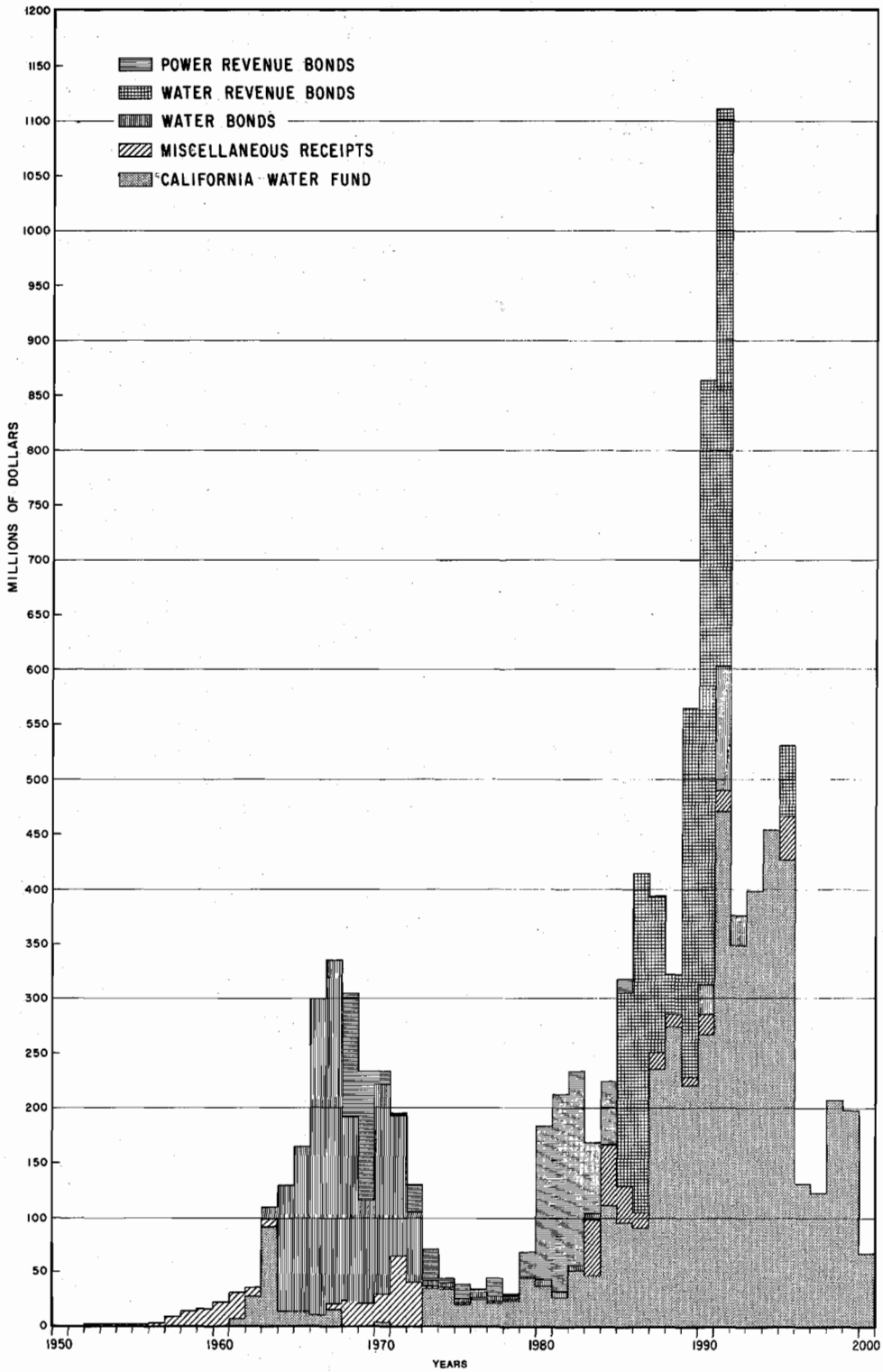


Figure 10: APPLICATION OF PROJECT OPERATING REVENUES

For State Water Project Capital Requirements Thru 2000

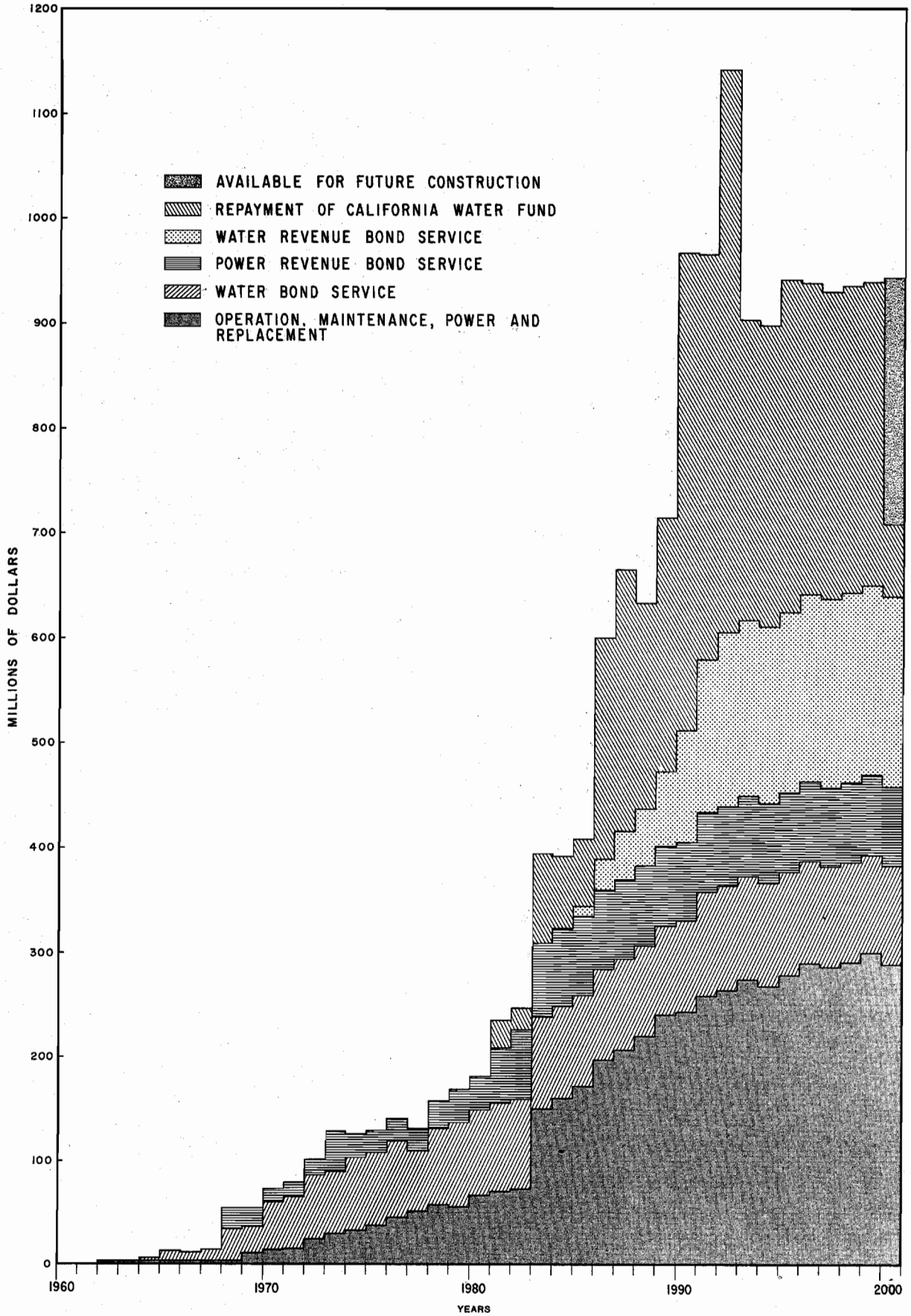


TABLE 7: PROJECT FINANCIAL

For State Water Project
(in thousands

LINE NO.	LINE ITEM	CALENDAR 1952-1979	1980	1981	1982	1983	1984
	PROJECT CONSTRUCTION EXPENDITURES						CAPITAL
1.	Initial Project Facilities	2,180,126	0	0	0	0	0
2.	Abbey Bridge and Dixie Refuge Dams and Reservoirs	761	0	0	0	0	0
3.	Phase II North Bay Aqueduct	1,275	1,708	1,770	6,655	16,608	6,899
4.	Delta Facilities (including Suisun Marsh)	53,045	10,473	7,873	16,219	28,375	63,399
	California Aqueduct:						
5.	Final Four Units at Delta Pumping Plant	822	89	236	877	2,221	4,831
6.	San Luis Canal Enlargement	0	1,173	2,500	5,000	2,210	3,670
7.	Final Three Units at A.D. Edmonston Pumping Plant	443	1,309	4,637	11,031	9,656	3,609
8.	Staged Units and Pipelines South of A. D. Edmonston	19,302	218	2,750	8,130	6,951	695
9.	Buttes Dam and Reservoir	50	0	128	348	982	8,162
10.	Final Three Units at Las Perillas and Badger Hill	769	0	0	0	0	29
11.	Peace Valley Pipeline and Pyramid Powerplant	44,541	38,457	25,689	8,055	448	7
12.	Cottonwood Powerplant	3,998	1,655	6,434	13,013	5,931	3,088
13.	Phase II of the Coastal Branch	415	127	553	1,595	2,867	9,259
14.	Enlargement of California Aqueduct, Mojave Division	0	0	660	1,700	7,750	13,250
15.	General Costs	63,826	10,305	7,686	7,217	996	5,612
16.	SUBTOTAL, California Aqueduct	134,166	53,333	51,273	56,966	40,012	52,212
17.	Miscellaneous Project Costs	24,870	8,752	10,024	9,487	3,837	2,499
18.	Additional Conservation Facilities	8,495	1	3	2,082	2,407	2,691
19.	Power Generating Facilities	1,699	23,182	80,431	92,976	54,318	53,809
20.	San Joaquin Drainage Facilities	9,206	93	328	351	360	360
21.	SUBTOTAL, PROJECT CONSTRUCTION EXPENDITURES	2,413,643	97,542	151,702	184,736	145,917	181,869
22.	Cost Escalation Allowance	0	821	2,977	10,400	18,269	42,964
23.	TOTAL PROJECT CONSTRUCTION EXPENDITURES	2,413,643	98,363	154,679	195,136	164,186	224,833
	OTHER CAPITAL REQUIREMENTS						
24.	Davis-Grunsky Act Program	108,982	5,145	5,145	5,179	5,179	370
25.	Additional Conservation Facilities-Storage Payments	0	0	0	0	0	0
26.	Special Capital Requirements under Revenue Bond Financing	60,650	80,482	52,951	34,125	0	0
27.	TOTAL OTHER CAPITAL REQUIREMENTS	169,632	85,627	58,096	39,304	5,179	370
28.	TOTAL CAPITAL REQUIREMENTS	2,583,275	183,990	212,775	234,440	169,365	225,203
							FINANCING OF
29.	APPLICATION OF CALIFORNIA WATER FUND MONEYS	373,647	37,184	25,750	50,999	45,985	111,481
	APPLICATION OF PROCEEDS FROM SALE OF BONDS:						
30.	Oroville Revenue Bonds	244,995	0	0	0	0	0
31.	Devil Canyon-Castaic Revenue Bonds	90,686	21,824	25,193	1,462	0	0
32.	Pyramid Hydroelectric Power Revenue Bonds	23,486	18,985	14,483	35,085	3,757	4
33.	Supplemental Water Revenue Bonds	0	0	0	0	0	0
34.	Supplemental Power Revenue Bonds	0	100,852	142,204	141,715	60,978	57,320
35.	Water Bonds, Davis-Grunsky Program	108,982	5,145	5,145	5,179	5,179	370
36.	Water Bonds, Additional Conservation Facilities	8,495	0	0	0	0	0
37.	Water Bonds, Initial Project Facilities	1,443,758	0	0	0	0	0
38.	TOTAL, Application of Proceeds from Sale of Bonds	1,920,402	146,806	187,025	183,441	69,914	57,694
39.	APPLICATION OF MISCELLANEOUS RECEIPTS TO CONSTRUCTION	289,226	0	0	0	53,466	56,028
40.	TOTAL FINANCING OF CAPITAL REQUIREMENTS	2,583,275	183,990	212,775	234,440	169,365	225,203

a) Dashes indicate that the Department has not identified the facilities or the timing of construction after 2000.

ANALYSIS, DECEMBER 31, 1979

Capital Requirements Thru 2000
of dollars)

Spread 1 of 2

YEARS 1985	1986	1987	1988	1989	1990	1991-2000	TOTAL 1952-2000	TOTAL 2001-2035	LINE NO.
EXPENDITURES									
0	0	0	0	0	0	0	2,180,126	0	1.
0	0	0	0	0	0	0	761	0	2.
694	168	56	24	8	1	0	35,866	0	3.
102,833	123,365	90,800	49,019	40,153	76,119	145,219	806,892	0	4.
10,305	7,517	1,974	0	0	0	0	28,872	0	5.
6,670	7,430	4,870	1,315	0	0	0	34,838	0	6.
52	0	0	0	0	0	0	30,737	0	7.
0	0	0	0	0	0	0	38,046	0	8.
10,269	1,878	495	127	5	4	2	22,450	0	9.
135	566	930	136	0	0	0	2,565	0	10.
0	0	0	0	0	0	0	117,197	0	11.
32	0	0	0	0	0	0	34,151	0	12.
37,409	48,153	30,827	3,874	1,598	53	18	136,748	0	13.
15,510	21,280	32,340	38,780	14,390	3,120	0	148,780	0	14.
2,076	1,695	754	200	60	177	236	100,840	0	15.
82,458	88,519	72,190	44,432	16,053	3,354	256	695,224	0	16.
1,647	1,327	994	990	987	862	2,534	68,810	-(a	17.
8,087	45,081	72,917	86,181	169,124	252,956	830,426	1,480,451	-	18.
11,830	70	0	0	0	0	0	318,315	-	19.
360	360	135	135	135	69	0	11,892	-	20.
207,909	258,890	237,092	180,781	226,460	333,361	978,435	5,598,337	-	21.
87,110	128,181	139,880	142,000	232,632	416,358	1,891,558	3,113,150	-	22.
295,019	387,071	376,972	322,781	459,092	749,719	2,869,993	8,711,487	-	23.
0	0	0	0	0	0	0	130,000	0	24.
0	0	0	0	66,956	66,956	669,560	803,472	2,343,460	25.
22,500	27,500	17,500	0	40,000	48,000	56,802	440,510	-	26.
22,500	27,500	17,500	0	106,956	114,956	726,362	1,373,982	-	27.
317,519	414,571	394,472	322,781	566,048	864,675	3,596,355	10,085,469	-	28.
CAPITAL EXPENDITURES									
95,261	91,183	236,731	274,134	221,491	266,895	2,824,807	4,655,548	2,343,460	29.
0	0	0	0	0	0	0	244,995	0	30.
0	0	0	0	0	0	0	139,165	0	31.
0	0	0	0	0	0	0	95,800	0	32.
176,506	309,118	142,941	36,447	337,157	550,768	570,013	2,122,950	-	33.
11,876	70	0	0	0	0	0	515,015	-	34.
0	0	0	0	0	0	0	130,000	0	35.
0	0	0	0	0	27,912	139,835	176,242	0	36.
0	0	0	0	0	0	0	1,443,758	0	37.
188,382	309,188	142,941	36,447	337,157	578,680	709,848	4,867,925	-	38.
33,876	14,200	14,800	12,200	7,400	19,100	61,700	561,996	0	39.
317,519	414,571	394,472	322,781	566,048	864,675	3,596,355	10,085,469	-	40.

TABLE 7: PROJECT FINANCIAL

For State Water Project
(in thousands

LINE NO.	LINE ITEM	CALENDAR 1952-1979	1980	1981	1982	1983	1984
	MISCELLANEOUS RECEIPTS				MISCELLANEOUS RECEIPTS AND		
41.	Federal Payments for Project Capital Expenditures	76,728	300	0	0	0	0
42.	Appropriations for Capital Costs Allocated to Recreation	70,000	5,000	5,000	5,000	5,000	5,000
43.	Appropriations for Project Capital Expenditures	181,636	0	0	0	0	0
44.	City of Los Angeles Payments for Castaic Power Development	36,502	0	0	0	0	0
45.	Water Contractor Advances for Construction of Requested Works	71,923	67	29	94	86	24
46.	Investment Earnings on Unexpended Miscellaneous Receipts	91,809	11,100	10,600	9,700	7,400	4,000
47.	TOTAL MISCELLANEOUS RECEIPTS	528,598	16,467	15,629	14,794	12,486	9,024
	PROJECT OPERATING REVENUES						
48.	Payments under Oroville Power Sale Contract	174,037	16,150	16,150	16,150	31,193	19,985
49.	Payments under Devil Canyon-Castaic Contract	56,714	9,677	9,061	9,061	9,961	9,955
50.	Payments under Long Term Water Supply Contracts	957,367	142,882	166,884	168,491	282,164	324,707
51.	Federal Payments for Project Operating Costs	20,911	3,864	4,261	4,679	4,837	4,842
52.	Appropriations for Operating Costs Allocated to Recreation	14,491	2,996	3,078	3,098	5,987	6,416
53.	Payments under Davis-Grunsky Loan Repayment Contracts	3,084	700	1,072	1,218	1,694	1,879
54.	Miscellaneous Revenues	164,744	75,875	52,552	34,591	16,623	3,486
55.	TOTAL PROJECT OPERATING REVENUES	1,391,348	252,144	253,058	237,288	352,459	371,270
56.	TOTAL MISCELLANEOUS RECEIPTS & PROJECT OPERATING REVENUES	1,919,946	268,611	268,687	252,082	364,945	380,294
				APPLICATION OF MISCELLANEOUS RECEIPTS			
57.	CARRYOVER (+) AND APPLICATION (-) OF RECEIPTS AND REVENUES HELD TEMPORARILY IN RESERVE	91,523	21,673	15,629	14,794	-67,776	-47,004
58.	PROJECT OPERATING COSTS	372,483	65,900	69,738	72,734	149,788	160,228
59.	DEPOSITS TO SPECIAL RESERVES UNDER REVENUE BOND FINANCING	71,887	72,735	18,985	-8,474	-14,298	-20,513
	PAYMENTS OF BOND SERVICE:						
	Bonds Sold Through December 31, 1979						
60.	Interest Payments	1,017,101	90,338	94,443	93,383	92,249	90,989
61.	Principal Repayments	77,726	17,965	20,070	21,380	23,665	25,745
	ASSUMED FUTURE BOND SALES:						
	Water Revenue and General Obligation Bonds:						
62.	Interest Payments	0	0	0	919	919	919
63.	Principal Repayments	0	0	0	0	0	0
	Power Revenue Bonds:						
64.	Interest Payments	0	0	24,573	37,111	41,201	41,201
65.	Principal Repayments	0	0	0	0	0	3,190
66.	TOTAL BOND INTEREST PAYMENTS	1,017,101	90,338	119,016	131,413	134,369	133,109
67.	TOTAL BOND PRINCIPAL REPAYMENTS	77,726	17,965	20,070	21,380	23,665	28,935
	REPAYMENT OF THE CALIFORNIA WATER FUND						
68.	Required for Construction	0	0	25,249	20,235	85,731	69,511
69.	Not Required for Construction	0	0	0	0	0	0
70.	APPLICATION OF MISCELLANEOUS RECEIPTS TO CONSTRUCTION	289,226	0	0	0	53,466	56,028
71.	SUBTOTAL, Repayment of Capital Financing	366,952	17,965	45,319	41,615	162,862	154,474
72.	RESERVATION FOR FUTURE CONSTRUCTION	0	0	0	0	0	0
73.	TOTAL APPLICATION OF MISCELLANEOUS RECEIPTS AND PROJECT OPERATING REVENUES	1,919,946	268,611	268,687	252,082	364,945	380,294

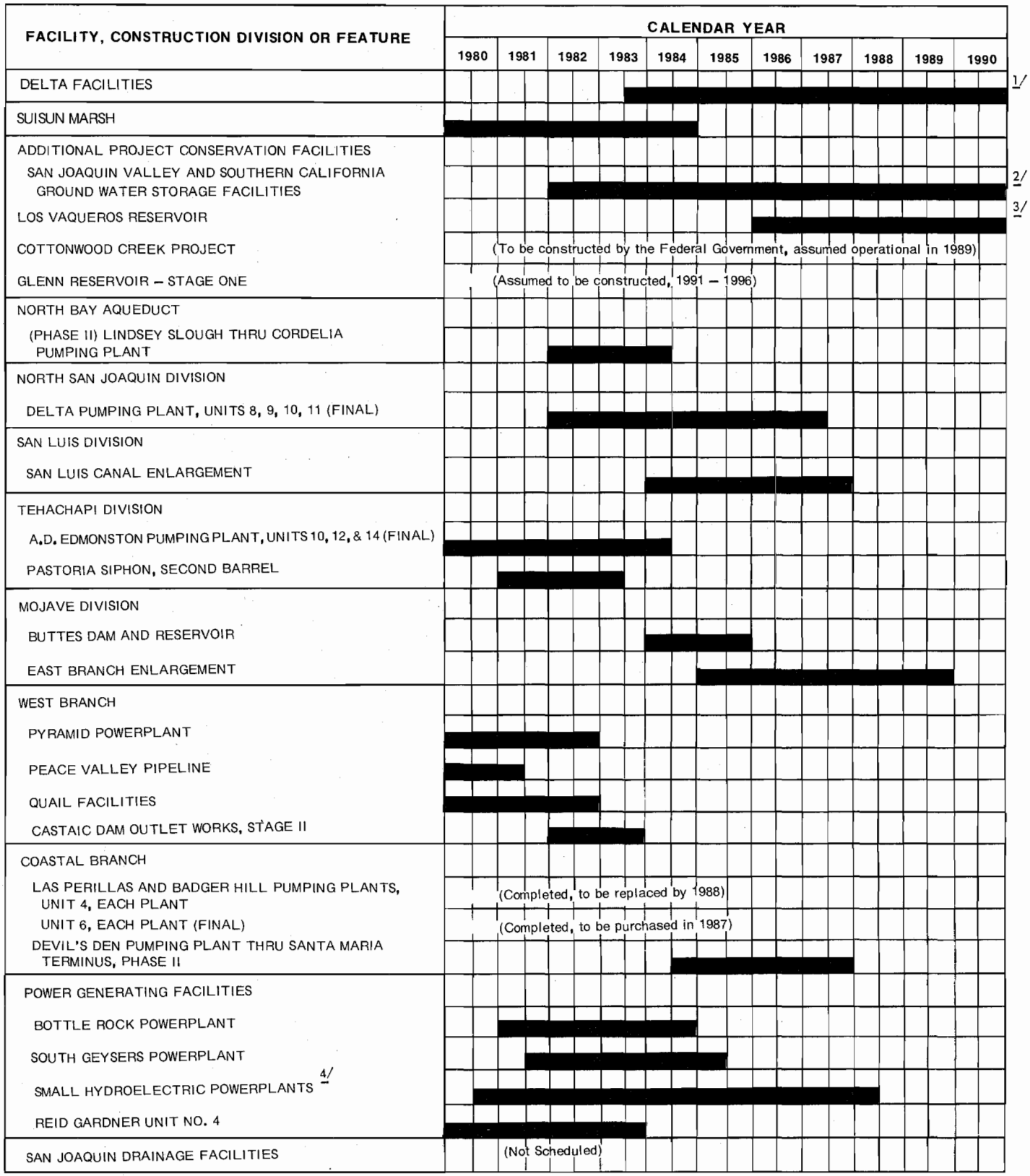
ANALYSIS, DECEMBER 31, 1979

Capital Requirements Thru 2000
of dollars)

Spread 2 of 2

YEARS 1985	1986	1987	1988	1989	1990	1991-2000	TOTAL 1952-2000	TOTAL 2001-2035	LINE NO.
EXPENDITURES									
0	0	0	0	0	0	0	77,028	0	41.
5,000	5,000	5,000	5,000	5,000	5,000	50,000	175,000	175,000	42.
0	0	0	0	0	0	0	181,636	0	43.
0	0	0	0	0	0	0	36,502	0	44.
37	0	0	0	0	0	0	72,260	0	45.
9,200	9,800	7,200	2,400	14,100	16,000	20,700	214,009	0	46.
14,237	14,800	12,200	7,400	19,100	21,000	70,700	756,435	175,000	47.
20,327	20,327	20,327	20,327	20,327	20,327	203,270	598,897	711,445	48.
9,946	9,937	9,930	9,924	9,912	9,906	98,418	262,402	222,180	49.
357,354	554,472	618,992	585,290	666,837	917,514	9,030,816	14,773,770	33,924,578	50.
4,860	4,876	4,876	4,879	4,896	4,914	50,833	123,528	199,360	51.
6,919	6,891	7,556	8,497	8,334	8,073	94,588	176,924	341,153	52.
1,902	1,922	1,944	1,971	2,060	1,978	19,097	40,521	34,300	53.
22,250	26,750	17,750	2,000	38,000	45,200	71,115	570,936	70,000	54.
423,558	625,175	681,375	632,888	750,366	1,007,912	9,568,137	16,546,978	35,503,016	55.
437,795	639,975	693,575	640,288	769,466	1,028,912	9,638,837	17,303,413	35,678,016	56.
AND PROJECT OPERATING REVENUES									
-19,369	600	-2,600	-4,800	11,700	1,900	-16,000	0	0	57.
171,203	196,477	205,889	218,876	238,950	242,412	2,789,631	4,954,309	15,167,371	58.
15,369	25,835	16,840	1,093	37,098	42,050	43,444	302,051	-302,051	59.
89,615	88,174	86,656	85,050	83,411	81,739	713,218	2,706,366	650,386	60.
26,725	28,220	30,120	31,640	33,275	34,805	425,050	796,386	1,253,574	61.
9,919	29,919	47,919	54,919	70,919	106,119	1,760,122	2,082,593	3,418,184	62.
0	0	0	0	0	0	106,785	106,785	2,196,165	63.
40,946	40,598	40,200	39,771	39,307	38,807	349,883	733,598	264,041	64.
4,348	4,971	5,367	5,798	6,261	6,764	105,805	142,504	372,511	65.
140,480	158,691	174,775	179,740	193,637	226,665	2,823,223	5,522,557	4,332,611	66.
31,073	33,191	35,487	37,438	39,536	41,569	637,640	1,045,675	3,822,250	67.
65,433	210,981	248,384	195,741	241,145	455,216	2,211,682	3,829,308	2,343,460	
0	0	0	0	0	0	826,240	826,240	0	69.
33,876	14,200	14,800	12,200	7,400	19,100	61,700	561,996	0	70.
130,382	258,372	298,671	245,379	288,081	515,885	3,737,262	6,263,219	6,165,710	71.
0	0	0	0	0	0	261,277	261,277	10,314,375	72.
437,795	639,975	693,575	640,288	769,466	1,028,912	9,638,837	17,303,413	35,678,016	73.

Figure 11: GENERALIZED CONSTRUCTION SCHEDULE



1/ Assumed to extend thru 1993.

2/ Assumed to extend thru 2000.

3/ Assumed to extend thru 1991.

4/ Includes Cottonwood Powerplant, Mojave Division.

TABLE 8: PROJECT CAPITAL EXPENDITURES

For State Water Project Capital Requirements Thru 2000

(in thousands of dollars)

FACILITIES AND CONSTRUCTION DIVISIONS	INCURRED THRU 1979	FUTURE EXPENDI-TURES	TOTAL	PRELIMINARY ALLOCATIONS AMONG PROJECT PURPOSES			
				Water Supply and Power Generation	Flood Control (a	Recreation and Fish and Wildlife Enhancement	Other (b
PROJECT CONSTRUCTION REQUIREMENTS							
Feather River Facilities:							
Upper Feather Division	14,576	581	15,157	1,326	0	13,831	0
Oroville Division	532,883	3,878	536,761	454,117	70,273	12,371	0
North Bay Aqueduct	5,247	42,063	47,310	47,310	0	0	0
Delta Facilities	53,044	1,266,383	1,319,427	1,060,400	0	172,336	86,691
South Bay Aqueduct	70,522	390	70,912	50,045	7,237	13,606	24
California Aqueduct:							
North San Joaquin Division	158,620	45,855	204,475	197,511	0	6,964	0
San Luis Division	177,096	47,387	224,483	216,096	0	8,177	210
South San Joaquin Division	267,332	2,520	269,852	261,729	0	8,123	0
Tehachapi Division	265,826	47,556	313,382	303,989	0	9,393	0
Mojave Division	222,774	354,897	577,671	292,864	0	9,376	275,431
Santa Ana Division	189,838	3,166	193,004	181,663	0	11,341	0
West Branch	410,711	92,239	502,950	483,895	0	18,672	383
Coastal Branch	16,211	207,462	223,673	223,568	0	0	105
SUBTOTAL	1,708,408	801,082	2,509,490	2,161,315	0	72,046	276,129
Additional Conservation Facilities	8,495	7,006,035	7,014,530	6,857,463	0	154,746	2,321
San Joaquin Drainage Facilities	9,206	2,682	11,888	0	0	0	11,888
Unassigned	11,262	5,066	16,328	895	0	0	15,433
SUBTOTAL	2,413,643	9,128,160	11,541,803	10,632,871	77,510	438,936	392,486
OTHER CAPITAL REQUIREMENTS							
Power Generating Facilities	0 (c	316,616	316,616	316,616	0	0	0
Davis-Grunsky Act Program	108,982	21,018	130,000	0	0	0	130,000
TOTAL	2,522,625	9,465,794	11,988,419	10,949,487	77,510	438,936	522,486

a) Reflects Department's allocation to this purpose, irrespective of federal payments.
b) Includes costs currently unassigned to purpose, planning costs of deleted features of project facilities, initial costs of inventoried items, joint costs assigned to the Federal Government, and costs assigned to the Davis-Grunsky Act Program.
c) Power generating costs totaling $1,699,087 prior to 1980 for Reid Gardner No. 4 have been capitalized and allocated to transportation pumping plants.

includes $2.2 billion for construction expenditures and $0.4 billion for special capital requirements under revenue bond financing. The analysis also assumes no change in the present statutory provisions regarding appropriation of State tideland oil and gas revenues.

Supplemental financing needed would be supplied by future sale of revenue bonds as authorized by the Central Valley Project Act. Revenue to support the bonds could be provided by water contractor charges which can be associated with the facilities being financed.

Future conditions undoubtedly will cause changes in the financial analysis set forth in Table 7. For this reason, basic assumptions are comprehensively reviewed and the financial analysis updated periodically. Notable contingencies that could change the financial analysis are:

- Deviation from the assumptions regarding SWP-owned power sources.
- Deviation of actual rates of future construction price inflation from those currently assumed for cost estimates.
- Rescheduling of currently planned construction for future facilities.
- Possible development of alternative sources of additional water not included in present plans.
- Possible extension of SWP facilities to serve Desert Water Agency, Coachella Valley County Water District, and San Gorgonio Pass Water Agency.
- Changes in contractors' entitlements due to changing needs.
- Increases or decreases in planned water conservation and reclamation.

Furthermore, the outcome of certain lawsuits now pending before the courts (see Chapter II) could affect SWP capital expenditures or anticipated SWP revenues.

Project Construction Expenditures

Actual and projected construction expenditures for each construction division of the SWP are shown in Table 8, together with a preliminary allocation of such total expenditures among SWP purposes. A generalized construction schedule for the contracts in progress and future contracts is shown in Figure 11.

Described in the following sections are the Department's current assumptions concerning the costs of each facility of the future construction program through year 2000, as set forth in Table 7. As to any project not yet constructed, a decision to proceed will be made only after examination of all alternatives and completion of a final environmental impact report and other review processes.

Lines 1 through 21 show costs based on prices and salaries prevailing on December 31, 1979. The portion of cost attributed to escalation is shown in Line 22.

Line 1: Initial Project Facilities.

This is the cost of the facilities included in the initial construction program concluded in 1973. (See Chapter II, Bulletin 132-74.) Additional costs after 1973 and estimated costs of remaining work on the initial SWP facilities are included in Lines 15 and 17, "California Aqueduct, General Costs" and "Miscellaneous Project Costs".

Line 2: Abbey Bridge and Dixie Refuge Dams and Reservoirs.

Beginning in Bulletin 132-76, the Department assumed these reservoirs to be postponed indefinitely until there is local support and demonstrated need for the reservoirs.

Line 3: Phase II of the North Bay Aqueduct.

The assumed schedule is for Phase II to be operational in 1984. The Solano and Napa County Flood Control and Water Conservation Districts and the Department are proceeding with discussions and negotiations regarding the construction of Phase II. (See Chapter I "Future Construction of the North Bay Aqueduct".)

Line 4: Delta Facilities.

The Department has recommended the Peripheral Canal as the Delta Transfer Facility. The expenditures shown in this line assume that Stage 1 and Stage 2 would be operational in 1988 and Stage 3 would be operational in 1993. This timing was based on the assumption that a decision to proceed with the Peripheral Canal will be made by the end of 1980. Under dry or critically dry conditions, the State will not be able to meet the contractors' entitlement water requirements after 1983, unless the projected requirements are reduced by water conservation and/or use of reclaimed water beyond the amounts assumed in the Delta Alternatives Review.

This line also includes costs for the other facilities located in the Delta and authorized by Senate Bill 200 (1980). These facilities are for (1) Suisun Marsh protection (2) South Delta water quality improvement, (3) relocation of Contra Costa Canal intake, and (4) Western Delta overland facilities. It is assumed that the costs of items (2) and (3) will be repaid by the beneficiaries of the facilities.

Line 5: California Aqueduct, Final Four Units at Delta Pumping Plant.

These 30.2 cubic-metre-per-second (1,067-cubic-feet-per-second) units would be operational in 1987. Installation and operation of these units is subject to the permit authority of the Corps of Engineers after compliance with the National Environmental Policy Act and the California Environmental Quality Act (see Litigation Section, Chapter II, Sierra Club vs. Morton).

Line 6: California Aqueduct, San Luis Canal Enlargement.

This enlargement would be required to maintain and, eventually, to augment the present conveyance capacity between Dos Amigos Pumping Plant and Kettleman City. Measures to compensate for subsidence along the canal would cost about $10.2 million (State share) between 1980 and 1983. Also included is $24.7 million ($35.6 million, including escalation allowance) between 1983 and 1988 for increasing the State's share of conveyance capacity by about 28.3 cubic metres per second (1,000 cubic feet per second).

Line 7: California Aqueduct, Final Three Units at A.D. Edmonston (Tehachapi) Pumping Plant.

The assumed schedule is for these 8.9-cubic-metre-per-second (315-cubic-feet-per-second) units to be operational in 1984.

Line 8: California Aqueduct, Staged Units and Pipelines South of A.D. Edmonston (Tehachapi) Pumping Plant.

Additional capacity would be installed as needed to convey increasing SWP water deliveries through this portion of the facilities and includes the second barrel of Pastoria Creek Siphon (to be completed in 1983) and Castaic Dam Outlet Works, Second Stage (to be completed in 1984).

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Line 9: California Aqueduct, Buttes Dam and Reservoir.

The assumptions are that this off-aqueduct reservoir would be operational by 1986 to regulate project water deliveries to Antelope Valley-East Kern Water Agency. Under the Agency's water supply contract, construction of the facility by the State is conditioned on engineering and financial feasibility.

Line 10: California Aqueduct, Final Three Units at Both Las Perillas and Badger Hill Pumping Plant.

These 3.2-cubic-metre-per-second (112-cubic-feet-per-second) units were installed by the Berrenda Mesa Water District in 1971, at the District's expense, under special agreement with the Department. Units No. 5 and the second discharge line at Badger Hill were purchased, at depreciated value, in January 1977. The cost assumptions are that the Department would replace Units No. 4 by January 1988, and Units No. 6 would be purchased at depreciated values in 1987.

Line 11: California Aqueduct, Peace Valley Pipeline and Pyramid Powerplant.

The costs shown in this line are for the first stage of the pipeline and power plant complex which is scheduled to be operational in 1982.

The portion of these costs allocable to power generation ($75.0 million) are being financed by the Pyramid Hydroelectric Project Revenue Bonds issued in October 1979. The Pyramid Hydroelectric Project consists of the portion of facilities allocable to power generation from and including Quail Lake through Pyramid Powerplant.

Line 12: California Aqueduct, Cottonwood Powerplant.

This proposed power recovery plant on the East Branch is scheduled for operation in 1984. Bulletin 132-78 assumed this power plant would be operational by 1982; however, the schedule was delayed to allow for time to reach agreement between the Department and the affected contractors on the capacity of the enlargement of the California Aqueduct, Mojave Division. While the contractors have not agreed on the size of the aqueduct enlargement, they have agreed that sufficient capacity should be provided through the power plant so that the aqueduct could be enlarged to the maximum feasible capacity.

Line 13: California Aqueduct, Phase II of the Coastal Branch.

Phase II construction of the Coastal Branch would include and extend from the proposed Devil's Den Pumping Plant to a terminus on the Santa Maria River for water service to San Luis Obispo and Santa Barbara County Flood Control and Water Conservation Districts. For purposes of this analysis, Phase II is assumed to be operational in 1988. The construction of this facility is dependent upon the election of options available to the two contractors, and it appears the facility may not be built to the size assumed herein. (See Chapter I, "Future Construction Coastal Branch, California Aqueduct" for further discussion.)

Line 14: Enlargement of California Aqueduct, Mojave Division.

One of the provisions of Senate Bill 200 (1980) is to enlarge the California Aqueduct between the Cottonwood Powerplant and Devil Canyon Powerplant afterbay, exclusive of the San Bernardino Tunnel. This is to provide enough capacity to transport both increased amounts of entitlement water for The Metropolitan Water District of Southern California and water for ground water storage in Southern California ground water basins. The analysis assumes the enlargement will be completed in 1988. (It should be noted that the operation

studies which determined projected energy requirements for this analysis do not reflect this potential enlargement.)

Line 15: California Aqueduct, General Costs.

These expenditures cover such items as general design and construction costs, completion of operation and maintenance facilities, and other completion activities for initial SWP facilities of the California Aqueduct. Portions of these costs would be allocated to the aqueduct units described in the preceding paragraphs.

Line 16: Subtotal, California Aqueduct.

The total of Line 5 through 15.

Line 17: Miscellaneous Project Costs.

These expenditures cover such items as the completion of monitor and control systems and other completion activities for SWP facilities other than the California Aqueduct.

Line 18: Additional Conservation Facilities.

The increasing water delivery commitments are rapidly approaching the dependable water supply provided by Lake Oroville and San Luis Reservoir. As discussed in Chapter I, SB 200 has authorized future actions which will include the construction of certain water storage facilities and ground water storage operations to meet projected water needs to year 2000. Line 18 includes construction and capitalized costs for ground water storage, Los Vaqueros Reservoir, the Glenn Reservoir Complex - Stage I, and future water supply planning costs. Firm yield from these facilities and the federal Cottonwood Creek Project (Line 25) would provide enough storage to meet projected demands of about 4.1 million cubic dekametres (3.3 million acre-feet) in the year 2000.

In order to provide the 5.22 million cubic dekametres (4.23 million acre-feet) of maximum annual entitlements under contract, there would have to be additional conservation facilities constructed to develop the remaining 1 110 000 cubic dekametres (900,000 acre-feet) of firm yield to the SWP. However, at the present time the Department has not decided on the facilities or the timing of construction to meet the demand after 2000.

This financial analysis differs from that shown in Bulletin 132-79 in regards to State-Federal sharing of future facilities. The 132-79 financial analysis assumed there would be State and Federal sharing of Los Vaqueros Reservoir; and Glenn Reservoir would be a State facility. This analysis assumes that the federal government will not participate and both facilities will be State facilities.

Line 19: Power Generation Facilities

The Department's Long Range Energy Program includes developing and constructing SWP-owned generating plants. This portion of the program is described in Chapter II of this Bulletin under the "Long Range Energy Program" section.

The facilities included in this line are: Reid Gardner Unit #4 ($175.2 million), Bottle Rock Powerplant ($73.2 million), and South Geysers Powerplant ($68.1 million). The costs for the Small Hydro powerplants discussed in Chapter II were not known at the time the cost data for this analysis was compiled. They will be included in Bulletin 132-81.

Line 20: San Joaquin Drainage Facilities.

Included are the costs of (1) securing commitments for repayment from local agencies, (2) assuring that local waste disposal plans are compatible with the recommended Plan of the Interagency Drainage Program, and (3) monitoring and

reporting the quality and quantity of agricultural waste waters in the San Joaquin Valley.

Line 21: Subtotal: Project Construction Expenditures.

The total of Lines 1 through 20.

Line 22: Cost Escalation Allowance.

Estimates of future construction expenditures shown in Lines 1 through 20 are based on prices and salaries prevailing on December 31, 1979. The amounts in Line 22 are the estimated cost increases that could be expected to occur due to escalation. The following assumed percentages were applied to allow for escalation:

	Percent Increase Per Annum	
Year	State Salaries	Construction Prices
1980 thru 2000	7	9

Land acquisition costs are assumed to escalate 10 percent per annum.

Line 23: Total Project Construction Expenditures.

The total of Lines 21 and 22.

Other Capital Requirements

In addition to construction expenditures, capital requirements of the SWP include the items discussed in the following paragraphs:

Line 24: Davis-Grunsky Act Program.

This State financial assistance program for water developments constructed by local public agencies is associated with the State Water Project to the extent of $130 million in capital expenditures. Such expenditures include disbursements under approved loans and grants and the Department's administrative costs incurred while the respective developments are under construction. (Administrative costs following construction are funded by project revenues.)

As of December 31, 1979, the Department and the California Water Commission had approved more than $106.4 million in grants and loans for 88 local agencies located throughout the State as indicated on Figure 12. One new grant application for a $1,392,250 amendment to a construction grant for San Bernardino Valley Municipal Water District, San Bernardino County was approved in 1979.

Of the total approved applications over $44.8 million (42 percent) were for loans and the remaining $61.6 million (58 percent) were for grants. The Department estimates that funds presently authorized for the program would be disbursed by 1984.

The Department of Water Resources and the California Water Commission approved during 1979 the following joint statement of policy concerning agricultural water conservation loan projects and instream enhancement grant projects.

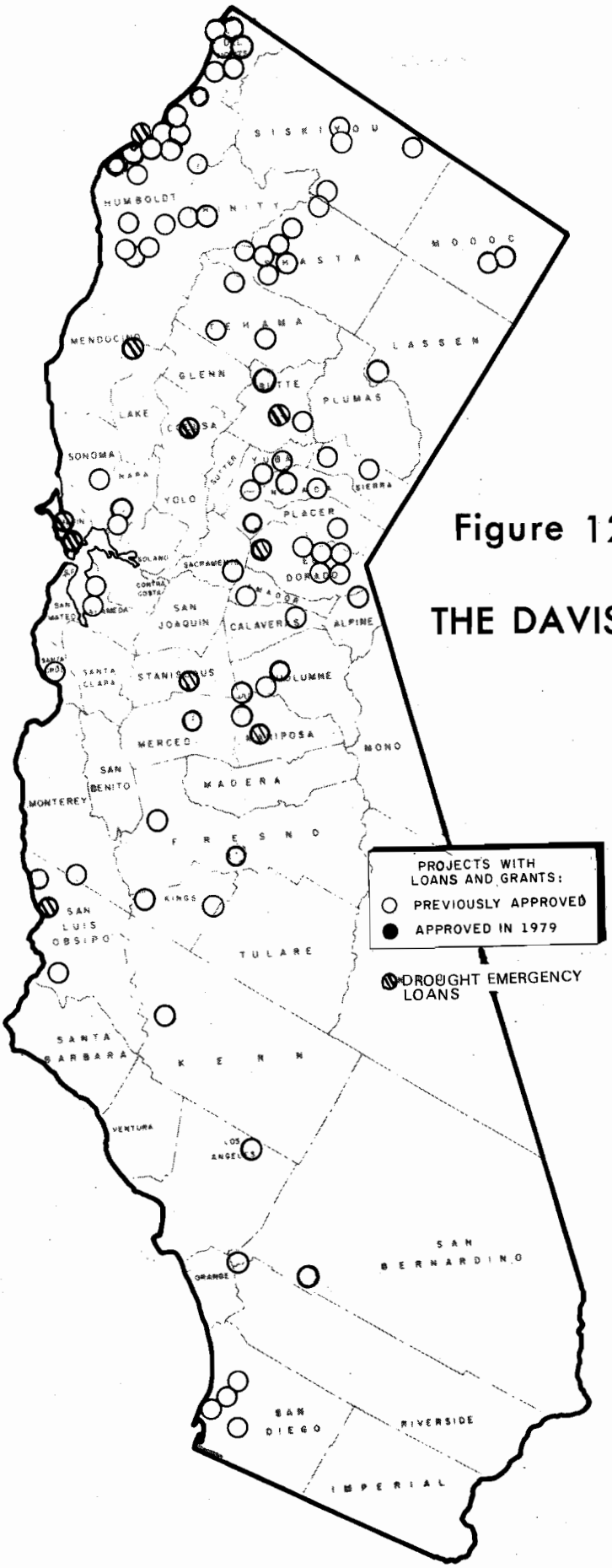

Figure 12: LOCAL PROJECTS UNDER THE DAVIS-GRUNSKY ACT PROGRAM

POLICY ON INSTREAM ENHANCEMENT GRANT PROJECTS AND LOANS FOR AGRICULTURAL WATER CONSERVATION PROJECTS.

"Well conceived, instream enhancement grant projects and loans for Agricultural Water Conservation Projects which carry out State Administration policy will be considered by the Commission on a case by case basis as possible exceptions of the policy giving preference to loans for domestic water projects."

Line 25: Additional Conservation Facilities-Storage Payments.

In addition to the additional conservation facility construction shown in Line 18, the Department assumes the State will purchase water storage rights in the future federal Cottonwood Creek Project. The storage rights would be purchased under a federal Water Supply Act of 1958 contract, in which annual payments of principal and interest would be made to the federal government. Line 25 is an estimate of the annual payments.

Line 26: Special Capital Requirements Under Revenue Bond Financing.

The authority under which revenue bonds are sold provide that proceeds may also fund interest and operation of the financed facilities through one year following completion of construction.

The analysis assumes that power facility revenue bond proceeds will pay bond interest during the construction period and for one year following construction completion, and operating costs for one year following completion of construction. These proceeds are also included in Line 54 as a Miscellaneous Revenue.

The revenue bonds for facilities other than power generating facilities (hereafter termed water revenue bonds) include proceeds for one year's bond interest and the first year's operating costs. Application of proceeds to these special requirements is shown below for actual and assumed revenue bond sales.

Application of Revenue Bond Proceeds	Oroville (actual)	Devil Canyon-Castaic (actual)	Pyramid (actual)	Supplemental Water (Assumed)	Supplemental Power (Assumed)
	(in millions)				
Construction Expenditures	$218.0	$127.1	$ 74.0	$1,910.7	$350.3
Plus, Other capital requirements:					
Reimbursment of General Fund	$ 2.6	$ 0.0	$ 0.0	$ 0.0	$ 0.0
Bond interest through one year following completion of construction	$ 19.9	$ 10.0	$ 19.2	$ 169.8	$140.3
Operating costs for one year following completion of construction	$ 1.5	$ 0.7	$ 1.0	$ 21.2	$ 16.7
Bond discount	$ 3.0	$ 1.4	$ 1.6	$ 21.2	$ 7.7
SUBTOTAL	$ 27.0	$ 12.1	$ 21.8	$ 212.2	$164.7
TOTAL, Principal amount of bonds	$245.0	$139.2	$ 95.8	$2,122.9	$515.0

Line 27: Total Other Capital Requirements.

The total of Lines 24, 25 and 26.

Line 28: Total Capital Requirements.

The total of Lines 23 and 27.

Financing of Capital Expenditures

Three general types of financing have been used for the SWP:

- Burns-Porter financing, derived from the sale of California Water Resources Development Bonds (Water Bonds) and the State's tideland oil and gas revenues that are deposited in the California Water Fund as authorized by the Burns-Porter Act (California Water Code Sections 12920- 12944), approved by the electorate in 1960.

- Revenue Bond Financing, derived from the sale of revenue bonds as authorized by the Central Valley Project Act (California Water Code Sections 11100-11925). The Department's authority to issue revenue bonds was confirmed by a decision of the Supreme Court of California in 1963 (Warne v. Harkness 60 Cal. 2d 579).

- Miscellaneous Receipts, derived from payments and appropriations (including tideland oil and gas revenues) as authorized by a variety of special contracts, cost-sharing agreements, and legislative actions concerning the State Water Project.

To date, Water Bonds have financed most of the construction costs of the Project. The Burns-Porter Act authorized an issue of $1.75 billion of general obligation bonds of the State, which are made self-supporting by revenues received under the water supply contracts. This authorization includes a reservation of $130 million specifically for the Davis-Grunsky Act Program. Proceeds from the sale of Water Bonds are deposited in the California Water Resources Development Bond Fund-Bond Proceeds Account, from which monies may be expended only for the construction of SWP facilities and for the Davis-Grunsky Act Program.

Monies deposited in the California Water Fund are appropriated for purposes of the Burns-Porter Act. Such deposits are derived from a portion of the State's tideland oil and gas revenues under a continuing authorization. In the past, the Legislature has acted both to decrease and increase the level of deposits to the Fund. Money may be expended from the Fund only for the construction of SWP facilities and for the Davis- Grunsky Program.

About $480 million of revenue bonds had been sold by the Department as of December 31, 1979. The most recent revenue bonds ($95.8 million) were issued in October 1979 for construction of the Pyramid Powerplant and related facilities. (See Line 32. Pyramid Hydroelectric Power Revenue Bonds.)

Future issues of revenue bonds are planned to supplement SWP financing. Proceeds from the sale of revenue bonds are deposited in the Central Valley Water Project Construction Fund, from

which money is expended only for purposes specified in the resolution authorizing such sale. These purposes, in addition to construction, planning, and right of way costs, may include the payment of (1) bond interest during the construction period, and for one year following completion of construction and (2) operating costs during a period of one year after completion of construction.

Miscellaneous receipts are deposited in the Central Valley Water Project Construction Fund and may be expended for (1) Water Bond interest and (2) construction of SWP facilities. Under the Department's financial management, miscellaneous receipts are first used to the extent needed for coverage of any Water Bond interest which exceeds available Burns-Porter Act revenues.

Described below is the application of funds to capital expenditures under the financial analysis:

Line 29: Application of California Water Fund Monies.

The Burns-Porter Act provides that any available money in the California Water Fund shall be used for construction in lieu of proceeds from the sale of Water Bonds. When the Act became effective in late 1960, approximately $97 million had been accumulated in the Fund. This balance and continuing annual appropriations to the Fund through June 28, 1968, financed a total of $176 million of project construction costs. On June 28, 1968, SB 261 became effective (California Statutes of 1968, Chapter 411), which transferred the remaining balance to the Central Valley Water Project Construction Fund and deferred accruals to the California Water Fund until July 1, 1972. Since the latter date, appropriations again are being deposited in the California Water Fund in annual amounts of $25 million.

The projected use of appropriations to the California Water Fund is shown in the financial analysis only to the extent required under current estimates of future construction expenditures. However, the Department expects that appropriations to the Fund will continue indefinitely in the full annual amounts now provided for by law. The Department also expects that repayments to the California Water Fund, to be derived from SWP revenues in excess of operating costs and Water Bond debt service, would be available for financing future capital expenditures (see Line 68) -- particularly, the long-range costs of additional conservation facilities and San Joaquin Drainage Facilities.

The financial analysis indicates that full annual appropriations of tideland revenues to the California Water Fund (and short-term interest earnings thereon, amounting to an estimated $0.75 million annually) would be required for financing construction expenditures through 1995. Commencing in 1982, annual repayments to the Fund (see Line 68, Spread 2), would supplement annual appropriations. After 1995, all future financing could be provided by such repayments.

Finally, it is emphasized that the projected use of the California Water Fund is based on current estimates and assumptions as to the timing and magnitude of future capital costs. Such costs could change significantly with future events, especially in regard to the nature and timing of additional conservation facilities required to develop the additional 1 110 000 cubic dekametres (900,000 acre-feet) of yield (see Line 18) and San Joaquin Drainage Facilities.

Line 30: Application of Proceeds From Sale of Oroville Revenue Bonds.

All proceeds from sale of Oroville Revenue Bonds in April 1968 (Series A) and in April 1969 (Series B) had been applied as of December 31, 1973.

TABLE 9: ACTUAL BOND SALES AND PROJECT INTEREST RATES

Bond Sales	Date of Sale	Dollar-years (a	Interest Cost (b	Percent Interest Cost (c	Project Interest Rate (d
	(1)	(2)	(3)	(4)	(5)
Actual Issues					
$50,000,000 Bond Anticipation Notes	11/21/63	26,944	531	1.970	1.970
$100,000,000 Series "A" Water Bonds	2/18/64	3,402,000	119,750	3.520	3.508
$50,000,000 Series "B" Water Bonds	5/ 5/64	1,726,000	60,986	3.533	3.516
$100,000,000 Series "C" Water Bonds	10/ 7/64	3,452,000	123,764	3.585	3.544
$100,000,000 Series "D" Water Bonds	2/16/65	3,497,900	122,403	3.499	3.531
$100,000,000 Series "E" Water Bonds	11/23/65	3,497,900	130,029	3.717	3.573
$100,000,000 Series "F" Water Bonds	6/ 8/66	3,497,900	137,359	3.927	3.638
$100,000,000 Series "G" Water Bonds	11/22/66	3,497,900	143,788	4.111	3.711
$100,000,000 Series "H" Water Bonds	3/21/67	3,497,900	129,261	3.695	3.709
$100,000,000 Series "J" Water Bonds	7/18/67	3,497,900	143,199	4.094	3.754
$100,000,000 Series "K" Water Bonds	11/14/67	3,497,900	163,887	4.685	3.853
$150,000,000 Revenue Bonds, Oroville Division, Series "A"	4/ 3/68	5,228,700	270,289	5.197	-
$100,000,000 Series "L" Water Bonds	7/11/68	3,497,900	166,918	4.772	3.941
$100,000,000 Series "M" Water Bonds	10/22/68	3,497,900	169,989	4.860	4.021
$94,995,000 Revenue Bonds, Oroville Division, Series "B"	4/ 1/69	3,423,460	195,902	5.767	-
$46,761,000 Cumulative 1970 General Fund Borrowing; repaid 7/10/70	-	4,938	346	7.007	4.021
$200,000,000 Series "N" and "P" Bond Anticipation Notes	6/16/70	200,000	11,660	5.830	4.030
$100,000,000 Series "N" Water Bonds	2/ 2/71	3,447,900	190,292	5.519	4.148
$100,000,000 Series "Q" Bond Anticipation Notes	3/10/71	100,000	2,349	2.350	4.143
$100,000,000 Series "P" Water Bonds	4/21/71	3,397,900	193,377	5.691	4.255
$150,000,000 Series "Q" and "R" Water Bonds	11/ 9/71	5,171,850	265,734	5.138	4.342
$40,000,000 Series "S" Water Bonds	3/28/72	1,399,160	76,509	5.468	4.371
$139,165,000 Devil Canyon-Castaic Revenue Bonds (e	8/ 8/72	4,776,204	258,839	5.419	4.457
$10,000,000 Series "T" Water Bonds	3/20/73	185,265	9,491	5.122	4.459
$10,000,000 Series "U" Water Bonds	1/13/76	158,750	8,731	5.50	4.462
$10,000,000 Series "V" Water Bonds	11/15/77	158,750	7,573	4.769	4.462
$95,800,000 Pyramid Hydroelectric Revenue Bonds (f	10/23/79	2,364,917	180,496	7.632	4.584
TOTAL (Excluding Oroville CVP Revenue Bonds)		61,453,678	2,817,261		

a) A unit equivalent to one dollar of principal amount outstanding for one year, in thousands.
b) In thousands of dollars.
c) The total interest cost (without regard to premiums received) divided by the total dollar-years, expressed as a percent.
d) Determined by dividing cumulative interest costs by cumulative dollar-years, expressed as a percent. Excluding Central Valley Project Revenue Bonds, Oroville Division, which do not affect the calculation of the "project interest rate".
e) Bonds sold at a net interest cost of 5.446 percent. Net proceeds for financing construction costs plus bond discount amounting to $126,893,000 are used for purposes of the project interest rate.
f) Bonds sold at a net interest cost of 7.680 percent. Net proceeds for financing construction costs plus bond discount amounting to $75,586,000 are used for purposes of the project interest rate.

TABLE 9-A: PROJECTED BOND SALES AND PROJECT INTEREST RATES

Bond Sales	Discounted Values (a	Date of Sale	Dollar-years (b	Interest Cost (c	Percent Interest Cost (d	Project Interest Rate (e (f
	(1)	(2)	(3)	(4)	(5)	(6)
$252,940,000 Power Revenue Bond (Reid Gardner)	$252,940,000	10/80	4,278,452	342,276	8.00	4.807
$108,445,000 Power Revenue Bond (Bottle Rock)	99,491,000	1/81	1,744,165	139,533	8.00	
$12,253,000 Series "W" Water Bond	11,241,000	7/81	202,093	15,157	7.50	
$51,380,000 Power Revenue Bond (Cottonwood)	47,138,000	7/81	1,029,407	82,353	8.00	4.944
$102,250,000 Power Revenue Bond (South Geysers)	86,062,000	1/82	1,620,602	129,648	8.00	5.014
$225,000,000 Water Revenue Bond	146,235,000	1/85	6,150,177	492,014	8.00	5.254
$275,000,000 Water Revenue Bond	163,973,000	1/86	7,516,883	601,351	8.00	5.500
$175,000,000 Water Revenue Bond	95,731,000	1/87	4,783,471	382,678	8.00	5.635
$400,000,000 Water Revenue Bond	184,171,000	1/89	10,933,648	874,692	8.00	5.894
$480,000,000 Water Revenue Bond	202,757,000	3/90	13,120,378	1,049,630	8.00	
$167,747,000 Series "X" Water Bond (Offset)	70,858,000	7/90	4,801,912	384,153	7.50	6.215
$504,630,000 Water Revenue Bond	195,561,000	1/91	13,793,617	1,103,490	8.00	6.402
$63,320,000 Water Revenue Bond	17,384,000	10/95	1,730,796	138,464	8.00	6.423

a) Amounts shown represent the discounted value of the bond from the year of sale to 1980 at the assumed escalation rate of 9 percent.
b) A unit equivalent to one dollar of principal amount outstanding for one year, in thousands.
c) In thousands of dollars.
d) The total interest cost (without regard to premiums received) divided by the total dollar-years, expressed as a percent.
e) Determined by dividing cumulative interest costs by cumulative dollar-years, expressed as a percent. Excluding Central Valley Project Revenue Bonds, Oroville Division, which do not affect the calculation of the "project interest rate".
f) Net proceeds for financing construction costs plus bond discount are used for purposes of the project interest rate.

Line 31: Application of Proceeds from Sale of Devil Canyon-Castaic Revenue Bonds.

Construction funds provided by the sale of Devil Canyon-Castaic Revenue Bonds, in August 1972, included (1) $98.9 million which reimbursed other project funds used to finance construction of the Devil Canyon and Castaic Facilities prior to the delivery of the bonds; and (2) $28.2 million which was reserved to complete construction of the Facilities. Shown in Line 31 is the projected use of the remaining reimbursement funds ($45.7 million) and the transfer to the trustee of $2.8 million which was not required for the completion of the Devil Canyon-Castaic Facilities. The bond resolution requires these unexpended bond proceeds be transferred to the trustee.

Line 32: Application of Proceeds From Sale of Pyramid Hydroelectric Project Revenue Bonds.

Revenue bonds were sold in October 1979 for the construction of the portion of the Pyramid Power Plant and related facilities allocated to power. The construction proceeds provided (1) $31.8 million which reimbursed other project funds used to finance construction of these facilities prior to delivery of the bonds; and (2) $42.2 million which is reserved to complete construction of the Pyramid facilities. The remaining proceeds are used for other requirements as stated in Line 26. Line 32 shows the assumed expenditure of these bond proceeds.

Line 33: Application of Proceeds From Sale of Supplemental Water Revenue Bonds.

As previously indicated in the description of Line 26, future water revenue bond issues are assumed to provide about $2.1 billion for application to the construction expenditures and other special capital requirements under revenue bond financing. This is, in effect, the supplemental amount necessary to complete the State Water Project as now contemplated. Future developments could reduce or increase this amount. It should also be noted that the assumptions regarding staging of the additional conservation facilities and cost escalation can have a significant effect on the need for supplemental water revenue bonds.

Line 34: Application of Proceeds From Sale of Supplemental Power Revenue Bonds.

Future power revenue bond issues are assumed to provide $515 million for construction of power generating facilities and other special capital requirements (interest during construction and one year of operating cost) under revenue bond financing. These facilities include those listed on Line 19 and Cottonwood Power Plant (Line 12).

Line 35: Application of Proceeds From Sale of Water Bonds, Davis-Grunsky Act Program.

For simplification, the $130 million of capital expenditures authorized for the Davis-Grunsky Act Program under the Burns-Porter Act are shown to be funded solely by proceeds from the sale of Water Bonds. Actually, $28.0 million of the California Water Fund was used for the Program in lieu of bond proceeds prior to 1969. This simplification does not in any way affect the validity of the analysis.

Line 36: Application of Proceeds From Sale of Water Bonds, Additional Conservation Facilities.

The Burns-Porter Act provides that to the extent California Water Fund monies are expended, an equal amount of Water Bonds is reserved ("offset") for financing the construction of certain additional conservation facilities in certain watersheds.

In mid-1972, the maximum reservation of "offset" bonds was effectively limited to $176 million -- the total amount of California Water Fund monies which had been expended up to that time. By mid-1972, all remaining Water Bond proceeds from the Burns-Porter authorization had either been "offset" or reserved for the Davis-Grunsky Act Program.

Approximately $8.5 million of the "offset" bonds have been used to finance planning studies of the Eel River Development. In the analysis, the offset bonds were assumed for the construction of the Glenn Reservoir Complex.

Line 37: Application of Proceeds From Sale of Water Bonds, Initial Project Facilities.

Financing of initial facilities from water bonds was completed in mid-1972, and amounted to $1.444 billion -- i.e., the total of $1.75 billion Burns-Porter authorization less $130 million reserved for the Davis-Grunsky Program and $176 million "offset" for additional conservation facilities.

Line 38: Total Application of Proceeds From Sale of Bonds.

The total of Lines 30 through 37. See Table 9 and 9A for a summary of actual and projected bond sales.

Line 39: Application of Miscellaneous Receipts to Construction.

This line matches Line 70 and illustrates the use of Miscellaneous Receipts for capital expenditures.

Line 40: Total Financing of Capital Requirements.

This line -- the total of Lines 29, 38 and 39 -- matches Line 28 and confirms that all estimated capital expenditures would be funded under the analysis.

Miscellaneous Receipts

Sources of Miscellaneous Receipts are described in the following paragraphs:

Line 41: Federal Payments for SWP Capital Expenditures.

The federal share of the State's capital expenditures includes payments for (1) "open-space" grants at certain project reservoirs, (2) costs of Lakes Oroville and Del Valle allocated to flood control under existing agreements, and under current expectations. In the analysis, only the State's share of costs is included for works constructed by the United States, such as the San Luis joint-use facilities.

About $1.6 million in federal payments has been received for acquisition costs of project and recreation lands reserved for open space at Lakes Perris and Del Valle, Castaic and Silverwood Lakes. The final payment for "open space" was received in 1975.

Federal payments received through December 31, 1979 for project costs allocated to flood control totalled $75.1 million -- $69.7 million for Lake Oroville and $5.4 million for Lake Del Valle. This line includes an allowance for $0.3 million of additional payments in 1980 for costs allocated to flood control at Lake Oroville. This additional amount is subject to revision after the Corps completes its final audit of the Department's records of joint costs.

Since this analysis assumes no further federal-State sharing of joint facilities there is no further payments expected from the Federal Government.

Line 42: Appropriations for Capital Costs Allocated to Recreation and Fish and Wildlife Enhancement.

In accordance with Public Resources Code Section 6217, $5 million of the State's tideland oil and gas revenues is deposited annually in the Central Valley Water Project Construction Fund for repayment of (1) costs of constructing multipurpose SWP facilities that are allocated to recreation and fish and wildlife enhancement and (2) costs of acquiring land for recreation developments associated with SWP facilities. As indicated in Table 8, such costs are now estimated to total about $439 million for Project facilities to be constructed prior to the year 2000. This is a decrease of $162 million from that shown in Table 8 of Bulletin 132-79, due primarily to exclusion of post-2000 facilities. The $5 million annual appropriation would not be adequate to reimburse the SWP for these allocated costs by the year 2035 (end of project repayment period). Efforts will have to be made to reduce the costs of the future recreation program or get additional funding to reimburse the SWP for costs allocated to recreation and fish and wildlife enhancement.

Release of the $5 million annual appropriations to the Department for expenditures is dependent on legislative approval for the costs reported annually by the Department. In 1980 the Department reported costs totalling over $175 million, including over $40 million of accrued interest (Appendix D, "Costs of Recreation and Fish and Wildlife Enhancement". Bulletin No. 132-80, April 1980). This was an increase of about $108 million over the previous report (see page 7, Appendix D, Bulletin No. 132-80). Most of this increase was due to the initial reporting of costs of the California Aqueduct, Dos Amigos Pumping Plant to termini. AB 927, which was introduced in 1979, was amended to include these costs. AB 927, as amended, was approved by the Legislature in 1980. The analysis assumes that agreement will be reached with the Department of Finance regarding the SWP allocation procedures.

Line 43: Appropriation for Project Capital Expenditures.

This line includes appropriations prior to the Burns-Porter Act and appropriations under SB 261 (1968).

Year to year appropriations by the Legislature financed all capital expenditures prior to the effective date of the Burns-Porter Act on November 8, 1960. Expenditures so financed substantially ended in 1963 and totalled about $11 million from the General Fund and $88 million from the Investment Fund (succeeded by the California Water Fund in 1959). While these special appropriations do not fit the general definition of "miscellaneous receipts" in that they were not deposited in the Central Valley Water Project Construction Fund, they are so classified herein for simplifying the presentation of the financial analysis.

By enactment of SB 261, June 29, 1968, the balance in the California Water Fund was transferred to the Central Valley Water Project Construction Fund, together with appropriations of tideland oil and gas revenues in the annual amounts of $11 million through June 30, 1970, and $25 million thereafter, until June 30, 1972, totalling $86.7 million.

Line 44: City of Los Angeles Payments for Castaic Power Development.

Under a 70-year contract executed September 2, 1966 (see page 12, Bulletin No. 132-67), the State constructed the Angeles Tunnel with a 30-foot diameter instead of with a 17-foot diameter as originally planned. In return, the City constructed, operates, and maintains a 1,250 megawatt Castaic Powerplant and will supply the State, without charge, power equivalent in value to that which

the State would have produced in its originally planned 214-megawatt plant. The value of this equivalent power is accounted for in Line 58 as a credit to SWP operating costs in the same manner as other aqueduct power credits. In addition, the City has made certain payments, shown in Line 44, to ensure that the benefits of joint development are equally realized by both the State and the City. Neither the estimated capital expenditures for the Project nor the payments shown in Line 44 include amounts for the Castaic surge chamber -- which was constructed by the State but directly financed by the City.

Line 45: Water Contractor Advances for Construction of Requested Works.

Water supply contractors are required to finance, in advance, the construction costs of delivery structures (turnouts) and of any excess capacity the Department is requested to construct in SWP facilities. Advance payments for State construction requested by contractors are summarized in the following table:

	(in millions)
Requested Excess Capacity:	
° The Metropolitan Water District of Southern California:	
(a) for 188 cubic feet per second excess capacity in reaches from Kettleman City to junction of the West Branch	$19.4
(b) for enlargement of Lake Perris above a basic capacity of 100,000 acre-feet	$13.9
(c) for 787 cubic-foot per second excess capacity in the San Bernardino Tunnel	$12.0
° San Gabriel Valley Municipal Water District: for 21 cubic foot per second of excess capacity in the San Bernardino Tunnel	$ 0.3
° Antelope Valley-East Kern Water Agency: for 19 cubic-foot per second excess capacity in the reaches of the West Branch from the junction through Quail Facilities	$ 0.3
Subtotal	$45.9
Required advance payment of water charges by The Metropolitan Water District of Southern California for originally requested excess capacity in the West Branch, now classified as basic Project capacity	$16.3
Requested delivery structures constructed or to be constructed by the State	$10.1
Total water supply contractor advances for State construction of requested works	$72.3

Excess capacity may be requested for the purpose of increasing the instantaneous rates of water delivery over the "peaking" rates normally provided for by the contracts.

Advance payments for requested excess capacity are determined by contract formula to assure more than enough funds to cover the additional construction costs. After construction of the excess capacity, differences between advance payments and additional costs are to be credited to the contractor's account. A complete determination of the additional construction costs and the credits for overpayments are reported in Table B-9 of this bulletin. The advance payments exceed the additional construction costs involved, with interest, by about $43.4 million. As of December 31, 1979, $32.8 million in credits have been applied to the contractors' accounts. Additional credits of $10.6 million were applied to appropriate contractors' accounts for the 1981 charges.

Line 46: Investment Earnings on Unexpended Miscellaneous Receipts.

Unexpended SWP funds are invested through its Surplus Money Investment Fund in the State Treasury. Interest earnings during the last half of 1979 were at a rate of 9.7 percent per annum, and 11.38 percent per annum for the first half of 1980. For the financial analysis, the Department estimates that future interest earnings of the Fund will average 8.00 percent per annum.

This line also includes the interest earning on the Devil Canyon-Castaic Revenue Bond and Pyramid Revenue Bond proceeds used to reimburse prior Burns-Porter bond expenditures and unexpended Supplemental Bond proceeds.

Line 47: Total Miscellaneous Receipts.

The total of Lines 41 through 46.

Project Operating Revenues

Project operating revenues are deposited in two primary accounts: the Central Valley Water Project Revenue Fund, in which are placed all revenues pledged to revenue bonds, and the California Water Resources Development Bond Fund-Revenue Account, in which are placed all other SWP operating revenues, including interest earnings on any unexpended proceeds from the sale of Water Bonds.

Line 48: Payments Under Oroville-Thermalito Power Sales Contract.

Until April 1, 1983 all of the generation from Hyatt-Thermalito Powerplants will be sold under a Power Sale Contract dated November 29, 1967 to three electric utilities (Pacific Gas and Electric Company, Southern California Edison Company, and San Diego Gas and Electric Company). Revenues under the Contract are pledged to the payment of annual operating expenses of Hyatt-Thermalito Powerplants (limited to $1.5 million annually) and annual debt service on Oroville Revenue Bonds. Firm revenues consist of $8,075,000 paid semiannually. Revenues are also received from energy adjustments accounts for cumulative theoretical generation in excess of 2.1 billion kilowatthours annually.

During 1979, preliminary studies indicate a 477 million kilowatthour debit will be made against energy adjustment accounts bringing the cumulative positive balance on December 31, 1978 to 3.3 billion kilowatthours (equivalent to a credit as of that date of about $8.6 million).

On April 1, 1983, the State Power Contract will replace the existing Power Sale Contract and the generation will be available for use in the SWP. For purposes of SWP cost accounting and for determining water charge revenues and the application of revenues under the State Power Contract will remain the same as under the Power Sale Contract -- except that the firm semiannual payments will be increased to cover the actual operating expenses of Hyatt-Thermalito Powerplants in excess of $1.5 million annually. Thus, the amounts shown on Line 48 after March 31, 1983 include additional revenue for increased operating expenses and additional transmission and station service charges. Also, Line 48 includes an additional revenue of $12.7 million from the electric utilities in 1983 to clear an estimated positive balance in energy adjustment accounts. Thereafter, Line 48 includes estimated revenues for energy generation in excess of 2.1 billion kilowatthours annually equivalent to 300 million kilowatthours ($777,000) annually.

For the financial analysis, the Department assumes that revenues from the sale or other disposal of Hyatt Thermalito power will continue after termination of the State Power Contract (November 29, 2017, or until all Oroville Revenue Bonds have been retired, whichever occurs later), in the same amounts as under the Contract.

Line 49: Water Contractor Payments Under Devil Canyon-Castaic Contract.

These payments by the six water contractors located below Devil Canyon and Castaic Facilities are equal to (1) the annual service on Devil Canyon-Castaic Revenue Bonds and (2) annual operating costs of the Facilities allocated to power generation (see page 2, Bulletin 132-73).

Line 50: Water Contractor Payments Under Long-Term Water Supply Contracts.

Water supply contracts provide for payments of two general charges: (1) a Delta Water Charge and (2) a Transportation Charge.

The Delta Water Charge is assessed for each acre-foot of water the contractors are entitled to receive. The Charge is computed to return to the State during the contract term all appropriate costs of SWP conservation facilities, together with interest thereon. SWP conservation facilities are defined as those facilities which conserve water, including Lake Oroville, Delta Facilities, additional conservation facilities and San Luis Reservoir, together with a portion of the California Aqueduct from the Delta to San Luis Reservoir. Current studies of operating ground water basins to provide for conservation of SWP water may result in an amendment of water supply contracts to include costs of such facilities as conservation facilities. Costs allocated to flood control, recreation, and fish and wildlife enhancement are not paid under the water supply contracts. Both charges for power costs and credits for power revenues are included in the determination of the Delta Water charge.

The Transportation Charge is computed to return to the State during the contract term the costs of the aqueducts necessary to deliver water to the respective contractors, including interest costs. Such costs exclude those allocated to flood control, recreation, and fish and wildlife enhancement. In addition, costs of the Devil Canyon and Castaic Facilities allocable to power are excluded from the Transportation Charge and are paid under the Devil Canyon-Castaic Contract.

Each year's costs of each aqueduct reach are allocated among contractors whose deliveries are or will be conveyed through that reach. For contractors with predominantly municipal and industrial water use, the allocated amounts of each year's construction expenditures are required to be repaid, together with interest, in not more than 50 equal annual installments. For contractors with predominantly agricultural water use, allocated construction costs are repaid by a uniform charge per acre-foot of water entitlement, computed to return those costs with interest to the State during the contract term.

Operating costs are paid currently under the Transportation Charge and therefore do not include any interest charges. Construction costs under the Transportation Charge and all construction and annual operating costs under the Delta Water Charge are to be repaid with interest at the "project interest rate".

The project interest rate is defined in Article 1(r) of the Standard Provisions for Water Supply Contracts as the weighted average of the rates paid on securities issued and loans obtained to finance SWP facilities, excluding Oroville Revenue Bonds. Under original contract provisions, the basis for determining the project interest rate was the weighted average of rates paid on Water Bond sales only. Under contract amendments executed in 1969, after issuance of Oroville Revenue Bonds, the basis was expanded to include rates on all other securities sold and loans obtained thereafter for financing SWP facilities, including revenue bonds (see page 28, Bulletin No. 132-70). However, not all proceeds from the sale of revenue bonds are melded in the calculation of the project interest rate -- only those proceeds applied to construction costs (the only application of general obligation bonds permitted by law) and those consumed by the bond discount (a component of the total interest cost of a revenue bond issue). Shown below is the percent of total proceeds from revenue bond issues which affect the actual and projected calculation of the project interest rate:

Revenue Bond Proceeds	Devil Canyon Castaic (Actual)	Pyramid (Actual)	Supplemental Water (Assumed)	Supplemental Power (Assumed)
Applied to construction costs	$127.1	$ 74.0	$1,910.7	$350.3
Less portion of such proceeds derived from interest earnings prior to delivery of bonds	1.6	0	0	0
Plus bond discount and financing costs	1.4	1.6	21.2	7.7
Subtotal, proceeds included in calculating the project interest rate	$126.9	$ 75.6	$1,931.9	$358.0
Principal amount of bonds	$139.2	$ 95.8	$2,122.9	$515.0
Percent total principal amount included in calculating the Project Interest Rate	91%	79%	91%	70%

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Tables 9 and 9A present information basic to the calculation of the actual and projected project interest rates.

A detailed development of water charges for each contractor is presented in Appendix B which is based on presently known conditions and supports the Department's determination of 1981 water charges -- billed July 1, 1980. However, there are the following significant differences between the projection of charges shown in Line 50 and the substantiation of 1981 charges shown in Appendix B:

- Future capital costs shown in Appendix B are based on prices prevailing on December 31, 1979. Those shown in the financial analysis include allowances for future price escalation.

- The project interest rate basic to charges shown in Appendix B includes actual bond sales (4.584 percent). The project interest rate basic to the charges shown in Line 50 also reflects the projected supplemental water revenue bond sales. The contractor charges assume that all capital costs, including interest, for power generating plants would be repaid through operating component charges. Therefore, the power revenue bonds were not included in the projected project interest rate for purpose of the contractor charges calculations. Table 9A does illustrate the project interest rate if the power revenue bonds are included.

- Pre-1981 charges shown in Appendix B represent what charges should have been under presently known conditions. Pre-1981 charges shown in Line 50 are those actually paid under previously determined bills.

- Charges shown in Appendix B are unadjusted for past over or underpayments. Charges for 1981 and thereafter shown in Line 50 include adjustments for any apparent overpayments or underpayments of pre-1980 charges. Line 50 also includes credits due to pre-payments of the capital cost components which resulted under various contract amendments involving excess aqueduct capacity.

- The charges shown in Appendix B are those which would apply in the absence of the Devil Canyon-Castaic Contract. The charges shown in Line 50 exclude those under the Contract (see Line 49).

- The charges in Appendix B do not include a capital cost component for the repayment of the Enlargement of the California Aqueduct, Mojave Division. Line 50 includes an estimate of the repayment for the enlargement expenditure.

The payments shown in Line 50 also include revenue which would be pledged to support supplemental revenue bonds. The amount of revenue pledged is that portion which is identifiable with the facilities financed with revenue bonds. The analysis assumes, with regard to future revenue bonds, that there will be no revenue payment defaults.

Line 51: Federal Payments for Project Operating Costs.

Under the December 31, 1961, Agreement between the State and the United States, the Department operates and maintains the San Luis joint-use facilities. Under the January 12, 1972, Supplement to the Agreement, the United States pays 45 percent of the costs incurred by the Department for these activities (the percentage does not apply to power costs. The United States and the Department provide their own power to pump their respective amounts of water through the joint facilities). This percentage was reviewed in 1975, and will remain at 45 percent, through December 31, 1980, subject to review again in 1980.. The amounts shown in Line 51 are based on the assumption that the current 45 percent federal share would be extended indefinitely.

Line 52: Appropriations for Operating Costs Allocated to Recreation.

Under the Davis-Dolwig Act, the Legislature declared its intent that, except for funds provided pursuant to AB 12 (1966), the Department's budget shall include appropriations from the General Fund of monies necessary for enhancement of fish and wildlife and for recreation in connection with State water projects. Annual operation, maintenance, power and replacement costs allocated to recreation and fish and wildlife enhancement are paid by annual General Fund appropriations.

Line 53: Local Agency Payments Under Davis-Grunsky Loan Repayment Contracts.

As pointed out in the description of Line 24, $44.8 million in loan applications had been approved as of December 31, 1979. The amounts shown in Line 53 are based on the assumption that $14.7 million in future contracts would be approved -- bringing estimated total loans under the $130 million authorization (which excludes an initial loan of about $1.3 million) to $59.5 million (46 percent). All future loans are assumed to be repaid in 50 years at 2.5 percent interest, with an initial five-year deferment of principal repayment.

Line 54: Miscellaneous Revenues.

Miscellaneous revenues include annual payments by the City of Los Angeles for a share of the maintenance costs of the Angeles Tunnel, interest earnings on unexpended proceeds from sale of Water Bonds, and other short-term investment earnings on SWP revenues. Based on experience to date, an allowance of $2 million annually is included in Line 54 to approximate these revenues.

This line also includes future bond proceeds that are special reserves under revenue bond financing, described in Line 26. These proceeds are not classified as revenues, but are shown in this line to simplify the financial presentation since they are used for operation and maintenance costs and revenue bond service.

Line 55: Total Project Operating Revenues.

The total of Lines 48 through 54.

Line 56: Total Miscellaneous Receipts and Project Operating Revenues.

The total of Lines 47 and 55.

Application of Revenues and Miscellaneous Receipts

Revenues pledged to revenue bonds, deposited in the Central Valley Water Project Revenue Fund, are disbursed in accordance with resolutions authorizing the issuance of such bonds. All other operating revenues, deposited in the California Water Resources Development Bond Fund-Revenue Account, are disbursed in accordance with the following priorities of use as specified in the Burns-Porter Act.

(1) Project operating costs.

(2) Water Bond Service.

(3) Repayment of SWP expenditures from the California Water Fund.

(4) Deposits to a reserve for future construction of the State Water Resources Development System -- a system of facilities which may be added to under certain authorizations of the Legislature and designations by the Department as specified in the Burns-Porter Act, and which includes the State Water Project.

Line 57: Carryover (+) and Application (-) of Miscellaneous Receipts and Revenues Held Temporarily in Reserve.

The carryover of reserves from year to year has primarily accumulated in the Central Valley Water Project Construction Fund from appropriations for recreation capital expenditures (Line 42) and interest earned from unexpended revenue bond reimbursement funds. These carryovers are assumed to be used for construction expenditures prior to the sale of supplemental water revenue bonds. Also included in this line is a carryover from year to year of funds in the California Water Resources Development Bond Fund Revenue Account through 1985 to insure that future annual service on water bonds will be met. After 1985 the carryover consists of interest earned during the latter half of the year and credited to the Project's accounts too late for use in the year that the interest was earned. Receipts accruing after 1996 -- not needed for either bond service or construction expenditures under this analysis -- are included in Line 72 as being available for financing future construction of the State Water Resources Development System.

Line 58: Project Operating Costs.

Historical and estimated project operating costs are presented in Table 10 by project facilities. Line 58 in the financial analysis is composed of operating costs that are assumed to occur under the assumptions of lower water demands due to waste water reclamation and water conservation. This line also includes the operating costs for the Federal share of joint facilities and operating costs allocated to recreation, which are offset by revenues shown in Lines 51 and 52, respectively. Allowances for future cost escalation are included for power costs through 1985 and operation and maintenance costs through 1982. Allowances for further future long-term price escalation are not included in these estimates since such operating costs do not substantially affect the overall results of the financial analysis. (For the most part, changes of operating costs cause direct offsetting changes of operating revenues.)

Power costs is the major item of annual operating expense for the SWP, and there have been significant changes in the assumptions regarding the future development of power sources and costs. Near the end of this chapter is a section titled "Power Costs" which explains the current assumptions regarding future power sources and their related costs.

Line 59: Deposits to Special Reserves Under Revenue Bond Financing.

In regard to Oroville Revenue Bonds, deposits include the following:

- Payments to the Department for energy and generating capability prior to April 1, 1969, under terms of interim letter agreements, and all other power revenues for one year following completion of construction.

- Payments to the Department from the energy adjustment account for net annual energy generation in excess of 2.1 billion kilowatthours.

- Federal flood control contributions in the amount of $1.65 million for allocated operations and maintenance costs.

- Annual amount of Oroville power sales revenue that is in excess over the operating cost and Oroville bond service payment.

In regard to Devil Canyon-Castaic Revenue Bonds, such deposits consist of about $9.2 million to provide a reserve approximating maximum annual bond service.

Deposits for the Pyramid Hydroelectric Project Revenue Bonds consisted of about $19.6 million to pay bond interest through July 1983 and $1.0 million for the first year of operating expense. The deduction of the annual bond service for the Pyramid bonds and first year's operating expense reduced the deposits in reserve through 1983.

This line also includes bond proceeds from supplemental water and power revenue bonds in the year of assumed sale to provide for interest during construction and the first year after completion of construction, a reserve approximating the maximum annual bond service, and an allowance for the first year of operating expense. These reserves were reduced in subsequent years as the reserved amounts were used for their respective purposes. When all revenue bonds are retired (2035) all deposits will have been used.

Lines 60-61: Payment of Service on Bonds Sold.

These two lines show the total interest and principal payments on bonds sold to date. Table 11 provides a summary of Water Bonds (Series A through V), Oroville Revenue Bonds, Devil Canyon-Castaic Revenue Bonds and Pyramid Hydroelectric Project Revenue Bonds. The last bonds sold were Series V Water Bonds in November 1977.

Annual interest and principal payments on individual series are shown in the following bulletins.

Series A-R	Table 13, Bulletin 132-72
Series S	Table 10, Bulletin 132-73
Series T	Table 10, Bulletin 132-74
Series U	Table 11, Bulletin 132-76
Series V	Table 11, Bulletin 132-79

Oroville Series A and B	Table 12, Bulletin 132-72
Devil Canyon-Castaic	Table 10, Bulletin 132-73

The Oroville Revenue Bond service schedule shown in Table 11 is based on the initial bond maturity schedule. Since 1978, the trustees has been retiring bonds prior to the fixed maturity date as follows:

Year	Bonds Retired	Cost
1978	$4,050,250	$3,845,099
1979	9,724,750	8,933,093

In effect, this will decrease the annual interest cost and the principal due in subsequent years. This action will increase the annual deposit to reserve (Line 59) which is held by the trustee and does not affect the basic validity of the financial analysis.

Line 60 also includes over $0.3 million in interest payments to the General Fund for the temporary loan of $46.8 million in 1970 -- repaid by proceeds from the sale of Series N Water Bonds.

Line 62-63: Assumed Payments of Service on Future Bond Sales.

These lines show the projected annual service on future Supplemental Water Revenue Bonds and Water Bonds (Series W and X) under the assumptions of this analysis.

Assumptions concerning the service on future Supplemental Water Revenue Bonds are as follows:

- The net interest cost would average 8.0 percent.

TABLE 10: PROJECT

(in thousands

FEATURE	CALENDAR					
	1962-1979	1980	1981	1982	1983	1984
BY PROJECT FACILITY						
Feather River Facilities	58,752	7,958	9,009	10,051	-7,587	-8,522
North Bay Aqueduct	836	113	126	131	209	588
Delta Facilities	2,932	59	59	80	160	280
South Bay Aqueduct	19,449	2,105	2,360	2,594	4,664	4,898
California Aqueduct:						
Main Line - Delta to A. D. Edmonston	170,831	30,927	32,483	34,278	78,316	74,139
Main Line - A. D. Edmonston to Perris	78,967	19,966	20,152	21,024	69,511	91,706
West Branch	19,623	2,346	2,816	1,553	820	-6,117
Coastal Branch	10,187	1,274	1,449	1,589	2,257	1,849
Additional Conservation Facilities	0	0	0	0	0	0
Water Quality Monitoring Program-Sacramento-San Joaquin Delta	10,125	1,015	1,147	1,297	1,301	1,270
Davis-Grunsky Act Program (continuing administrative costs)	781	137	137	137	137	137
TOTAL OPERATING COSTS	372,483	65,900	69,738	72,734	149,788	160,228
BY COMPOSITION:						
Salaries and Expenses of Headquarters Personnel	143,290	21,664	21,529	18,187	33,410	40,809
Salaries and Expenses of Field Personnel	200,607	26,610	26,331	32,053	32,053	32,053
Pumping Power:						
Used by Pumping Plants	105,738	20,593	25,133	27,348	135,465	146,383
Produced by Recovery Plants	-26,775	-6,640	-7,568	-9,096	-55,503	-63,469
Deposits to Replacement Reserves	9,207	5,786	6,118	6,212	6,435	6,494
Oroville Thermalito Insurance Premiums	3,355	338	368	369	369	369
Less, Portion of Costs Incurred During Construction	62,939	2,451	2,173	2,339	2,441	2,411
TOTAL OPERATING COSTS	372,483	65,900	69,738	72,734	149,788	160,228
BY PROJECT PURPOSE:						
Water Supply and Power Generation	333,252	58,758	62,075	64,654	138,636	148,635
Recreation and Fish and Wildlife Enhancement	15,792	2,996	3,078	3,098	5,986	6,417
Flood Control	415	66	76	87	109	114
Miscellaneous Purposes:						
Federal Share, San Luis and Delta Facilities	22,213	3,864	4,261	4,679	4,837	4,842
Other (Davis-Grunsky, Drainage, City of Los Angeles)	811	216	248	216	220	220
TOTAL OPERATING COSTS	372,483	65,900	69,738	72,734	149,788	160,228

OPERATING COSTS

of dollars)

YEAR						TOTAL
1985	1986-1995	1996-2005	2006-2015	2016-2025	2026-2035	
-8,871	-90,317	-89,707	-88,718	-88,609	-90,019	-386,580
620	8,376	10,695	13,538	17,007	18,621	70,860
213	44,917	58,091	58,935	61,048	61,408	288,182
5,153	55,377	62,614	71,647	83,299	85,391	399,551
75,118	1,068,693	1,209,525	1,644,530	2,265,053	2,256,872	8,940,765
95,654	1,339,868	1,528,549	1,994,307	2,472,066	2,524,520	10,256,290
110	-121,408	-184,088	-235,021	-242,920	-262,977	-1,025,263
1,827	20,279	21,965	24,836	32,818	32,061	152,391
0	80,361	332,106	369,964	261,656	264,733	1,308,820
1,242	33,425	23,534	11,285	11,285	11,285	108,211
137	1,370	1,370	1,370	1,370	1,370	8,453
171,203	2,440,941	2,974,654	3,866,673	4,874,073	4,903,265	20,121,680
44,077	558,627	736,579	709,466	685,159	685,435	3,698,232
32,053	320,528	320,528	320,528	320,528	320,528	1,984,400
154,298	2,276,362	2,632,317	3,685,571	4,884,395	5,028,357	19,121,960
-62,993	-771,416	-821,392	-1,030,269	-1,199,860	-1,210,434	-5,265,415
6,631	75,514	107,170	177,683	180,157	75,685	663,092
369	3,694	3,694	3,694	3,694	3,694	24,007
3,232	22,368	4,242	0	0	0	104,596
171,203	2,440,941	2,974,654	3,866,673	4,874,073	4,903,265	20,121,680
159,086	2,303,551	2,819,516	3,698,746	4,712,414	4,758,364	19,257,687
6,919	84,855	96,133	100,953	98,310	94,837	519,374
118	1,188	1,201	1,353	1,343	1,228	7,298
4,860	49,151	55,608	63,425	59,810	46,640	324,190
220	2,196	2,196	2,196	2,196	2,196	13,131
171,203	2,440,941	2,974,654	3,866,673	4,874,073	4,903,265	20,121,680

- The service pattern would provide for no maturities during the first 5 years after issuance, with a final maturity 40 years after issuance.

Assumptions concerning the service on future Water Bonds are as follows:

- The net interest cost would average 7.5 percent.

- The service pattern would provide for no maturities during the first nine years after issuance, with a final maturity for Series W 20 years after issuance. The final sale of water bonds (Series X) for additional conservation facilities would have final maturity 40 years after issuance.

Lines 64-65: Assumed Payments of Service on Future Power Revenue Bonds Sales.

These lines show the projected annual service for the supplemental power revenues bonds discussed in Line 33. Assumptions concerning the service on these future bonds are as follows:

- The net interest cost for the power revenues bonds would average 8.0 percent.

- The service pattern would provide for no maturities during the construction period of the facility being financed. Final maturity for the bonds would be 30 years after construction is complete.

Lines 66-67: Total Payments of Bond Service.

The total of interest payments shown on Lines 60, 62, and 64 and the total of principal payments shown on Lines 61, 63 and 65 respectively.

Lines 68-69: Repayment of the California Water Fund.

The Burns-Porter Act requires that, after operation and maintenance and bond service requirements have been satisfied, project revenues shall be transferred to the California Water Fund as reimbursement to the Fund for monies expended for construction of the State Water Resources Development System. For the financial analysis the repayment amounts through 1995 (Line 68), together with the $25 million of tidelands revenue allocated each year to the California Water Fund are utilized for financing capital expenditures (Line 29).

Line 60 indicates repayment to the Fund of monies not required to be appropriated for further construction. The Fund would be substantially repaid by 2000. Continuing annual repayments shown thereafter in Line 68 represent repayment of the continuing appropriation from the fund for annual principal and interest payments to the federal government for the additional conservation storage costs shown in Line 25.

The totals of Line 68 and Line 69 equal the total of Line 29 and indicate that all California Water Fund appropriations are repaid as required by the Burns-Porter Act.

Line 70: Application of Miscellaneous Receipts to Construction Expenditures.

This line matches Line 39. All projected annual accruals of miscellaneous receipts would be totally applied to Water Bond service and construction expenditures through 1995 under the financial analysis. After 1995 annual receipts would be reserved for financing future construction -- shown in Line 72.

Line 71: Subtotal, Repayment of Capital Financing.

This line is the subtotal of Lines 67, 68, 69 and 70. Under the assumptions of this analysis, Line 71 demonstrates the schedule by which the SWP would eventually repay, with SWP income, all funds required to finance capital expenditures as shown in Line 40.

TABLE 11: ANNUAL SERVICE ON BONDS SOLD AS OF DECEMBER 31, 1979

Calendar Year	Bonds Sold Through December 31, 1979									
	Series A through V Water Bonds		Oroville Revenue Bonds		Devil Canyon-Castaic Revenue Bonds		Pyramid Hydroelectric Project Revenue Bonds Sold 10/23/79		Total	
	Principal	Interest	Principal	Interest	Principal	Interest	Principal	Interest	Principal	Interest
1964	0	3,333	0	0	0	0	0	0	0	3,333
1965	0	11,114	0	0	0	0	0	0	0	11,114
1966	0	16,742	0	0	0	0	0	0	0	16,742
1967	0	26,912	0	0	0	0	0	0	0	26,912
1968	0	37,760	0	3,876	0	0	0	0	0	41,636
1969	0	47,461	0	10,448	0	0	0	0	0	57,909
1970	0	53,291	0	13,145	0	0	0	0	0	66,436
1971	0	63,035	0	13,145	0	0	0	0	0	76,180
1972	0	69,148	1,260	13,112	0	0	0	0	1,260	82,260
1973	1,200	69,348	1,330	13,042	0	7,708	0	0	2,530	90,098
1974	3,000	69,533	1,400	12,969	0	7,708	0	0	4,400	90,210
1975	5,000	69,366	1,475	12,893	0	7,708	0	0	6,475	89,967
1976	7,000	69,408	1,555	12,811	0	7,708	0	0	8,555	89,927
1977	10,200	69,323	1,635	12,727	0	7,708	0	0	11,835	89,758
1978	12,700	69,312	1,725	12,637	0	7,708	0	0	14,425	89,657
1979	13,650	68,690	1,815	12,540	0	7,708	0	0	15,465	88,938
1980	16,050	67,968	1,915	12,441	0	7,708	0	7,900	17,965	96,017
1981	18,050	67,109	2,020	12,334	0	7,708	0	7,292	20,070	94,443
1982	19,250	66,162	2,130	12,221	0	7,708	0	7,292	21,380	93,383
1983	20,520	65,148	2,245	12,101	900	7,708	0	7,292	23,665	92,249
1984	21,785	64,068	2,365	11,982	955	7,647	640	7,292	25,745	90,989
1985	22,555	62,932	2,485	11,862	1,010	7,583	675	7,238	26,725	89,615
1986	23,830	61,742	2,605	11,737	1,070	7,515	715	7,180	28,220	88,174
1987	25,495	60,492	2,735	11,602	1,135	7,442	755	7,120	30,120	86,656
1988	26,770	59,165	2,870	11,464	1,205	7,366	795	7,055	31,640	85,050
1989	28,145	57,825	3,015	11,314	1,275	7,284	840	6,988	33,275	83,411
1990	29,385	56,473	3,175	11,152	1,355	7,198	890	6,916	34,805	81,739
1991	30,365	55,070	3,335	10,983	1,435	7,107	940	6,841	36,075	80,001
1992	31,295	53,640	3,510	10,806	1,520	7,010	995	6,761	37,320	78,217
1993	32,940	52,183	3,695	10,618	1,610	6,907	1,050	6,693	39,295	76,401
1994	34,525	50,660	3,885	10,421	1,705	6,799	1,115	6,622	41,230	74,502
1995	35,660	49,073	4,085	10,215	1,810	6,684	1,180	6,545	42,735	72,517
1996	36,900	47,436	4,300	9,996	1,920	6,561	1,250	6,464	44,370	70,457
1997	36,595	45,818	4,525	9,767	2,035	6,432	1,325	6,376	44,480	68,393
1998	36,675	44,226	4,760	9,524	2,155	6,295	1,405	6,283	44,995	66,328
1999	37,600	42,655	5,005	9,265	2,285	6,160	1,490	6,184	46,380	64,264
2000	38,890	41,033	5,280	8,987	2,420	6,040	1,580	6,078	48,170	62,138
2001	39,980	39,351	5,565	8,693	2,565	5,912	1,680	5,964	49,790	59,920
2002	41,120	37,620	5,865	8,384	2,720	5,773	1,785	5,842	51,490	57,619
2003	42,970	35,835	6,180	8,057	2,885	5,626	1,900	5,712	53,935	55,230
2004	45,160	33,957	6,520	7,714	3,055	5,470	2,020	5,573	56,755	52,714
2005	46,450	31,995	6,870	7,349	3,240	5,305	2,150	5,424	58,710	50,073
2006	47,740	29,971	7,245	6,968	3,435	5,130	2,290	5,268	60,710	47,337
2007	49,230	27,883	7,635	6,564	3,640	4,945	2,445	5,102	62,950	44,494
2008	51,220	25,727	8,050	6,138	3,860	4,749	2,605	4,925	65,735	41,539
2009	53,560	23,478	8,490	5,690	4,090	4,540	2,780	4,736	68,920	38,444
2010	55,250	21,134	8,950	5,216	4,335	4,319	2,960	4,534	71,495	35,203
2011	56,740	18,717	9,435	4,717	4,595	4,085	3,160	4,305	73,930	31,824
2012	58,530	16,216	9,945	4,192	4,875	3,837	3,370	4,060	76,720	28,305
2013	60,370	13,676	10,485	3,636	5,165	3,574	3,600	3,799	79,620	24,685
2014	57,900	11,244	11,055	3,051	5,475	3,303	3,840	3,520	78,270	21,118
2015	53,690	8,838	11,655	2,435	5,805	3,015	4,095	3,222	75,245	17,510
2016	46,130	6,626	12,290	1,782	6,150	2,710	4,370	2,905	68,940	14,023
2017	38,060	4,614	12,960	1,097	6,520	2,388	4,665	2,566	62,205	10,665
2018	25,350	2,980	13,665	371	6,910	2,045	4,975	2,204	50,900	7,600
2019	16,890	1,778	0	0	7,325	1,682	5,310	1,819	29,525	5,279
2020	17,320	934	0	0	7,765	1,298	5,665	1,407	30,750	3,639
2021	8,510	301	0	0	8,230	890	6,045	968	22,785	2,159
2022	1,800	48	0	0	8,725	458	6,450	500	16,975	1,006
TOTAL	1,570,000	2,377,577	244,995	466,191	139,165	283,872	95,800	228,767	2,049,960	3,356,407

TABLE 12: ANNUAL SERVICE ON ASSUMED FUTURE BOND SALES

(in thousands of dollars)

Calendar Year	Series W through X Water Bonds		Supplemental Water Revenue Bonds		Supplemental Power Revenue Bonds		Total Future Bond Sales	
	Principal	Interest	Principal	Interest	Principal	Interest	Principal	Interest
1981	0	0	0	0	0	24,573	0	24,573
1982	0	919	0	0	0	37,111	0	38,030
1983	0	919	0	0	0	41,201	0	42,120
1984	0	919	0	0	3,190	41,201	3,190	42,120
1985	0	919	0	9,000	4,348	40,946	4,348	50,865
1986	0	919	0	29,000	4,971	40,598	4,971	70,517
1987	0	919	0	47,000	5,367	40,200	5,367	88,119
1988	0	919	0	54,000	5,798	39,771	5,798	94,690
1989	0	919	0	70,000	6,261	39,307	6,261	110,226
1990	0	919	0	105,200	6,764	38,807	6,764	144,926
1991	0	13,500	1,305	144,533	7,306	38,265	8,611	196,298
1992	865	13,500	3,005	164,546	7,887	37,681	11,757	215,727
1993	930	13,435	4,265	164,256	8,518	37,050	13,713	214,741
1994	1,000	13,365	4,600	163,902	9,202	36,369	14,802	213,636
1995	1,075	13,290	7,290	163,426	9,937	35,633	18,302	212,349
1996	1,155	13,210	10,660	167,774	10,734	34,837	22,549	215,821
1997	1,245	13,123	14,440	166,770	11,590	33,978	27,275	213,871
1998	1,335	13,030	15,600	165,569	12,516	33,051	29,451	211,650
1999	1,435	12,930	16,840	164,272	13,517	32,050	31,792	209,252
2000	1,545	12,822	18,195	162,869	14,598	30,969	34,338	206,660
2001	3,288	12,706	20,020	161,356	15,766	29,802	39,074	203,864
2002	1,745	12,460	21,615	159,693	17,029	28,539	40,389	200,692
2003	1,875	12,329	23,350	157,895	18,391	27,177	43,616	197,401
2004	2,015	12,188	25,220	155,953	19,861	25,706	47,096	193,847
2005	2,165	12,037	27,230	153,857	21,451	24,118	50,846	190,012
2006	2,330	11,875	29,405	151,592	23,169	22,401	54,904	185,868
2007	2,505	11,700	31,765	149,147	25,020	20,547	59,290	181,394
2008	2,690	11,512	34,300	146,507	27,020	18,547	64,010	176,566
2009	2,895	11,310	37,050	143,656	29,183	16,385	69,128	171,351
2010	3,110	11,093	40,010	140,575	31,518	14,051	74,638	165,719
2011	3,345	10,860	43,215	137,250	34,042	11,528	80,602	159,638
2012	3,595	10,609	46,665	133,656	36,764	8,805	87,024	153,070
2013	3,865	10,339	50,405	129,776	39,695	5,863	93,965	145,978
2014	4,155	10,049	54,435	125,587	10,747	2,688	69,337	138,324
2015	4,465	9,738	58,795	121,060	2,555	1,828	65,815	132,626
2016	4,800	9,403	63,495	116,170	2,760	1,624	71,055	127,197
2017	5,160	9,043	68,580	110,892	2,980	1,403	76,720	121,338
2018	5,545	8,656	74,060	105,190	3,220	1,165	82,825	115,011
2019	5,965	8,240	79,990	99,032	3,480	907	89,435	108,179
2020	6,410	7,793	86,375	92,383	3,755	629	96,540	100,805
2021	6,890	7,312	93,300	85,200	4,105	328	104,295	92,840
2022	7,410	6,795	100,755	77,444	0	0	108,165	84,239
2023	7,965	6,239	108,820	69,066	0	0	116,785	75,305
2024	8,560	5,642	117,525	60,017	0	0	126,085	65,659
2025	9,205	5,000	126,920	50,247	0	0	136,125	55,247
2026	9,895	4,310	117,830	40,466	0	0	127,725	44,776
2027	10,635	3,568	103,670	31,613	0	0	114,305	35,181
2028	11,435	2,770	96,880	23,600	0	0	108,315	26,370
2029	12,290	1,912	104,775	15,543	0	0	117,065	17,455
2030	13,207	991	78,610	8,216	0	0	91,817	9,207
2031	0	0	43,705	3,334	0	0	43,705	3,334
2032	0	0	3,995	1,438	0	0	3,995	1,438
2033	0	0	4,315	1,119	0	0	4,315	1,119
2034	0	0	4,660	774	0	0	4,660	774
2035	0	0	5,010	401	0	0	5,010	401
TOTAL	180,000	398,955	2,122,950	5,101,822	515,015	997,639	2,817,965	6,498,416

Line 72: Reservation for Future Construction.

In accordance with the Burns-Porter Act, all SWP revenues in excess of SWP operating costs, Water Bond service, and California Water Fund repayment shall be deposited in a reserve account for financing future construction of the State Water Resources Development System. Also included in the amounts shown in Line 72 are those miscellaneous receipts (reimbursements of capital costs allocated to recreation and fish and wildlife enhancement) which accrue too late to be applied to construction expenditures under this analysis. Within the constraints of timing, accruals to the reserve could be available for financing additional SWP costs after the year 2000, since additional facilities will need to be constructed to satisfy the contractual minimum yield of the Project.

Line 73: Total Application of Miscellaneous Receipts and Project Operating Revenues.

This summary of the application of revenues and receipts matches the total accruals of such money as shown in Line 56.

Power Costs

Costs of electrical energy for pumping will constitute most of the Project's annual operating expenses and a significant portion of the Project's total annual costs. Currently, contractor payments for net power costs approximate 10 percent of the total charges for SWP water service, including the repayments of capital costs. However, commencing in 1983, such costs are expected to constitute more than 40 percent in certain years.

Through March 31, 1983, SWP pumping energy loads in excess of recovery generation (from San Luis, Devil Canyon, Castaic and, commencing in 1982, Pyramid Plants) will continue to be obtained under the Canadian Entitlement Power and Suppliers Contracts, under fixed purchase terms negotiated in 1966. Generation from Hyatt-Thermalito plants will continue to be sold under the Power Sale Contract (with fixed sale terms also negotiated in 1966). Both power purchases and sale contracts terminate on March 31, 1983.

As discussed in Chapter II, sources have been identified for meeting essentially all of the energy load forecasted for the period following March 31, 1983 through the year 2000. In March 1980, the DWR prepared and distributed a long-range projection of future power costs for these identified sources in terms of the deflated value of future dollars. Previously, the DWR had projected power costs only to about the mid-1980s, in order to illustrate the absolute impact on water bills when current firm power purchase contracts expire. Confirming these previous projections, SWP power costs are expected to increase about five times. For several years, contractors have been fully advised to allow for this increase in their financial planning (see page 72, Bulletin 132-77). The contractors opted not to pursue a DWR-proposed procedure for a more gradual phasing-in of the charge increases.

At the beginning of 1980, misleading information had been distributed by others regarding the projected SWP energy costs for the year 2000. (See the Future Costs of Water Service Section, in Chapter I, for the Department's projections of future energy costs of SWP water.) For instance, the Marin Conservation League, by letter of February 6, 1980, circulated its analysis which indicated year 2000 SWP power costs of $246 per acre-foot for SWP water deliveries to the San Joaquin Valley agricultural users and $634 per acre-foot to The Metropolitan Water District of Southern California (Metropolitan). Also, the

Working Alliance to Equalize Rates (WATER) claimed that power costs will be $874 per acre-foot to pump water over the Tehachapis.

The misinformation stemmed primarily from extending a PGandE projection of energy costs for its system (under the California Public Utilities Commission Order for Instituting Investigation No. 26). However, the characteristics of the PGandE and the SWP power systems and associated loads and costs differ significantly. In terms of year 2000 dollars, the Company's projection of the costs of each kilowatthour of electricity for its system is more than twice the DWR's projection for the SWP system.

The rest of the misinformation is caused by applying erroneously derived factors for the amount of energy required to convey a unit of SWP water to various delivery points. Such unit energy requirements are known as physical constants.

As a consequence of the above two considerations, the Marin Conservation League's figures for year 2000 costs of power are overstated by seven times for SWP deliveries to the San Joaquin Valley and almost three times for SWP deliveries to Metropolitan. WATER's estimate for Southern California deliveries is overstated by almost four times.

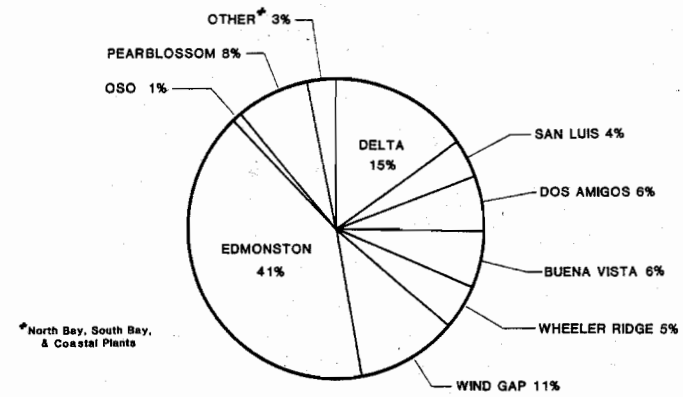
SWP power costs in the year 2000 are expected to be less than half the projected costs of the PGandE (129 mills per kilowatthours for the year 1998). The reasons for this significant difference are due to differences between the SWP and PGandE systems with regard to:

(1) Characteristics of electric loads. As a public electric utility, PGandE must satisfy the loads of its customers on demand. As yet, there is no practical way of storing large quantities of electricity. Thus, the required capacity of PGandE's system is dependent upon the peak instantaneous demand of its customers, together with a margin of reserves for contingencies. On the other hand, the SWP is primarily a water utility and water can be stored both in reservoirs located along its aqueduct system and within canal sections themselves. Furthermore, SWP pumping plants are sized to convey ultimate delivery quantities which are not expected to be needed until well after 2000. Thus, the SWP possesses sufficient pumping and storage capability to permit its electric energy use primarily during off-peak periods -- when the unused capacity of electric utility systems is available. The SWP can use a greater proportion of its energy off-peak as compared with electric utilities -- and can even exchange some of its on-peak generation for a greater quantity of off-peak energy from the utilities. The price of energy during on-peak use periods is at a premium; the price of energy during off-peak use periods is less expensive.

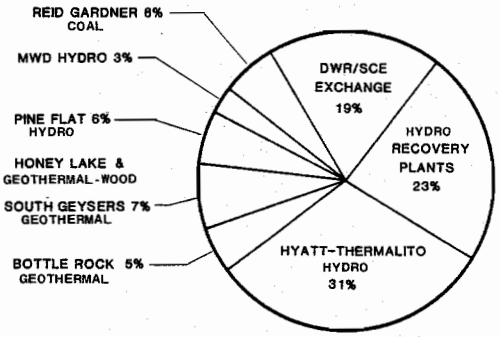
(2) Mix of resources. In the year 2000, hydroelectric power will constitute over half (57%) of the identified energy resources for the SWP. (Exhibit 1) While hydroelectric plants have a relatively high capital cost, this energy source is relatively unaffected by long-term escalation and inflation once plants are constructed. Most of the SWP's hydro plants are constructed and in operation. On the other hand, PGandE's resources are now primarily oil-fired thermal plants. Less than 30 percent of PGandE's load is now supplied by hydroelectric generation, and this percentage will decline as loads grow in the future. The costs of operating thermal plants (primarily for fuel) are affected significantly by inflation and escalation.

SWP ENERGY LOADS AND RESOURCES IN 1985

(7,500,000,000 kWh)



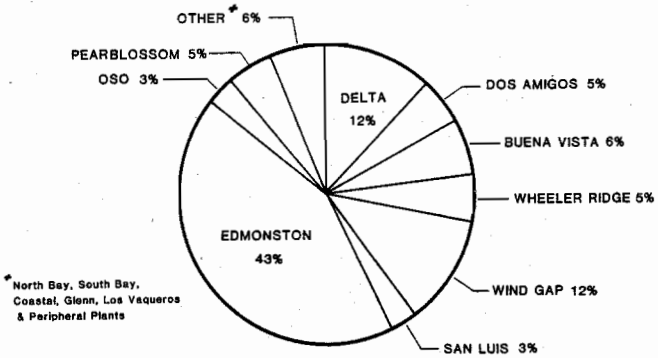
LOADS, BY PUMPING PLANTS



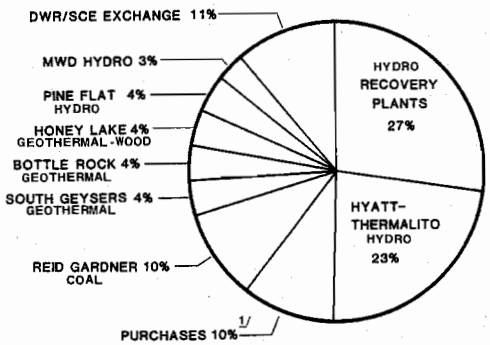
RESOURCES

SWP ENERGY LOADS AND RESOURCES IN 2000

(10,000,000,000 kWh)



LOADS, BY PUMPING PLANTS



RESOURCES

1/ This portion may include other sources if they are found to be feasible; such as wind, cogeneration and additional geothermal sites.

EXHIBIT 1

(3) Cost of financing. Being an investor-owned utility, PGandE must return a profit to its investors and is not permitted tax-exempt financing. On the other hand, bonds issued for the SWP are tax-exempt and therefore can be sold at a lower interest cost. Furthermore, SWP customers are committed under long-term contracts to repay the costs of the SWP; the SWP does not operate at a profit, nor does it operate at a loss.

Forecasts of SWP Energy Loads

The DWR's analysis of energy loads and resources is based on median conditions of water supply in the Sacramento-San Joaquin Delta. Generally, such conditions are critical regarding project pumping loads in relation to project hydroelectric generation. For above median conditions, the increase in such generation is expected to exceed the increase in load for pumping additional surplus water and SWP storage recharge quantities. On the other hand, for below median conditions, project pumping loads are expected to be reduced more than hydro generation due to the elimination of surplus water and SWP storage recharge deliveries and the possible application of entitlement deficiencies.

The DWR's forecasts of need currently extend to the year 2000 as a practical limit. This is the limit of the Bulletin 76 program for augmenting future SWP water supply included in SB 200. Furthermore, energy forecasts and reviews by the California Energy Commission are based on a maximum 20-year period of analysis. In view of inevitable technological advances and breakthroughs, it would be unrealistic to plan now for specific power sources beyond that period.

Previous Forecasts. DWR forecasts of the growth rates for future entitlement water service and SWP pumping energy needs have generally decreasd since the SWP was sized in the early 1960s:

Year of Analysis	Description	Reference	Estimated Year 2000 Load, in billions of kWh
1965	Nominal end of the entitlement water contracting program.	Bul. 132-65 (Table 8)	13.1
1972	Reduced population growth rates cause decreased M&I water use projections.	Bul. 132-72 (Table 3)	11.2
1978	DWR's submittal to CEC reflecting Bul. 76 conservation and reclamation goals and future water storage facilities and operations.	CFM II	10.0
1979	Essentially current estimates by water contractors plus future facilities.	Bul. 132-79 (Table 4)	12.1
1979	Energy Loads and Resources Chart prevailing during the latter part of 1979. (Same as CFM II, but with greater allowance for future project ground water operations.)	Bul. 132-79, page 113	11.0
1980	Same as for the above Loads and Resources Chart, but with decreases of entitlement deliveries beyond Bul. 76 conservation and reclamation goals.	Bul. 132-80	10.0

Current Forecast. The current projection of SWP energy loads is shown graphically on the chart included in Chapter II. The loads portrayed include electrical energy requirements for the following:

- Required future entitlement water deliveries as estimated by the water contractors in the Fall of 1979, reduced by the DWR for water conservation and waste water reclamation goals and for other considerations more fully described in the following section "Change from Previous Forecast".

- Desired future surplus water deliveries through 1984 as submitted by the water contractors in the Fall of 1979, plus a long-term projection of desired deliveries thereafter declining to about 431 700 cubic dekametres (350,000 acre-feet) annually by 2000.

- SWP aqueduct reservoir seepage and evaporation losses to the extent SWP pumping requirements are affected.

- SWP recreation water deliveries from the aqueduct system.

- Initial fill of future off-stream storage reservoirs, Glenn and Los Vaqueros, as identified in Bulletin 76, to the extent SWP pumping requirements are affected.

- Initial fill of off-aqueduct ground water demonstration projects.

- Initial fill of off-aqueduct ground water storage in San Joaquin and Southern California basins 3 281 000 cubic dekametres (2,660,000 acre-feet) sufficient to support a day period yield of 493 000 cubic dekametres 400,000 acre-feet as described in Bulletin 76.

- Contingency allowances to facilitate refill of the above off-aqueduct storage in the event of withdrawal during intervening dry years -- or for possible additional off-aqueduct storage operations in lieu of future on-stream storage works.

Change from Previous Forecast. Based on criteria established for Bulletin 132-80 analyses, entitlement water deliveries in 2000 would be reduced about 212 000 cubic dekametres (172,000 acre-feet) in addition to the 740 000 cubic dekametres (600,000 acre-foot) reduction goal set forth in Bulletin 76 (pages 73-74). As compared with previous estimates, the reasons for these additional decreases are:

Elimination of Metropolitan's deliveries of cooling water to potential power plants which would be energy sources for the SWP	74 000 dam^3 (60,000 af)
Elimination of projected deliveries to the Central Coastal Area due to absence of current requests by Santa Barbara and San Luis Obispo Counties	64 000 dam^3 (52,000 af)
Elimination of projected deliveries to the San Gorgonio Pass Water Agency due to lack of a current request by the Agency	21 000 dam^3 (17,000 af)
Increased conservation and reclamation use in excess of Bulletin 76 goals, based on a preliminary contractor-by-contractor analysis	53 000 dam^3 (43,000 af)
TOTAL	212 000 dam^3 (172,000 af)

CALIFORNIA STATE WATER PROJECT

ESTIMATED ELECTRICAL ENERGY LOADS AND SOURCES FOR 1980,1985 AND 2000

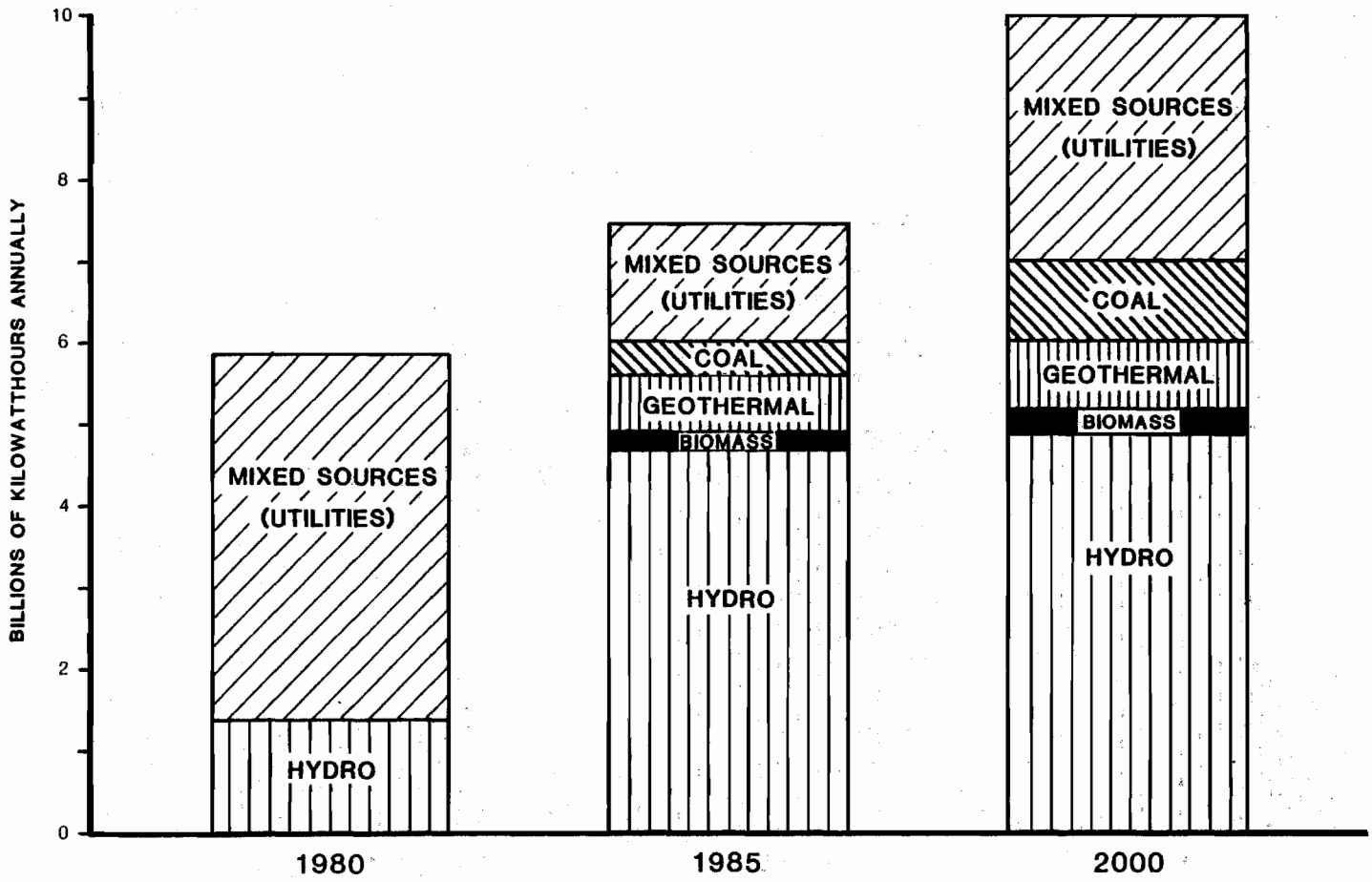


EXHIBIT 2

The reduced water delivery base, together with a reduction of the allowance for potential transmission losses for 7-1/2 to 3 percent, causes the year 2000 load to be about one billion kilowatt-hours less than previous estimates.

Energy Supply Plan

The current supply plan using energy sources identified to date, and a description of those sources, is also shown on the chart included in Chapter II. Illustrative loads by SWP pumping plants and supply by identified SWP energy sources are also shown graphically in Exhibit 2 for the years 1985 and 2000. In addition to the sources shown in Exhibit 2, if the cogeneration and wind projects, which are discussed in Chapter II, prove to be feasible they may be included as a power source by year 2000.

Capital Requirements for Future SWP Power Plants

It is assumed that the construction costs of future SWP power plants would for the most part be financed by sale of Central Valley Project Revenue Bonds. This has historically been the case, except for the State's share of San Luis Pumping-Generating Plant which was financed by Burns-Porter funds. However, possible exceptions to the above assumption would be the financing for future small hydro power plants and power plants associated with the Los Vaqueros and Glenn Reservoir. It is assumed for this analysis that such recovery plants would be financed by any available SWP funds, including Burns-Porter funds.

The estimated bonding requirement for SWP power plants of about $515 million through the year 2000 is approximately one-quarter of that estimated last year in Bulletin 132-79. This significant reduction in financing results directly from the factors which caused the redirection in the Department's Long Range Energy Program. The Long Range Energy Program section in Chapter II discusses this decreasing forecast of Project energy loads and increasing energy resources which have resulted from the purchase and exchange agreements under the Southern California Edison contract of 1979.

APPENDIX B

DATA AND COMPUTATIONS USED IN

DETERMINING WATER CHARGES FOR 1981

APPENDIX B - DATA AND COMPUTATIONS USED
IN DETERMINING WATER CHARGES FOR 1981

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APPENDIX B

DATA AND COMPUTATIONS USED IN DETERMINING WATER CHARGES

Statements of charges to be furnished by the State on or before July 1 of each year are described in Article 29(e) of the "Standard Provisions for Water Supply Contract", which provides 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 Article 29(e) requires a comprehensive annual redetermination of all water supply aspects of the State Water Project for the entire project repayment period. This annual redetermination is specifically provided for in Article 22(f), concerning the Delta Water Rate per acre-foot of future entitlement, and in Article 28, with regard to the Annual Transportation Charges for the entire project repayment period.

This appendix documents the redetermination for water charges to be paid by contractors during calendar year 1980 and is based on aspects of the State Water Project known January 1, 1979. The computational procedure and relationships among tabulations of this redetermination are outlined on Figure B-1. All B-tables shown on Figure B-1 are found at the end of this appendix.

This appendix also documents payments, pursuant to amended Article 21 of the Standard Provisions, for the sale and service of surplus project water to contractors.

Character of Water Charges

Most of the facilities of the State Water Project are necessary either for the conservation and development of a project water supply in and above the Sacramento-San Joaquin Delta or for the conveyance of such a supply to project service areas throughout the State. The Standard Provisions classify these facilities, respectively, as "project conservation facilities" and "project transportation facilities".

Project Conservation Facilities

- Frenchman Dam and Lake
- Grizzly Valley Dam and Lake Davis
- Oroville Dam and Lake Oroville
- Oroville Power Facilities
- Delta Facilities
- Additional Conservation Facilities
- A portion of the California Aqueduct (all of San Luis Dam, Reservoir, and Pumping-Generating Plant, and a portion of the works from the Delta through O'Neill Forebay)

Project Transportation Facilities

- Grizzly Valley Pipeline

- North Bay Aqueduct
- South Bay Aqueduct (including Del Valle Dam and Lake Del Valle)
- The remaining portion of the California Aqueduct (the remaining portion of the works between the Delta Facilities and Dos Amigos Pumping Plant and all works south, including Dos Amigos Pumping Plant and the project dams and lakes in Southern California)

The Standard Provisions provide for two basic annual charges for project water:

- The Delta Water Charge, which will be paid by all contractors and which will return all reimbursable costs of the project conservation facilities to the State.
- The Transportation Charge, in addition to the Delta Water Charge, which will be paid by those contractors served by the project transportation facilities and which will return all reimbursable costs of such facilities to the State.

The Delta Water Charge is essentially a unit commodity assessment on each acre-foot of project water the contractors are entitled to receive under their contracts. The unit charge is calculated so that, if applied to each acre-foot of all such entitlements for the remainder of the project repayment period, all outstanding reimbursable costs of the project conservation facilities will be returned to the State, with appropriate interest, by the end of the period. Reimbursable costs include those allocated to water supply and power generation. Outstanding reimbursable costs exclude (a) those returned to the State through actual payments of the Delta Water Charge and (b) all those returned and to be returned to the State through sales of power generated in connection with the project conservation facilities.

Article 22(g) of the Standard Provisions as amended, requires that the Delta Water Charge be adjusted, when costs are incurred, to reimburse the costs of those supplemental conservation facilities constructed in the future to supply "supplemental water" in addition to the "minimum project yield", 5 217 705 cubic dekametres (4,230,000 acre-feet) annually. Article 22(g) further provides that the redetermined charge will be paid both by contractors for "supplemental water" and by contractors supplied by the present "minimum project yield". Thus, the Delta Water Charge is "open-ended".

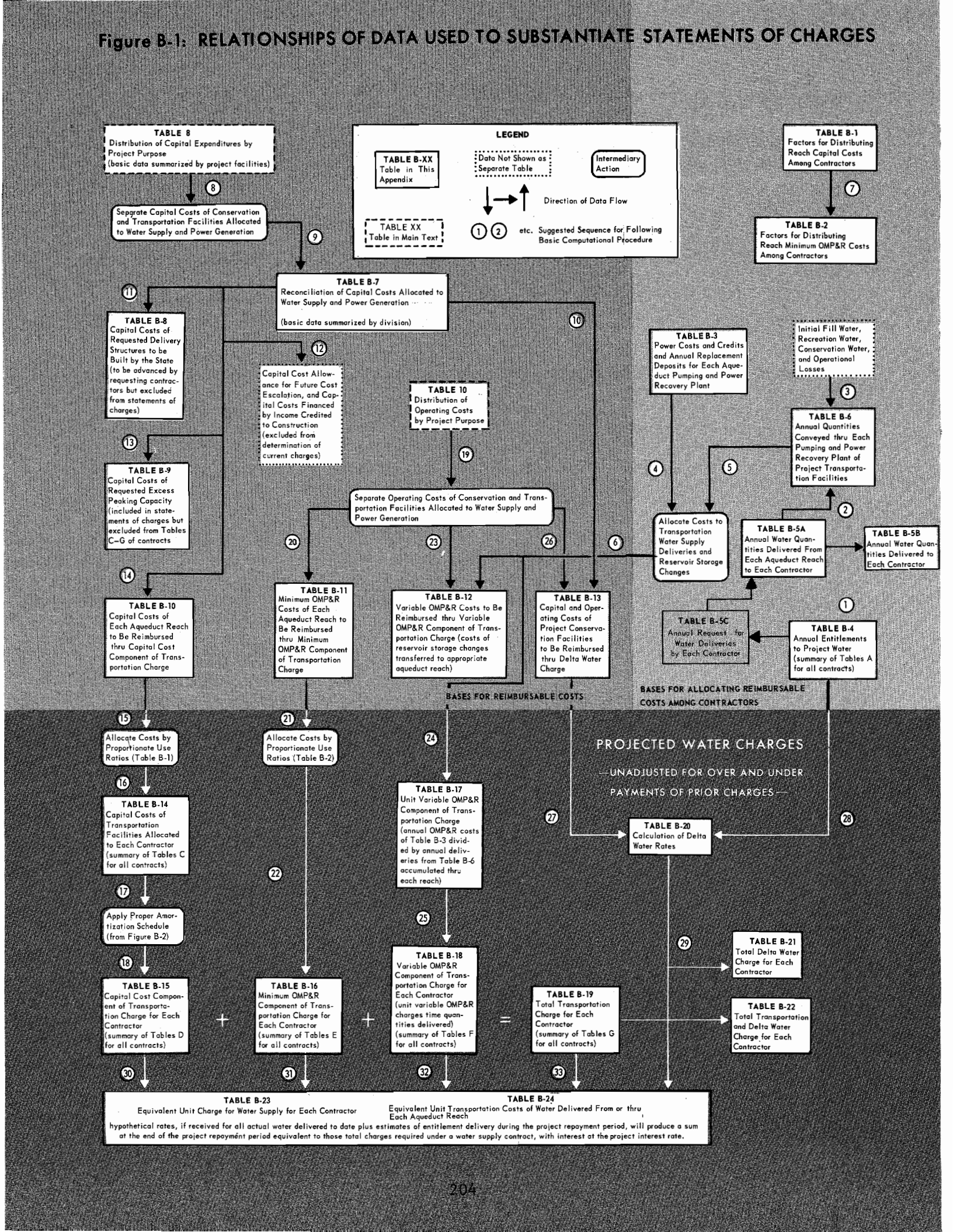
The Transportation Charge is essentially an assessment for that use of the project transportation facilities required to deliver water provided within the "minimum project yield" from points in and above the Sacramento-San Joaquin Delta to the vicinity of each contractor's turnout. Generally, the annual Charge represents each contractor's proportionate share of the reimbursable costs for constructing and operating the project transportation facilities. Certain variations are allowed in the method of amortizing each contractor's share of reimbursable capital costs. The contractor's share of reimbursable operating costs is repaid essentially in the year such costs are incurred by the State.

Composition of Water Charges

The Delta Water Charge and the Transportation Charge each consists of three components:

- A capital cost component, which will return to the State all reimbursable capital costs.

Figure B-1: RELATIONSHIPS OF DATA USED TO SUBSTANTIATE STATEMENTS OF CHARGES



- A minimum operation, maintenance, power, and replacement (OMP&R) component, which will return to the State all reimbursable operating costs that are incurred irrespectve of water quantities actually delivered to the contractors.

- A variable OMP&R component, which will return to the State all reimbursable operating costs that are incurred in amounts that depend on, and vary with, water quantities actually delivered to the contractors. The variable OMP&R component of the Delta Water Rate is included with the minimum OMP&R component of the rate used in determining total Delta Water Charges.

The time and method of payment for corresponding components of the Delta Water Charge and the Transportation Charge are as follows:

- The capital cost components of the Delta Water Charge and the Transportation Charge are paid in two semiannual installments, due January 1 and July 1 of each year, on the basis of statements furnished by the State on or before July 1 of the preceding year.

- The minimum OMP&R component of the Transportation Charge and all reimbursable operating costs under the Delta Water Charge are paid in 12 equal installments, due the first of each month, also on the basis of statements furnished by the State on or before July 1 of the preceding year.

- The variable OMP&R component of the Transportation Charge is paid in varying monthly amounts, due the 15th of the second month following actual water delivery, on the basis of a unit charge per acre-foot established on or before July 1 of the preceding year and applied to actual monthly delivery quantities as determined by the State on or before the 15th of the month following actual delivery.

The Transportation Charges do not include certain credits from contractor payments under supplemental agreements including the following:

1. Payments for State construction of requested delivery structures which exceed actual construction costs of such structures.

2. Payments for State construction of requested excess capacity in project transportation facilities which exceed actual construction costs of such excess capacity.

3. Payments under the Devil Canyon-Castaic contract.

Transportation Charges for prior years, through 1979, do not equal those amounts actually paid by contractors under statements previously furnished by the State. Overpayments or underpayments of charges (difference between the redetermined amounts and those under statements previously furnished) are accumulated, with interest credits or debits, and are deducted from or added to the redetermined amounts of the Transportation Charge to be paid by respective contractors during 1981 (except for the capital cost component associated with agricultural use by Kern County Water Agency). These adjustment computations are shown in the attachments accompanying each contractor's statement of charges and are reflected in revised copies of Tables C through G of the contract, also furnished with the statement of charges.

The formula for computing the Delta Water Rate, Article 22(f) of the Standard Provisions, provides that all adjustments for prior overpayments or underpayments of the Charge are accounted for in a redetermination of the Rate. Since the redetermined Rate applies to all future entitlements, such adjustments are effectively amortized during the remainder of the project repayment period. This appendix includes a deter-

mination of the Delta Water Rate for 1981.

This redetermination excludes charges associated with project water service other than the Delta Water Charge and the Transportation Charge. Other charges (and the manner by which such charges are treated herein) are:

- Advances of funds pursuant to Article 24(d) of the Standard Provisions, for excess capacity constructed by the State at the request of contractors. (Information on required advances is included herein because these charges are covered in the July 1 statements. However, the advances which are projected to exceed the additional capital costs for such excess capacity in completed aqueduct reaches, together with interest accruals thereon, have been credited to future capital cost components of the Transportation Charges of contractors requesting excess capacity. Application of these credits is shown in the copies of revised Tables D and G which are furnished with the statements of charges.)

- Advances of funds pursuant to Article 10(d) of the Standard Provisions, for delivery structures (turnouts) constructed by the State at the request of contractors. (Partial information is included herein concerning actual and projected capital costs of such delivery structures. Statements concerning these costs and data in support of such statements are furnished. to the appropriate contractors at various times and are not part of the July 1 statements.)

- Payments for sale and service of surplus project water to entities other than contractors pursuant to Article 21 of the Standard Provisions. (Payments on such water are based on prices greater than the unit variable OMP&R costs involved. Net revenues resulting from "noncontractor" service are applied as described on page 24, Bulletin 132-71. Such prices are generally based on the unit rates shown in Table B-24.)

- Payments under the Devil Canyon-Castaic Contract for costs of the Devil Canyon and Castaic Facilities allocable to power generation. (Charges under the Contract are billed separately from those under the Water Supply Contract. The treatment of such charges in relation to redetermined Transportation Charges is shown in special attachments to the bills of the six affected contractors.)

The minimum and variable OMP&R costs and charges presented in this Bulletin include annual replacement deposits substantially increased over those presented in bulletins prior to Bulletin 132-79. Under the revised schedule, replacement deposits of about $5.7 million will be charged to contractors in 1981. Under the prior schedules about $.9 million was projected for 1981.

Bases for Allocating Reimbursable Costs Among Contractors

This section concerns how reimbursable costs of aqueduct reaches of the project transportation facilities are allocated among contractors for determining the Transportation Charge. Reimbursable costs of the project conservation facilities are not allocated directly among contractors. Conceptually, the Delta Water Charge is a unit commodity charge rather than a use-of-facilities charge.

Allocation of reimbursable costs of aqueduct reaches among contractors is based on two specific applications of the Proportionate Use of Facilities method:

- Allocations of reimbursable capital costs and minimum OMP&R costs of each reach are based on the proportionate maximum use of that reach by respective contractors under planned conditions of full project development.

- Allocations of reimbursable variable OMP&R costs of each reach are based on the proportionate actual annual use of that reach by the respective contractors.

Figure B-3, at the end of the text for this appendix, shows reaches in which reimbursable costs of project transportation facilities are allocated among contractors.

Proportionate Maximum Use of Facilities

The derivation of ratios that represent the proportionate maximum use of each aqueduct reach by the respective contractors was last described in Bulletin 132-70. (See pages 103-106 for a description of the computational procedure; pages 116-117 for a summary of aqueduct reaches, reach delivery quantities, and reach capacities; and pages 118-173 for a detailed derivation of factors for each contractor and for each aqueduct reach.) Such factors are still valid -- except for the first reach of the California Aqueduct and for reaches of the South Bay Aqueduct. Revised ratios for these reaches are described in Bulletin 132-72 (see pages 106-111) and account for certain contract amendments executed early in 1972 regarding South Bay Aqueduct use (see pages 33-35, Bulletin 132-73).

Table B-1 presents a summary of all reach ratios currently applicable to reimbursable capital costs.

Table B-2 presents a corresponding summary applicable to reimbursable minimum OMP&R costs. Requested excess capacity is ignored in B-1 (since the associated capital costs are paid for on an incremental-cost basis and not a proportionate-use basis) but is accounted for in B-2

Proportionate Annual Use of Facilities

Article 26(a) of the contract provides that the variable OMP&R component of the Transportation Charge shall return to the State those costs which are incurred in an amount which depends upon and varies with the amount of project water delivered to the contractor. (The minimum OMP&R component returns those operating costs which are incurred in an amount which does not vary with deliveries.) The Article explains that all such costs for a reach for a given year shall be allocated among contractors in proportion to the respective delivery quantities conveyed through the reach during the year.

Under the State's procedure, variable OMP&R costs originate with certain operating costs of project pumping and power recovery plants. These costs are incurred in amounts which generally vary with the total water conveyed through the plants -- not with just the portion for delivery to contractor turnouts. In addition to direct deliveries, conveyance may include the following:

(a) Water applied in down-aqueduct onshore recreation developments,

(b) Water stored in the initial fill of down-aqueduct reaches and reservoirs,

(c) Water lost through evaporation and seepage from down-aqueduct reaches and reservoirs, and

(d) Water stored during a year in excess of storage withdrawals, subsequent to initial fill, in down-aqueduct reservoirs.

Under the State's procedure, certain operating costs for a plant for a given

year are allocated among direct deliveries and (a) through (d) above in proportion to respective quantities conveyed through the plant during the year. Plant costs allocated to direct deliveries are designated as variable OMP&R costs to be repaid by contractors for the reach in which the plant is located. Remaining plant costs are allocated to the quantities (a) through (d) above and designated as follows:

(a) A portion of joint OMP&R costs of the reach containing the plant allocated to recreation,

(b) A portion of joint capital costs of respective down-aqueduct reaches and reservoirs,

(c) and (d) A portion of joint minimum OMP&R costs of respective down-aqueduct reaches and reservoirs,

Concerning (d) above, in years when storage in down-aqueduct reservoirs is decreased for the purpose of making deliveries, associated variable OMP&R costs are established for the respective reservoirs with an offsetting credit applied to the minimum OMP&R costs of each. Such variable OMP&R costs are calculated to be equivalent to the original plant costs of conveying the water placed in storage. Under current procedures, the unit cost of conveying water to storage is assumed to be equivalent to the unit cost of conveying water to the storage site in years when such storage is released.

Special Treatment of Certain Plant Costs. As indicated in the preceding section, the State's procedure requires an initial apportionment of certain plant costs among capital cost, minimum OMP&R, and variable OMP&R components. This is based on annual quantities conveyed through respective plants for various down-aqueduct functions. Plant costs which are apportioned are summarized in Table B-3 and include the following items:

- Costs of capacity and energy used, exclusive of associated power transmission and station service charges. (Transmission and station service costs are classified as minimum OMP&R costs.)

- Credits for capacity and energy produced at aqueduct power recovery plants (treated as negative costs).

- Annual payments to sinking fund reserves to finance periodic replacement of plant machinery components having economic lives shorter than the project repayment period.
  The annual sinking fund payments for years 1962 through 1979 are based on a schedule which was determined in 1970 and has been continued in bulletins and water contractor charges since that date. Sinking fund payments for 1980 and amounts projected from 1981 through 2035 in this bulletin are based on a revised schedule. Amounts in the revised schedule are substantially greater than those projected in the 1970 schedule.

Excluded from the above are costs for salaries of plant operations and maintenance personnel -- classified as minimum OMP&R costs.

Also excluded from B-3 are plant capacity and energy costs associated with surplus water service after May 1, 1973. Prior to May 1, 1973, surplus water service was charged the same unit variable OMP&R component as entitlement water service. Prior to that date, surplus water deliveries are included in the "Deliveries -- Water Supply" described in the following section.

Beginning May 1, 1973, the rate structure for surplus water service was significantly changed (see "Contract Amendments, Water Contracts Management", Chapter II). Capacity and energy costs of pumping plants are assigned directly to surplus water service in years of delivery. However, no surplus water was available in 1977 due to the severity of the drought.

Water Conveyance. Table B-4 summarizes the schedules of annual entitlements as set forth in Table A of each contract. Table B-5A presents a summary of the actual water quantities delivered from each aqueduct reach to each contractor. The projected water quantities reflect the Department's application of water conservation and water reclamation goals contained in Bulletin 76 to reduce future delivery estimates. Future water conservation and reclamation projections will be refined annually through consultation with local agencies and assessment of water supply variables. These quantities also include actual and projected nonproject water delivered to contractors and surplus water deliveries prior to May 1, 1973. (For a comparison of actual and projected deliveries to annual entitlements, see Table 1, Chapter II.)
Table B-5B presents a summary of actual and projected annual water quantities delivered and to be delivered to each contractor as shown in Table B-5A.
Table B-5C presents actual water deliveries and the current annual requests for future water deliveries received from each water contractor in September 1979 for purposes of this bulletin.

Table B-6 summarizes the water quantities conveyed or to be conveyed through each aqueduct pumping plant or power plant for each year of the project repayment period and for each of the following functions:

- Made available to contractors at down-aqueduct delivery structures ("Deliveries -- Water Supply").

- Required to initially fill down-aqueduct reaches and reservoirs to operational levels or for repayment of preconsolidation water used during construction of project facilities ("Initial Fill Water").

- Consumed in down-aqueduct project-associated recreation developments ("Deliveries, Recreation").

- Lost through evaporation and seepage from all down-aqueduct reaches ("Operational Losses").

- Placed in down-aqueduct reservoir storage subsequent to the initial fill of such storage ("Reservoir Storage Changes"). Except at the Delta Pumping Plant, where it is included in "Conservation Water", "Reservoir Storage Changes" also includes project water placed into Southern California ground water storage in 1978 through 1984 (as plus amounts), and includes a projection for withdrawing a portion of the water from storage and delivery of the water to contractors, between 1979 and 1982 (as negative amounts).

In addition Table B-6 summarizes the net annual water amounts stored and to be stored in San Luis Reservoir (a project conservation facility with costs reimbursed through the Delta Water Charge) and lost and to be lost through evaporation and seepage from the Reservoir and from the water conservation portion of the Aqueduct (all such quantities are included under the heading "Conservation Water").

The Delta Pumping Plant is a joint transportation-conservation facility. Under the State's procedure, power and replacement costs of the Delta Pumping Plant which are apportioned to the conveyance of annual "conservation water" quantities are transferred to the capital costs of San Luis Reservoir (during initial fill) or to the minimum OMP&R costs of San Luis Reservoir (subsequent to initial fill).

In years when releases from San Luis Reservoir cause a net annual storage depletion in order to make deliveries to contractors down-aqueduct therefrom, a portion of the minimum OMP&R costs of the reservoir is transferred to the transportation variable OMP&R costs of the Delta Pumping Plant. This transfer is in an amount equal to the variable OMP&R cost per acre-foot of delivery through the Delta Pumping Plant for that year, multiplied by the acre-feet of deliveries derived from San Luis Reservoir storage for that year.

Project Facilities	Water Supply and Power Generation		All Other Purposes (Nonreimbursable)	
	Capital Costs	Minimum OMP&R Costs	Capital Costs	Minimum OMP&R Costs
	(in percent)			
Project Conservation Facilities				
Frenchman Dam and Lake	21.5	0	78.5	100.0
Antelope Dam and Lake	0	0	100.0	100.0
Grizzly Valley Dam and Lake Davis	5.1	8.8	94.9	91.2
Oroville Division[a]	97.1	99.5	2.9	0.5
California Aqueduct, Delta to Dos Amigos Pumping Plant	96.6	96.7	3.4	3.3
Delta Facilities	86.0	86.0	14.0	14.0
Additional Conservation Facilities				
Ground Water Storage	100.0	100.0	0	0
Los Vaqueros Reservoir	95.0	95.0	5.0	5.0
Glenn Reservoir Complex	95.0	95.0	5.0	5.0
Cottonwood Creek Project	100.0	100.0	0	0
Transportation Facilities				
California Aqueduct:				
California Aqueduct excluding Coastal Branch[b]	97.0	92.9	3.0	7.1
Coastal Branch	100.0	100.0	0	0
South Bay Aqueduct:				
Del Valle Dam and Lake Del Valle	25.2	22.0	74.8[c]	78.0[d]
Remainder of South Bay Aqueduct	100.0	100.0	0	0
North Bay Aqueduct	100.0	100.0	0	0

a) Percentages shown are applicable to the total costs of the Division excluding specific power costs of Edward Hyatt and Thermalito Powerplants and Switchyards. Federal reimbursements for flood control are treated as negative costs.

b) A final allocation of facilities from the Delta to Dos Amigos Pumping Plant has been made. 3.4 percent of these capital costs are allocated to recreation and fish and wildlife enhancement and are reported for reimbursement under AB12. However, until the remainder of the aqueduct is finally reported the percentage for billing purposes is as shown.

c) Percentage shown consists of 48.0% recreation and 26.8% flood control.

d) Percentage shown consists of 44.9% recreation and 33.1% flood control.

Bases for Reimbursable Costs

Tables 8 and 10 (Chapter III) summarize the capital and OMP&R costs of all project facilities, respectively, and the allocation of these costs among the various project purposes. Allocation percentages are shown for each project facility in the above tabulation. For the most part, these percentages are preliminary and subject to future revision and are applicable to the State's costs of the respective facilities. The redetermination in this appendix is concerned only with the costs of project facilities that are allocated to water supply and power generation.

Capital Costs

Table B-7 presents a reconciliation of estimated total capital costs of each project conservation facility and each aqueduct reach as estimated for (a) Chapter III and (b) current redetermination of water charges.

Costs of Delivery Structures. Costs incurred by the State in connection with both State and Contractor constructed delivery structures are paid directly by the the contractors for which the structures are built. (State incurs design, review and construction inspection costs in connection with contractor constructed turnouts.)

Project Facility	Number of Delivery Structures					
	Requested by Agencies	Under Construction		Completed		Stub Only[a]
		by State	by Agencies	by State	by Agencies	
Oroville Area	6	0	0	0	6	0
North Bay Aqueduct (Phase I)	3	0	0	1	1	1
South Bay Aqueduct	20	0	0	8	9	3
California Aqueduct:						
North San Joaquin Division	5	0	1	0	4	0
San Luis Division (served by the federal Central Valley Project)						
South San Joaquin Division	47	0	2	9	29	7
Tehachapi Division	1	0	0	0	0	1
Mojave Division	24	0	0	0	13	11
Santa Ana Division	10	0	0	3	5	2
West Branch	5	0	0	1	1	3
Coastal Branch (Phase I)	3	0	0	1	2	0
TOTAL	**124**	**0**	**3**	**23**	**70**	**28**

a) Will be completed at a later date. Temporary facilities for delivery of water have been installed at several of the stubs.

Costs incurred and projected to be incurred by the State in connection with each contractor's turnouts are shown in Table B-8. The projected costs shown in Table B-8, are only rough approximates as in most cases the structures have not been designed as yet.

Costs of Requested Excess Capacity. Amendments have been added to contracts of the following three agencies and provide for excess capacity in the project transportation facilities:

The Metropolitan Water District of Southern California, San Gabriel Valley Municipal Water District, and Antelope Valley-East Kern Water Agency.

Listed in Table B-9 are the amounts for:

- o Additional costs incurred by the State for requested excess capacity.
- o Advances, by water contractors, of funds for such costs.
- o Credits for advances in excess of costs which are applied to the respective contractor's installment of the capital cost component of the Transportation Charge in 1981.

Under Amendment 2 of Metropolitan's contract, 22.9 cubic metres per second (809 cubic feet per second) of excess capacity originally was constructed in reaches of the West Branch at the District's request. Under Amendment 7, such capacity was reclassified as basic capacity of the project transportation facilities. This aspect of Amendment 7 required a $16.3 million prepayment of the District's capital cost component of the Transportation Charge in lieu of advances of funds for the originally requested capacity.

Application of credits for contractor advances that are estimated to be in excess of actual costs and (concerning

Metropolitan's Amendment 7) for prepayments of the capital cost component is shown in attachments to the respective statements of charges.

Amendment 5 of Metropolitan's contract includes a provision whereby additional costs to be incurred because of modifications to the Santa Ana Valley Pipeline, required for enlargement of Lake Perris at the request of Metropolitan, are to be allocated to the District and returned to the State through payments of the Transportation Charge: The estimated additional costs to be repaid through the District's capital cost component for the aqueduct reach from Devil Canyon Powerplant to Barton Road total $6.7 million, as shown on page 98, Bulletin 132-72.

Annual Operating Costs

Estimated operating costs allocable to water supply and power generation shown in Table 10 (Chapter III) will be returned to the State through payments of the minimum and variable OMP&R components of Delta Water and Transportation Charges and through a portion of the revenues from electric power sales.

All reimbursable operating costs of conservation facilities are returned to the State through payments of the minimum OMP&R component of the Delta Water Charge.

Those operating costs to be reimbursed through payments of the variable OMP&R component of the Transportation Charge were previously described in the section entitled "Special treatment of Certain Plant Costs". The remainder of this section centers on those costs to be reimbursed through payments of the minimum OMP&R component of the Transportation Charges.

Minimum Operating Costs. The following types of operating costs are considered to be incurred in annual amounts that do not vary with the water quantities delivered to the contractors and are therefore classified as minimum OMP&R costs:

- All direct labor charges for field operations and maintenance personnel, including associated indirect costs.
- Electric power transmission and station service costs.
- Escalation of projected minimum OMP&R amounts in Table B-11 at 7 percent per year through 1982.
- All costs for equipment, materials, and supplies and for replacement of works other than rotating machinery of pumping and power recovery plants. Minimum OMP&R costs in Table B-11, for 1980 through 2035 include replacement deposits based on a revised schedule, first included in water contractor charges for 1980 and in Bulletin 132-79.
- Portions of the power and replacement costs of all up-aqueduct pumping plants and power plants that are allocable to the annual conveyance of water (a) lost to evaporation and seepage from respective aqueduct reaches, or (b) placed into storage in respective reservoirs of the project transportation facilities (after initial fill).
- Credits, which offset those costs referred to in (b) above, for deliveries derived from reservoir storage.
- A distributed share of general and direct operating costs which cannot be identified solely with one facility or aqueduct reach.

Concerning the allocation of general operating costs among facilities and reaches, this redetermination follows the procedures described on pages 111-113, Bulletin 132-70.

Costs to be Returned to the State Through Payments Under the Transportation Charge and the Devil Canyon-Castaic Contract

Table B-10 presents the actual and projected annual capital costs of each aqueduct reach that will eventually be returned to the State, with interest, through contractor payments of the capital cost component under the Transportation Charge and of debt service under the Devil Canyon-Castaic Contract. The actual and projected costs to be reimbursed through payments of the minimum OMP&R component under the Transportation Charge and of allocated operating costs under the Devil Canyon-Castaic Contract are shown in Table B-11. Variable OMP&R costs, shown in Table B-12, are a portion of those costs shown in Table B-3 allocable to the water supply delivery quantities shown in Table B-6 and reimbursed through payments of the variable OMP&R component of the Transportation Charge.

Costs to be Returned through Payments Under the Delta Water Charge and the Oroville Power Sale Contract

Summarized in Table B-13 are actual and projected capital and operating costs of the initial project conservation facilities to be reimbursed through payments under (a) the Delta Water Charge, (b) Oroville power sales, and (c) San Luis power credits. Included in Table B-13 are credits applied to the reimbursable capital costs of the project conservation facilities pursuant to negotiated settlements concerning the magnitude of incurred planning costs for the period 1952 through 1976 (see section entitled "Negotiation of Water Charge Settlements", Chapter II).

Ground water storage costs shown in column (7) and (8) are subject to those costs being determined to be proper charges to conservation under the water supply contracts.

Project Water Charges

This section summarizes the redetermination of past and projected components of the Transportation Charge for annual revision of Tables C through G that are included in each water contract. This section also includes a derivation of the unit Delta Water Rates. Equivalent unit charges for each acre-foot of entitlement water service are also summarized herein for (a) each contractor and (b) each aqueduct reach.

Transportation Charges

The accumulation of allocated costs of each aqueduct reach to each contractor forms the basis for the annual components of the Transportation Charge.

Allocated Capital Costs. Table B-14 summarizes each contractor's share of the capital costs of aqueduct reaches presented in Table B-10, as determined by application of proportionate-use ratios set forth in Table B-1. The resulting allocated costs are set forth in Table C of the respective contracts.

Prepayments of the capital cost component, required under Metropolitan's Amendment 7, are shown as negative capital costs in Metropolitan's Table C and in Table B-14. Both Table B-14 and Tables C of the six contracts for service below the Devil Canyon and Castaic Facilities include the capital costs that are reimbursable under the Devil Canyon-Castaic Contract.

Capital Cost Components. Criteria as to the types of amortization schedules applicable to the allocated capital costs

for the respective contractors are summarized in Figure B-2. The accounting of interest charges included in the capital cost components of the Transportation Charge follows the procedure established in Settlement Letter No. 2.

Table B-15 summarizes the capital cost components of the Transportation Charge for each contractor for each year of the project repayment period. These estimated components, subsequently adjusted for prior overpayments or underpayments are set forth in Table D of the respective contracts. Credits for advance payment for excess capacity that exceeds actual costs of such capacity are aplied to reduce the payment amounts set forth in Table D, but are not included in Table B-15. Both Table B-15 and Table D of the six Devil Canyon-Castaic contracts include the debt service payments due under the Devil Canyon-Castaic Contract.

Minimum OMP&R Components. Table B-16 summarizes the minimum OMP&R components of the Transportation Charge for each year of the project repayment period. These estimated components subsequently adjusted for prior overpayments or underpayments, are set forth in Table E of the respective contracts. These components represent the accumulated share of the reach costs presented in Table B-11, as determined by application of the proportionate-use ratios shown for each reach and for each contractor in Table B-2.

Under operating agreements with Kern County Water Agency concerning the early installation of units by Berrenda Mesa Water District in Las Perillas and Badger Hill Pumping Plants (see page 7, Bulletin 132-71), the Agency is to be billed any additional operating costs caused by early installation of the units which would otherwise increase charges to downstream contractors. Under this requirement, the following minimum OMP&R costs of Reach 31A are assigned directly to the Agency with the remaining reach costs allocated by application of the proportionate-use ratios:

Year	Direct Charge	Year	Direct Charge
1969 . . .	$ 46,465	1979 . . .	$ 57,000
1970 . . .	46,342	1980 . . .	79,838
1971 . . .	139,695	1981 . . .	92,165
1972 . . .	93,612	1982 . . .	102,870
1973 . . .	71,053	1983 . . .	109,559
1974 . . .	97,934	1984 . . .	109,373
1975 . . .	123,842	1985 . . .	109,192
1976 . . .	136,266	1986 . . .	109,398
1977 . . .	60,248	1987 . . .	109,400
1978 . . .	75,916	**Total . . .**	**$1,770,168**

Both Table B-16 and Table E for the six Devil Canyon-Castaic contracts include the portion of operating costs payable under the Devil Canyon-Castaic Contract.

Variable OMP&R Components. Article 26(a) of the Standard Provisions specifies the following procedure for calculating the variable OMP&R component of the Transportation Charge:

- An annual charge per acre-foot of projected water deliveries to all contractors served from or through each reach is determined so as to return to the State the projected variable OMP&R costs to be incurred for each reach.

- The total annual variable OMP&R component for any contractor for a given reach is obtained by multiplying the unit charge associated with that reach by the quantity of water actually delivered from or through the reach to the contractor.

Table B-17 presents a summary of actual and projected total variable OMP&R costs for each acre-foot of conveyance through each aqueduct pumping plant and power

plant for each year of the project repayment period. The data summarized in Table B-17 have been derived by dividing the power costs (and credits) and replacement costs shown in Table B-3 by the total water quantities shown in Table B-6.

However, certain costs included in Table B-12 for "extra peaking service", which would otherwise constitute variable OMP&R costs, are assigned directly to contractors requesting this type of service (see page 21, Bulletin 132-71, and Water Service Contractors Council Memo No. 593, July 10, 1970). These costs are excluded from the unit charges shown in Table B-17. Extra peaking charges for additional power capacity are as shown below:

Year	Agency	Pumping Plant: Dos Amigos	Pumping Plant: Las Perillas and Badger Hill
		(dollars)	
1972	Kern County W.A.	$9,553	$24,700
	Hacienda W.D.	10	0
1973	Kern County W.A.	0	6,016
1974	Kern County W.A.	0	7,140
1975	Kern County W.A.	494	6,397
1976	Kern County W.A.	0	1,981
1978	Kern County W.A.	41,832	3,772
	Dudley Ridge W.D.	2,086	0
	County of Kings	43	0
	Antelope Valley East Kern W.A.	2,322	0
1979	Kern County W.A.1/	46,000	4,000

1/ *Preliminary Allocation*

FIGURE B-2: CRITERIA FOR AMORTIZATION SCHEDULES

Contractor	Amortization of Allocated Capital Costs in 50 Equal Annual Installments, With Initial Payment Due in: 1963	1964	1965	1966	1968	1970	1973	a	b
Alameda County FC&WCD, Zone 7	● c								
Alameda County WD	●								
Antelope Valley-East Kern WA	●								
Castaic Lake WA		●							
County of Butte									●
County of Kings					●				
City of Yuba City									●
Coachella Valley WD		●							
Crestline-Lake Arrowhead WA		●							
Desert WA	● d								
Devil's Den WD								●	
Dudley Ridge WD								●	
Empire West Side ID								●	
Hacienda WD								●	
Kern County WA: Ag use								●	
M&I use			●						
Littlerock Creek ID		●							
Mojave WA		●							
Napa County FC&WCD				●					
Oak Flat WD								●	
Palmdale WD		●							
Plumas County FC&WCD						●			
San Bernardino Valley MWD	●								
San Gabriel Valley MWD	● d								
San Gorgonio Pass WA	● d								
San Luis Obispo County FC&WCD		● e							
Santa Barbara County FC&WCD		● e							
Santa Clara Valley WD	●								
Solano County FC&WCD							●		
The Metropolitan WD-SC	●								
Tulare Lake Basin WSD								●	
Ventura County FCD		●							

a Amortization of allocated capital costs on basis of equivalent unit rate applied to annual entitlements (Table B-4) within project repayment period.
b Payments on Delta Water Charge only.
c Principal payments on each annual capital cost prior to 1971 delayed until calendar year 1972, except payments for 1963.
d Deferred and added to 1964 payment with accrued interest.
e Exception: all principal and interest payments for costs of "Coastal Stub" are assumed deferred until 1976.

Table B-18 summarizes the variable OMP&R components of the Transportation Charge for each contractor and for each year of the project repayment period. Table B-18 is developed from the costs per acre-foot as shown in Table B-17 and the delivery quantities for each contractor from each reach as shown in Table B-5A, plus any costs for "extra peaking service". These estimated components, subsequently adjusted for prior overpayments or underpayments, are set forth in Table F of the respective contracts.

Total Transportation Charges. Annual Transportation Charges for each contractor are summarized in Table B-19. (The amounts shown in Table B-19 represent the sums of the corresponding amounts shown in Tables B-15, B-16, and B-18.) These estimated payments, subsequently adjusted for prior overpayments or underpayments, are set forth in Table G of the respective contracts. Both Table B-19 and Table G of the six Devil Canyon-Castaic contracts include debt service and operating cost payments due under the Devil Canyon-Castaic Contract.

Delta Water Rates per Acre-Foot of Entitlement

Calculation of the Delta Water Rate for the "initial" conservation facilities applicable in 1981 thru 1983, is shown in Table B-20 in accordance with the amended Articles 22(e) and 22(g) of 29 contracts. See discussion of "Costs to be reimbursed through payments under the Delta Water Charge and the Oroville Power Sales Contract" for Table B-13. Under the amended articles, future construction and operating costs of each additional and supplemental conservation facility will be included in the calculation of the Rate in years when the State first incurs major construction costs.

Ground water storage costs shown in column (7) and (8) of B-13 are subject to those costs being determined to be proper charges to Conservation under the water supply contracts.

Two contracts have not as yet been amended (Yuba City and Solano County Flood Control and Water Conservation District). Delta Water Rates for these two contractors are also shown in Table B-20. Future charges to these contractors projected in Table B-21, are based upon rates determined under original provisions of their respective contracts.

Delta Water Charges

Total Delta Water Charges. The annual Delta Water Charge for each contractor is summarized in Table B-21. Table B-21 is developed from the total rate per acre-foot as shown in Table B-20 and the entitlement water for each contractor as shown in Table B-4.

Total Transportation and Delta Water Charges

The total charge to each contractor consists of the sum of the Total Delta Water Charge and the Total Transportation Charge.

Total annual transportation and total Delta Water Charges are summarized in Table B-22. Table B-22 summarizes the total charge to each contractor by combining Table B-19 and Table B-21.

Equivalent Total Water Charges

A summary of total charges is shown in Table B-23 in terms of the equivalent charge for each acre-foot of project water now estimated to be delivered as entitlement water to the respective contractors. These equivalent charges would provide the same principal sum at the end of the project repayment period as annual payments to be made under the Delta Water Charge and Transportation

Charge, plus interest at the project interest rate. The Table B-23 values account for the fact that current estimates of future entitlement water service are noticeably less than the amounts shown in Tables A for certain Southern California contractors.

Equivalent Water Costs, by Reach

Table B-24 presents a summary of the equivalent unit transportation cost of conveying entitlement water through respective aqueduct reaches of the project transportation facilities. These unit costs provide the basis of charges assessed (a) for certain "extra service" (such as for delivery of entitlements down-aqueduct from a contractor's turnout) and, together with the Delta Water Charge per acre-foot, (b) for surplus water service to entities other than long-term water supply contractors. It should be noted that the cumulative unit conveyance costs shown for reaches in Table B-24 do not necessarily equal the equivalent unit Transportation Charges to contractors served from such reaches. This is because the unit charges of Table B-23 account for the rates of water demand buildup and cost allocation factors of the respective contractors, whereas the unit costs of Table B-24 meld together the effect of the respective buildups and allocation criteria of all contractors whose entitlements are conveyed through a given reach.

Surplus Water Service

Actual and Projected Deliveries. Surplus water has been delivered from project supplies during each of the years 1968 through 1979, except for 1977, when none was available because of the severity of the drought. In 1978 above-normal precipitation and the large quantities of Article 12(d) makeup water available to the usual surplus water users, resulted in surplus deliveries being the second lowest of record.

Table B-25 shows the quantities of surplus water delivered to long-term contractors during the period of May 1, 1973 through December 31, 1979. Table B-28 shows projected surplus water deliveries for each year of the six-year period of January 1, 1980 through December 31,1985 Amounts during the years 1980 through 1981 are requested amounts. For the remaining years, requested amounts have been reduced, using contractual criteria so that each year's total projected delivery does not exceed the quantity of surplus water estimated to be available that year. Estimated availability is based on the assumption that a lower quartile water supply will be available each of the six years and that enough water will be held in storage at the end of each year so that delivery of all entitlement water can be made the following year even if the following year should have a water supply similar to that which would be available in a repeat of the year 1924 (1,651,000 acre-feet). It was further assumed that Delta water quality standards would be maintained through necessary releases of Federal and State water.

Surplus Water Costs. Table B-26 shows the costs for power which have been incurred by the State at each project pumping plant associated with surplus water deliveries shown in Table B-25. Estimated power costs at each pumping plant that will be incurred in making the projected surplus water deliveries shown in Table B-28 are tabulated in Table B-29.

Surplus Water Charges. Table B-27 shows the actual charges to each contractor for delivery of the surplus water quantities shown in Table B-25. The method of determining these charges is discussed on Page 117 of Bulletin 132-77. Estimated unit power rates for pumping the projected surplus water delivery amounts shown in Table B-28 are shown in Table B-30.

Table B-31 shows the financial obligations incurred by contractors which have requested the State to order power for future surplus water pumping. Under amended Article 21(d) of the long-term water supply contracts, the contractors

have made written commitments which guarantee repayment of these costs even if the power cannot be utilized for the intended purpose or for other project uses. In each case the power ordered was an amount estimated by the State to be required to deliver the requested surplus water amounts shown on Table B-31. Based on the September 1979 monthly delivery requests and project operation studies reflecting those requests, some of the power ordered for surplus water pumping can not be used for project purposes. Commitments are made to be assured of the future availability of power for surplus water service at the lowest possible cost.

Figure B-3: REPAYMENT REACHES AND DESCRIPTIONS

PROJECT TRANSPORTATION FACILITIES

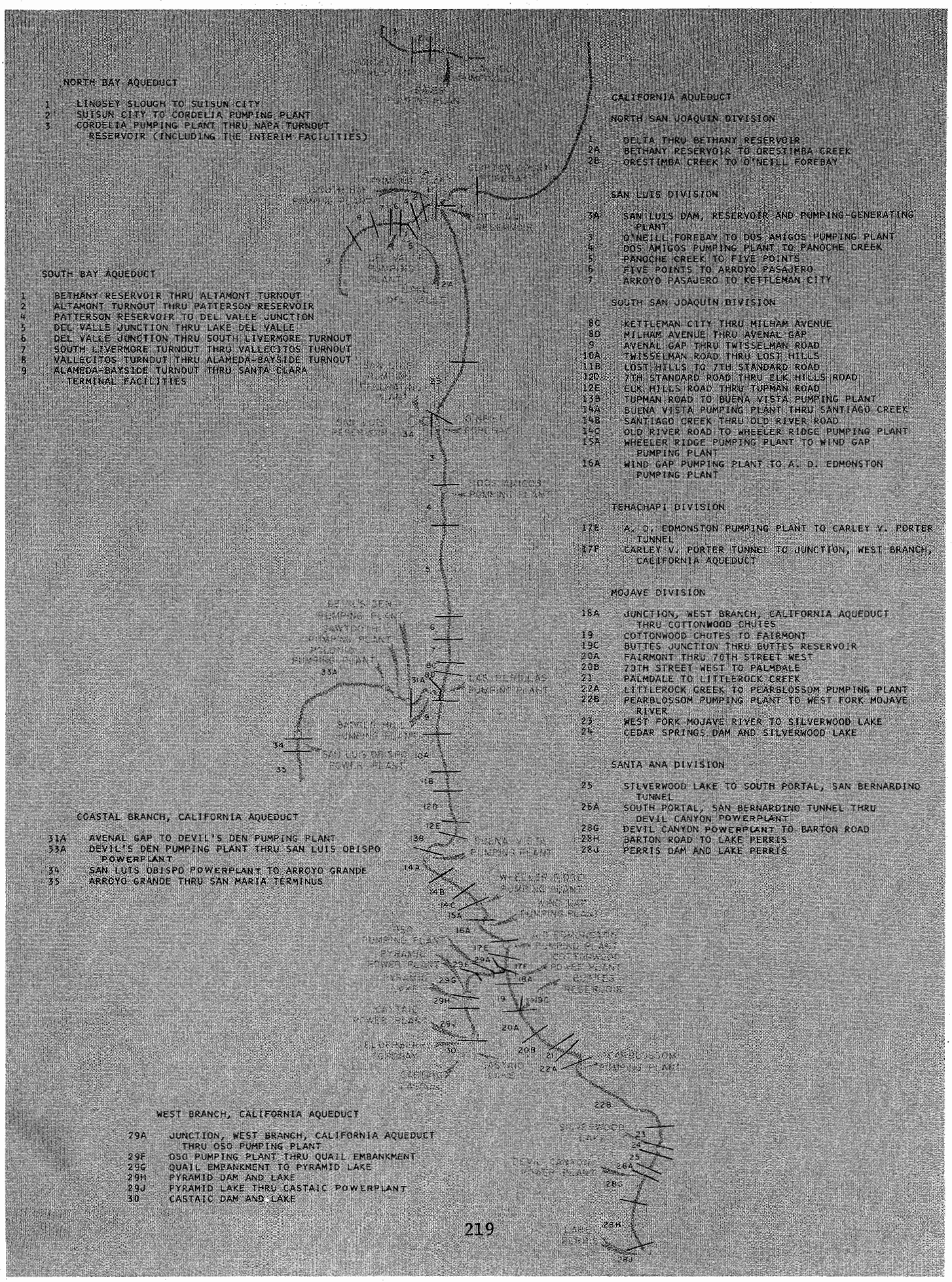


TABLE B-1: FACTORS FOR DISTRIBUTING

Reach No.	Reach Description	NORTH BAY AREA		SOUTH BAY AREA				TOTAL
		Napa County FC&WCD	Solano County FC&WCD	Alameda County FC&WCD Zone 7	Alameda County Water District	Santa Clara Valley Water District	Future Contractor	
	North Bay Aqueduct							
1	Lindsey Slough to Suisun City	.39808876	.60191124					1.00000000
2	Suisun City to Cordelia Pumping Plant	.39808861	.60191139					1.00000000
3	Cordelia Pumping Plant thru Napa Turnout Reservoir (Including the interim facilities)	1.00000000						1.00000000
	South Bay Aqueduct							
1	Bethany Reservoir thru Altamont Turnout			.22599621	.20663014	.49237700	.07499665	1.00000000
2	Altamont Turnout thru Patterson Reservoir			.22599657	.20663057	.49237791	.07499495	1.00000000
4	Patterson Reservoir to Del Valle Junction			.19504791	.21450021	.51113252	.07931936	1.00000000
5	Del Valle Junction thru Lake Del Valle			.14436367	.12972254	.33715573	.38875806	1.00000000
6	Del Valle Junction thru South Livermore Turnout			.14599918	.21144710	.50574745	.13680627	1.00000000
7	South Livermore Turnout thru Vallecitos Turnout				.25176680	.60218448	.14604872	1.00000000
8	Vallecitos Turnout thru Alameda-Bayside Turnout				.06294980	.72065355	.21639665	1.00000000
9	Alameda-Bayside Turnout thru Santa Clara Terminal Facilities					1.00000000		1.00000000
	California Aqueduct							
1	Delta Thru Bethany Reservoir			.00954802	.00872976	.02080260	.00342519	— — —

Reach No.	Reach Description	CENTRAL COASTAL AREA		SOUTHERN				
		San Luis Obispo County FC&WCD	Santa Barbara County FC&WCD	Antelope Valley-East Kern Water Agency	Castaic Lake Water Agency	Coachella Valley Water District	Crestline Lake Arrowhead Water Agency	Desert Water Agency
	California Aqueduct							
1	Delta Thru Bethany Reservoir	.00531147	.01240007	.02939503	.00890866	.00528393	.00133630	.00871425
2A	Bethany Reservoir to Orestimba Creek	.00555266	.01296315	.03072975	.00931319	.00552151	.00139640	.00910607
2B	Orestimba Creek to O'Neill Forebay	.00555876	.01297741	.03076360	.00932344	.00552915	.00139833	.00911867
3	O'Neill Forebay to Dos Amigos Pumping Plant	.00555769	.01297494	.03075777	.00932168	.00552856	.00139818	.00911771
4	Dos Amigos Pumping Plant to Panoche Creek	.00555659	.01297235	.03075165	.00931982	.00552794	.00139801	.00911670
5	Panoche Creek to Five Points	.00555520	.01296912	.03074401	.00931751	.00552717	.00139780	.00911543
6	Five Points to Arroyo Pasajero	.00555311	.01296424	.03073244	.00931400	.00552602	.00139750	.00911351
7	Arroyo Pasajero to Kettleman City	.00555243	.01296267	.03072873	.00931287	.00552565	.00139740	.00911289
8C	Kettleman City thru Milham Avenue	.00555159	.01296069	.03072405	.00931145	.00552517	.00139729	.00911211
8D	Milham Avenue thru Avenal Gap	.00566628	.01322842	.03135878	.00950380	.00564073	.00142650	.00930269
9	Avenal Gap thru Twisselman Road			.03437577	.01041812	.00618845	.00156502	.01020599
10A	Twisselman Road thru Lost Hills			.03492681	.01058510	.00628966	.00159061	.01037292
11B	Lost Hills to 7th Standard Road			.03848657	.01166387	.00694140	.00175542	.01144773
12D	7th Standard Road thru Elk Hills Road			.04046660	.01226391	.00730484	.00184732	.01204709
12E	Elk Hills Road thru Tupman Road			.04052108	.01228042	.00731580	.00185010	.01206514
13B	Tupman Road to Buena Vista Pumping Plant			.04397523	.01332721	.00794772	.00200991	.01310729
14A	Buena Vista Pumping Plant thru Santiago Creek			.04618687	.01399742	.00835456	.00211281	.01377821
14B	Santiago Creek thru Old River Road			.04702647	.01425185	.00851020	.00215218	.01403490
14C	Old River Road to Wheeler Ridge Pumping Plant			.04846557	.01468794	.00877627	.00221947	.01447369
15A	Wheeler Ridge Pumping Plant to Wind Gap Pumping Plant			.04927653	.01493368	.00892667	.00225752	.01472172
16A	Wind Gap Pumping Plant to A.D. Edmonston Pumping Plant			.05113510	.01549688	.00927016	.00234437	.01528820
17E	A.D. Edmonston Pumping Plant to Carley V. Porter Tunnel			.05355379	.01622984	.00971819	.00245767	.01602709
17F	Carley V. Porter Tunnel to Junction, West Branch, Calif. Aqueduct			.05366827	.01626453	.00973908	.00246295	.01606154
18A	Junction, West Branch, Calif. Aqueduct thru Cottonwood Chutes			.13238112		.02399390	.00606794	.03957043
19	Cottonwood Chutes to Fairmont			.13237766		.02399451	.00606810	.03957141
19C	Buttes Junction thru Buttes Reservoir			1.00000000				
20A	Fairmont thru 70th Street West			.06847931		.02576424	.00651572	.04249001
20B	70th Street West to Palmdale			.02276024		.02702916	.00683554	.04457607
21	Palmdale to Littlerock Creek			.02318953		.02754716	.00696650	.04543034
22A	Littlerock Creek to Pearblossom Pumping Plant			.01181870		.02794143	.00706620	.04608043
22B	Pearblossom Pumping Plant to West Fork Mojave River					.02827552	.00715073	.04663153
23	West Fork Mojave River to Silverwood Lake					.00324449	.00818121	.00535117
24	Cedar Springs Dam and Silverwood Lake					.01024605	.01251569	.01690478
25	Silverwood Lake to South Portal, San Bernardino Tunnel							
26A	South Portal, San Bernardino Tunnel thru Devil Canyon Pwp.							
28G	Devil Canyon Powerplant to Barton Road							
28H	Barton Road to Lake Perris							
28J	Perris Dam and Lake Perris							
29A	Junction, West Branch, Calif. Aqueduct thru Oso Pumping Plant				.02736564			
29F	Oso Pumping Plant thru Quail Embankment				.02736563			
29G	Quail Embankment to Pyramid Lake				.02736564			
29H	Pyramid Dam and Lake				.02646380			
29J	Pyramid Lake thru Castaic Powerplant				.02736563			
30	Castaic Dam and Lake				.02637131			
31A	Avenal Gap to Devil's Den Pumping Plant	.10522767	.24566277					
33A	Devil's Den Pumping Plant thru San Luis Obispo Powerplant	.29988697	.70011303					
34	San Luis Obispo Powerplant to Arroyo Grande	.20553239	.79446761					
35	Arroyo Grande thru Santa Maria Terminal	.14771038	.85228962					

REACH CAPITAL COSTS AMONG CONTRACTORS

Reach No.	SAN JOAQUIN VALLEY AREA								
	Devil's Den Water District	Dudley Ridge Water District	Empire West Side Irrigation District	Hacienda Water District	Kern County Water Agency		County of Kings	Oak Flat Water District	Tulare Lake Basin Water Storage District
					Municipal and Industrial	Agricultural			
California Aqueduct									
1	.00377824	.01707931	.00088687	.00251598	.02742075	.30633444	.00090702	.00167139	.03253706
2A	.00394038	.01781205	.00092491	.00262393	.02864590	.31948963	.00094755	.00174305	.03393294
2B	.00395099	.01786013	.00092740	.00263102	.02869073	.32034362	.00094904		.03402458
3	.00395208	.01786513	.00092766	.00263176	.02868919	.32043064	.00094900		.03403409
4	.00395323	.01787039	.00092794	.00263254	.02868758	.32052214	.00094893		.03404410
5	.00395466	.01787693	.00092828	.00263352	.02868559	.32063639	.00094886		.03405659
6	.00395684	.01788685	.00092879	.00263498	.02868255	.32080926	.00094875		.03407550
7	.00395753	.01789003	.00092896	.00263544	.02868158	.32086471	.00094872		.03408157
8C	.00395842	.01789405	.00092918	.00263603	.02868035	.32093468	.00094867		.03408923
8D	.00404591	.01828966		.00269431	.02928494	.32802221			.01551611
9					.03214521	.32838224			
10A					.03267760	.31755652			
11B					.03609912	.24768443			
12D					.03801001	.20879251			
12E					.03807068	.20769413			
13B					.01464596	.16664965			
14A					.00622935	.13374077			
14B					.00634719	.11790931			
14C					.00654829	.09078926			
15A					.00666217	.07549599			
16A					.00692172	.04047416			
17E					.00213551				
31A	.07364766					.57546190			

Reach No.	CALIFORNIA AREA								
	Littlerock Creek Irrigation District	Mojave Water Agency	Palmdale Water 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	Ventura County Flood Control District	TOTAL
1	.00049187	.01101303	.00369180	.02363192	.00650450	.00398446	.43940274	.00429334	1.00000000
2A	.00051421	.01151300	.00385943	.02469456	.00679800	.00416362	.45932582	.00448829	1.00000000
2B	.00051477	.01152575	.00386368	.02472869	.00680672	.00416938	.45985090	.00449324	1.00000000
3	.00051469	.01152359	.00386296	.02472604	.00680580	.00416893	.45976953	.00449238	1.00000000
4	.00051459	.01152131	.00386218	.02472327	.00680482	.00416846	.45968397	.00449149	1.00000000
5	.00051448	.01151846	.00386122	.02471980	.00680361	.00416788	.45957712	.00449037	1.00000000
6	.00051428	.01151416	.00385978	.02471455	.00680178	.00416698	.45941544	.00448869	1.00000000
7	.00051421	.01151278	.00385931	.02471286	.00680118	.00416671	.45936361	.00448816	1.00000000
8C	.00051414	.01151103	.00385874	.02471072	.00680044	.00416634	.45929816	.00448747	1.00000000
8D	.00052475	.01174889	.00393847	.02522753	.00694206	.00425349	.46880430	.00458017	1.00000000
9	.00057523	.01287942	.00431739	.02767698	.00761389	.00466647	.51396901	.00502081	1.00000000
10A	.00058444	.01308595	.00438661	.02812957	.00773752	.00474279	.52223261	.00510129	1.00000000
11B	.00064401	.01442004	.00483371	.03104405	.00853455	.00523416	.57558975	.00562119	1.00000000
12D	.00067713	.01516215	.00508241	.03266922	.00897860	.00550817	.60527969	.00591035	1.00000000
12E	.00067804	.01518261	.00508926	.03271816	.00899157	.00551643	.60610827	.00591831	1.00000000
13B	.00073586	.01647710	.00552311	.03554404	.00976456	.00599288	.65787670	.00642278	1.00000000
14A	.00077287	.01730602	.00580090	.03736328	.01026125	.00629961	.69105032	.00674576	1.00000000
14B	.00078692	.01762074	.00590636	.03805925	.01045073	.00641694	.70365858	.00686838	1.00000000
14C	.00081102	.01816015	.00608712	.03924903	.01077498	.00661754	.72526114	.00707853	1.00000000
15A	.00082461	.01846415	.00618901	.03992156	.01095807	.00673092	.73744044	.00719696	1.00000000
16A	.00085571	.01916080	.00642247	.04145755	.01137676	.00698987	.76533787	.00746838	1.00000000
17E	.00089617	.02006742	.00672629	.04346097	.01192239	.00732766	.80165539	.00782162	1.00000000
17F	.00089809	.02011032	.00674067	.04355438	.01194797	.00734341	.80337045	.00783834	1.00000000
18A	.00221525	.04960424	.01662681	.10730447	.02944861	.01809192	.57469531		1.00000000
19	.00221522	.04960300	.01662640	.10730706	.02944877	.01809230	.57469557		1.00000000
19C									1.00000000
20A	.00237800	.05324853	.01784830	.11522151	.03161800	.01942666	.61700972		1.00000000
20B	.00249470	.05586076	.01872390	.12087842	.03316988	.02038045	.64729088		1.00000000
21	.00254199	.05692052		.12319478	.03380326	.02077093	.65963499		1.00000000
22A		.05773081		.12495765	.03428607	.02106816	.66905055		1.00000000
22B		.05842136		.12645206	.03469615	.02132008	.67705257		1.00000000
23				.14467449	.03969012	.02439238	.77446614		1.00000000
24				.22243002	.04339444	.02843498	.66607404		1.00000000
25				.14947726	.03997502	.02520426	.78534346		1.00000000
26A				.14947726	.03997502	.02520426	.78534346		1.00000000
28G				.05126137			.94873863		1.00000000
28H							1.00000000		1.00000000
28J							1.00000000		1.00000000
29A							.95944607	.01318829	1.00000000
29F							.95944608	.01318829	1.00000000
29G							.95944609	.01318827	1.00000000
29H							.96446829	.00906791	1.00000000
29J							.95944608	.01318829	1.00000000
30							.96499830	.00863039	1.00000000
31A									1.00000000
33A									1.00000000
34									1.00000000
35									1.00000000

TABLE B-2: FACTORS FOR DISTRIBUTING REACH

Reach No.	Reach Description	NORTH BAY AREA		SOUTH BAY AREA				TOTAL
		Napa County FC&WCD	Solano County FC&WCD	Alameda County FC&WCD Zone 7	Alameda County Water District	Santa Clara Valley Water District	Future Contractor	
	North Bay Aqueduct							
1	Lindsey Slough to Suisun City	.39808876	.60191124					1.00000000
2	Suisun City to Cordelia Pumping Plant	.39808861	.60191139					1.00000000
3	Cordelia Pumping Plant thru Napa Turnout Reservoir (Including the interim facilities)	1.00000000						1.00000000
	South Bay Aqueduct							
1	Bethany Reservoir thru Altamont Turnout			.22599621	.20663014	.49237700	.07499665	1.00000000
2	Altamont Turnout thru Patterson Reservoir			.22599657	.20663057	.49237791	.07499495	1.00000000
4	Patterson Reservoir to Del Valle Junction			.19504791	.21450021	.51113252	.07931936	1.00000000
5	Del Valle Junction thru Lake Del Valle			.14436367	.12972254	.33715573	.38875806	1.00000000
6	Del Valle Junction thru South Livermore Turnout			.14599918	.21144710	.50574745	.13680627	1.00000000
7	South Livermore Turnout thru Vallecitos Turnout				.25176680	.60218448	.14604872	1.00000000
8	Vallecitos Turnout thru Alameda-Bayside Turnout				.06294980	.72065355	.21639665	1.00000000
9	Alameda-Bayside Turnout thru Santa Clara Terminal Facilities					1.00000000		1.00000000
	California Aqueduct							
1	Delta Thru Bethany Reservoir			.00954802	.00872976	.02080260	.00342519	— — —

Reach No.	Reach Description	CENTRAL COASTAL AREA		SOUTHERN				
		San Luis Obispo County FC&WCD	Santa Barbara County FC&WCD	Antelope Valley-East Kern Water Agency	Castaic Lake Water Agency	Coachella Valley Water District	Crestline Lake Arrowhead Water Agency	Desert Water Agency
	California Aqueduct							
1	Delta Thru Bethany Reservoir	.00531147	.01240007	.02939503	.00890866	.00528393	.00133630	.00871425
2A	Bethany Reservoir to Orestimba Creek	.00555266	.01296315	.03072975	.00931319	.00552151	.00139640	.00910607
2B	Orestimba Creek to O'Neill Forebay	.00555876	.01297741	.03076360	.00932344	.00552915	.00139833	.00911867
3	O'Neill Forebay to Dos Amigos Pumping Plant	.00555769	.01297494	.03075777	.00932168	.00552856	.00139818	.00911771
4	Dos Amigos Pumping Plant to Panoche Creek	.00555659	.01297235	.03075165	.00931982	.00552794	.00139801	.00911670
5	Panoche Creek to Five Points	.00555520	.01296912	.03074401	.00931751	.00552717	.00139780	.00911543
6	Five Points to Arroyo Pasajero	.00555311	.01296424	.03073244	.00931400	.00552602	.00139750	.00911351
7	Arroyo Pasajero to Kettleman City	.00555243	.01296267	.03072873	.00931287	.00552565	.00139740	.00911289
8C	Kettleman City thru Milham Avenue	.00549671	.01283255	.03042012	.00921937	.00546665	.00138249	.00901561
8D	Milham Avenue thru Avenal Gap	.00560860	.01309375	.03103938	.00940703	.00557923	.00141095	.00920128
9	Avenal Gap thru Twisselman Road			.03398205	.01029883	.00611262	.00154585	.01008094
10A	Twisselman Road thru Lost Hills			.03451663	.01046082	.00621064	.00157063	.01024262
11B	Lost Hills to 7th Standard Road			.03796305	.01150525	.00684053	.00172991	.01128139
12D	7th Standard Road thru Elk Hills Road			.03987187	.01208371	.00719023	.00181834	.01185809
12E	Elk Hills Road thru Tupman Road			.03992309	.01209924	.00720053	.00182095	.01187505
13B	Tupman Road to Buena Vista Pumping Plant			.04324825	.01310695	.00780756	.00197447	.01287616
14A	Buena Vista Pumping Plant thru Santiago Creek			.04536499	.01374841	.00819606	.00207273	.01351685
14B	Santiago Creek thru Old River Road			.04616419	.01399059	.00834387	.00211013	.01376063
14C	Old River Road to Wheeler Ridge Pumping Plant			.04753265	.01440528	.00859629	.00217396	.01417689
15A	Wheeler Ridge Pumping Plant to Wind Gap Pumping Plant			.04830162	.01463830	.00873855	.00220995	.01441151
16A	Wind Gap Pumping Plant to A.D. Edmonston Pumping Plant			.05006206	.01517177	.00906311	.00229201	.01494676
17E	A.D. Edmonston Pumping Plant to Carley V. Porter Tunnel			.05234459	.01586347	.00948480	.00239865	.01564222
17F	Carley V. Porter Tunnel to Junction, West Branch, Calif. Aqueduct			.05245356	.01589650	.00950462	.00240367	.01567491
18A	Junction, West Branch, Calif. Aqueduct thru Cottonwood Chutes			.13238112		.02399390	.00606794	.03957043
19	Cottonwood Chutes to Fairmont			.13237766		.02399451	.00606810	.03957141
19C	Buttes Junction thru Buttes Reservoir			1.00000000				
20A	Fairmont thru 70th Street West			.06847931		.02576424	.00651572	.04249001
20B	70th Street West to Palmdale			.02276024		.02702916	.00683554	.04457607
21	Palmdale to Littlerock Creek			.02318953		.02754716	.00696650	.04543034
22A	Littlerock Creek to Pearblossom Pumping Plant			.01181870		.02794143	.00706620	.04608043
22B	Pearblossom Pumping Plant to West Fork Mojave River					.02827552	.00715073	.04663153
23	West Fork Mojave River to Silverwood Lake					.00324449	.00818121	.00535117
24	Cedar Springs Dam and Silverwood Lake					.01024605	.01251569	.01690478
25	Silverwood Lake to South Portal, San Bernardino Tunnel							
26A	South Portal, San Bernardino Tunnel thru Devil Canyon Pwp.							
28G	Devil Canyon Powerplant to Barton Road							
28H	Barton Road to Lake Perris							
28J	Perris Dam and Lake Perris							
29A	Junction, West Branch, Calif. Aqueduct thru Oso Pumping Plant			.00304299	.02728237			
29F	Oso Pumping Plant thru Quail Embankment			.00304379	.02728234			
29G	Quail Embankment to Pyramid Lake				.02736564			
29H	Pyramid Dam and Lake				.02646380			
29J	Pyramid Lake thru Castaic Powerplant				.02736563			
30	Castaic Dam and Lake				.02637131			
31A	Avenal Gap to Devil's Den Pumping Plant	.10522767	.24566277					
33A	Devil's Den Pumping Plant thru San Luis Obispo Powerplant	.29988697	.70011303					
34	San Luis Obispo Powerplant to Arroyo Grande	.20553239	.79446761					
35	Arroyo Grande thru Santa Maria Terminal	.14771038	.85228962					

MINIMUM OMP&R COSTS AMONG CONTRACTORS

Reach No.	SAN JOAQUIN VALLEY AREA								
	Devil's Den Water District	Dudley Ridge Water District	Empire West Side Irrigation District	Hacienda Water District	Kern County Water Agency		County of Kings	Oak Flat Water District	Tulare Lake Basin Water Storage District
					Municipal and Industrial	Agricultural			
California Aqueduct									
1	.00377824	.01707931	.00088687	.00251598	.02742075	.30633444	.00090702	.00167139	.03253706
2A	.00394038	.01781205	.00092491	.00262393	.02864590	.31948963	.00094755	.00174305	.03393294
2B	.00395099	.01786013	.00092740	.00263102	.02869073	.32034362	.00094904		.03402458
3	.00395208	.01786513	.00092766	.00263176	.02868919	.32043064	.00094900		.03403409
4	.00395323	.01787039	.00092794	.00263254	.02868758	.32052214	.00094893		.03404410
5	.00395466	.01787693	.00092828	.00263352	.02868559	.32063639	.00094886		.03405659
6	.00395684	.01788685	.00092879	.00263498	.02868255	.32080926	.00094875		.03407550
7	.00395753	.01789003	.00092896	.00263544	.02868158	.32086471	.00094872		.03408157
8C	.00390372	.01764649	.00091632	.00259956	.02836376	.31651560	.00093819		.03361753
8D	.00398843	.01802948		.00265599	.02895222	.32337797			.01529539
9					.03173493	.32315570			
10A					.03225002	.31237849			
11B					.03555316	.24304304			
12D					.03738966	.20458362			
12E					.03744664	.20348854			
13B					.01437747	.16288986			
14A					.00610657	.13050491			
14B					.00621833	.11497394			
14C					.00640883	.08842321			
15A					.00651639	.07347673			
16A					.00676126	.03933051			
17E					.00208231				
31A	.07364766					.57546190			

Reach No.	CALIFORNIA AREA								
	Littlerock Creek Irrigation District	Mojave Water Agency	Palmdale Water 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	Ventura County Flood Control District	TOTAL
1	.00049187	.01101303	.00369180	.02363192	.00650450	.00398446	.43940274	.00429334	1.00000000
2A	.00051421	.01151300	.00385943	.02469456	.00679800	.00416362	.45932582	.00448829	1.00000000
2B	.00051477	.01152575	.00386368	.02472869	.00680672	.00416938	.45985090	.00449324	1.00000000
3	.00051469	.01152359	.00386296	.02472604	.00680580	.00416893	.45976953	.00449238	1.00000000
4	.00051459	.01152131	.00386218	.02472327	.00680482	.00416846	.45968397	.00449149	1.00000000
5	.00051448	.01151846	.00386122	.02471980	.00680361	.00416788	.45957712	.00449037	1.00000000
6	.00051428	.01151416	.00385978	.02471455	.00680178	.00416698	.45941544	.00448869	1.00000000
7	.00051421	.01151278	.00385931	.02471286	.00680118	.00416671	.45936361	.00448816	1.00000000
8C	.00050905	.01139703	.00382056	.02444913	.00673013	.00412224	.46619410	.00444309	1.00000000
8D	.00051940	.01162908	.00389834	.02495260	.00686817	.00420714	.47575203	.00453354	1.00000000
9	.00056864	.01273174	.00426793	.02733801	.00752279	.00460932	.52108733	.00496332	1.00000000
10A	.00057757	.01293209	.00433508	.02777635	.00764260	.00468324	.52938182	.00504140	1.00000000
11B	.00063524	.01422367	.00476795	.03059311	.00841338	.00515814	.58274744	.00554474	1.00000000
12D	.00066717	.01493906	.00500769	.03215687	.00884093	.00542180	.61234745	.00582351	1.00000000
12E	.00066803	.01495830	.00501413	.03220286	.00885312	.00542956	.61318897	.00583099	1.00000000
13B	.00072369	.01620441	.00543178	.03491750	.00959625	.00588725	.66464178	.00631662	1.00000000
14A	.00075911	.01699773	.00569765	.03665478	.01007092	.00618017	.69750337	.00662575	1.00000000
14B	.00077249	.01729729	.00579803	.03731574	.01025102	.00629159	.70996969	.00674247	1.00000000
14C	.00079540	.01781020	.00596992	.03844447	.01055888	.00648190	.73127981	.00694231	1.00000000
15A	.00080829	.01809845	.00606653	.03908064	.01073222	.00658915	.74327706	.00705461	1.00000000
16A	.00083775	.01875830	.00628766	.04053195	.01112817	.00683383	.77068316	.00731170	1.00000000
17E	.00087593	.01961383	.00657438	.04241764	.01164221	.00715176	.80626315	.00764506	1.00000000
17F	.00087775	.01965466	.00658807	.04250630	.01166651	.00716671	.80794577	.00766097	1.00000000
18A	.00221525	.04960424	.01662681	.10730447	.02944861	.01809192	.57469531		1.00000000
19	.00221522	.04960300	.01662640	.10730706	.02944877	.01809230	.57469557		1.00000000
19C									1.00000000
20A	.00237800	.05324853	.01784830	.11522151	.03161800	.01942666	.61700972		1.00000000
20B	.00249470	.05586076	.01872390	.12087842	.03316988	.02038045	.64729088		1.00000000
21	.00254199	.05692052		.12319478	.03380326	.02077093	.65963499		1.00000000
22A		.05773081		.12495765	.03428607	.02106816	.66905055		1.00000000
22B		.05842136		.12645206	.03469615	.02132008	.67705257		1.00000000
23				.14467449	.03969012	.02439238	.77446614		1.00000000
24				.22243002	.04339444	.02843498	.66607404		1.00000000
25				.11825184	.03722720	.01993915	.82458181		1.00000000
26A				.14947726	.03997502	.02520426	.78534346		1.00000000
28G				.05126137			.94873863		1.00000000
28H							1.00000000		1.00000000
28J							1.00000000		1.00000000
29A							.95652648	.01314816	1.00000000
29F							.95652573	.01314814	1.00000000
29G							.95944609	.01318827	1.00000000
29H							.96446829	.00906791	1.00000000
29J							.95944608	.01318829	1.00000000
30							.96499830	.00863039	1.00000000
31A									1.00000000
33A									1.00000000
34									1.00000000
35									1.00000000

TABLE B-3: POWER COSTS AND CREDITS AND ANNUAL REPLACEMENT

(in

Calendar Year	NORTH BAY AQUEDUCT		SOUTH BAY AQUEDUCT	CALIFORNIA					
	Reach 1 Calhoun and Travis Pumping Plants	Reach 3 Cordelia Pumping Plant (b	Reach 1 South Bay and Del Valle Pumping Plants (c	Reach 1 Delta Pumping Plant	Reach 4 Dos Amigos Pumping Plant	Reach 14A Buena Vista Pumping Plant	Reach 15A Wheeler Ridge Pumping Plant	Reach 16A Wind Gap Pumping Plant	Reach 17E A.D. Edmonston Pumping Plant
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1962	0	0	38,130	0	0	0	0	0	0
1963	0	0	58,871	0	0	0	0	0	0
1964	0	0	75,239	0	0	0	0	0	0
1965	0	0	146,297	0	0	0	0	0	0
1966	0	0	198,643	0	0	0	0	0	0
1967	0	0	229,629	26,982	0	0	0	0	0
1968	0	7,128	342,761	1,324,777	239,505	0	0	0	0
1969	0	8,557	279,751	855,304	143,403	0	0	0	0
1970	0	13,666	448,383	368,508	217,820	2,940	0	0	0
1971	0	10,626	422,057	597,946	229,306	156,540	23,021	18,577	29,067
1972	0	14,430	623,564	1,110,833	575,291	348,668	187,825	385,935	1,263,087
1973	0	14,453	485,534	918,234	493,776	511,904	514,487	883,725	3,139,297
1974	0	17,508	510,873	997,269	560,461	556,968	595,585	1,048,196	3,700,573
1975	0	14,801	382,106	1,353,916	561,089	650,781	707,038	1,394,918	4,853,538
1976	0	20,867	589,007	916,728	596,426	701,061	687,677	1,414,902	4,917,776
1977	0	22,591	540,553	650,647	191,127	170,146	172,977	336,796	1,126,681
1978	0	21,690	568,756	3,873,153	742,441	1,008,246	968,900	1,776,718	6,252,043
1979	0	19,859	602,175	3,924,751	1,215,946	980,129	826,718	1,649,053	5,576,182
1980	0	21,000	623,000	2,111,566	1,359,876	1,300,896	1,310,410	2,596,256	8,657,017
1981	0	24,000	688,000	3,365,989	1,566,876	1,515,153	1,557,505	3,019,556	10,183,383
1982	0	25,000	713,000	3,545,081	1,742,102	1,750,972	1,679,905	3,531,198	12,030,067
1983	0	83,000	2,482,000	15,223,461	6,348,623	7,334,009	6,972,167	15,599,893	54,810,122
1984	78,000	170,000	3,049,000	21,037,667	9,024,958	10,245,058	9,757,795	22,061,624	79,234,151
1985	58,000	165,000	3,396,000	24,306,933	10,106,527	11,225,762	10,562,031	23,868,180	85,657,640
1986	75,000	182,000	3,486,000	28,026,083	12,402,010	13,054,581	12,318,811	27,965,681	100,351,854
1987	87,000	192,000	3,524,000	29,474,746	12,934,838	13,578,032	12,751,141	28,956,286	103,600,676
1988	139,000	203,000	3,559,000	31,977,138	13,398,814	14,011,970	13,097,892	29,741,301	106,067,047
1989	181,000	212,000	3,624,000	35,306,172	14,334,635	15,405,494	14,475,522	32,956,195	117,516,543
1990	250,000	220,000	3,570,000	33,182,924	14,773,857	16,296,822	15,349,951	34,993,796	124,659,895
1991	243,000	237,000	3,735,000	35,849,454	14,442,231	17,044,880	16,112,412	36,780,120	131,213,795
1992	250,000	255,000	3,914,000	32,903,894	14,313,104	16,714,199	15,753,913	35,910,563	127,929,757
1993	258,000	276,000	4,076,000	35,246,495	14,570,162	17,016,311	16,037,024	36,569,490	130,341,068
1994	279,000	308,000	4,371,000	32,686,923	14,636,372	16,635,532	15,556,780	35,373,483	125,678,232
1995	282,000	324,000	4,153,000	37,054,467	14,877,572	17,096,539	16,041,789	36,532,538	130,006,963
1996	263,000	300,000	4,490,000	36,301,064	14,851,235	16,846,492	15,746,523	35,791,550	127,169,057
1997	266,000	317,000	4,461,000	33,902,064	14,951,764	17,018,633	15,933,693	36,259,890	128,798,406
1998	277,000	345,000	4,501,000	34,843,224	15,107,525	17,034,249	15,900,758	36,214,281	128,325,374
1999	282,000	365,000	4,443,000	37,334,644	15,354,687	17,423,448	16,311,127	37,216,854	131,843,825
2000	294,000	391,000	4,468,000	33,443,437	15,320,252	17,166,349	16,028,603	36,546,032	128,963,730
2001	311,000	393,000	4,553,000	36,914,708	15,591,759	17,622,756	16,499,212	37,657,335	132,867,610
2002	308,000	394,000	4,500,000	33,840,265	15,804,512	18,060,778	16,978,964	38,763,662	136,643,546
2003	318,000	400,000	4,520,000	38,132,910	16,060,299	18,532,374	17,463,613	39,776,590	140,294,283
2004	322,000	405,000	4,576,000	37,376,918	16,171,841	18,770,749	17,718,152	40,207,584	141,719,770
2005	321,000	407,000	4,552,000	38,049,244	16,449,019	19,392,726	18,376,075	41,614,202	146,908,854
2006	350,000	413,000	4,644,000	37,526,737	16,649,931	19,772,529	18,777,255	42,360,194	149,433,858
2007	354,000	418,000	4,708,000	36,534,454	16,854,239	20,080,193	19,088,105	43,184,093	152,486,873
2008	361,000	430,000	4,782,000	43,676,532	17,689,643	21,416,219	20,449,422	46,325,388	163,836,206
2009	374,000	448,000	4,934,000	42,280,827	18,193,902	22,032,464	21,031,478	47,683,385	168,738,608
2010	378,000	456,000	5,084,000	41,762,282	18,532,216	22,560,872	21,568,784	48,916,401	173,264,550
2011	478,000	502,000	5,207,000	42,783,013	19,304,440	23,681,358	22,685,280	51,523,240	183,016,958
2012	486,000	510,000	5,294,000	44,816,249	19,751,091	24,307,598	23,305,293	52,949,308	188,430,320
2013	501,000	526,000	5,457,000	48,960,248	20,620,011	25,554,933	24,538,760	55,823,498	199,202,479
2014	512,000	538,000	5,640,000	47,760,139	21,313,231	26,563,983	25,543,005	58,153,922	208,010,595
2015	526,000	552,000	5,856,000	50,923,521	21,632,333	27,202,753	26,153,104	59,552,388	213,205,567
2016	539,000	539,000	5,715,000	47,514,142	21,360,258	26,575,320	25,552,969	59,487,527	213,269,226
2017	552,000	552,000	5,922,000	52,393,967	21,932,881	27,914,506	26,891,403	61,281,067	219,762,603
2018	549,000	549,000	5,890,000	49,980,985	22,115,874	27,981,401	26,970,956	61,471,805	220,489,368
2019	556,000	556,000	5,964,000	52,180,202	22,202,581	28,595,286	27,581,772	62,852,389	225,679,842
2020	575,000	594,000	6,142,000	52,831,229	22,737,224	29,120,923	28,115,027	64,058,778	230,216,775
2021	618,000	589,000	6,086,000	50,803,034	22,261,247	28,642,092	27,643,488	63,012,670	226,470,252
2022	624,000	595,000	6,147,000	53,691,799	22,527,194	29,067,534	28,071,175	63,961,124	230,512,848
2023	619,000	590,000	6,098,000	50,410,580	22,349,626	28,950,473	27,967,188	63,512,532	229,494,826
2024	668,000	598,000	6,309,000	54,053,614	22,467,670	29,197,379	28,198,569	63,798,596	231,219,179
2025	666,000	596,000	6,287,000	51,523,292	22,414,222	29,235,316	28,246,108	63,675,614	231,615,006
2026	720,000	637,000	6,477,000	53,084,147	22,595,948	29,675,135	28,682,825	64,521,566	235,290,361
2027	715,000	632,000	6,429,000	52,731,918	22,222,793	29,334,652	28,344,952	63,563,953	232,419,116
2028	715,000	633,000	6,431,000	50,831,760	22,106,410	29,356,235	28,422,807	63,753,383	233,113,990
2029	718,000	635,000	6,453,000	53,279,827	21,975,508	29,337,805	28,377,484	63,816,417	233,342,338
2030	711,000	629,000	6,392,000	51,038,722	21,595,328	28,888,303	27,910,187	62,924,981	229,835,416
2031	722,000	638,000	6,489,000	52,952,626	21,849,637	29,334,599	28,367,293	64,193,917	233,955,229
2032	714,000	632,000	6,422,000	50,412,000	21,479,774	28,886,998	27,911,692	63,397,942	230,673,621
2033	717,000	634,000	6,444,000	50,884,000	21,500,721	28,763,118	27,761,349	63,346,872	230,019,473
2034	722,000	638,000	6,491,000	53,242,000	21,707,691	28,930,102	27,902,117	63,993,248	231,909,932
2035	721,000	637,000	6,477,000	52,272,000	21,651,702	28,716,944	27,668,276	63,776,221	230,925,955

a) Includes the costs of electric capacity and energy used by pumping plants, exclusive of associated power transmission and station service charges; the value of electric capacity and energy produced by power recovery plants (treated as negative costs); the payments to sinking fund reserves that will finance periodic replacement of electro-mechanical equipment; and the plant capacity and energy costs associated with surplus water service prior to May 1, 1973.

b) Power costs for the period 1968 through 1983 are for an interim facility.

c) The estimated costs of Del Valle Pumping Plant are combined with those of South Bay Pumping Plant to simplify the cost allocations.

DEPOSITS FOR EACH AQUEDUCT PUMPING AND POWER RECOVERY PLANT[a]

dollars)

AQUEDUCT									
Reach 18A Cottonwood Powerplant	Reach 22B Pear-blossom Pumping Plant	Reach 26A Devil Canyon Powerplant	Reach 29A Oso Pumping Plant	Reach 29G Pyramid Powerplant	Reach 29J Castaic Powerplant	Reach 31A Las Perillas and Badger Hill Pumping Plants	Reach 33A Devil's Den Sawtooth and Polonio PP's and San Luis Obispo Pwp.	GRAND TOTAL	Calendar Year
(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	
0	0	0	0	0	0	0	0	38,130	1962
0	0	0	0	0	0	0	0	58,871	1963
0	0	0	0	0	0	0	0	75,239	1964
0	0	0	0	0	0	0	0	146,297	1965
0	0	0	0	0	0	0	0	198,643	1966
0	0	0	0	0	0	6,517	0	263,128	1967
0	0	0	0	0	0	120,278	0	2,034,449	1968
0	0	0	0	0	0	79,620	0	1,366,635	1969
0	0	0	0	0	0	137,449	0	1,188,766	1970
0	64,807	0	1,696	0	0	171,389	0	1,725,032	1971
0	103,584	-3,112	180,005	0	-385,696	240,651	0	4,645,065	1972
0	615,309	-931,697	274,450	0	-1,193,216	128,730	0	5,854,986	1973
0	595,646	-939,072	322,440	0	-1,823,397	129,345	0	6,272,395	1974
0	616,327	-1,101,445	457,487	0	-2,835,302	101,109	0	7,156,363	1975
0	914,440	-1,520,412	314,669	0	-2,512,021	151,211	0	7,192,331	1976
0	317,416	-1,216,060	53,081	0	-1,233,043	85,147	0	1,218,059	1977
0	1,813,884	-3,298,247	248,435	0	-2,194,618	197,420	0	11,978,821	1978
0	1,782,521	-3,477,609	164,882	0	-2,679,966	246,990	0	10,831,631	1979
0	2,235,520	-3,863,277	380,575	0	-3,031,767	201,000	0	13,902,072	1980
0	2,622,285	-4,026,824	500,341	0	-3,463,900	228,000	0	17,780,364	1981
0	2,910,259	-4,418,135	417,077	-1,379,600	-3,159,250	240,000	0	19,627,676	1982
0	10,852,302	-17,993,264	2,326,443	-4,967,475	-9,135,950	746,000	0	90,681,331	1983
-2,646,584	15,543,065	-23,509,535	3,002,328	-5,537,000	-10,413,400	946,000	0	132,043,127	1984
-3,459,000	17,106,058	-23,374,000	3,083,673	-5,093,000	-9,556,800	1,091,000	0	149,144,004	1985
-3,628,000	18,641,816	-24,405,000	4,237,409	-6,816,000	-12,353,100	1,133,000	0	174,672,145	1986
-3,647,000	18,845,350	-24,436,000	4,539,096	-7,211,000	-12,789,200	1,143,000	0	181,542,965	1987
-3,641,000	18,891,460	-24,597,000	4,782,321	-7,546,000	-13,251,600	1,154,000	0	187,987,343	1988
-3,666,000	18,971,459	-24,424,000	6,145,044	-9,673,000	-16,717,800	1,158,000	0	205,805,264	1989
-3,733,000	19,034,381	-24,343,000	6,993,019	-11,081,000	-18,944,100	1,148,000	0	212,371,545	1990
-3,739,000	19,207,880	-24,749,000	7,718,988	-12,165,000	-20,744,100	1,157,000	0	222,344,660	1991
-3,651,000	18,846,923	-23,899,000	7,445,151	-11,542,000	-19,651,600	1,170,000	0	216,662,904	1992
-3,348,000	17,358,264	-21,122,000	8,262,831	-12,678,000	-21,518,600	1,192,000	0	222,537,045	1993
-2,723,000	14,372,609	-16,434,000	8,799,823	-12,813,000	-21,737,600	1,259,000	0	216,249,154	1994
-2,731,000	14,253,664	-16,101,000	9,340,035	-13,688,000	-23,163,600	1,253,000	0	225,531,967	1995
-2,639,000	13,861,246	-15,517,000	9,080,701	-13,025,000	-22,080,600	1,278,000	0	222,717,268	1996
-2,622,000	13,553,381	-15,410,000	9,366,599	-13,544,000	-22,892,000	1,269,000	0	221,629,430	1997
-2,580,000	13,468,740	-14,534,000	9,281,454	-13,120,000	-22,185,000	1,296,000	0	224,175,605	1998
-2,615,000	13,477,622	-14,404,000	9,642,032	-13,663,000	-23,081,000	1,294,000	0	231,225,239	1999
-2,446,000	12,457,006	-13,478,000	9,657,540	-13,456,000	-22,738,000	1,311,000	0	223,928,949	2000
-2,581,000	13,241,035	-14,131,000	9,835,146	-13,762,000	-23,236,000	1,305,000	0	233,081,561	2001
-2,591,000	13,179,410	-14,344,000	10,372,158	-14,692,000	-24,758,100	1,289,000	0	233,749,195	2002
-2,652,000	13,597,657	-14,700,000	10,658,729	-15,007,000	-25,261,100	1,295,000	0	243,429,355	2003
-2,700,000	13,963,095	-15,221,000	10,820,442	-15,066,000	-25,360,100	1,295,000	0	244,999,451	2004
-2,715,000	14,005,272	-15,212,000	11,520,213	-16,090,000	-26,991,100	1,288,000	0	251,875,505	2005
-2,741,000	14,309,522	-15,219,000	11,766,702	-16,387,000	-27,488,100	1,291,000	0	255,459,628	2006
-2,893,000	15,206,309	-16,532,000	11,754,846	-16,324,000	-27,368,500	1,293,000	0	258,844,612	2007
-2,880,000	15,357,482	-16,348,000	13,131,965	-17,957,000	-29,982,500	1,313,000	0	281,601,357	2008
-2,954,000	16,267,719	-16,872,000	13,272,749	-17,650,000	-29,454,500	1,355,000	0	289,681,632	2009
-2,979,000	16,551,051	-17,086,000	13,730,378	-18,103,000	-30,164,500	1,365,000	0	295,837,034	2010
-3,036,000	17,283,160	-17,585,000	14,543,433	-18,778,000	-31,221,500	1,397,000	0	311,784,382	2011
-3,085,000	17,945,991	-17,889,000	14,947,249	-18,936,000	-31,488,500	1,421,000	0	322,765,599	2012
-3,169,000	19,077,125	-18,346,000	15,744,553	-19,374,000	-32,170,500	1,464,000	0	344,410,107	2013
-3,207,000	19,774,274	-18,593,000	16,467,930	-19,871,000	-32,963,500	1,497,000	0	357,139,579	2014
-3,253,000	20,563,659	-18,992,000	16,709,736	-19,627,000	-32,549,500	1,537,000	0	369,992,561	2015
-3,299,000	20,440,406	-19,382,000	16,788,273	-20,214,000	-33,498,500	1,499,000	0	362,886,621	2016
-3,352,000	21,259,747	-19,807,000	17,200,801	-20,213,000	-33,496,500	1,537,000	0	380,331,475	2017
-3,377,000	21,351,916	-20,001,000	17,262,062	-20,399,000	-33,786,500	1,529,000	0	378,577,867	2018
-3,457,000	22,159,605	-20,734,000	17,533,174	-20,468,000	-33,904,500	1,548,000	0	388,845,351	2019
-3,576,000	22,893,321	-20,885,000	17,675,745	-20,519,000	-33,962,500	1,556,000	0	397,573,522	2020
-3,494,000	22,341,766	-20,537,000	17,574,359	-20,546,000	-34,012,500	1,543,000	0	388,995,408	2021
-3,484,000	22,465,608	-20,631,000	18,009,286	-20,883,000	-34,548,500	1,559,000	0	397,685,068	2022
-3,526,000	22,565,114	-20,824,000	17,862,036	-20,857,000	-34,507,500	1,547,000	0	392,251,875	2023
-3,467,000	22,521,052	-20,474,000	18,143,427	-20,909,000	-34,575,500	1,566,000	0	399,314,986	2024
-3,514,000	22,561,437	-20,713,000	18,098,901	-20,913,000	-34,580,500	1,561,000	0	396,759,396	2025
-3,502,000	22,612,449	-20,472,000	18,491,600	-21,203,000	-35,039,500	1,575,000	0	404,146,531	2026
-3,485,000	22,318,679	-20,472,000	18,272,508	-21,093,000	-34,863,500	1,563,000	0	398,634,071	2027
-3,514,000	22,543,316	-20,361,000	18,102,462	-21,079,000	-34,846,500	1,564,000	0	397,772,863	2028
-3,490,000	22,447,829	-20,291,000	17,995,160	-21,087,000	-34,846,500	1,569,000	0	400,232,868	2029
-3,455,000	21,972,334	-20,276,000	17,753,202	-21,056,000	-34,813,500	1,555,000	0	391,604,973	2030
-3,480,000	22,475,268	-20,150,000	18,029,395	-21,137,000	-34,922,500	1,578,000	0	400,895,464	2031
-3,475,000	22,078,629	-20,150,000	17,715,974	-21,097,000	-34,872,500	1,562,000	0	392,292,130	2032
-3,434,000	21,701,675	-20,150,000	17,661,546	-21,120,000	-34,898,500	1,567,000	0	391,398,254	2033
-3,493,000	22,185,796	-20,150,000	17,494,553	-21,022,000	-34,754,500	1,578,000	0	397,374,939	2034
-3,463,000	21,792,387	-20,150,000	17,301,000	-21,105,000	-34,890,500	1,575,000	0	393,905,985	2035

(in acre-feet)[b]

Calendar Year	NORTH BAY AREA			SOUTH BAY AREA[c]				CENTRAL COASTAL AREA		
	Napa County FC & WCD[d]	Solano County FC & WCD	Total	Alameda County FC & WCD Zone 7	Alameda County Water District	Santa Clara Valley Water District	Total	San Luis Obispo County FC & WCD	Santa Barbara County FC & WCD	Total
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1967	0	0	0	507	5,248	5,783	11,538	0	0	0
1968	0	0	0	6,900	15,000	88,000	109,900	0	0	0
1969	0	0	0	8,200	15,500	75,000	98,700	0	0	0
1970	0	0	0	10,000	16,200	88,000	114,200	0	0	0
1971	0	0	0	11,200	17,000	88,000	116,200	0	0	0
1972	0	0	0	12,400	17,900	88,000	118,300	0	0	0
1973	0	0	0	13,600	18,800	88,000	120,400	0	0	0
1974	0	0	0	14,800	19,600	88,000	122,400	0	0	0
1975	0	0	0	16,000	20,500	88,000	124,500	0	0	0
1976	0	0	0	17,200	21,300	88,000	126,500	0	0	0
1977	0	0	0	18,400	22,200	88,000	128,600	0	0	0
1978	0	0	0	19,600	23,100	88,000	130,700	0	0	0
1979	0	0	0	20,800	23,900	88,000	132,700	0	0	0
1980	12,500	500	13,000	22,000	24,800	88,000	134,800	1,000	1,200	2,200
1981	13,750	650	14,400	23,000	26,000	88,000	137,000	1,000	2,300	3,300
1982	15,000	800	15,800	24,000	27,200	88,000	139,200	2,000	4,600	6,600
1983	16,250	950	17,200	25,000	28,400	88,000	141,400	3,000	6,900	9,900
1984	17,500	12,100	29,600	26,000	29,600	88,000	143,600	4,500	10,400	14,900
1985	18,750	14,000	32,750	27,000	30,800	88,000	145,800	7,500	17,300	24,800
1986	20,000	16,500	36,500	28,000	32,100	88,000	148,100	10,000	23,100	33,100
1987	21,250	20,000	41,250	29,000	33,300	88,000	150,300	12,500	28,800	41,300
1988	22,500	27,000	49,500	30,000	34,500	88,000	152,500	15,500	35,800	51,300
1989	23,750	34,500	58,250	31,000	35,700	90,000	156,700	20,000	46,100	66,100
1990	25,000	42,000	67,000	32,000	36,900	92,000	160,900	25,000	57,700	82,700
1991	25,000	42,000	67,000	34,000	38,400	94,000	166,400	25,000	57,700	82,700
1992	25,000	42,000	67,000	36,000	39,900	96,000	171,900	25,000	57,700	82,700
1993	25,000	42,000	67,000	38,000	41,400	98,000	177,400	25,000	57,700	82,700
1994	25,000	42,000	67,000	40,000	42,000	100,000	182,000	25,000	57,700	82,700
1995	25,000	42,000	67,000	42,000	42,000	100,000	184,000	25,000	57,700	82,700
1996	25,000	42,000	67,000	44,000	42,000	100,000	186,000	25,000	57,700	82,700
1997	25,000	42,000	67,000	46,000	42,000	100,000	188,000	25,000	57,700	82,700
1998	25,000	42,000	67,000	46,000	42,000	100,000	188,000	25,000	57,700	82,700
1999	25,000	42,000	67,000	46,000	42,000	100,000	188,000	25,000	57,700	82,700
2000	25,000	42,000	67,000	46,000	42,000	100,000	188,000	25,000	57,700	82,700
2001	25,000	42,000	67,000	46,000	42,000	100,000	188,000	25,000	57,700	82,700
2002	25,000	42,000	67,000	46,000	42,000	100,000	188,000	25,000	57,700	82,700
2003	25,000	42,000	67,000	46,000	42,000	100,000	188,000	25,000	57,700	82,700
2004	25,000	42,000	67,000	46,000	42,000	100,000	188,000	25,000	57,700	82,700
2005	25,000	42,000	67,000	46,000	42,000	100,000	188,000	25,000	57,700	82,700
2006	25,000	42,000	67,000	46,000	42,000	100,000	188,000	25,000	57,700	82,700
2007	25,000	42,000	67,000	46,000	42,000	100,000	188,000	25,000	57,700	82,700
2008	25,000	42,000	67,000	46,000	42,000	100,000	188,000	25,000	57,700	82,700
2009	25,000	42,000	67,000	46,000	42,000	100,000	188,000	25,000	57,700	82,700
2010	25,000	42,000	67,000	46,000	42,000	100,000	188,000	25,000	57,700	82,700
2011	25,000	42,000	67,000	46,000	42,000	100,000	188,000	25,000	57,700	82,700
2012	25,000	42,000	67,000	46,000	42,000	100,000	188,000	25,000	57,700	82,700
2013	25,000	42,000	67,000	46,000	42,000	100,000	188,000	25,000	57,700	82,700
2014	25,000	42,000	67,000	46,000	42,000	100,000	188,000	25,000	57,700	82,700
2015	25,000	42,000	67,000	46,000	42,000	100,000	188,000	25,000	57,700	82,700
2016	25,000	42,000	67,000	46,000	42,000	100,000	188,000	25,000	57,700	82,700
2017	25,000	42,000	67,000	46,000	42,000	100,000	188,000	25,000	57,700	82,700
2018	25,000	42,000	67,000	46,000	42,000	100,000	188,000	25,000	57,700	82,700
2019	25,000	42,000	67,000	46,000	42,000	100,000	188,000	25,000	57,700	82,700
2020	25,000	42,000	67,000	46,000	42,000	100,000	188,000	25,000	57,700	82,700
2021	25,000	42,000	67,000	46,000	42,000	100,000	188,000	25,000	57,700	82,700
2022	25,000	42,000	67,000	46,000	42,000	100,000	188,000	25,000	57,700	82,700
2023	25,000	42,000	67,000	46,000	42,000	100,000	188,000	25,000	57,700	82,700
2024	25,000	42,000	67,000	46,000	42,000	100,000	188,000	25,000	57,700	82,700
2025	25,000	42,000	67,000	46,000	42,000	100,000	188,000	25,000	57,700	82,700
2026	25,000	42,000	67,000	46,000	42,000	100,000	188,000	25,000	57,700	82,700
2027	25,000	42,000	67,000	46,000	42,000	100,000	188,000	25,000	57,700	82,700
2028	25,000	42,000	67,000	46,000	42,000	100,000	188,000	25,000	57,700	82,700
2029	25,000	42,000	67,000	46,000	42,000	100,000	188,000	25,000	57,700	82,700
2030	25,000	42,000	67,000	46,000	42,000	100,000	188,000	25,000	57,700	82,700
2031	25,000	42,000	67,000	46,000	42,000	100,000	188,000	25,000	57,700	82,700
2032	25,000	42,000	67,000	46,000	42,000	100,000	188,000	25,000	57,700	82,700
2033	25,000	42,000	67,000	46,000	42,000	100,000	188,000	25,000	57,700	82,700
2034	25,000	42,000	67,000	46,000	42,000	100,000	188,000	25,000	57,700	82,700
2035	25,000	42,000	67,000	46,000	42,000	100,000	188,000	25,000	57,700	82,700
TOTAL	1,331,250	2,059,000	3,390,250	2,494,607	2,459,248	6,510,783	11,464,638	1,227,000	2,830,700	4,057,700

a) From Tables A and Articles 6(a) of water supply contracts as of December 31, 1978.

b) Metric conversion is acre-feet times 1.2335 equals cubic dekametres.

c) Entitlements fro the South Bay Area were supplied by nonproject water for the period June 1962 through November 1967. Actual delivery quantities of project water are shown for 1967.

d) District's Table A quantities exclude those during the period 1968 through 1979 which are assumed to be supplied by nonproject water.

MENTS TO PROJECT WATER[a]

(in acre-feet)[b]

Calendar Year	SAN JOAQUIN VALLEY AREA										
	Devil's Den Water District	Dudley Ridge Water District	Empire West Side Irrigation District	Hacienda Water District	Kern County Water Agency			County of Kings	Oak Flat Water District	Tulare Lake Basin Water Storage District	Total
					M & I	Ag.	Total				
	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)
1967	0	0	0	0	0	0	0	0	0	0	0
1968	3,700	14,300	1,000	0	0	45600	46,600	900	2,300	12,250	81,050
1969	5,000	14,325	3,000	2,400	0	95700	95,700	1,200	2,500	43,950	168,075
1970	5,700	15,700	3,000	2,500	28700	116400	145,100	1,300	2,600	31,800	207,700
1971	6,700	17,900	3,000	2,300	35700	154600	190,300	1,300	2,800	34,200	258,500
1972	7,700	20,000	3,000	2,600	39200	231500	270,700	1,400	5,366	110,000	420,766
1973	8,700	22,000	3,000	2,900	43500	267000	310,500	1,500	3,100	40,652	392,352
1974	9,700	33,390	3,000	3,300	48000	299000	347,000	1,500	3,471	68,989	470,350
1975	10,700	40,555	3,000	3,758	52700	358120	410,820	1,600	3,576	82,500	556,509
1976	11,700	30,921	3,000	3,900	56100	386050	442,150	1,600	4,039	57,807	555,117
1977	12,700	30,400	3,000	4,200	60600	423000	483,600	1,700	3,700	54,800	594,100
1978	11,362	32,500	0	4,600	64100	470200	534,300	1,900	3,900	58,700	647,262
1979	12,700	38,544	3,000	4,900	67600	516300	583,900	2,000	4,000	66,341	715,385
1980	12,700	41,000	3,000	5,200	71100	563400	634,500	2,200	5,700	66,500	770,800
1981	12,700	38,800	3,000	5,600	74800	616600	691,400	2,300	4,300	70,400	828,500
1982	12,700	41,000	3,000	5,900	79600	665700	745,300	2,500	4,500	74,300	889,200
1983	12,700	42,900	3,000	6,200	83500	721600	805,100	2,800	4,600	78,200	955,500
1984	12,700	45,100	3,000	6,500	88600	772000	860,600	3,100	4,800	82,100	1,017,900
1985	12,700	47,200	3,000	6,900	93900	821100	915,000	3,400	4,900	86,000	1,079,100
1986	12,700	49,300	3,000	7,200	98400	869800	968,200	3,700	5,100	90,000	1,139,200
1987	12,700	51,400	3,000	7,500	104100	919400	1,023,500	4,000	5,200	93,900	1,201,200
1988	12,700	53,500	3,000	7,800	108900	965700	1,074,600	4,000	5,400	97,800	1,258,800
1989	12,700	55,600	3,000	8,200	113200	999100	1,112,300	4,000	5,600	101,700	1,303,100
1990	12,700	57,700	3,000	8,500	119600	1033800	1,153,400	4,000	5,700	110,000	1,355,000
1991	12,700	57,700	3,000	8,500	119600	1033800	1,153,400	4,000	5,700	110,000	1,355,000
1992	12,700	57,700	3,000	8,500	119600	1033800	1,153,400	4,000	5,700	110,000	1,355,000
1993	12,700	57,700	3,000	8,500	119600	1033800	1,153,400	4,000	5,700	110,000	1,355,000
1994	12,700	57,700	3,000	8,500	119600	1033800	1,153,400	4,000	5,700	110,000	1,355,000
1995	12,700	57,700	3,000	8,500	119600	1033800	1,153,400	4,000	5,700	110,000	1,355,000
1996	12,700	57,700	3,000	8,500	119600	1033800	1,153,400	4,000	5,700	110,000	1,355,000
1997	12,700	57,700	3,000	8,500	119600	1033800	1,153,400	4,000	5,700	110,000	1,355,000
1998	12,700	57,700	3,000	8,500	119600	1033800	1,153,400	4,000	5,700	110,000	1,355,000
1999	12,700	57,700	3,000	8,500	119600	1033800	1,153,400	4,000	5,700	110,000	1,355,000
2000	12,700	57,700	3,000	8,500	119600	1033800	1,153,400	4,000	5,700	110,000	1,355,000
2001	12,700	57,700	3,000	8,500	119600	1033800	1,153,400	4,000	5,700	110,000	1,355,000
2002	12,700	57,700	3,000	8,500	119600	1033800	1,153,400	4,000	5,700	110,000	1,355,000
2003	12,700	57,700	3,000	8,500	119600	1033800	1,153,400	4,000	5,700	110,000	1,355,000
2004	12,700	57,700	3,000	8,500	119600	1033800	1,153,400	4,000	5,700	110,000	1,355,000
2005	12,700	57,700	3,000	8,500	119600	1033800	1,153,400	4,000	5,700	110,000	1,355,000
2006	12,700	57,700	3,000	8,500	119600	1033800	1,153,400	4,000	5,700	110,000	1,355,000
2007	12,700	57,700	3,000	8,500	119600	1033800	1,153,400	4,000	5,700	110,000	1,355,000
2008	12,700	57,700	3,000	8,500	119600	1033800	1,153,400	4,000	5,700	110,000	1,355,000
2009	12,700	57,700	3,000	8,500	119600	1033800	1,153,400	4,000	5,700	110,000	1,355,000
2010	12,700	57,700	3,000	8,500	119600	1033800	1,153,400	4,000	5,700	110,000	1,355,000
2011	12,700	57,700	3,000	8,500	119600	1033800	1,153,400	4,000	5,700	110,000	1,355,000
2012	12,700	57,700	3,000	8,500	119600	1033800	1,153,400	4,000	5,700	110,000	1,355,000
2013	12,700	57,700	3,000	8,500	119600	1033800	1,153,400	4,000	5,700	110,000	1,355,000
2014	12,700	57,700	3,000	8,500	119600	1033800	1,153,400	4,000	5,700	110,000	1,355,000
2015	12,700	57,700	3,000	8,500	119600	1033800	1,153,400	4,000	5,700	110,000	1,355,000
2016	12,700	57,700	3,000	8,500	119600	1033800	1,153,400	4,000	5,700	110,000	1,355,000
2017	12,700	57,700	3,000	8,500	119600	1033800	1,153,400	4,000	5,700	110,000	1,355,000
2018	12,700	57,700	3,000	8,500	119600	1033800	1,153,400	4,000	5,700	110,000	1,355,000
2019	12,700	57,700	3,000	8,500	119600	1033800	1,153,400	4,000	5,700	110,000	1,355,000
2020	12,700	57,700	3,000	8,500	119600	1033800	1,153,400	4,000	5,700	110,000	1,355,000
2021	12,700	57,700	3,000	8,500	119600	1033800	1,153,400	4,000	5,700	110,000	1,355,000
2022	12,700	57,700	3,000	8,500	119600	1033800	1,153,400	4,000	5,700	110,000	1,355,000
2023	12,700	57,700	3,000	8,500	119600	1033800	1,153,400	4,000	5,700	110,000	1,355,000
2024	12,700	57,700	3,000	8,500	119600	1033800	1,153,400	4,000	5,700	110,000	1,355,000
2025	12,700	57,700	3,000	8,500	119600	1033800	1,153,400	4,000	5,700	110,000	1,355,000
2026	12,700	57,700	3,000	8,500	119600	1033800	1,153,400	4,000	5,700	110,000	1,355,000
2027	12,700	57,700	3,000	8,500	119600	1033800	1,153,400	4,000	5,700	110,000	1,355,000
2028	12,700	57,700	3,000	8,500	119600	1033800	1,153,400	4,000	5,700	110,000	1,355,000
2029	12,700	57,700	3,000	8,500	119600	1033800	1,153,400	4,000	5,700	110,000	1,355,000
2030	12,700	57,700	3,000	8,500	119600	1033800	1,153,400	4,000	5,700	110,000	1,355,000
2031	12,700	57,700	3,000	8,500	119600	1033800	1,153,400	4,000	5,700	110,000	1,355,000
2032	12,700	57,700	3,000	8,500	119600	1033800	1,153,400	4,000	5,700	110,000	1,355,000
2033	12,700	57,700	3,000	8,500	119600	1033800	1,153,400	4,000	5,700	110,000	1,355,000
2034	12,700	57,700	3,000	8,500	119600	1033800	1,153,400	4,000	5,700	110,000	1,355,000
2035	12,700	57,700	3,000	8,500	119600	1033800	1,153,400	4,000	5,700	110,000	1,355,000
TOTAL	817,562	3,430,535	199,000	495,358	6,913,900	58,833,670	65,747,570	233,900	353,652	6,562,889	77,840,466

(in acre-feet)[b]

Calendar Year	SOUTHERN CALIFORNIA AREA									
	Antelope Valley-East Kern Water Agency	Castaic Lake Water Agency	Coachella Valley Water District	Crestline Lake Arrowhead Water Agency	Desert Water Agency	Littlerock Creek Irrigation District	Mojave Water Agency	Palmdale Water District	San Bernardino Valley Municipal Water District	San Gabriel Valley Municipal Water District
	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)	(31)
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	20,000	1,236	5,200	526	8,000	170	8,400	1,620	1,677	122
1973	25,000	3,700	5,800	870	9,000	290	10,700	2,940	48,000	11,500
1974	30,000	5,700	6,400	1,160	10,000	400	13,100	4,260	50,000	12,300
1975	35,000	7,500	7,000	1,450	11,000	520	15,400	5,580	52,500	13,100
1976	44,000	9,500	7,600	1,740	12,000	640	17,800	6,900	55,000	14,000
1977	50,000	11,400	8,421	2,030	13,000	730	20,200	8,220	57,500	14,800
1978	57,000	13,400	9,242	2,320	14,000	920	22,500	9,340	60,000	15,700
1979	63,000	15,300	10,063	2,610	15,000	1,040	24,900	10,260	62,500	16,600
1980	69,200	17,700	10,884	2,900	17,000	1,150	27,200	11,180	65,500	17,400
1981	75,000	20,100	12,105	3,190	19,000	1,270	29,600	11,700	68,500	18,300
1982	81,300	22,100	13,326	3,480	21,000	1,380	31,900	12,320	71,500	19,100
1983	87,700	24,600	14,547	3,770	23,000	1,500	34,300	12,940	74,500	19,900
1984	94,000	26,900	15,768	4,060	25,000	1,610	36,700	13,560	78,000	20,700
1985	100,400	29,100	16,989	4,350	27,000	1,730	39,000	14,180	81,500	21,800
1986	106,700	30,900	18,210	4,640	29,000	1,840	41,400	14,800	85,000	23,200
1987	113,000	32,900	19,431	4,930	31,500	1,960	43,700	15,420	89,000	24,600
1988	119,400	35,300	20,652	5,220	34,000	2,070	46,000	16,040	93,000	26,000
1989	125,700	37,400	21,873	5,510	36,500	2,190	48,500	16,660	97,000	27,400
1990	132,100	39,300	23,100	5,800	38,100	2,300	50,800	17,300	101,500	28,800
1991	138,400	41,500	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
1992	138,400	41,500	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
1993	138,400	41,500	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
1994	138,400	41,500	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
1995	138,400	41,500	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
1996	138,400	41,500	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
1997	138,400	41,500	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
1998	138,400	41,500	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
1999	138,400	41,500	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
2000	138,400	41,500	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
2001	138,400	41,500	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
2002	138,400	41,500	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
2003	138,400	41,500	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
2004	138,400	41,500	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
2005	138,400	41,500	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
2006	138,400	41,500	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
2007	138,400	41,500	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
2008	138,400	41,500	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
2009	138,400	41,500	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
2010	138,400	41,500	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
2011	138,400	41,500	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
2012	138,400	41,500	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
2013	138,400	41,500	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
2014	138,400	41,500	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
2015	138,400	41,500	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
2016	138,400	41,500	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
2017	138,400	41,500	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
2018	138,400	41,500	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
2019	138,400	41,500	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
2020	138,400	41,500	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
2021	138,400	41,500	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
2022	138,400	41,500	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
2023	138,400	41,500	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
2024	138,400	41,500	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
2025	138,400	41,500	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
2026	138,400	41,500	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
2027	138,400	41,500	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
2028	138,400	41,500	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
2029	138,400	41,500	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
2030	138,400	41,500	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
2031	138,400	41,500	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
2032	138,400	41,500	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
2033	138,400	41,500	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
2034	138,400	41,500	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
2035	138,400	41,500	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
TOTAL	7,656,500	2,251,536	1,286,111	321,556	2,107,600	127,210	2,848,100	983,720	5,909,177	1,641,322

MENTS TO PROJECT WATER[a]

(in acre-feet)[b]

Calendar Year	SOUTHERN CALIFORNIA AREA (continued)				FEATHER RIVER AREA				TOTAL STATE WATER PROJECT
	San Gorgonio Pass Water Agency	The Metropolitan Water District of Southern California	Ventura County Flood Control District	Total	City of Yuba City	County of Butte	Plumas County FC & WCD	Total	
	(32)	(33)	(34)	(35)	(36)	(37)	(38)	(39)	(40)
1967	0	0	0	0	0	0	0	0	11,538
1968	0	0	0	0	0	300	250	550	191,500
1969	0	0	0	0	0	350	270	620	267,395
1970	0	0	0	0	0	400	300	700	322,600
1971	0	0	0	0	0	450	440	890	375,590
1972	0	154,772	0	201,723	0	500	470	970	741,759
1973	0	354,600	0	472,400	0	600	500	1,100	986,252
1974	0	454,900	0	588,220	0	700	530	1,230	1,182,200
1975	0	555,200	0	704,250	0	1,050	560	1,610	1,386,869
1976	0	655,600	0	824,780	0	1,400	590	1,990	1,508,387
1977	0	755,900	0	942,201	0	1,800	620	2,420	1,667,321
1978	0	856,300	0	1,060,722	0	1,200	650	1,850	1,840,534
1979	0	956,600	0	1,177,873	0	1,450	680	2,130	2,028,088
1980	6,800	1,057,000	1,000	1,304,914	0	1,100	710	1,810	2,227,524
1981	7,800	1,157,300	2,000	1,425,865	4,200	1,200	740	6,140	2,415,205
1982	8,800	1,257,600	3,000	1,546,806	4,600	1,200	770	6,570	2,604,176
1983	9,800	1,358,000	4,000	1,668,557	5,050	1,200	800	7,050	2,799,607
1984	10,800	1,458,300	5,000	1,790,398	5,500	1,200	830	7,530	3,003,928
1985	11,800	1,558,700	6,000	1,912,549	5,950	1,200	860	8,010	3,203,009
1986	12,900	1,659,300	8,000	2,035,890	6,600	1,200	890	8,690	3,401,480
1987	14,000	1,759,800	10,000	2,160,241	7,300	1,200	920	9,420	3,603,711
1988	15,100	1,860,400	13,000	2,286,182	8,000	1,200	960	10,160	3,808,442
1989	16,200	1,961,000	16,000	2,411,933	8,800	1,200	1,000	11,000	4,007,083
1990	17,300	2,011,500	20,000	2,487,900	9,600	1,200	1,040	11,840	4,165,340
1991	17,300	2,011,500	20,000	2,497,500	9,600	27,500	1,080	38,180	4,206,780
1992	17,300	2,011,500	20,000	2,497,500	9,600	27,500	1,120	38,220	4,212,320
1993	17,300	2,011,500	20,000	2,497,500	9,600	27,500	1,160	38,260	4,217,860
1994	17,300	2,011,500	20,000	2,497,500	9,600	27,500	1,200	38,300	4,222,500
1995	17,300	2,011,500	20,000	2,497,500	9,600	27,500	1,250	38,350	4,224,550
1996	17,300	2,011,500	20,000	2,497,500	9,600	27,500	1,300	38,400	4,226,600
1997	17,300	2,011,500	20,000	2,497,500	9,600	27,500	1,350	38,450	4,228,650
1998	17,300	2,011,500	20,000	2,497,500	9,600	27,500	1,400	38,500	4,228,700
1999	17,300	2,011,500	20,000	2,497,500	9,600	27,500	1,450	38,550	4,228,750
2000	17,300	2,011,500	20,000	2,497,500	9,600	27,500	1,510	38,610	4,228,810
2001	17,300	2,011,500	20,000	2,497,500	9,600	27,500	1,570	38,670	4,228,870
2002	17,300	2,011,500	20,000	2,497,500	9,600	27,500	1,630	38,730	4,228,930
2003	17,300	2,011,500	20,000	2,497,500	9,600	27,500	1,690	38,790	4,228,990
2004	17,300	2,011,500	20,000	2,497,500	9,600	27,500	1,750	38,850	4,229,050
2005	17,300	2,011,500	20,000	2,497,500	9,600	27,500	1,810	38,910	4,229,110
2006	17,300	2,011,500	20,000	2,497,500	9,600	27,500	1,880	38,980	4,229,180
2007	17,300	2,011,500	20,000	2,497,500	9,600	27,500	1,950	39,050	4,229,250
2008	17,300	2,011,500	20,000	2,497,500	9,600	27,500	2,020	39,120	4,229,320
2009	17,300	2,011,500	20,000	2,497,500	9,600	27,500	2,090	39,190	4,229,390
2010	17,300	2,011,500	20,000	2,497,500	9,600	27,500	2,160	39,260	4,229,460
2011	17,300	2,011,500	20,000	2,497,500	9,600	27,500	2,240	39,340	4,229,540
2012	17,300	2,011,500	20,000	2,497,500	9,600	27,500	2,320	39,420	4,229,620
2013	17,300	2,011,500	20,000	2,497,500	9,600	27,500	2,410	39,510	4,229,710
2014	17,300	2,011,500	20,000	2,497,500	9,600	27,500	2,500	39,600	4,229,800
2015	17,300	2,011,500	20,000	2,497,500	9,600	27,500	2,600	39,700	4,229,900
2016	17,300	2,011,500	20,000	2,497,500	9,600	27,500	2,700	39,800	4,230,000
2017	17,300	2,011,500	20,000	2,497,500	9,600	27,500	2,700	39,800	4,230,000
2018	17,300	2,011,500	20,000	2,497,500	9,600	27,500	2,700	39,800	4,230,000
2019	17,300	2,011,500	20,000	2,497,500	9,600	27,500	2,700	39,800	4,230,000
2020	17,300	2,011,500	20,000	2,497,500	9,600	27,500	2,700	39,800	4,230,000
2021	17,300	2,011,500	20,000	2,497,500	9,600	27,500	2,700	39,800	4,230,000
2022	17,300	2,011,500	20,000	2,497,500	9,600	27,500	2,700	39,800	4,230,000
2023	17,300	2,011,500	20,000	2,497,500	9,600	27,500	2,700	39,800	4,230,000
2024	17,300	2,011,500	20,000	2,497,500	9,600	27,500	2,700	39,800	4,230,000
2025	17,300	2,011,500	20,000	2,497,500	9,600	27,500	2,700	39,800	4,230,000
2026	17,300	2,011,500	20,000	2,497,500	9,600	27,500	2,700	39,800	4,230,000
2027	17,300	2,011,500	20,000	2,497,500	9,600	27,500	2,700	39,800	4,230,000
2028	17,300	2,011,500	20,000	2,497,500	9,600	27,500	2,700	39,800	4,230,000
2029	17,300	2,011,500	20,000	2,497,500	9,600	27,500	2,700	39,800	4,230,000
2030	17,300	2,011,500	20,000	2,497,500	9,600	27,500	2,700	39,800	4,230,000
2031	17,300	2,011,500	20,000	2,497,500	9,600	27,500	2,700	39,800	4,230,000
2032	17,300	2,011,500	20,000	2,497,500	9,600	27,500	2,700	39,800	4,230,000
2033	17,300	2,011,500	20,000	2,497,500	9,600	27,500	2,700	39,800	4,230,000
2034	17,300	2,011,500	20,000	2,497,500	9,600	27,500	2,700	39,800	4,230,000
2035	17,300	2,011,500	20,000	2,497,500	9,600	27,500	2,700	39,800	4,230,000
TOTAL	909,800	112,360,272	988,000	139,390,904	497,600	1,260,800	112,820	1,871,220	238,015,178

TABLE B-5A: ANNUAL WATER QUANTITIES DELIVERED

(in acre-feet)[c]

Calendar Year	Grizzly Valley Pipeline PC FC&WCD	NORTH BAY AQUEDUCT Reach 2 SC[d] FC&WCD	NORTH BAY AQUEDUCT Reach 3 NC[e] FC&WCD[a]	TOTAL NORTH BAY AQUEDUCT [a]	SOUTH BAY AQUEDUCT[f] Reach 1 ACWD	SOUTH BAY AQUEDUCT Reach 1 AC FC&WCD	SOUTH BAY AQUEDUCT Reach 2 AC FC&WCD	SOUTH BAY AQUEDUCT Reach 4 AC FC&WCD	SOUTH BAY AQUEDUCT Reach 5 ACWD	SOUTH BAY AQUEDUCT Reach 5 AC FC&WCD	SOUTH BAY AQUEDUCT Reach 6 AC FC&WCD
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
1962	0	0	0	0	8,412	141	353	0	0	0	0
1963	0	0	0	0	10,914	814	917	0	0	0	0
1964	0	0	0	0	19,238	248	1,425	0	0	0	0
1965	0	0	0	0	15,280	637	1,830	138	0	0	0
1966	0	0	0	0	0	2,475	2,537	499	0	0	0
1967	0	0	0	0	0	1,527	2,391	862	0	0	0
1968	0	0	1,214	1,214	0	1,608	3,799	721	0	5	0
1969	0	0	2,687	2,687	0	1,165	3,459	1,851	0	160	0
1970	70	0	3,618	3,618	0	1,345	4,558	3,182	0	164	0
1971	64	0	2,521	2,521	0	546	1,908	2,403	0	160	0
1972	505	0	3,647	3,647	0	1,066	4,605	2,041	1,489	2,777	0
1973	679	0	3,792	3,792	0	430	1,123	1,193	0	229	0
1974	648	0	4,870	4,870	0	177	0	975	0	162	0
1975	405	0	6,840	6,840	0	137	1,783	1,864	0	120	714
1976	382	0	7,122	7,122	0	265	7,204	3,384	0	817	5,461
1977	303	0	8,226	8,226	0	210	4,491	2,213	0	524	5,206
1978	278	0	6,034	6,034	0	422	2,426	3,754	0	2,034	2,348
1979	329	0	6,561	6,561	0	197	4,283	5,567	0	3,937	5,341
1980	710	0	6,600	6,600	0	180	4,519	5,533	0	2,640	9,128
1981	730	0	6,685	6,685	0	180	4,500	5,758	0	2,854	9,108
1982	750	0	6,675	6,675	0	180	4,479	6,058	0	3,041	9,052
1983	770	0	6,750	6,750	0	170	4,494	6,298	0	3,131	9,097
1984	790	8,180	6,945	15,125	0	170	4,522	6,442	0	3,325	9,141
1985	810	9,100	7,210	16,310	0	170	4,540	6,396	0	3,703	9,191
1986	820	10,620	7,470	18,090	0	170	4,600	6,540	0	3,790	9,300
1987	840	13,140	7,670	20,810	0	170	4,690	6,600	0	3,870	9,480
1988	860	19,160	7,880	27,040	0	160	4,770	6,690	0	3,920	9,650
1989	880	25,680	8,080	33,760	0	160	4,860	6,790	0	3,980	9,810
1990	900	28,000	8,300	36,300	0	160	4,940	6,880	0	4,040	9,980
1991	940	27,600	8,710	36,310	0	160	5,170	7,150	0	4,200	10,430
1992	980	27,200	9,130	36,330	0	150	5,390	7,410	0	4,360	10,880
1993	1,020	26,800	9,540	36,340	0	150	5,620	7,680	0	4,530	11,330
1994	1,060	26,400	9,960	36,360	0	140	5,840	7,950	0	4,690	11,780
1995	1,100	26,000	10,370	36,370	0	140	6,070	8,210	0	4,850	12,220
1996	1,140	25,600	10,900	36,500	0	140	6,300	8,480	0	5,010	12,670
1997	1,180	25,200	11,420	36,620	0	130	6,520	8,750	0	5,170	13,120
1998	1,220	24,800	11,950	36,750	0	130	6,350	8,520	0	5,040	12,770
1999	1,260	24,400	12,470	36,870	0	120	6,170	8,280	0	4,900	12,420
2000	1,300	24,000	13,000	37,000	0	120	6,000	8,050	0	4,760	12,070
2001	1,350	24,530	13,260	37,790	0	120	6,110	8,200	0	4,850	12,290
2002	1,410	25,060	13,520	38,580	0	120	6,220	8,350	0	4,940	12,520
2003	1,460	25,590	13,880	39,470	0	130	6,330	8,500	0	5,030	12,740
2004	1,520	26,120	14,140	40,260	0	130	6,450	8,650	0	5,110	12,970
2005	1,570	26,650	14,400	41,050	0	130	6,560	8,800	0	5,200	13,190
2006	1,620	27,180	14,660	41,840	0	130	6,670	8,950	0	5,290	13,420
2007	1,680	27,720	14,920	42,640	0	140	6,780	9,100	0	5,380	13,640
2008	1,730	28,250	15,280	43,530	0	140	6,890	9,250	0	5,470	13,870
2009	1,780	28,780	15,540	44,320	0	140	7,000	9,400	0	5,560	14,090
2010	1,840	29,310	15,800	45,110	0	140	7,120	9,550	0	5,640	14,320
2011	1,890	29,840	15,900	45,740	0	150	7,230	9,700	0	5,730	14,540
2012	1,950	30,370	16,000	46,370	0	150	7,340	9,850	0	5,820	14,770
2013	2,000	30,900	16,100	47,000	0	150	7,450	9,990	0	5,910	14,990
2014	2,050	31,430	16,300	47,730	0	150	7,560	10,140	0	6,000	15,220
2015	2,110	31,960	16,400	48,360	0	150	7,670	10,290	0	6,090	15,440
2016	2,160	32,490	16,500	48,990	0	160	7,780	10,440	0	6,180	15,670
2017	2,220	33,020	16,600	49,620	0	160	7,900	10,590	0	6,260	15,890
2018	2,270	33,550	16,700	50,250	0	160	8,010	10,740	0	6,350	16,120
2019	2,320	34,080	16,900	50,980	0	160	8,120	10,890	0	6,440	16,340
2020	2,380	34,620	17,000	51,620	0	170	8,230	11,040	0	6,530	16,570
2021	2,430	35,150	17,100	52,250	0	170	8,340	11,190	0	6,620	16,790
2022	2,480	35,680	17,200	52,880	0	170	8,450	11,340	0	6,710	17,020
2023	2,540	36,210	17,300	53,510	0	170	8,570	11,490	0	6,790	17,240
2024	2,590	36,740	17,500	54,240	0	180	8,680	11,640	0	6,880	17,470
2025	2,650	37,270	17,600	54,870	0	180	8,790	11,790	0	6,970	17,690
2026	2,700	37,800	17,700	55,500	0	180	8,900	11,940	0	7,060	17,920
2027	2,700	37,800	17,700	55,500	0	180	8,900	11,940	0	7,060	17,920
2028	2,700	37,800	17,700	55,500	0	180	8,900	11,940	0	7,060	17,920
2029	2,700	37,800	17,700	55,500	0	180	8,900	11,940	0	7,060	17,920
2030	2,700	37,800	17,700	55,500	0	180	8,900	11,940	0	7,060	17,920
2031	2,700	37,800	17,700	55,500	0	180	8,900	11,940	0	7,060	17,920
2032	2,700	37,800	17,700	55,500	0	180	8,900	11,940	0	7,060	17,920
2033	2,700	37,800	17,700	55,500	0	180	8,900	11,940	0	7,060	17,920
2034	2,700	37,800	17,700	55,500	0	180	8,900	11,940	0	7,060	17,920
2035	2,700	37,800	17,700	55,500	0	180	8,900	11,940	0	7,060	17,920

a) Contractor requests have been reduced to reflect Bulletin 76, water conservation and reclamation objectives and are subject to annual review. See Appendix B text, "Water Conveyance".

b) Includes entitlement water, surplus water (delivered prior to May 1, 1973), and nonproject water.

c) Metric conversion is acre-feet times 1.2335 equals cubic dekametres.

d) Solano County Flood Control and Water Conservation District (SCFC&WCD) has contracted for 42,000 acre-feet maximum annually, of which 4,200 acre-feet will be delivered from the Delta through the District's facilities.

e) For the period 1968 through 1983 annual quantities delivered are nonproject water pumped through an interim facility.

f) For the period June 1962 through November 1967, deliveries were supplied by nonproject water.

FROM EACH AQUEDUCT REACH TO EACH CONTRACTOR[a] [b]

(in acre-feet)[c]

Calendar Year	SOUTH BAY AQUEDUCT[e] (continued)			TOTAL SOUTH BAY AQUEDUCT	CALIFORNIA AQUEDUCT							
					NORTH SAN JOAQUIN DIVISION	SOUTH SAN JOAQUIN DIVISION						
						Reach 8C				Reach 8D		
	Reach 7	Reach 8	Reach 9		Reach 2A							
	ACWD	ACWD	SCVWD		OFWD	HWD	TLBWSD	EWSID	CK	KCWA (Ag.)	DRWD	HWD
	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)
1962	0	0	0	8,906	0	0	0	0	0	0	0	0
1963	0	0	0	12,645	0	0	0	0	0	0	0	0
1964	0	0	0	20,911	0	0	0	0	0	0	0	0
1965	1,127	0	15,014	34,026	0	0	0	0	0	0	0	0
1966	14,864	0	34,538	54,913	0	0	0	0	0	0	0	0
1967	12,882	0	39,101	56,763	0	0	0	0	0	0	0	0
1968	24,817	0	70,105	101,055	3,084	0	25,100	1,978	900	0	26,360	0
1969	813	0	62,264	69,712	3,016	0	7,081	56	100	0	31,375	0
1970	0	0	80,311	89,560	5,911	0	0	3,942	0	0	40,407	3,408
1971	5,961	0	87,606	98,584	7,212	0	80,906	5,990	3,700	0	41,053	6,659
1972	26,182	0	100,266	138,426	8,166	0	144,843	5,795	1,400	0	42,443	5,851
1973	2,521	0	88,582	94,078	3,214	140	26,177	3,000	1,500	1,500	22,057	2,760
1974	0	4	88,000	89,318	3,471	0	32,603	3,000	1,500	0	33,390	3,300
1975	393	593	88,000	93,604	3,576	0	41,536	3,000	1,600	0	40,555	3,758
1976	13,774	7,526	88,000	126,431	4,112	0	26,595	3,000	1,600	0	41,421	3,900
1977	11,284	7,556	76,220	107,704	1,472	0	12,984[g]	738	1,530	0	11,153	1,680
1978	854	5,009	95,727	112,574	3,906	0	3,934	454	2,070	0	51,747	2,520
1979	3,430	7,444	91,991	122,190	6,149	0	74,758	1,739	2,000	0	38,544	8,500
1980	16,025	8,775	88,000	134,800	4,200	0	43,482	4,800	2,200	0	36,700	6,200
1981	17,125	8,775	87,000	135,300	4,300	0	35,300	4,500	2,300	0	38,800	5,600
1982	18,325	8,775	85,000	134,910	4,500	0	37,300	3,000	2,500	0	41,000	5,900
1983	19,425	8,675	84,000	135,290	4,600	0	39,300	3,000	2,800	0	42,900	6,200
1984	20,525	8,675	83,000	135,800	4,800	0	41,300	3,000	3,100	0	45,100	6,500
1985	21,625	8,675	81,000	135,300	4,900	0	43,300	3,000	3,400	0	47,200	6,900
1986	22,925	8,675	80,000	136,000	5,100	0	45,300	3,000	3,700	0	49,300	7,200
1987	24,025	8,675	79,000	136,510	5,200	0	47,200	3,000	4,000	0	51,400	7,500
1988	25,125	8,575	78,000	136,890	5,400	0	49,200	3,000	4,000	0	53,500	7,800
1989	26,325	8,575	78,000	138,500	5,600	0	51,100	3,000	4,000	0	55,600	8,200
1990	27,500	8,500	79,000	141,000	5,700	0	55,300	3,000	4,000	0	57,700	8,500
1991	29,000	8,500	81,000	145,610	5,700	0	55,300	3,000	4,000	0	57,700	8,500
1992	30,500	8,500	82,000	149,190	5,700	0	55,300	3,000	4,000	0	57,700	8,500
1993	32,000	8,500	84,000	153,810	5,700	0	55,300	3,000	4,000	0	57,700	8,500
1994	32,600	8,500	85,000	156,500	5,700	0	55,300	3,000	4,000	0	57,700	8,500
1995	32,500	8,500	85,000	157,490	5,700	0	55,300	3,000	4,000	0	57,700	8,500
1996	32,500	8,500	85,000	158,600	5,700	0	55,300	3,000	4,000	0	57,700	8,500
1997	32,500	8,500	84,000	158,690	5,700	0	55,300	3,000	4,000	0	57,700	8,500
1998	32,500	8,500	84,000	157,810	5,700	0	55,300	3,000	4,000	0	57,700	8,500
1999	32,500	8,500	83,000	155,890	5,700	0	55,300	3,000	4,000	0	57,700	8,500
2000	32,500	8,500	83,000	155,000	5,700	0	55,300	3,000	4,000	0	57,700	8,500
2001	32,500	8,500	84,000	156,570	5,700	0	55,300	3,000	4,000	0	57,700	8,500
2002	32,600	8,500	84,000	157,250	5,700	0	55,300	3,000	4,000	0	57,700	8,500
2003	32,600	8,500	85,000	158,830	5,700	0	55,300	3,000	4,000	0	57,700	8,500
2004	32,700	8,500	86,000	160,510	5,700	0	55,300	3,000	4,000	0	57,700	8,500
2005	32,700	8,500	86,000	161,080	5,700	0	55,300	3,000	4,000	0	57,700	8,500
2006	32,700	8,500	87,000	162,660	5,700	0	55,300	3,000	4,000	0	57,700	8,500
2007	32,700	8,600	88,000	164,340	5,700	0	55,300	3,000	4,000	0	57,700	8,500
2008	32,700	8,600	88,000	164,920	5,700	0	55,300	3,000	4,000	0	57,700	8,500
2009	32,800	8,600	89,000	166,590	5,700	0	55,300	3,000	4,000	0	57,700	8,500
2010	32,800	8,600	90,000	168,170	5,700	0	55,300	3,000	4,000	0	57,700	8,500
2011	32,800	8,600	90,000	168,750	5,700	0	55,300	3,000	4,000	0	57,700	8,500
2012	32,900	8,600	91,000	170,430	5,700	0	55,300	3,000	4,000	0	57,700	8,500
2013	32,900	8,600	91,000	170,990	5,700	0	55,300	3,000	4,000	0	57,700	8,500
2014	32,900	8,600	92,000	172,570	5,700	0	55,300	3,000	4,000	0	57,700	8,500
2015	33,000	8,600	93,000	174,240	5,700	0	55,300	3,000	4,000	0	57,700	8,500
2016	33,000	8,600	93,000	174,830	5,700	0	55,300	3,000	4,000	0	57,700	8,500
2017	33,000	8,600	94,000	176,400	5,700	0	55,300	3,000	4,000	0	57,700	8,500
2018	33,100	8,600	95,000	178,080	5,700	0	55,300	3,000	4,000	0	57,700	8,500
2019	33,100	8,600	95,000	178,650	5,700	0	55,300	3,000	4,000	0	57,700	8,500
2020	33,100	8,700	96,000	180,340	5,700	0	55,300	3,000	4,000	0	57,700	8,500
2021	33,100	8,700	97,000	181,910	5,700	0	55,300	3,000	4,000	0	57,700	8,500
2022	33,200	8,700	97,000	182,590	5,700	0	55,300	3,000	4,000	0	57,700	8,500
2023	33,200	8,700	98,000	184,160	5,700	0	55,300	3,000	4,000	0	57,700	8,500
2024	33,200	8,700	99,000	185,750	5,700	0	55,300	3,000	4,000	0	57,700	8,500
2025	33,300	8,700	99,000	186,420	5,700	0	55,300	3,000	4,000	0	57,700	8,500
2026	33,300	8,700	100,000	188,000	5,700	0	55,300	3,000	4,000	0	57,700	8,500
2027	33,300	8,700	100,000	188,000	5,700	0	55,300	3,000	4,000	0	57,700	8,500
2028	33,300	8,700	100,000	188,000	5,700	0	55,300	3,000	4,000	0	57,700	8,500
2029	33,300	8,700	100,000	188,000	5,700	0	55,300	3,000	4,000	0	57,700	8,500
2030	33,300	8,700	100,000	188,000	5,700	0	55,300	3,000	4,000	0	57,700	8,500
2031	33,300	8,700	100,000	188,000	5,700	0	55,300	3,000	4,000	0	57,700	8,500
2032	33,300	8,700	100,000	188,000	5,700	0	55,300	3,000	4,000	0	57,700	8,500
2033	33,300	8,700	100,000	188,000	5,700	0	55,300	3,000	4,000	0	57,700	8,500
2034	33,300	8,700	100,000	188,000	5,700	0	55,300	3,000	4,000	0	57,700	8,500
2035	33,300	8,700	100,000	188,000	5,700	0	55,300	3,000	4,000	0	57,700	8,500

TABLE B-5A: ANNUAL WATER QUANTITIES DELIVERED

(in acre-feet)[c]

Calendar Year	CALIFORNIA AQUEDUCT (continued)											
	SOUTH SAN JOAQUIN DIVISION (continued)											
	Reach 8 D (continued)	Reach 9		Reach 10 A			Reach 11 B	Reach 11B	Reach 12 E		Reach 13 B	
	TLBWSD	KCWA (Ag.)	HWD	KCWA (M&I)	KCWA (Ag.)	HWD	KCWA (M&I)	KCWA (Ag.)	KCWA (M&I)	KCWA (Ag.)	KCWA (M&I)	KCWA (Ag.)
	(24)	(25)	(26)	(27)	(28)	(29)	(30)	(31)	(32)	(33)	(34)	(35)
1968	0	30,951	0	0	0	0	0	24,776	0	0	0	0
1969	0	24,489	0	0	0	2,842	0	64,682	0	0	0	0
1970	0	46,114	1,855	0	158	4,315	0	72,279	0	9,279	0	4,891
1971	34,920	58,356	0	0	9,973	0	0	63,773	0	28,056	0	0
1972	107,699	75,464	0	0	5,876	0	0	72,358	0	62,342	0	17,388
1973	21,387	54,583	0	0	22,948	0	0	67,544	0	13,082	0	9,297
1974	36,386	63,814	0	10,019	22,719	0	0	87,476	2,651	4,248	8,038	4,246
1975	40,964	50,021	0	2,791	72,121	0	0	85,675	0	10,787	8,538	7,059
1976	28,316	53,465	0	74	50,444	0	0	85,067	37,519	20,555	5,626	8,855
1977	3,417	24,668	0	201	34,451	0	3,981	29,603	20,280	1,737	0	5,024
1978	5,599	72,231	0	0	161,889	0	0	88,753	47,133	15,011	21,773	7,601
1979	71,863	74,524	0	285	153,245	0	484	108,379	50,740	61,567	5,663	17,766
1980	33,200	75,950	0	0	110,034	0	775	112,871	52,700	40,820	2,925	13,875
1981	35,100	80,340	0	0	122,724	0	765	119,010	54,310	47,328	2,215	15,938
1982	37,000	83,890	0	0	135,066	0	755	124,598	56,870	53,448	2,605	17,938
1983	38,900	87,180	0	0	149,609	0	745	128,995	58,680	61,383	3,195	20,563
1984	40,800	98,600	0	1,420	163,609	0	735	133,423	55,980	67,880	25	22,688
1985	42,700	101,380	0	1,400	177,138	0	725	136,774	58,900	75,631	845	24,937
1986	44,700	107,000	0	1,380	190,200	0	715	141,400	60,980	83,500	905	25,260
1987	46,700	112,800	0	1,360	203,300	0	705	147,100	63,110	91,400	965	25,790
1988	48,600	118,500	0	1,340	215,400	0	695	152,800	65,140	98,300	1,025	26,220
1989	50,600	123,200	0	1,320	225,500	0	685	155,500	66,570	101,200	1,075	26,560
1990	54,700	129,800	0	1,300	235,560	0	675	160,200	67,300	104,840	1,125	26,900
1991	54,700	129,800	0	1,300	235,560	0	675	160,200	67,300	104,840	1,125	26,900
1992	54,700	129,800	0	1,300	235,560	0	675	160,200	67,300	104,840	1,125	26,900
1993	54,700	129,800	0	1,300	235,560	0	675	160,200	67,300	104,840	1,125	26,900
1994	54,700	129,800	0	1,300	235,560	0	675	160,200	67,300	104,840	1,125	26,900
1995	54,700	129,800	0	1,300	235,560	0	675	160,200	67,300	104,840	1,125	26,900
1996	54,700	129,800	0	1,300	235,560	0	675	160,200	67,300	104,840	1,125	26,900
1997	54,700	129,800	0	1,300	235,560	0	675	160,200	67,300	104,840	1,125	26,900
1998	54,700	129,800	0	1,300	235,560	0	675	160,200	67,300	104,840	1,125	26,900
1999	54,700	129,800	0	1,300	235,560	0	675	160,200	67,300	104,840	1,125	26,900
2000	54,700	129,800	0	1,300	235,560	0	675	160,200	67,300	104,840	1,125	26,900
2001	54,700	129,800	0	1,310	235,560	0	675	160,200	67,670	104,840	1,125	26,900
2002	54,700	129,800	0	1,320	235,560	0	685	160,200	68,050	104,840	1,135	26,900
2003	54,700	129,800	0	1,320	235,560	0	685	160,200	68,420	104,840	1,135	26,900
2004	54,700	129,800	0	1,330	235,560	0	695	160,200	68,790	104,840	1,145	26,900
2005	54,700	129,800	0	1,340	235,560	0	695	160,200	69,170	104,840	1,145	26,900
2006	54,700	129,800	0	1,350	235,560	0	695	160,200	69,540	104,840	1,145	26,900
2007	54,700	129,800	0	1,350	235,560	0	705	160,200	69,910	104,840	1,155	26,900
2008	54,700	129,800	0	1,360	235,560	0	705	160,200	70,280	104,840	1,155	26,900
2009	54,700	129,800	0	1,370	235,560	0	705	160,200	70,660	104,840	1,155	26,900
2010	54,700	129,800	0	1,380	235,560	0	715	160,200	71,030	104,840	1,165	26,900
2011	54,700	129,800	0	1,380	235,560	0	715	160,200	71,400	104,840	1,165	26,900
2012	54,700	129,800	0	1,390	235,560	0	725	160,200	71,780	104,840	1,175	26,900
2013	54,700	129,800	0	1,400	235,560	0	725	160,200	72,150	104,840	1,175	26,900
2014	54,700	129,800	0	1,410	235,560	0	725	160,200	72,520	104,840	1,175	26,900
2015	54,700	129,800	0	1,420	235,560	0	735	160,200	72,900	104,840	1,185	26,900
2016	54,700	129,800	0	1,420	235,560	0	735	160,200	73,270	104,840	1,185	26,900
2017	54,700	129,800	0	1,430	235,560	0	745	160,200	73,640	104,840	1,195	26,900
2018	54,700	129,800	0	1,440	235,560	0	745	160,200	74,020	104,840	1,195	26,900
2019	54,700	129,800	0	1,450	235,560	0	745	160,200	74,390	104,840	1,195	26,900
2020	54,700	129,800	0	1,450	235,560	0	755	160,200	74,760	104,840	1,205	26,900
2021	54,700	129,800	0	1,460	235,560	0	755	160,200	75,130	104,840	1,205	26,900
2022	54,700	129,800	0	1,470	235,560	0	755	160,200	75,510	104,840	1,205	26,900
2023	54,700	129,800	0	1,480	235,560	0	765	160,200	75,880	104,840	1,215	26,900
2024	54,700	129,800	0	1,480	235,560	0	765	160,200	76,250	104,840	1,215	26,900
2025	54,700	129,800	0	1,490	235,560	0	775	160,200	76,630	104,840	1,225	26,900
2026	54,700	129,800	0	1,500	235,560	0	775	160,200	77,000	104,840	1,225	26,900
2027	54,700	129,800	0	1,500	235,560	0	775	160,200	77,000	104,840	1,225	26,900
2028	54,700	129,800	0	1,500	235,560	0	775	160,200	77,000	104,840	1,225	26,900
2029	54,700	129,800	0	1,500	235,560	0	775	160,200	77,000	104,840	1,225	26,900
2030	54,700	129,800	0	1,500	235,560	0	775	160,200	77,000	104,840	1,225	26,900
2031	54,700	129,800	0	1,500	235,560	0	775	160,200	77,000	104,840	1,225	26,900
2032	54,700	129,800	0	1,500	235,560	0	775	160,200	77,000	104,840	1,225	26,900
2033	54,700	129,800	0	1,500	235,560	0	775	160,200	77,000	104,840	1,225	26,900
2034	54,700	129,800	0	1,500	235,560	0	775	160,200	77,000	104,840	1,225	26,900
2035	54,700	129,800	0	1,500	235,560	0	775	160,200	77,000	104,840	1,225	26,900

FROM EACH AQUEDUCT REACH TO EACH CONTRACTOR[a][b]

(in acre-feet)[c]

Calendar Year	CALIFORNIA AQUEDUCT (continued)										
	SOUTH SAN JOAQUIN DIVISION (continued)							TEHACHAPI DIVISION	MOJAVE DIVISION		
	Reach 14 A		Reach 14 B	Reach 14 C	Reach 15 A	Reach 16 A		Reach 17 E	Reach 18 A	Reach 19	Reach 19 C
	KCWA (M&I)	KCWA (Ag.)	KCWA (Ag.)	KCWA (Ag.)	KCWA (Ag.)	KCWA (M&I)	KCWA (Ag.)	KCWA (M&I)	AVEKWA	AVEKWA	AVEKWA
	(36)	(37)	(38)	(39)	(40)	(41)	(42)	(43)	(44)	(45)	(46)
1970	0	0	3	0	0	0	0	0	0	0	0
1971	0	23,844	49,929	24,187	3,552	0	0	0	0	0	0
1972	0	26,621	77,034	35,016	6,064	0	4,768	0	0	0	0
1973	0	15,328	47,040	19,043	19,916	0	1,961	0	0	0	0
1974	0	7,794	32,356	12,601	18,000	3,000	1,564	0	0	1,223	0
1975	0	10,306	27,736	12,783	35,420	3,200	9,867	0	0	7,622	0
1976	0	268	35,296	9,005	39,551	3,500	11,667	0	3,808	23,063	0
1977	0	8,299	13,539	3,757	6,158	3,420	685	0	1,231	8,927	0
1978	0	34,029	72,351	24,542	31,148	7,989	1,655	0	1,321	36,333	0
1979	3,012	27,356	59,413	22,372	38,602	2,813	15,808	0	2,098	49,910	0
1980	7,500	11,900	32,800	15,000	38,000	2,200	22,400	0	1,985	76,420	0
1981	7,890	13,400	37,000	16,800	42,800	2,010	25,400	1,170	2,295	59,090	0
1982	8,280	15,300	42,200	19,200	47,200	1,920	25,600	1,240	2,295	64,825	0
1983	8,170	18,900	51,800	23,600	47,200	1,730	25,800	1,310	1,193	43,191	0
1984	8,060	21,800	60,000	27,200	47,200	1,640	26,000	1,380	1,193	43,341	0
1985	7,950	24,700	68,000	31,000	47,200	1,550	26,400	1,450	1,193	43,701	0
1986	7,840	27,500	75,000	33,000	48,300	3,860	29,400	1,520	1,193	14,719	29,262
1987	7,730	30,400	82,000	35,000	49,400	6,170	32,400	1,590	1,193	14,019	30,512
1988	7,620	33,100	88,200	36,900	50,600	8,480	35,400	1,660	1,193	14,019	31,342
1989	7,510	35,700	91,400	38,700	51,800	10,790	38,400	1,730	1,193	14,019	32,442
1990	7,400	38,100	94,800	40,400	53,000	13,100	41,200	1,700	1,193	14,019	33,822
1991	7,400	38,100	94,800	40,400	53,000	13,100	41,200	1,700	1,173	14,019	33,912
1992	7,400	38,100	94,800	40,400	53,000	13,100	41,200	1,700	1,143	14,019	34,102
1993	7,400	38,100	94,800	40,400	53,000	13,100	41,200	1,700	1,123	14,019	34,362
1994	7,400	38,100	94,800	40,400	53,000	13,100	41,200	1,700	1,093	14,019	34,712
1995	7,400	38,100	94,800	40,400	53,000	13,100	41,200	1,700	1,073	14,019	35,142
1996	7,400	38,100	94,800	40,400	53,000	13,100	41,200	1,700	1,053	14,019	35,662
1997	7,400	38,100	94,800	40,400	53,000	13,100	41,200	1,700	1,023	14,019	36,172
1998	7,400	38,100	94,800	40,400	53,000	13,100	41,200	1,700	1,003	14,019	36,692
1999	7,400	38,100	94,800	40,400	53,000	13,100	41,200	1,700	973	14,019	37,202
2000	7,400	38,100	94,800	40,400	53,000	13,100	41,200	1,700	953	14,019	37,692
2001	7,440	38,100	94,800	40,400	53,000	13,170	41,200	1,710	963	14,019	38,202
2002	7,480	38,100	94,800	40,400	53,000	13,250	41,200	1,720	973	14,019	38,722
2003	7,530	38,100	94,800	40,400	53,000	13,320	41,200	1,730	983	14,019	39,232
2004	7,570	38,100	94,800	40,400	53,000	13,390	41,200	1,750	993	14,019	39,742
2005	7,610	38,100	94,800	40,400	53,000	13,470	41,200	1,760	1,003	14,019	40,262
2006	7,650	38,100	94,800	40,400	53,000	13,540	41,200	1,770	1,013	14,019	40,772
2007	7,700	38,100	94,800	40,400	53,000	13,610	41,200	1,780	1,013	14,019	41,282
2008	7,740	38,100	94,800	40,400	53,000	13,680	41,200	1,790	1,023	14,019	41,802
2009	7,780	38,100	94,800	40,400	53,000	13,760	41,200	1,800	1,033	14,019	42,312
2010	7,820	38,100	94,800	40,400	53,000	13,830	41,200	1,820	1,043	14,019	42,822
2011	7,870	38,100	94,800	40,400	53,000	13,900	41,200	1,830	1,053	14,019	43,342
2012	7,910	38,100	94,800	40,400	53,000	13,980	41,200	1,840	1,063	14,019	43,852
2013	7,950	38,100	94,800	40,400	53,000	14,050	41,200	1,850	1,073	14,019	44,362
2014	7,990	38,100	94,800	40,400	53,000	14,120	41,200	1,860	1,083	14,019	44,882
2015	8,030	38,100	94,800	40,400	53,000	14,200	41,200	1,870	1,093	14,019	45,392
2016	8,080	38,100	94,800	40,400	53,000	14,270	41,200	1,880	1,103	14,019	45,912
2017	8,120	38,100	94,800	40,400	53,000	14,340	41,200	1,900	1,113	14,019	46,422
2018	8,160	38,100	94,800	40,400	53,000	14,420	41,200	1,910	1,123	14,019	46,932
2019	8,200	38,100	94,800	40,400	53,000	14,490	41,200	1,920	1,133	14,019	47,452
2020	8,250	38,100	94,800	40,400	53,000	14,560	41,200	1,930	1,133	14,019	47,962
2021	8,290	38,100	94,800	40,400	53,000	14,630	41,200	1,940	1,143	14,019	48,472
2022	8,330	38,100	94,800	40,400	53,000	14,710	41,200	1,950	1,153	14,019	48,992
2023	8,370	38,100	94,800	40,400	53,000	14,780	41,200	1,970	1,163	14,019	49,502
2024	8,420	38,100	94,800	40,400	53,000	14,850	41,200	1,980	1,173	14,019	50,012
2025	8,460	38,100	94,800	40,400	53,000	14,930	41,200	1,990	1,183	14,019	50,532
2026	8,500	38,100	94,800	40,400	53,000	15,000	41,200	2,000	1,193	14,019	51,042
2027	8,500	38,100	94,800	40,400	53,000	15,000	41,200	2,000	1,193	14,019	51,042
2028	8,500	38,100	94,800	40,400	53,000	15,000	41,200	2,000	1,193	14,019	51,042
2029	8,500	38,100	94,800	40,400	53,000	15,000	41,200	2,000	1,193	14,019	51,042
2030	8,500	38,100	94,800	40,400	53,000	15,000	41,200	2,000	1,193	14,019	51,042
2031	8,500	38,100	94,800	40,400	53,000	15,000	41,200	2,000	1,193	14,019	51,042
2032	8,500	38,100	94,800	40,400	53,000	15,000	41,200	2,000	1,193	14,019	51,042
2033	8,500	38,100	94,800	40,400	53,000	15,000	41,200	2,000	1,193	14,019	51,042
2034	8,500	38,100	94,800	40,400	53,000	15,000	41,200	2,000	1,193	14,019	51,042
2035	8,500	38,100	94,800	40,400	53,000	15,000	41,200	2,000	1,193	14,019	51,042

TABLE B-5A: ANNUAL WATER QUANTITIES DELIVERED

(in acre-feet)[c]

Calendar Year	CALIFORNIA AQUEDUCT (continued)											
	MOJAVE DIVISION (continued)											
	Reach 20 A	Reach 20 B		Reach 21		Reach 22 A	Reach 22 B				Reach 23	Reach 24
	AVEKWA	PWD	AVEKWA	LCID	AVEKWA	AVEKWA	MWD-SC[h]	CVWD[h]	DWA [h]	MWA	MWA	CLAWA
	(47)	(48)	(49)	(50)	(51)	(52)	(53)	(54)	(55)	(56)	(57)	(58)
1972	0	0	0	338	0	0	0	0	0	55	0	464
1973	0	0	0	290	0	0	14,800-	5,800	9,000	0	0	389
1974	0	0	0	400	0	0	16,400-	6,400	10,000	0	14	627
1975	420	0	0	520	0	0	18,000-	7,000	11,000	0	0	825
1976	471	0	416	589	0	0	19,600-	7,600	12,000	0	0	1,002
1977	773	0	271	111	0	0	0	0	0	22	58	1,109
1978	5,549	0	934	208	0	0	25,384-	10,084	15,300	0	0	1,209
1979	7,555	0	930	133	0	0	25,063-	10,063	15,000	4,000	0	1,260
1980	10,130	0	0	1,150	1,705	280	27,884-	10,884	17,000	4,000	0	1,725
1981	10,665	0	0	1,260	1,705	1,245	30,705-	11,905	18,800	4,000	0	2,136
1982	11,205	0	0	1,360	1,705	1,265	33,526-	12,926	20,600	31,700	0	2,448
1983	11,860	300	0	1,470	1,486	1,300	36,347-	13,947	22,400	33,300	0	3,066
1984	12,495	3,000	0	1,570	1,516	1,325	39,168-	14,968	24,200	35,400	0	3,500
1985	13,180	5,000	0	1,680	1,546	1,355	41,789-	15,889	25,900	37,300	0	4,000
1986	13,820	5,600	0	1,780	1,581	1,425	44,610-	16,910	27,700	38,900	0	4,000
1987	15,080	6,200	0	1,890	1,641	1,555	47,931-	17,931	30,000	40,900	0	4,000
1988	16,970	6,800	0	1,990	1,731	1,745	51,252-	18,952	32,300	42,900	0	4,000
1989	19,480	7,400	0	2,100	1,861	2,005	54,573-	19,973	34,600	45,000	0	4,000
1990	22,620	8,000	0	2,200	2,021	2,325	57,000-	21,000	36,000	47,000	0	4,000
1991	24,620	8,800	0	2,190	2,101	2,535	56,800-	20,900	35,900	46,900	0	4,060
1992	26,810	9,600	0	2,180	2,191	2,755	56,600-	20,800	35,800	46,800	0	4,120
1993	29,190	10,400	0	2,170	2,291	2,995	56,400-	20,700	35,700	46,700	0	4,180
1994	31,760	11,200	0	2,160	2,401	3,255	56,200-	20,600	35,600	46,600	0	4,240
1995	34,510	12,000	0	2,150	2,511	3,535	56,000-	20,500	35,500	46,500	0	4,300
1996	37,450	12,600	0	2,140	2,641	3,835	55,800-	20,400	35,400	46,400	0	4,360
1997	40,390	13,200	0	2,130	2,771	4,135	55,600-	20,300	35,300	46,300	0	4,420
1998	43,330	13,800	0	2,120	2,901	4,435	55,400-	20,200	35,200	46,200	0	4,480
1999	46,270	14,400	0	2,110	3,031	4,735	55,200-	20,100	35,100	46,100	0	4,540
2000	49,140	15,000	0	2,100	3,161	5,035	55,000-	20,000	35,000	46,000	0	4,600
2001	49,630	15,500	0	2,110	3,191	5,085	55,200-	20,100	35,100	46,200	0	4,660
2002	50,120	16,000	0	2,120	3,221	5,135	55,400-	20,200	35,200	46,300	0	4,720
2003	50,610	16,500	0	2,130	3,251	5,185	55,800-	20,400	35,400	46,600	0	4,780
2004	51,090	17,000	0	2,140	3,281	5,235	56,000-	20,500	35,500	46,800	0	4,840
2005	51,580	17,300	0	2,140	3,321	5,285	56,200-	20,600	35,600	46,900	0	4,900
2006	52,070	17,300	0	2,150	3,351	5,335	56,400-	20,700	35,700	47,100	0	4,960
2007	52,560	17,300	0	2,160	3,381	5,385	56,600-	20,800	35,800	47,300	0	5,020
2008	53,050	17,300	0	2,170	3,411	5,435	57,000-	21,000	36,000	47,500	0	5,080
2009	53,540	17,300	0	2,170	3,441	5,485	57,200-	21,100	36,100	47,700	0	5,140
2010	54,020	17,300	0	2,180	3,471	5,535	57,400-	21,200	36,200	47,900	0	5,200
2011	54,510	17,300	0	2,190	3,501	5,585	57,600-	21,300	36,300	48,000	0	5,260
2012	55,000	17,300	0	2,200	3,531	5,635	57,800-	21,400	36,400	48,200	0	5,320
2013	55,490	17,300	0	2,200	3,561	5,685	58,000-	21,500	36,500	48,300	0	5,380
2014	55,980	17,300	0	2,210	3,601	5,735	58,400-	21,700	36,700	48,600	0	5,440
2015	56,470	17,300	0	2,220	3,631	5,785	58,600-	21,800	36,800	48,800	0	5,500
2016	56,960	17,300	0	2,230	3,661	5,835	58,800-	21,900	36,900	48,900	0	5,560
2017	57,440	17,300	0	2,240	3,691	5,885	59,000-	22,000	37,000	49,100	0	5,620
2018	57,930	17,300	0	2,240	3,721	5,935	59,200-	22,100	37,100	49,400	0	5,680
2019	58,420	17,300	0	2,250	3,751	5,985	59,600-	22,300	37,300	49,500	0	5,740
2020	58,910	17,300	0	2,260	3,781	6,035	59,800-	22,400	37,400	49,700	0	5,800
2021	59,400	17,300	0	2,270	3,811	6,085	60,000-	22,500	37,500	49,900	0	5,800
2022	59,890	17,300	0	2,270	3,851	6,135	60,200-	22,600	37,600	50,000	0	5,800
2023	60,370	17,300	0	2,280	3,881	6,185	60,400-	22,700	37,700	50,300	0	5,800
2024	60,860	17,300	0	2,290	3,911	6,235	60,800-	22,900	37,900	50,500	0	5,800
2025	61,350	17,300	0	2,300	3,941	6,285	61,000-	23,000	38,000	50,600	0	5,800
2026	61,840	17,300	0	2,300	3,971	6,335	61,200-	23,100	38,100	50,800	0	5,800
2027	61,840	17,300	0	2,300	3,971	6,335	61,200-	23,100	38,100	50,800	0	5,800
2028	61,840	17,300	0	2,300	3,971	6,335	61,200-	23,100	38,100	50,800	0	5,800
2029	61,840	17,300	0	2,300	3,971	6,335	61,200-	23,100	38,100	50,800	0	5,800
2030	61,840	17,300	0	2,300	3,971	6,335	61,200-	23,100	38,100	50,800	0	5,800
2031	61,840	17,300	0	2,300	3,971	6,335	61,200-	23,100	38,100	50,800	0	5,800
2032	61,840	17,300	0	2,300	3,971	6,335	61,200-	23,100	38,100	50,800	0	5,800
2033	61,840	17,300	0	2,300	3,971	6,335	61,200-	23,100	38,100	50,800	0	5,800
2034	61,840	17,300	0	2,300	3,971	6,335	61,200-	23,100	38,100	50,800	0	5,800
2035	61,840	17,300	0	2,300	3,971	6,335	61,200-	23,100	38,100	50,800	0	5,800

FROM EACH AQUEDUCT REACH TO EACH CONTRACTOR[a] [b]

(in acre-feet)[c]

Calendar Year	CALIFORNIA AQUEDUCT (continued)							
	SANTA ANA DIVISION							
	Reach 26 A				Reach 28 G		Reach 28 H	Reach 28 J
	MWD-SC	SBVMWD	SGVMWD	SGPWA[g]	MWD-SC	SBVMWD	MWD-SC	MWD-SC
	(58)	(59)	(60)	(61)	(62)	(63)	(64)	(65)
1972	0	1,275	0	0	0	0	0	0
1973	444	32,426	0	0	18,942	0	0	0
1974	84,981	16,605	612	0	0	0	0	0
1975	169,960	13,865	5,450	0	0	0	0	251
1976	215,312	12,273	6,071	0	0	0	55	2,000
1977	64,823	24,833	8,996	0	0	0	43	2,442
1978	297,708	4,055	7,771	0	0	0	48	64,054
1979	260,903	18	290	0	0	0	1,290	94,353
1980	412,284	22,800	7,500	0	0	0	6,600	117,300
1981	448,705	31,900	17,700	0	0	0	8,800	158,200
1982	421,226	41,100	17,400	0	0	0	8,000	176,100
1983	421,847	50,200	17,200	0	0	0	7,100	183,400
1984	477,168	59,400	19,600	0	0	0	6,400	206,700
1985	454,389	73,700	20,400	0	0	0	6,100	228,600
1986	447,610	79,900	21,500	0	0	0	7,000	211,100
1987	390,131	83,000	22,600	0	0	0	7,300	217,400
1988	376,952	86,200	23,800	0	0	0	8,100	223,800
1989	323,573	89,300	24,900	0	0	0	8,900	230,100
1990	303,500	93,000	26,000	0	0	0	9,800	243,500
1991	296,300	92,500	25,800	0	0	0	10,300	242,900
1992	289,000	92,000	25,600	0	0	0	10,700	242,300
1993	281,700	91,500	25,400	0	0	0	11,200	241,700
1994	274,700	91,000	25,200	0	0	0	11,700	241,100
1995	267,400	90,500	25,000	0	0	0	12,000	240,500
1996	259,900	89,800	24,800	0	0	0	12,700	240,100
1997	252,400	89,100	24,600	0	0	0	13,400	239,400
1998	245,300	88,400	24,400	0	0	0	14,100	238,900
1999	238,000	87,700	24,200	0	0	0	14,700	238,200
2000	230,600	87,000	24,000	0	0	0	15,400	237,600
2001	226,900	87,600	24,200	0	0	0	17,000	244,800
2002	223,300	88,200	24,400	0	0	0	18,500	251,900
2003	219,700	88,800	24,600	0	0	0	20,100	259,100
2004	216,300	89,400	24,700	0	0	0	21,700	266,300
2005	212,600	90,000	24,900	0	0	0	23,200	273,400
2006	211,000	90,600	25,100	0	0	0	24,800	278,600
2007	209,100	91,200	25,300	0	0	0	26,400	283,800
2008	207,800	91,800	25,500	0	0	0	28,000	289,000
2009	206,000	92,400	25,700	0	0	0	29,500	294,100
2010	204,600	93,000	25,800	0	0	0	31,100	299,300
2011	202,900	93,600	26,000	0	0	0	32,700	304,700
2012	201,400	94,200	26,200	0	0	0	34,200	309,600
2013	199,800	94,800	26,400	0	0	0	35,800	314,800
2014	198,600	95,400	26,600	0	0	0	37,400	320,000
2015	200,200	96,000	26,800	0	0	0	37,700	323,100
2016	201,800	96,600	27,000	0	0	0	38,100	326,300
2017	203,400	97,200	27,100	0	0	0	38,500	329,500
2018	205,000	97,800	27,300	0	0	0	38,800	332,600
2019	206,800	98,400	27,500	0	0	0	39,200	335,800
2020	208,400	99,000	27,700	0	0	0	39,600	339,000
2021	210,000	99,600	27,900	0	0	0	40,000	342,200
2022	211,500	100,200	28,100	0	0	0	40,300	345,300
2023	213,100	100,800	28,200	0	0	0	40,700	348,500
2024	214,900	101,400	28,400	0	0	0	41,100	351,700
2025	216,500	102,000	28,600	0	0	0	41,400	354,800
2026	218,100	102,600	28,800	0	0	0	41,800	358,000
2027	218,100	102,600	28,800	0	0	0	41,800	358,000
2028	218,100	102,600	28,800	0	0	0	41,800	358,000
2029	218,100	102,600	28,800	0	0	0	41,800	358,000
2030	218,100	102,600	28,800	0	0	0	41,800	358,000
2031	218,100	102,600	28,800	0	0	0	41,800	358,000
2032	218,100	102,600	28,800	0	0	0	41,800	358,000
2033	218,100	102,600	28,800	0	0	0	41,800	358,000
2034	218,100	102,600	28,800	0	0	0	41,800	358,000
2035	218,100	102,600	28,800	0	0	0	41,800	358,000

g) Contractor did not submit a projection for future water deliveries.

TABLE B-5A: ANNUAL WATER QUANTITIES DELIVERED FROM EACH AQUEDUCT REACH TO EACH CONTRACTOR a) b)

(in acre-feet) (c

Calendar Year	CALIFORNIA AQUEDUCT (continued)											Total California Aqueduct
	WEST BRANCH, CALIFORNIA AQUEDUCT					COASTAL BRANCH, CALIFORNIA AQUEDUCT						
	Reach 29 F	Reach 29H	Reach 30			Reach 31 A		Reach 33 A	Reach 34	Reach 35		
	AVEKWA	VCFCD	MWD-SC	VCFCD	CLWA	KCWA (Ag.)	DDWD	SLOC (g FC&WCD	SLOC FC&WCD	SLOC FC&WCD	SBC (g FC&WCD	
	(66)	(67)	(68)	(69)	(70)	(71)	(72)	(73)	(74)	(75)	(76)	(77)
1968	0	0	0	0	0	71,657	7,382	0	0	0	0	192,188
1969	0	0	0	0	0	52,094	9,970	0	0	0	0	195,705
1970	0	0	0	0	0	71,910	11,739	0	0	0	0	276,211
1971	0	0	0	0	0	98,481	12,490	0	0	0	0	553,081
1972	53	0	71,938	0	0	107,850	13,905	0	0	0	0	895,006
1973	20	0	155,297	0	0	69,227	9,418	0	0	0	0	638,930
1974	36	0	209,136	0	0	68,474	9,700	0	0	0	0	783,984
1975	26	0	374,280	0	0	74,516	10,700	0	0	0	0	1,129,728
1976	24	0	420,684	0	0	78,358	11,700	0	0	0	0	1,245,662
1977	0	0	122,447	0	0	35,504	5,075	0	0	0	0	465,442
1978	0	0	171,139	0	0	81,242	11,362	0	0	0	0	1,339,268
1979	0	0	145,591	0	7	104,017	19,138	0	0	0	0	1,537,075
1980	0	250	290,500	750	7,000	94,750	14,110	0	0	0	0	1,741,771
1981	0	400	282,600	1,300	8,100	100,960	12,700	0	0	0	0	1,868,761
1982	0	650	299,800	1,950	9,200	106,510	12,700	0	0	0	0	1,978,749
1983	0	800	314,300	2,500	10,300	112,220	12,700	0	0	0	0	2,056,293
1984	0	1,050	299,900	3,150	11,400	117,600	12,700	0	0	0	0	2,200,648
1985	0	1,200	286,500	3,700	12,500	122,320	12,700	0	0	0	0	2,268,444
1986	0	1,700	397,000	5,100	13,000	122,400	12,700	0	0	0	0	2,427,350
1987	0	2,100	392,800	6,400	13,500	122,400	12,700	0	0	0	0	2,443,541
1988	0	2,850	403,600	8,550	14,000	122,500	12,700	0	0	0	0	2,518,622
1989	0	3,500	574,400	10,600	14,500	122,600	12,700	0	0	0	0	2,700,313
1990	0	4,500	670,200	13,500	15,000	122,600	12,700	0	0	0	0	2,857,800
1991	0	4,500	686,300	13,400	15,400	122,600	12,700	0	0	0	0	2,869,310
1992	0	4,500	702,400	13,300	15,800	122,600	12,700	0	0	0	0	2,880,920
1993	0	4,400	718,600	13,300	16,200	122,600	12,700	0	0	0	0	2,893,030
1994	0	4,400	734,700	13,200	16,600	122,600	12,700	0	0	0	0	2,905,640
1995	0	4,400	750,800	13,100	17,000	122,600	12,700	0	0	0	0	2,918,040
1996	0	4,400	754,900	13,000	17,200	122,600	12,700	0	0	0	0	2,918,560
1997	0	4,400	759,000	12,900	17,400	122,600	12,700	0	0	0	0	2,918,760
1998	0	4,300	763,200	12,900	17,600	122,600	12,700	0	0	0	0	2,919,680
1999	0	4,300	767,300	12,800	17,800	122,600	12,700	0	0	0	0	2,919,980
2000	0	4,300	771,400	12,700	18,000	122,600	12,700	0	0	0	0	2,920,300
2001	0	4,300	805,700	12,800	18,700	122,600	12,700	0	0	0	0	2,963,660
2002	0	4,400	840,100	12,900	19,400	122,600	12,700	0	0	0	0	3,007,070
2003	0	4,400	872,400	13,000	20,100	122,600	12,700	0	0	0	0	3,048,630
2004	0	4,400	908,800	13,100	20,900	122,600	12,700	0	0	0	0	3,094,410
2005	0	4,400	943,000	13,100	21,600	122,600	12,700	0	0	0	0	3,137,100
2006	0	4,500	979,500	13,200	22,100	122,600	12,700	0	0	0	0	3,182,160
2007	0	4,500	1,015,800	13,300	22,600	122,600	12,700	0	0	0	0	3,226,630
2008	0	4,500	1,052,100	13,400	23,100	122,600	12,700	0	0	0	0	3,271,700
2009	0	4,500	1,088,500	13,500	23,600	122,600	12,700	0	0	0	0	3,316,170
2010	0	4,600	1,124,800	13,600	24,200	122,600	12,700	0	0	0	0	3,361,250
2011	0	4,600	1,155,100	13,700	24,900	122,600	12,700	0	0	0	0	3,400,220
2012	0	4,600	1,185,300	13,800	25,600	122,600	12,700	0	0	0	0	3,438,820
2013	0	4,600	1,215,500	13,800	26,300	122,600	12,700	0	0	0	0	3,477,470
2014	0	4,700	1,245,700	13,900	27,000	122,600	12,700	0	0	0	0	3,516,950
2015	0	4,700	1,258,000	14,000	27,700	122,600	12,700	0	0	0	0	3,537,750
2016	0	4,700	1,270,400	14,100	28,400	122,600	12,700	0	0	0	0	3,558,720
2017	0	4,800	1,282,700	14,200	29,200	122,600	12,700	0	0	0	0	3,579,800
2018	0	4,800	1,295,100	14,300	29,900	122,600	12,700	0	0	0	0	3,600,770
2019	0	4,800	1,307,400	14,400	30,600	122,600	12,700	0	0	0	0	3,621,840
2020	0	4,800	1,319,700	14,500	31,300	122,600	12,700	0	0	0	0	3,642,810
2021	0	4,900	1,332,100	14,600	32,000	122,600	12,700	0	0	0	0	3,663,910
2022	0	4,900	1,344,400	14,600	32,700	122,600	12,700	0	0	0	0	3,684,340
2023	0	4,900	1,356,800	14,700	33,600	122,600	12,700	0	0	0	0	3,705,560
2024	0	4,900	1,369,100	14,800	34,300	122,600	12,700	0	0	0	0	3,726,660
2025	0	5,000	1,381,500	14,900	35,000	122,600	12,700	0	0	0	0	3,747,510
2026	0	5,000	1,393,800	15,000	35,800	122,600	12,700	0	0	0	0	3,768,500
2027	0	5,000	1,393,800	15,000	36,490	122,600	12,700	0	0	0	0	3,769,190
2028	0	5,000	1,393,800	15,000	37,000	122,600	12,700	0	0	0	0	3,769,700
2029	0	5,000	1,393,800	15,000	37,700	122,600	12,700	0	0	0	0	3,770,400
2030	0	5,000	1,393,800	15,000	38,300	122,600	12,700	0	0	0	0	3,771,000
2031	0	5,000	1,393,800	15,000	38,900	122,600	12,700	0	0	0	0	3,771,600
2032	0	5,000	1,393,800	15,000	39,600	122,600	12,700	0	0	0	0	3,772,300
2033	0	5,000	1,393,800	15,000	40,200	122,600	12,700	0	0	0	0	3,772,900
2034	0	5,000	1,393,800	15,000	40,800	122,600	12,700	0	0	0	0	3,773,500
2035	0	5,000	1,393,800	15,000	41,500	122,600	12,700	0	0	0	0	3,774,200

g) Contractor did not submit a projection for future water deliveries.

TABLE B-5B: ANNUAL WATER QUANTITIES

(in acre-feet) (c

Calendar Year	NORTH BAY AREA			SOUTH BAY AREA (e				CENTRAL COASTAL AREA		
	Napa (d County FC & WCD	Solano County FC & WCD	Total	Alameda County FC & WCD Zone 7	Alameda County Water District	Santa Clara Valley Water District	Total	San Luis Obispo County FC & WCD(f	Santa Barbara County FC & WCD(f	Total
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1962	0	0	0	494	8,412	0	8,906	0	0	0
1963	0	0	0	1,731	10,914	0	12,645	0	0	0
1964	0	0	0	1,673	19,238	0	20,911	0	0	0
1965	0	0	0	2,605	16,407	15,014	34,026	0	0	0
1966	0	0	0	5,511	14,864	34,538	54,913	0	0	0
1967	0	0	0	4,780	12,882	39,101	56,763	0	0	0
1968	1,214	0	1,214	6,133	24,817	70,105	101,055	0	0	0
1969	2,687	0	2,687	6,635	813	62,264	69,712	0	0	0
1970	3,618	0	3,618	9,249	0	80,311	89,560	0	0	0
1971	2,521	0	2,521	5,017	5,961	87,606	98,584	0	0	0
1972	3,647	0	3,647	10,489	27,671	100,266	138,426	0	0	0
1973	3,792	0	3,792	2,975	2,521	88,582	94,078	0	0	0
1974	4,870	0	4,870	1,314	4	88,000	89,318	0	0	0
1975	6,840	0	6,840	4,618	986	88,000	93,604	0	0	0
1976	7,122	0	7,122	17,131	21,300	88,000	126,431	0	0	0
1977	8,226	0	8,226	12,644	18,840	76,220	107,704	0	0	0
1978	6,034	0	6,034	10,984	5,863	95,727	112,574	0	0	0
1979	6,561	0	6,561	19,325	10,874	91,991	122,190	0	0	0
1980	6,600	0	6,600	22,000	24,800	88,000	134,800	0	0	0
1981	6,685	0	6,685	22,400	25,900	87,000	135,300	0	0	0
1982	6,675	0	6,675	22,810	27,100	85,000	134,910	0	0	0
1983	6,750	0	6,750	23,190	28,100	84,000	135,290	0	0	0
1984	6,945	8,180	15,125	23,600	29,200	83,000	135,800	0	0	0
1985	7,210	9,100	16,310	24,000	30,300	81,000	135,300	0	0	0
1986	7,470	10,620	18,090	24,400	31,600	80,000	136,000	0	0	0
1987	7,670	13,140	20,810	24,810	32,700	79,000	136,510	0	0	0
1988	7,880	19,160	27,040	25,190	33,700	78,000	136,890	0	0	0
1989	8,080	25,680	33,760	25,600	34,900	78,000	138,500	0	0	0
1990	8,300	28,000	36,300	26,000	36,000	79,000	141,000	0	0	0
1991	8,710	27,600	36,310	27,110	37,500	81,000	145,610	0	0	0
1992	9,130	27,200	36,330	28,190	39,000	82,000	149,190	0	0	0
1993	9,540	26,800	36,340	29,310	40,500	84,000	153,810	0	0	0
1994	9,960	26,400	36,360	30,400	41,100	85,000	156,500	0	0	0
1995	10,370	26,000	36,370	31,490	41,000	85,000	157,490	0	0	0
1996	10,900	25,600	36,500	32,600	41,000	85,000	158,600	0	0	0
1997	11,420	25,200	36,620	33,690	41,000	84,000	158,690	0	0	0
1998	11,950	24,800	36,750	32,810	41,000	84,000	157,810	0	0	0
1999	12,470	24,400	36,870	31,890	41,000	83,000	155,890	0	0	0
2000	13,000	24,000	37,000	31,000	41,000	83,000	155,000	0	0	0
2001	13,260	24,530	37,790	31,570	41,000	84,000	156,570	0	0	0
2002	13,520	25,060	38,580	32,150	41,100	84,000	157,250	0	0	0
2003	13,880	25,590	39,470	32,730	41,100	85,000	158,830	0	0	0
2004	14,140	26,120	40,260	33,310	41,200	86,000	160,510	0	0	0
2005	14,400	26,650	41,050	33,880	41,200	86,000	161,080	0	0	0
2006	14,660	27,180	41,840	34,460	41,200	87,000	162,660	0	0	0
2007	14,920	27,720	42,640	35,040	41,300	88,000	164,340	0	0	0
2008	15,280	28,250	43,530	35,620	41,300	88,000	164,920	0	0	0
2009	15,540	28,780	44,320	36,190	41,400	89,000	166,590	0	0	0
2010	15,800	29,310	45,110	36,770	41,400	90,000	168,170	0	0	0
2011	15,900	29,840	45,740	37,350	41,400	90,000	168,750	0	0	0
2012	16,000	30,370	46,370	37,930	41,500	91,000	170,430	0	0	0
2013	16,100	30,900	47,000	38,490	41,500	91,000	170,990	0	0	0
2014	16,300	31,430	47,730	39,070	41,500	92,000	172,570	0	0	0
2015	16,400	31,960	48,360	39,640	41,600	93,000	174,240	0	0	0
2016	16,500	32,490	48,990	40,230	41,600	93,000	174,830	0	0	0
2017	16,600	33,020	49,620	40,800	41,600	94,000	176,400	0	0	0
2018	16,700	33,550	50,250	41,380	41,700	95,000	178,080	0	0	0
2019	16,900	34,080	50,980	41,950	41,700	95,000	178,650	0	0	0
2020	17,000	34,620	51,620	42,540	41,800	96,000	180,340	0	0	0
2021	17,100	35,150	52,250	43,110	41,800	97,000	181,910	0	0	0
2022	17,200	35,680	52,880	43,690	41,900	97,000	182,590	0	0	0
2023	17,300	36,210	53,510	44,260	41,900	98,000	184,160	0	0	0
2024	17,500	36,740	54,240	44,850	41,900	99,000	185,750	0	0	0
2025	17,600	37,270	54,870	45,420	42,000	99,000	186,420	0	0	0
2026	17,700	37,800	55,500	46,000	42,000	100,000	188,000	0	0	0
2027	17,700	37,800	55,500	46,000	42,000	100,000	188,000	0	0	0
2028	17,700	37,800	55,500	46,000	42,000	100,000	188,000	0	0	0
2029	17,700	37,800	55,500	46,000	42,000	100,000	188,000	0	0	0
2030	17,700	37,800	55,500	46,000	42,000	100,000	188,000	0	0	0
2031	17,700	37,800	55,500	46,000	42,000	100,000	188,000	0	0	0
2032	17,700	37,800	55,500	46,000	42,000	100,000	188,000	0	0	0
2033	17,700	37,800	55,500	46,000	42,000	100,000	188,000	0	0	0
2034	17,700	37,800	55,500	46,000	42,000	100,000	188,000	0	0	0
2035	17,700	37,800	55,500	46,000	42,000	100,000	188,000	0	0	0
TOTAL	818,347	1,522,380	2,340,727	2,118,228	2,398,367	6,130,725	10,647,320	0	0	0

a) Contractor requests have been reduced to reflect Bulletin 76, water conservation and reclamation objectives and are subject to annual review. See Appendix B text, "Water Conveyance".

b) Includes entitlement water, surplus water (delivered prior to May 1, 1973), and nonproject water.

c) Metric conversion is acre-feet times 1.2335 equals cubic dekametres.

d) For the period 1968 through 1983 annual quantities delivered are nonproject water pumped through an interim facility.

e) For the period June 1962 through November 1967, deliveries were supplied by nonproject water.

f) Contractor did not submit a projection for future water deliveries.

DELIVERED TO EACH CONTRACTOR[a] [b]
(in acre-feet)[c]

Calendar Year	SAN JOAQUIN VALLEY AREA								
	Devil's Den Water District	Dudley Ridge Water District	Empire West Side Irrigation District	Hacienda Water District	Kern County Water Agency	County of Kings	Oak Flat Water District	Tulare Lake Basin Water Storage District	Total
	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)
1962	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0	0	0
1967	0	0	0	0	0	0	0	0	0
1968	7,382	26,360	1,978	0	127,384	900	3,084	25,100	192,188
1969	9,970	31,375	56	2,842	141,265	100	3,016	7,081	195,705
1970	11,739	40,407	3,942	9,578	204,634	0	5,911	0	276,211
1971	12,490	41,053	5,990	6,659	360,151	3,700	7,212	115,826	553,081
1972	13,905	42,443	5,795	5,851	490,781	1,400	8,166	252,542	820,883
1973	9,418	22,057	3,000	2,900	341,469	1,500	3,214	47,564	431,122
1974	9,700	33,390	3,000	3,300	347,000	1,500	3,471	68,989	470,350
1975	10,700	40,555	3,000	3,758	410,820	1,600	3,576	82,500	556,509
1976	11,700	41,421	3,000	3,900	439,250	1,600	4,112	54,911	559,894
1977	5,075	11,153	738	1,680	191,307	1,530	1,472	16,401	229,356
1978	11,362	51,747	454	2,520	667,347	2,070	3,906	9,533	748,939
1979	19,138	38,544	1,739	8,500	746,046	2,000	6,149	146,621	968,737
1980	14,110	36,700	4,800	6,200	634,500	2,200	4,200	76,682	779,392
1981	12,700	38,800	4,500	5,600	690,060	2,300	4,300	70,400	828,660
1982	12,700	41,000	3,000	5,900	742,620	2,500	4,500	74,300	886,520
1983	12,700	42,900	3,000	6,200	801,080	2,800	4,600	78,200	951,480
1984	12,700	45,100	3,000	6,500	855,240	3,100	4,800	82,100	1,012,540
1985	12,700	47,200	3,000	6,900	908,300	3,400	4,900	86,000	1,072,400
1986	12,700	49,300	3,000	7,200	960,160	3,700	5,100	90,000	1,131,160
1987	12,700	51,400	3,000	7,500	1,013,620	4,000	5,200	93,900	1,191,320
1988	12,700	53,500	3,000	7,800	1,063,880	4,000	5,400	97,800	1,248,080
1989	12,700	55,600	3,000	8,200	1,100,240	4,000	5,600	101,700	1,291,040
1990	12,700	57,700	3,000	8,500	1,140,000	4,000	5,700	110,000	1,341,600
1991	12,700	57,700	3,000	8,500	1,140,000	4,000	5,700	110,000	1,341,600
1992	12,700	57,700	3,000	8,500	1,140,000	4,000	5,700	110,000	1,341,600
1993	12,700	57,700	3,000	8,500	1,140,000	4,000	5,700	110,000	1,341,600
1994	12,700	57,700	3,000	8,500	1,140,000	4,000	5,700	110,000	1,341,600
1995	12,700	57,700	3,000	8,500	1,140,000	4,000	5,700	110,000	1,341,600
1996	12,700	57,700	3,000	8,500	1,140,000	4,000	5,700	110,000	1,341,600
1997	12,700	57,700	3,000	8,500	1,140,000	4,000	5,700	110,000	1,341,600
1998	12,700	57,700	3,000	8,500	1,140,000	4,000	5,700	110,000	1,341,600
1999	12,700	57,700	3,000	8,500	1,140,000	4,000	5,700	110,000	1,341,600
2000	12,700	57,700	3,000	8,500	1,140,000	4,000	5,700	110,000	1,341,600
2001	12,700	57,700	3,000	8,500	1,140,500	4,000	5,700	110,000	1,342,100
2002	12,700	57,700	3,000	8,500	1,141,040	4,000	5,700	110,000	1,342,640
2003	12,700	57,700	3,000	8,500	1,141,540	4,000	5,700	110,000	1,343,140
2004	12,700	57,700	3,000	8,500	1,142,070	4,000	5,700	110,000	1,343,670
2005	12,700	57,700	3,000	8,500	1,142,590	4,000	5,700	110,000	1,344,190
2006	12,700	57,700	3,000	8,500	1,143,090	4,000	5,700	110,000	1,344,690
2007	12,700	57,700	3,000	8,500	1,143,610	4,000	5,700	110,000	1,345,210
2008	12,700	57,700	3,000	8,500	1,144,110	4,000	5,700	110,000	1,345,710
2009	12,700	57,700	3,000	8,500	1,144,630	4,000	5,700	110,000	1,346,230
2010	12,700	57,700	3,000	8,500	1,145,160	4,000	5,700	110,000	1,346,760
2011	12,700	57,700	3,000	8,500	1,145,660	4,000	5,700	110,000	1,347,260
2012	12,700	57,700	3,000	8,500	1,146,200	4,000	5,700	110,000	1,347,800
2013	12,700	57,700	3,000	8,500	1,146,700	4,000	5,700	110,000	1,348,300
2014	12,700	57,700	3,000	8,500	1,147,200	4,000	5,700	110,000	1,348,800
2015	12,700	57,700	3,000	8,500	1,147,740	4,000	5,700	110,000	1,349,340
2016	12,700	57,700	3,000	8,500	1,148,240	4,000	5,700	110,000	1,349,840
2017	12,700	57,700	3,000	8,500	1,148,770	4,000	5,700	110,000	1,350,370
2018	12,700	57,700	3,000	8,500	1,149,290	4,000	5,700	110,000	1,350,890
2019	12,700	57,700	3,000	8,500	1,149,790	4,000	5,700	110,000	1,351,390
2020	12,700	57,700	3,000	8,500	1,150,310	4,000	5,700	110,000	1,351,910
2021	12,700	57,700	3,000	8,500	1,150,810	4,000	5,700	110,000	1,352,410
2022	12,700	57,700	3,000	8,500	1,151,330	4,000	5,700	110,000	1,352,930
2023	12,700	57,700	3,000	8,500	1,151,860	4,000	5,700	110,000	1,353,460
2024	12,700	57,700	3,000	8,500	1,152,360	4,000	5,700	110,000	1,353,960
2025	12,700	57,700	3,000	8,500	1,152,900	4,000	5,700	110,000	1,354,500
2026	12,700	57,700	3,000	8,500	1,153,400	4,000	5,700	110,000	1,355,000
2027	12,700	57,700	3,000	8,500	1,153,400	4,000	5,700	110,000	1,355,000
2028	12,700	57,700	3,000	8,500	1,153,400	4,000	5,700	110,000	1,355,000
2029	12,700	57,700	3,000	8,500	1,153,400	4,000	5,700	110,000	1,355,000
2030	12,700	57,700	3,000	8,500	1,153,400	4,000	5,700	110,000	1,355,000
2031	12,700	57,700	3,000	8,500	1,153,400	4,000	5,700	110,000	1,355,000
2032	12,700	57,700	3,000	8,500	1,153,400	4,000	5,700	110,000	1,355,000
2033	12,700	57,700	3,000	8,500	1,153,400	4,000	5,700	110,000	1,355,000
2034	12,700	57,700	3,000	8,500	1,153,400	4,000	5,700	110,000	1,355,000
2035	12,700	57,700	3,000	8,500	1,153,400	4,000	5,700	110,000	1,355,000
TOTAL	845,189	3,536,205	203,992	510,488	65,978,654	233,900	364,089	6,738,150	78,410,667

Calendar Year	SOUTHERN CALIFORNIA AREA									
	Antelope Valley-East Kern Water Agency	Castaic Lake Water Agency	Coachella Valley Water District	Crestline Lake Arrowhead Water Agency	Desert Water Agency	Littlerock Creek Irrigation District	Mojave Water Agency	Palmdale Water District	San Bernardino Valley Municipal Water District	San Gabriel Valley Municipal Water District
	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)
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	53	0	0	464	0	338	55	0	1,275	0
1973	20	0	5,800	389	9,000	290	0	0	32,426	0
1974	1,259	0	6,400	627	10,000	400	14	0	16,605	612
1975	8,068	0	7,000	825	11,000	520	0	0	13,865	5,450
1976	27,782	0	7,600	1,002	12,000	589	0	0	12,273	6,071
1977	11,202	0	0	1,109	0	111	80	0	24,833	8,996
1978	44,137	0	10,084	1,209	15,300	208	0	0	4,055	7,771
1979	60,493	7	10,063	1,260	15,000	133	4,000	0	18	290
1980	90,520	7,000	10,884	1,725	17,000	1,150	4,000	0	22,800	7,500
1981	75,000	8,100	11,905	2,136	18,800	1,260	4,000	0	31,900	17,700
1982	81,295	9,200	12,926	2,448	20,600	1,360	31,700	0	41,100	17,400
1983	59,030	10,300	13,947	3,066	22,400	1,470	33,300	300	50,200	17,200
1984	59,870	11,400	14,968	3,500	24,200	1,570	35,400	3,000	59,400	19,600
1985	60,975	12,500	15,889	4,000	25,900	1,680	37,300	5,000	73,700	20,400
1986	62,000	13,000	16,910	4,000	27,700	1,780	38,900	5,600	79,900	21,500
1987	64,000	13,500	17,931	4,000	30,000	1,890	40,900	6,200	83,000	22,600
1988	67,000	14,000	18,952	4,000	32,300	1,990	42,900	6,800	86,200	23,800
1989	71,000	14,500	19,973	4,000	34,600	2,100	45,000	7,400	89,300	24,900
1990	76,000	15,000	21,000	4,000	36,000	2,200	47,000	8,000	93,000	26,000
1991	78,360	15,400	20,900	4,060	35,900	2,190	46,900	8,800	92,500	25,800
1992	81,020	15,800	20,800	4,120	35,800	2,180	46,800	9,600	92,000	25,600
1993	83,980	16,200	20,700	4,180	35,700	2,170	46,700	10,400	91,500	25,400
1994	87,240	16,600	20,600	4,240	35,600	2,160	46,600	11,200	91,000	25,200
1995	90,790	17,000	20,500	4,300	35,500	2,150	46,500	12,000	90,500	25,000
1996	94,660	17,200	20,400	4,360	35,400	2,140	46,400	12,600	89,800	24,800
1997	98,510	17,400	20,300	4,420	35,300	2,130	46,300	13,200	89,100	24,600
1998	102,380	17,600	20,200	4,480	35,200	2,120	46,200	13,800	88,400	24,400
1999	106,230	17,800	20,100	4,540	35,100	2,110	46,100	14,400	87,700	24,200
2000	110,000	18,000	20,000	4,600	35,000	2,100	46,000	15,000	87,000	24,000
2001	111,090	18,700	20,100	4,660	35,100	2,110	46,200	15,500	87,600	24,200
2002	112,190	19,400	20,200	4,720	35,200	2,120	46,300	16,000	88,200	24,400
2003	113,280	20,100	20,400	4,780	35,400	2,130	46,600	16,500	88,800	24,600
2004	114,360	20,900	20,500	4,840	35,500	2,140	46,800	17,000	89,400	24,700
2005	115,470	21,600	20,600	4,900	35,600	2,140	46,900	17,300	90,000	24,900
2006	116,560	22,100	20,700	4,960	35,700	2,150	47,100	17,300	90,600	25,100
2007	117,640	22,600	20,800	5,020	35,800	2,160	47,300	17,300	91,200	25,300
2008	118,740	23,100	21,000	5,080	36,000	2,170	47,500	17,300	91,800	25,500
2009	119,830	23,600	21,100	5,140	36,100	2,170	47,700	17,300	92,400	25,700
2010	120,910	24,200	21,200	5,200	36,200	2,180	47,900	17,300	93,000	25,800
2011	122,010	24,900	21,300	5,260	36,300	2,190	48,000	17,300	93,600	26,000
2012	123,100	25,600	21,400	5,320	36,400	2,200	48,200	17,300	94,200	26,200
2013	124,190	26,300	21,500	5,380	36,500	2,200	48,300	17,300	94,800	26,400
2014	125,300	27,000	21,700	5,440	36,700	2,210	48,600	17,300	95,400	26,600
2015	126,390	27,700	21,800	5,500	36,800	2,220	48,800	17,300	96,000	26,800
2016	127,490	28,400	21,900	5,560	36,900	2,230	48,900	17,300	96,600	27,000
2017	128,570	29,200	22,000	5,620	37,000	2,240	49,100	17,300	97,200	27,100
2018	129,660	29,900	22,100	5,680	37,100	2,240	49,400	17,300	97,800	27,300
2019	130,760	30,600	22,300	5,740	37,300	2,250	49,500	17,300	98,400	27,500
2020	131,840	31,300	22,400	5,800	37,400	2,260	49,700	17,300	99,000	27,700
2021	132,930	32,000	22,500	5,800	37,500	2,270	49,900	17,300	99,600	27,900
2022	134,040	32,700	22,600	5,800	37,600	2,270	50,000	17,300	100,200	28,100
2023	135,120	33,600	22,700	5,800	37,700	2,280	50,300	17,300	100,800	28,200
2024	136,210	34,300	22,900	5,800	37,900	2,290	50,500	17,300	101,400	28,400
2025	137,310	35,000	23,000	5,800	38,000	2,300	50,600	17,300	102,000	28,600
2026	138,400	35,800	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
2027	138,400	36,490	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
2028	138,400	37,000	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
2029	138,400	37,700	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
2030	138,400	38,300	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
2031	138,400	38,900	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
2032	138,400	39,600	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
2033	138,400	40,200	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
2034	138,400	40,800	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
2035	138,400	41,500	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
TOTAL	6,341,864	1,348,597	1,196,432	278,660	2,011,000	120,609	2,547,149	764,600	5,111,350	1,444,790

DELIVERED TO EACH CONTRACTOR[a] [b]

(in acre-feet) [c]

Calendar Year	SOUTHERN CALIFORNIA AREA (continued)				FEATHER RIVER AREA				TOTAL STATE WATER PROJECT
	San Gorgonio Pass Water Agency [f]	The Metropolitan Water District of Southern California	Ventura County Flood Control District	Total	City of Yuba City	County of Butte	Plumas County FC & WCD	Total	
	(30)	(31)	(32)	(33)	(34)	(35)	(36)	(37)	(38)
1962	0	0	0	0	0	0	0	0	8,906
1963	0	0	0	0	0	0	0	0	12,645
1964	0	0	0	0	0	0	0	0	20,911
1965	0	0	0	0	0	0	0	0	34,026
1966	0	0	0	0	0	0	0	0	54,913
1967	0	0	0	0	0	0	0	0	56,763
1968	0	0	0	0	0	0	0	0	294,457
1969	0	0	0	0	0	0	0	0	268,104
1970	0	0	0	0	0	0	70	70	369,459
1971	0	0	0	0	0	192	64	256	654,442
1972	0	71,938	0	74,123	0	186	505	691	1,037,770
1973	0	159,883	0	207,808	0	53	679	732	737,532
1974	0	277,717	0	313,634	0	127	648	775	878,947
1975	0	526,491	0	573,219	0	253	405	658	1,230,830
1976	0	618,451	0	685,768	0	527	382	909	1,380,124
1977	0	189,755	0	236,086	0	706	303	1,009	582,381
1978	0	507,565	0	590,329	0	579	278	857	1,458,733
1979	0	477,074	0	568,338	0	302	329	631	1,666,457
1980	0	798,800	1,000	962,379	0	1,100	710	1,810	1,884,981
1981	0	867,600	1,700	1,040,101	4,100	1,200	730	6,030	2,016,776
1982	0	871,600	2,600	1,092,229	4,400	1,200	750	6,350	2,126,684
1983	0	890,300	3,300	1,104,813	4,750	1,200	770	6,720	2,205,053
1984	0	951,000	4,200	1,188,108	5,100	1,200	790	7,090	2,358,663
1985	0	933,800	4,900	1,196,044	5,450	1,200	810	7,460	2,427,514
1986	0	1,018,100	6,800	1,296,190	6,000	1,200	820	8,020	2,589,460
1987	0	959,700	8,500	1,252,221	6,600	1,200	840	8,640	2,609,501
1988	0	961,200	11,400	1,270,542	7,200	1,200	860	9,260	2,691,812
1989	0	1,082,400	14,100	1,409,273	7,900	1,200	880	9,980	2,882,553
1990	0	1,170,000	18,000	1,516,200	8,600	1,200	900	10,700	3,045,800
1991	0	1,179,000	17,900	1,527,710	8,600	18,900	940	28,440	3,079,670
1992	0	1,187,800	17,800	1,539,320	8,500	19,400	980	28,880	3,095,320
1993	0	1,196,800	17,700	1,551,430	8,500	19,800	1,020	29,320	3,112,500
1994	0	1,206,000	17,600	1,564,040	8,400	20,300	1,060	29,760	3,128,260
1995	0	1,214,700	17,500	1,576,440	8,400	20,700	1,100	30,200	3,142,100
1996	0	1,211,800	17,400	1,576,960	8,400	21,200	1,140	30,740	3,144,400
1997	0	1,208,600	17,300	1,577,160	8,300	21,600	1,180	31,080	3,145,150
1998	0	1,206,100	17,200	1,578,080	8,300	22,100	1,220	31,620	3,145,860
1999	0	1,203,000	17,100	1,578,380	8,200	22,500	1,260	31,960	3,144,700
2000	0	1,200,000	17,000	1,578,700	8,200	23,000	1,300	32,500	3,144,800
2001	0	1,239,200	17,100	1,621,560	8,300	23,200	1,350	32,850	3,190,870
2002	0	1,278,400	17,300	1,664,430	8,300	23,300	1,410	33,010	3,235,910
2003	0	1,315,500	17,400	1,705,490	8,400	23,500	1,460	33,360	3,280,290
2004	0	1,357,100	17,500	1,750,740	8,400	23,700	1,520	33,620	3,328,800
2005	0	1,396,000	17,500	1,792,910	8,500	23,900	1,570	33,970	3,373,200
2006	0	1,437,500	17,700	1,837,470	8,500	24,000	1,620	34,120	3,420,780
2007	0	1,478,500	17,800	1,881,420	8,600	24,200	1,680	34,480	3,468,090
2008	0	1,519,900	17,900	1,925,990	8,600	24,400	1,730	34,730	3,514,880
2009	0	1,560,900	18,000	1,969,940	8,700	24,600	1,780	35,080	3,562,160
2010	0	1,602,400	18,200	2,014,490	8,700	24,700	1,840	35,240	3,609,770
2011	0	1,637,800	18,300	2,052,960	8,800	24,900	1,890	35,590	3,650,300
2012	0	1,672,700	18,400	2,091,020	8,800	25,100	1,950	35,850	3,691,470
2013	0	1,707,900	18,400	2,129,170	8,900	25,200	2,000	36,100	3,731,560
2014	0	1,743,300	18,600	2,168,150	9,000	25,400	2,050	36,450	3,773,700
2015	0	1,760,400	18,700	2,188,410	9,000	25,600	2,110	36,710	3,797,060
2016	0	1,777,800	18,800	2,208,880	9,100	25,800	2,160	37,060	3,819,600
2017	0	1,795,100	19,000	2,229,430	9,100	25,900	2,200	37,200	3,843,020
2018	0	1,812,300	19,100	2,249,880	9,200	26,100	2,270	37,570	3,866,670
2019	0	1,829,600	19,200	2,270,450	9,200	26,300	2,320	37,820	3,889,290
2020	0	1,846,900	19,300	2,290,900	9,300	26,500	2,380	38,180	3,912,950
2021	0	1,864,300	19,500	2,311,500	9,300	26,600	2,430	38,330	3,936,400
2022	0	1,881,300	19,500	2,331,410	9,400	26,800	2,480	38,680	3,958,490
2023	0	1,898,700	19,600	2,352,100	9,400	27,000	2,540	38,940	3,982,170
2024	0	1,916,000	19,700	2,372,700	9,500	27,200	2,590	39,290	4,005,940
2025	0	1,933,200	19,900	2,393,010	9,500	27,300	2,650	39,450	4,028,250
2026	0	1,950,500	20,000	2,413,500	9,600	27,500	2,700	39,800	4,051,800
2027	0	1,950,500	20,000	2,414,190	9,600	27,500	2,700	39,800	4,052,490
2028	0	1,950,500	20,000	2,414,700	9,600	27,500	2,700	39,800	4,053,000
2029	0	1,950,500	20,000	2,415,400	9,600	27,500	2,700	39,800	4,053,700
2030	0	1,950,500	20,000	2,416,000	9,600	27,500	2,700	39,800	4,054,300
2031	0	1,950,500	20,000	2,416,600	9,600	27,500	2,700	39,800	4,054,900
2032	0	1,950,500	20,000	2,417,300	9,600	27,500	2,700	39,800	4,055,600
2033	0	1,950,500	20,000	2,417,900	9,600	27,500	2,700	39,800	4,056,200
2034	0	1,950,500	20,000	2,418,500	9,600	27,500	2,700	39,800	4,056,800
2035	0	1,950,500	20,000	2,419,200	9,600	27,500	2,700	39,800	4,057,500
TOTAL	0	86,114,874	913,400	108,193,325	462,400	1,131,725	100,703	1,694,828	201,286,867

f) Contractor did not submit a projection for future water deliveries.

TABLE B-5C: ANNUAL REQUESTS FROM EACH

(in acre-feet)[d]

Calendar Year	NORTH BAY AREA			SOUTH BAY AREA (f				CENTRAL COASTAL AREA		
	Napa County (e FC & WCD	Solano County FC & WCD	Total	Alameda County FC & WCD Zone 7	Alameda County Water District	Santa Clara Valley Water District	Total	San Luis Obispo County (g FC & WCD	Santa Barbara County (g FC & WCD	Total
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1967	0	0	0	507	5,248	5,783	11,538	0	0	0
1968	0	0	0	6,133	24,817	70,105	101,055	0	0	0
1969	0	0	0	6,635	813	62,264	69,712	0	0	0
1970	0	0	0	9,249	0	80,311	89,560	0	0	0
1971	0	0	0	5,017	5,961	87,606	98,584	0	0	0
1972	0	0	0	10,489	27,671	100,266	138,426	0	0	0
1973	0	0	0	2,975	2,521	88,582	94,078	0	0	0
1974	0	0	0	1,314	4	88,000	89,318	0	0	0
1975	0	0	0	4,618	986	88,000	93,604	0	0	0
1976	0	0	0	17,131	21,300	88,000	126,431	0	0	0
1977	0	0	0	12,644	18,840	76,220	107,704	0	0	0
1978	0	0	0	10,984	5,863	95,727	112,574	0	0	0
1979	0	0	0	19,325	10,874	91,991	122,190	0	0	0
1980	6,600	0	6,600	22,000	24,800	88,000	134,800	0	0	0
1981	6,825	0	6,825	23,000	26,000	88,000	137,000	0	0	0
1982	6,945	0	6,945	24,000	27,200	88,000	139,200	0	0	0
1983	7,160	0	7,160	25,000	28,400	88,000	141,400	0	0	0
1984	7,485	12,100	19,585	26,000	29,600	88,000	143,600	0	0	0
1985	7,890	14,000	21,890	27,000	30,800	88,000	145,800	0	0	0
1986	8,280	16,500	24,780	28,000	32,100	88,000	148,100	0	0	0
1987	8,620	20,000	28,620	29,000	33,300	88,000	150,300	0	0	0
1988	8,960	27,000	35,960	30,000	34,500	88,000	152,500	0	0	0
1989	9,300	34,500	43,800	31,000	35,700	90,000	156,700	0	0	0
1990	9,650	37,800	47,450	32,000	36,900	92,000	160,900	0	0	0
1991	10,240	37,800	48,040	34,000	38,400	94,000	166,400	0	0	0
1992	10,830	37,800	48,630	36,000	39,900	96,000	171,900	0	0	0
1993	11,420	37,800	49,220	38,000	41,400	98,000	177,400	0	0	0
1994	12,010	37,800	49,810	40,000	42,000	100,000	182,000	0	0	0
1995	12,600	37,800	50,400	42,000	42,000	100,000	184,000	0	0	0
1996	13,300	37,800	51,100	44,000	42,000	100,000	186,000	0	0	0
1997	14,000	37,800	51,800	46,000	42,000	100,000	188,000	0	0	0
1998	14,700	37,800	52,500	46,000	42,000	100,000	188,000	0	0	0
1999	15,400	37,800	53,200	46,000	42,000	100,000	188,000	0	0	0
2000	16,100	37,800	53,900	46,000	42,000	100,000	188,000	0	0	0
2001	16,260	37,800	54,060	46,000	42,000	100,000	188,000	0	0	0
2002	16,420	37,800	54,220	46,000	42,000	100,000	188,000	0	0	0
2003	16,580	37,800	54,380	46,000	42,000	100,000	188,000	0	0	0
2004	16,740	37,800	54,540	46,000	42,000	100,000	188,000	0	0	0
2005	16,900	37,800	54,700	46,000	42,000	100,000	188,000	0	0	0
2006	17,060	37,800	54,860	46,000	42,000	100,000	188,000	0	0	0
2007	17,220	37,800	55,020	46,000	42,000	100,000	188,000	0	0	0
2008	17,380	37,800	55,180	46,000	42,000	100,000	188,000	0	0	0
2009	17,540	37,800	55,340	46,000	42,000	100,000	188,000	0	0	0
2010	17,700	37,800	55,500	46,000	42,000	100,000	188,000	0	0	0
2011	17,700	37,800	55,500	46,000	42,000	100,000	188,000	0	0	0
2012	17,700	37,800	55,500	46,000	42,000	100,000	188,000	0	0	0
2013	17,700	37,800	55,500	46,000	42,000	100,000	188,000	0	0	0
2014	17,700	37,800	55,500	46,000	42,000	100,000	188,000	0	0	0
2015	17,700	37,800	55,500	46,000	42,000	100,000	188,000	0	0	0
2016	17,700	37,800	55,500	46,000	42,000	100,000	188,000	0	0	0
2017	17,700	37,800	55,500	46,000	42,000	100,000	188,000	0	0	0
2018	17,700	37,800	55,500	46,000	42,000	100,000	188,000	0	0	0
2019	17,700	37,800	55,500	46,000	42,000	100,000	188,000	0	0	0
2020	17,700	37,800	55,500	46,000	42,000	100,000	188,000	0	0	0
2021	17,700	37,800	55,500	46,000	42,000	100,000	188,000	0	0	0
2022	17,700	37,800	55,500	46,000	42,000	100,000	188,000	0	0	0
2023	17,700	37,800	55,500	46,000	42,000	100,000	188,000	0	0	0
2024	17,700	37,800	55,500	46,000	42,000	100,000	188,000	0	0	0
2025	17,700	37,800	55,500	46,000	42,000	100,000	188,000	0	0	0
2026	17,700	37,800	55,500	46,000	42,000	100,000	188,000	0	0	0
2027	17,700	37,800	55,500	46,000	42,000	100,000	188,000	0	0	0
2028	17,700	37,800	55,500	46,000	42,000	100,000	188,000	0	0	0
2029	17,700	37,800	55,500	46,000	42,000	100,000	188,000	0	0	0
2030	17,700	37,800	55,500	46,000	42,000	100,000	188,000	0	0	0
2031	17,700	37,800	55,500	46,000	42,000	100,000	188,000	0	0	0
2032	17,700	37,800	55,500	46,000	42,000	100,000	188,000	0	0	0
2033	17,700	37,800	55,500	46,000	42,000	100,000	188,000	0	0	0
2034	17,700	37,800	55,500	46,000	42,000	100,000	188,000	0	0	0
2035	17,700	37,800	55,500	46,000	42,000	100,000	188,000	0	0	0
TOTAL	830,615	1,862,900	2,693,515	2,432,021	2,347,898	6,484,855	11,264,774	0	0	0

a) Tables B-5A and B-5B show the contractor requests for water deliveries reduced to reflect Bulletin 76 conservation and reclamation goals and are subject to annual review. See Appendix B text, "Water Conveyance".

b) Includes entitlement water, surplus water (delivered prior to May 1, 1973), and nonproject water.

c) For the period 1967 through 1979 the amounts shown are quantities actually delivered.

d) Metric conversion is acre-feet times 1.2335 equals cubic dekametres.

e) For the period 1968 through 1983 annual quantities delivered are nonproject water pumped through an interim facility.

f) For the period June 1962 through November 1967, deliveries were supplied by nonproject water.

g) Contractor did not submit a projection for future water deliveries.

CONTRACTOR FOR WATER DELIVERIES[a][b][c]
(in acre-feet)[d]

Calendar Year	SAN JOAQUIN VALLEY AREA								
	Devil's Den Water District	Dudley Ridge Water District	Empire West Side Irrigation District	Hacienda Water District	Kern County Water Agency	County of Kings	Oak Flat Water District	Tulare Lake Basin Water Storage District	Total
	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)
1967	0	0	0	0	0	0	0	0	0
1968	7,382	26,360	1,978	0	127,384	900	3,084	25,100	192,188
1969	9,970	31,375	56	2,842	141,265	100	3,016	7,081	195,705
1970	11,739	40,407	3,942	9,578	204,634	0	5,911	0	276,211
1971	12,490	41,053	5,990	6,659	360,151	3,700	7,212	115,826	553,081
1972	13,905	42,443	5,795	5,851	490,781	1,400	8,166	252,542	820,883
1973	9,418	22,057	3,000	2,900	341,469	1,500	3,214	47,564	431,122
1974	9,700	33,390	3,000	3,300	347,000	1,500	3,471	68,989	470,350
1975	10,700	40,555	3,000	3,758	410,820	1,600	3,576	82,500	556,509
1976	11,700	41,421	3,000	3,900	439,250	1,600	4,112	54,911	559,894
1977	5,075	11,153	738	1,680	191,307	1,530	1,472	16,401	229,356
1978	11,362	51,747	454	2,520	667,347	2,070	3,906	9,533	748,939
1979	19,138	38,544	1,739	8,500	746,046	2,000	6,149	146,621	968,737
1980	14,110	36,700	4,800	6,200	634,500	2,200	4,200	76,682	779,392
1981	12,700	38,800	4,500	5,600	691,400	2,300	4,300	70,400	830,000
1982	12,700	41,000	3,000	5,900	745,300	2,500	4,500	74,300	889,200
1983	12,700	42,900	3,000	6,200	805,100	2,800	4,600	78,200	955,500
1984	12,700	45,100	3,000	6,500	860,600	3,100	4,800	82,100	1,017,900
1985	12,700	47,200	3,000	6,900	915,000	3,400	4,900	86,000	1,079,100
1986	12,700	49,300	3,000	7,200	968,200	3,700	5,100	90,000	1,139,200
1987	12,700	51,400	3,000	7,500	1,023,000	4,000	5,200	93,900	1,200,700
1988	12,700	53,500	3,000	7,800	1,074,600	4,000	5,400	97,800	1,258,800
1989	12,700	55,600	3,000	8,200	1,112,300	4,000	5,600	101,700	1,303,100
1990	12,700	57,700	3,000	8,500	1,153,400	4,000	5,700	110,000	1,355,000
1991	12,700	57,700	3,000	8,500	1,153,400	4,000	5,700	110,000	1,355,000
1992	12,700	57,700	3,000	8,500	1,153,400	4,000	5,700	110,000	1,355,000
1993	12,700	57,700	3,000	8,500	1,153,400	4,000	5,700	110,000	1,355,000
1994	12,700	57,700	3,000	8,500	1,153,400	4,000	5,700	110,000	1,355,000
1995	12,700	57,700	3,000	8,500	1,153,400	4,000	5,700	110,000	1,355,000
1996	12,700	57,700	3,000	8,500	1,153,400	4,000	5,700	110,000	1,355,000
1997	12,700	57,700	3,000	8,500	1,153,400	4,000	5,700	110,000	1,355,000
1998	12,700	57,700	3,000	8,500	1,153,400	4,000	5,700	110,000	1,355,000
1999	12,700	57,700	3,000	8,500	1,153,400	4,000	5,700	110,000	1,355,000
2000	12,700	57,700	3,000	8,500	1,153,400	4,000	5,700	110,000	1,355,000
2001	12,700	57,700	3,000	8,500	1,153,400	4,000	5,700	110,000	1,355,000
2002	12,700	57,700	3,000	8,500	1,153,400	4,000	5,700	110,000	1,355,000
2003	12,700	57,700	3,000	8,500	1,153,400	4,000	5,700	110,000	1,355,000
2004	12,700	57,700	3,000	8,500	1,153,400	4,000	5,700	110,000	1,355,000
2005	12,700	57,700	3,000	8,500	1,153,400	4,000	5,700	110,000	1,355,000
2006	12,700	57,700	3,000	8,500	1,153,400	4,000	5,700	110,000	1,355,000
2007	12,700	57,700	3,000	8,500	1,153,400	4,000	5,700	110,000	1,355,000
2008	12,700	57,700	3,000	8,500	1,153,400	4,000	5,700	110,000	1,355,000
2009	12,700	57,700	3,000	8,500	1,153,400	4,000	5,700	110,000	1,355,000
2010	12,700	57,700	3,000	8,500	1,153,400	4,000	5,700	110,000	1,355,000
2011	12,700	57,700	3,000	8,500	1,153,400	4,000	5,700	110,000	1,355,000
2012	12,700	57,700	3,000	8,500	1,153,400	4,000	5,700	110,000	1,355,000
2013	12,700	57,700	3,000	8,500	1,153,400	4,000	5,700	110,000	1,355,000
2014	12,700	57,700	3,000	8,500	1,153,400	4,000	5,700	110,000	1,355,000
2015	12,700	57,700	3,000	8,500	1,153,400	4,000	5,700	110,000	1,355,000
2016	12,700	57,700	3,000	8,500	1,153,400	4,000	5,700	110,000	1,355,000
2017	12,700	57,700	3,000	8,500	1,153,400	4,000	5,700	110,000	1,355,000
2018	12,700	57,700	3,000	8,500	1,153,400	4,000	5,700	110,000	1,355,000
2019	12,700	57,700	3,000	8,500	1,153,400	4,000	5,700	110,000	1,355,000
2020	12,700	57,700	3,000	8,500	1,153,400	4,000	5,700	110,000	1,355,000
2021	12,700	57,700	3,000	8,500	1,153,400	4,000	5,700	110,000	1,355,000
2022	12,700	57,700	3,000	8,500	1,153,400	4,000	5,700	110,000	1,355,000
2023	12,700	57,700	3,000	8,500	1,153,400	4,000	5,700	110,000	1,355,000
2024	12,700	57,700	3,000	8,500	1,153,400	4,000	5,700	110,000	1,355,000
2025	12,700	57,700	3,000	8,500	1,153,400	4,000	5,700	110,000	1,355,000
2026	12,700	57,700	3,000	8,500	1,153,400	4,000	5,700	110,000	1,355,000
2027	12,700	57,700	3,000	8,500	1,153,400	4,000	5,700	110,000	1,355,000
2028	12,700	57,700	3,000	8,500	1,153,400	4,000	5,700	110,000	1,355,000
2029	12,700	57,700	3,000	8,500	1,153,400	4,000	5,700	110,000	1,355,000
2030	12,700	57,700	3,000	8,500	1,153,400	4,000	5,700	110,000	1,355,000
2031	12,700	57,700	3,000	8,500	1,153,400	4,000	5,700	110,000	1,355,000
2032	12,700	57,700	3,000	8,500	1,153,400	4,000	5,700	110,000	1,355,000
2033	12,700	57,700	3,000	8,500	1,153,400	4,000	5,700	110,000	1,355,000
2034	12,700	57,700	3,000	8,500	1,153,400	4,000	5,700	110,000	1,355,000
2035	12,700	57,700	3,000	8,500	1,153,400	4,000	5,700	110,000	1,355,000
TOTAL	845,189	3,536,205	203,992	510,488	66,353,854	233,900	364,089	6,738,150	78,785,867

TABLE B-5C: ANNUAL REQUESTS FROM EACH

(in acre-feet)[d]

Calendar Year	SOUTHERN CALIFORNIA AREA									
	Antelope Valley-East Kern Water Agency	Castaic Lake Water Agency	Coachella Valley Water District	Crestline Lake Arrowhead Water Agency	Desert Water Agency	Littlerock Creek Irrigation District	Mojave Water Agency	Palmdale Water District	San Bernardino Valley Municipal Water District	San Gabriel Valley Municipal Water District
	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)
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	53	0	0	464	0	338	55	0	1,275	0
1973	20	0	5,800	389	9,000	290	0	0	32,426	0
1974	1,259	0	6,400	627	10,000	400	14	0	16,605	612
1975	8,068	0	7,000	825	11,000	520	0	0	13,865	5,450
1976	27,782	0	7,600	1,002	12,000	589	0	0	12,273	6,071
1977	11,202	0	0	1,109	0	111	80	0	24,833	8,996
1978	44,137	0	10,084	1,209	15,300	208	0	0	4,055	7,771
1979	60,493	7	10,063	1,260	15,000	133	4,000	0	18	290
1980	90,520	7,000	10,884	1,725	17,000	1,150	4,000	0	22,800	7,500
1981	75,000	8,200	12,105	2,136	19,000	1,270	4,000	0	32,800	18,000
1982	81,295	9,400	13,326	2,448	21,000	1,380	32,400	0	42,800	18,000
1983	59,030	10,600	14,547	3,066	23,000	1,500	34,300	300	52,800	18,000
1984	59,870	11,800	15,768	3,500	25,000	1,610	36,700	3,000	62,800	20,700
1985	60,975	13,000	16,989	4,000	27,000	1,730	39,000	5,000	78,000	21,800
1986	62,000	13,600	18,210	4,000	29,000	1,840	41,400	5,600	85,000	23,200
1987	64,000	14,200	19,431	4,000	31,500	1,960	43,700	6,200	89,000	24,600
1988	67,000	14,800	20,652	4,000	34,000	2,070	46,000	6,800	93,000	26,000
1989	71,000	15,400	21,873	4,000	36,500	2,190	48,500	7,400	97,000	27,400
1990	76,000	16,000	23,100	4,000	38,100	2,300	50,800	8,000	101,500	28,800
1991	81,200	16,600	23,100	4,060	38,100	2,300	50,800	8,800	101,700	28,800
1992	86,700	17,200	23,100	4,120	38,100	2,300	50,800	9,600	101,900	28,800
1993	92,500	17,800	23,100	4,180	38,100	2,300	50,800	10,400	102,100	28,800
1994	98,600	18,400	23,100	4,240	38,100	2,300	50,800	11,200	102,300	28,800
1995	105,000	19,000	23,100	4,300	38,100	2,300	50,800	12,000	102,600	28,800
1996	111,700	19,400	23,100	4,360	38,100	2,300	50,800	12,600	102,600	28,800
1997	118,400	19,800	23,100	4,420	38,100	2,300	50,800	13,200	102,600	28,800
1998	125,100	20,200	23,100	4,480	38,100	2,300	50,800	13,800	102,600	28,800
1999	131,800	20,600	23,100	4,540	38,100	2,300	50,800	14,400	102,600	28,800
2000	138,400	21,000	23,100	4,600	38,100	2,300	50,800	15,000	102,600	28,800
2001	138,400	21,600	23,100	4,660	38,100	2,300	50,800	15,500	102,600	28,800
2002	138,400	22,200	23,100	4,720	38,100	2,300	50,800	16,000	102,600	28,800
2003	138,400	22,800	23,100	4,780	38,100	2,300	50,800	16,500	102,600	28,800
2004	138,400	23,400	23,100	4,840	38,100	2,300	50,800	17,000	102,600	28,800
2005	138,400	24,000	23,100	4,900	38,100	2,300	50,800	17,300	102,600	28,800
2006	138,400	24,400	23,100	4,960	38,100	2,300	50,800	17,300	102,600	28,800
2007	138,400	24,800	23,100	5,020	38,100	2,300	50,800	17,300	102,600	28,800
2008	138,400	25,200	23,100	5,080	38,100	2,300	50,800	17,300	102,600	28,800
2009	138,400	25,600	23,100	5,140	38,100	2,300	50,800	17,300	102,600	28,800
2010	138,400	26,000	23,100	5,200	38,100	2,300	50,800	17,300	102,600	28,800
2011	138,400	26,600	23,100	5,260	38,100	2,300	50,800	17,300	102,600	28,800
2012	138,400	27,200	23,100	5,320	38,100	2,300	50,800	17,300	102,600	28,800
2013	138,400	27,800	23,100	5,380	38,100	2,300	50,800	17,300	102,600	28,800
2014	138,400	28,400	23,100	5,440	38,100	2,300	50,800	17,300	102,600	28,800
2015	138,400	29,000	23,100	5,500	38,100	2,300	50,800	17,300	102,600	28,800
2016	138,400	29,600	23,100	5,560	38,100	2,300	50,800	17,300	102,600	28,800
2017	138,400	30,200	23,100	5,620	38,100	2,300	50,800	17,300	102,600	28,800
2018	138,400	30,800	23,100	5,680	38,100	2,300	50,800	17,300	102,600	28,800
2019	138,400	31,400	23,100	5,740	38,100	2,300	50,800	17,300	102,600	28,800
2020	138,400	32,000	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
2021	138,400	32,600	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
2022	138,400	33,200	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
2023	138,400	33,900	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
2024	138,400	34,500	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
2025	138,400	35,100	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
2026	138,400	35,800	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
2027	138,400	36,490	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
2028	138,400	37,000	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
2029	138,400	37,700	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
2030	138,400	38,300	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
2031	138,400	38,900	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
2032	138,400	39,600	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
2033	138,400	40,200	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
2034	138,400	40,800	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
2035	138,400	41,500	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
TOTAL	6,853,104	1,412,597	1,273,332	278,660	2,087,900	125,089	2,670,949	764,600	5,477,450	1,559,190

CONTRACTOR FOR WATER DELIVERIES [a][b][c]

(in acre-feet) [d]

Calendar Year	SOUTHERN CALIFORNIA AREA (continued)				FEATHER RIVER AREA				TOTAL STATE WATER PROJECT
	San Gorgonio Pass [g] Water Agency	The Metropolitan Water District of Southern California	Ventura County Flood Control District	Total	City of Yuba City	County of Butte	Plumas County FC & WCD	Total	
	(30)	(31)	(32)	(33)	(34)	(35)	(36)	(37)	(38)
1967	0	0	0	0	0	0	0	0	11,538
1968	0	0	0	0	0	300	0	300	293,543
1969	0	0	0	0	0	350	0	350	265,767
1970	0	0	0	0	0	400	70	470	366,241
1971	0	0	0	0	0	450	64	514	652,179
1972	0	71,938	0	74,123	0	500	505	1,005	1,034,437
1973	0	159,883	0	207,808	0	600	679	1,279	734,287
1974	0	277,717	0	313,634	0	700	648	1,348	874,650
1975	0	526,491	0	573,219	0	1,050	405	1,455	1,224,787
1976	0	618,451	0	685,768	0	1,400	382	1,782	1,373,875
1977	0	189,755	0	236,086	0	1,800	303	2,103	575,249
1978	0	507,565	0	590,329	0	1,200	278	1,478	1,453,320
1979	0	477,074	0	568,338	0	1,450	329	1,779	1,661,044
1980	0	798,800	1,000	962,379	0	1,100	710	1,810	1,884,981
1981	0	887,500	2,000	1,062,011	4,200	1,200	740	6,140	2,041,976
1982	0	911,400	3,000	1,136,449	4,600	1,200	770	6,570	2,178,364
1983	0	950,000	4,000	1,171,143	5,050	1,200	800	7,050	2,282,253
1984	0	1,030,500	5,000	1,276,248	5,500	1,200	830	7,530	2,464,863
1985	0	1,033,400	6,000	1,306,894	5,950	1,200	860	8,010	2,561,694
1986	0	1,137,500	8,000	1,429,350	6,600	1,200	890	8,690	2,750,120
1987	0	1,099,000	10,000	1,407,591	7,300	1,200	920	9,420	2,796,631
1988	0	1,120,300	13,000	1,447,622	8,000	1,200	960	10,160	2,905,042
1989	0	1,261,500	16,000	1,608,763	8,800	1,200	1,000	11,000	3,123,363
1990	0	1,368,900	20,000	1,737,500	9,600	1,200	1,040	11,840	3,312,690
1991	0	1,402,900	20,000	1,778,360	9,600	27,500	1,080	38,180	3,385,980
1992	0	1,436,800	20,000	1,819,420	9,600	27,500	1,120	38,220	3,433,170
1993	0	1,470,700	20,000	1,860,780	9,600	27,500	1,160	38,260	3,480,660
1994	0	1,504,900	20,000	1,902,740	9,600	27,500	1,200	38,300	3,527,850
1995	0	1,538,800	20,000	1,944,800	9,600	27,500	1,250	38,350	3,572,550
1996	0	1,560,800	20,000	1,974,560	9,600	27,500	1,300	38,400	3,605,060
1997	0	1,582,600	20,000	2,004,120	9,600	27,500	1,350	38,450	3,637,370
1998	0	1,605,000	20,000	2,034,280	9,600	27,500	1,400	38,500	3,668,280
1999	0	1,627,000	20,000	2,064,040	9,600	27,500	1,450	38,550	3,698,790
2000	0	1,649,000	20,000	2,093,700	9,600	27,500	1,510	38,610	3,729,210
2001	0	1,670,900	20,000	2,116,760	9,600	27,500	1,570	38,670	3,752,490
2002	0	1,692,900	20,000	2,139,920	9,600	27,500	1,630	38,730	3,775,870
2003	0	1,712,700	20,000	2,160,880	9,600	27,500	1,690	38,790	3,797,050
2004	0	1,736,900	20,000	2,186,240	9,600	27,500	1,750	38,850	3,822,630
2005	0	1,758,800	20,000	2,209,100	9,600	27,500	1,810	38,910	3,845,710
2006	0	1,782,900	20,000	2,233,660	9,600	27,500	1,880	38,980	3,870,500
2007	0	1,806,600	20,000	2,257,820	9,600	27,500	1,950	39,050	3,894,890
2008	0	1,830,700	20,000	2,282,380	9,600	27,500	2,020	39,120	3,919,680
2009	0	1,854,500	20,000	2,306,640	9,600	27,500	2,090	39,190	3,944,170
2010	0	1,878,700	20,000	2,331,300	9,600	27,500	2,160	39,260	3,969,060
2011	0	1,896,700	20,000	2,349,960	9,600	27,500	2,240	39,340	3,987,800
2012	0	1,914,500	20,000	2,368,420	9,600	27,500	2,320	39,420	4,006,340
2013	0	1,932,500	20,000	2,387,080	9,600	27,500	2,410	39,510	4,025,090
2014	0	1,950,500	20,000	2,405,740	9,600	27,500	2,500	39,600	4,043,840
2015	0	1,950,500	20,000	2,406,400	9,600	27,500	2,600	39,700	4,044,600
2016	0	1,950,500	20,000	2,407,060	9,600	27,500	2,700	39,800	4,045,360
2017	0	1,950,500	20,000	2,407,720	9,600	27,500	2,700	39,800	4,046,020
2018	0	1,950,500	20,000	2,408,380	9,600	27,500	2,700	39,800	4,046,680
2019	0	1,950,500	20,000	2,409,040	9,600	27,500	2,700	39,800	4,047,340
2020	0	1,950,500	20,000	2,409,700	9,600	27,500	2,700	39,800	4,048,000
2021	0	1,950,500	20,000	2,410,300	9,600	27,500	2,700	39,800	4,048,600
2022	0	1,950,500	20,000	2,410,900	9,600	27,500	2,700	39,800	4,049,200
2023	0	1,950,500	20,000	2,411,600	9,600	27,500	2,700	39,800	4,049,900
2024	0	1,950,500	20,000	2,412,200	9,600	27,500	2,700	39,800	4,050,500
2025	0	1,950,500	20,000	2,412,800	9,600	27,500	2,700	39,800	4,051,100
2026	0	1,950,500	20,000	2,413,500	9,600	27,500	2,700	39,800	4,051,800
2027	0	1,950,500	20,000	2,414,190	9,600	27,500	2,700	39,800	4,052,490
2028	0	1,950,500	20,000	2,414,700	9,600	27,500	2,700	39,800	4,053,000
2029	0	1,950,500	20,000	2,415,400	9,600	27,500	2,700	39,800	4,053,700
2030	0	1,950,500	20,000	2,416,000	9,600	27,500	2,700	39,800	4,054,300
2031	0	1,950,500	20,000	2,416,600	9,600	27,500	2,700	39,800	4,054,900
2032	0	1,950,500	20,000	2,417,300	9,600	27,500	2,700	39,800	4,055,600
2033	0	1,950,500	20,000	2,417,900	9,600	27,500	2,700	39,800	4,056,200
2034	0	1,950,500	20,000	2,418,500	9,600	27,500	2,700	39,800	4,056,800
2035	0	1,950,500	20,000	2,419,200	9,600	27,500	2,700	39,800	4,057,500
TOTAL	0	96,186,474	988,000	119,677,345	497,600	1,260,800	110,623	1,869,023	214,290,524

g) Contractor did not submit a projection for future water deliveries.

TABLE B-6: ANNUAL WATER QUANTITIES CONVEYED THRU EACH PUMPING

(in acre-feet) [b]

Calendar Year	NORTH BAY AQUEDUCT							SOUTH BAY AQUEDUCT					
	CALHOUN AND TRAVIS PUMPING PLANTS			CORDELIA PUMPING PLANT				SOUTH BAY PUMPING PLANT					
											Deliveries		
	Operational Losses	Water Supply Delivery	Total	Initial Fill Water	Operational Losses	Water Supply Delivery (c	Total	Initial Fill Water	Operational Losses	Reservoir Storage Changes	Water Supply (d	Recreation	Total
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
1962	0	0	0	0	0	0	0	9	272	0	8,906	0	9,187
1963	0	0	0	0	0	0	0	71	185	0	12,645	0	12,901
1964	0	0	0	0	0	0	0	171	152	0	20,911	0	21,234
1965	0	0	0	0	0	0	0	93	729	0	34,026	0	34,848
1966	0	0	0	0	0	0	0	0	1,746	0	54,913	0	56,659
1967	0	0	0	0	0	0	0	0	1,677	0	56,763	0	58,440
1968	0	0	0	24	-10	1,214	1,228	0	1,847	0	101,055	0	102,902
1969	0	0	0	0	2	2,687	2,689	3,449	2,668	0	69,712	0	75,829
1970	0	0	0	0	18	3,618	3,636	16,279	1,086	-5,355	89,560	0	101,570
1971	0	0	0	0	4	2,521	2,525	0	1,815	8,854	98,584	0	109,253
1972	0	0	0	0	-10	3,647	3,637	0	3,557	2,273	138,426	0	144,256
1973	0	0	0	0	1	3,792	3,793	0	-33	-1,510	94,078	0	92,535
1974	0	0	0	0	10	4,870	4,880	0	1,287	-10,056	89,318	0	80,549
1975	0	0	0	0	10	6,840	6,850	0	320	8,550	93,604	0	102,474
1976	0	0	0	0	4	7,122	7,126	0	2,431	1,391	126,431	141	130,394
1977	0	0	0	0	2	8,226	8,228	0	2,866	2,685	107,704	112	113,367
1978	0	0	0	0	-6	6,034	6,028	0	2,165	-11,249	112,574	126	103,616
1979	0	0	0	0	1	6,561	6,562	0	2,401	1,069	122,190	89	125,749
1980	0	0	0	0	0	6,600	6,600	0	3,185	0	134,800	140	138,125
1981	0	0	0	0	0	6,685	6,685	0	3,185	0	135,300	150	138,635
1982	0	0	0	0	0	6,675	6,675	0	3,185	0	134,910	150	138,245
1983	0	0	0	0	0	6,750	6,750	0	3,185	0	135,290	160	138,635
1984	350	15,125	15,475	0	0	6,945	6,945	0	3,185	0	135,800	160	139,145
1985	350	16,310	16,660	0	0	7,210	7,210	0	3,185	0	135,300	200	138,685
1986	350	18,090	18,440	0	0	7,470	7,470	0	3,185	0	136,000	240	139,425
1987	350	20,810	21,160	0	0	7,670	7,670	0	3,185	0	136,510	280	139,975
1988	350	27,040	27,390	0	0	7,880	7,880	0	3,185	0	136,890	320	140,395
1989	350	33,760	34,110	0	0	8,080	8,080	0	3,183	0	138,500	360	142,043
1990	350	36,300	36,650	0	0	8,300	8,300	0	3,181	0	141,000	400	144,581
1991	350	36,310	36,660	0	0	8,710	8,710	0	3,161	0	145,610	400	149,171
1992	350	36,330	36,680	0	0	9,130	9,130	0	3,118	0	149,190	400	152,708
1993	350	36,340	36,690	0	0	9,540	9,540	0	3,079	0	153,810	400	157,289
1994	350	36,360	36,710	0	0	9,960	9,960	0	3,048	0	156,500	400	159,948
1995	350	36,370	36,720	0	0	10,370	10,370	0	3,032	0	157,490	400	160,922
1996	350	36,500	36,850	0	0	10,900	10,900	0	3,017	0	158,600	400	162,017
1997	350	36,620	36,970	0	0	11,420	11,420	0	3,012	0	158,690	400	162,102
1998	350	36,750	37,100	0	0	11,950	11,950	0	3,021	0	157,810	400	161,231
1999	350	36,870	37,220	0	0	12,470	12,470	0	3,032	0	155,890	400	159,322
2000	350	37,000	37,350	0	0	13,000	13,000	0	3,040	0	155,000	400	158,440
2001	350	37,790	38,140	0	0	13,260	13,260	0	3,017	0	156,570	400	159,987
2002	350	38,580	38,930	0	0	13,520	13,520	0	3,017	0	157,250	400	160,667
2003	350	39,470	39,820	0	0	13,880	13,880	0	3,017	0	158,830	400	162,247
2004	350	40,260	40,610	0	0	14,140	14,140	0	3,007	0	160,510	400	163,917
2005	350	41,050	41,400	0	0	14,400	14,400	0	3,007	0	161,080	400	164,487
2006	350	41,840	42,190	0	0	14,660	14,660	0	2,993	0	162,660	400	166,053
2007	350	42,640	42,990	0	0	14,920	14,920	0	2,982	0	164,340	400	167,722
2008	350	43,530	43,880	0	0	15,280	15,280	0	2,982	0	164,920	400	168,302
2009	350	44,320	44,670	0	0	15,540	15,540	0	2,982	0	166,590	400	169,972
2010	350	45,110	45,460	0	0	15,800	15,800	0	2,950	0	168,170	400	171,520
2011	350	45,740	46,090	0	0	15,900	15,900	0	2,950	0	168,750	400	172,100
2012	350	46,370	46,720	0	0	16,000	16,000	0	2,950	0	170,430	400	173,780
2013	350	47,000	47,350	0	0	16,100	16,100	0	2,950	0	170,990	400	174,340
2014	350	47,730	48,080	0	0	16,300	16,300	0	2,934	0	172,570	400	175,904
2015	350	48,360	48,710	0	0	16,400	16,400	0	2,918	0	174,240	400	177,558
2016	350	48,990	49,340	0	0	16,500	16,500	0	2,918	0	174,830	400	178,148
2017	350	49,620	49,970	0	0	16,600	16,600	0	2,902	0	176,400	400	179,702
2018	350	50,250	50,600	0	0	16,700	16,700	0	2,902	0	178,080	400	181,382
2019	350	50,980	51,330	0	0	16,900	16,900	0	2,902	0	178,650	400	181,952
2020	350	51,620	51,970	0	0	17,000	17,000	0	3,114	0	180,340	400	183,854
2021	350	52,250	52,600	0	0	17,100	17,100	0	3,114	0	181,910	400	185,424
2022	350	52,880	53,230	0	0	17,200	17,200	0	3,114	0	182,590	400	186,104
2023	350	53,510	53,860	0	0	17,300	17,300	0	3,114	0	184,160	400	187,674
2024	350	54,240	54,590	0	0	17,500	17,500	0	3,089	0	185,750	400	189,239
2025	350	54,870	55,220	0	0	17,600	17,600	0	3,089	0	186,420	400	189,909
2026	350	55,500	55,850	0	0	17,700	17,700	0	3,059	0	188,000	400	191,459
2027	350	55,500	55,850	0	0	17,700	17,700	0	3,059	0	188,000	400	191,459
2028	350	55,500	55,850	0	0	17,700	17,700	0	3,059	0	188,000	400	191,459
2029	350	55,500	55,850	0	0	17,700	17,700	0	3,059	0	188,000	400	191,459
2030	350	55,500	55,850	0	0	17,700	17,700	0	3,059	0	188,000	400	191,459
2031	350	55,500	55,850	0	0	17,700	17,700	0	3,059	0	188,000	400	191,459
2032	350	55,500	55,850	0	0	17,700	17,700	0	3,059	0	188,000	400	191,459
2033	350	55,500	55,850	0	0	17,700	17,700	0	3,059	0	188,000	400	191,459
2034	350	55,500	55,850	0	0	17,700	17,700	0	3,059	0	188,000	400	191,459
2035	350	55,500	55,850	0	0	17,700	17,700	0	3,059	0	188,000	400	191,459

Note: "Reservoir Storage Changes" include projected net annual storage accretions (positive values) and withdrawals (negative values) for all down-aqueduct reservoirs of the project transportation facilities. Those variable OMP&R costs (Table B-12) that are allocable to storage accretions are assigned to the minimum OMP&R costs of the respective reservoirs.

"Water Supply Delivery" or "Deliveries, Water Supply", include certain hypothetical quantities to facilitate cost allocations for those years when deliveries are made from net annual storage withdrawals. The net annual amounts of storage withdrawals are hypothetically added to the actual amounts conveyed from the Delta to the reservoirs -- since deliveries made from storage withdrawals bear the same variable OMP&R costs per acre-foot as if the deliveries were actually conveyed, that year, from the Delta. The hypothetical increases in the amounts conveyed are compensated for by proportionate hypothetical increases in the actual variable OMP&R costs (Table B-3) of the up-aqueduct plants. The hypothetical increases in variable OMP&R costs for deliveries made from reservoir storage withdrawals are offset by equal credits to the minimum OMP&R costs of the respective reservoirs. Thus, the variable OMP&R components per acre-foot (Table B-17) may be applied to the total annual quantities delivered either from aqueduct reservoir storage or from the Delta.

"Conservation Water" includes initial fill water, operational losses, and net annual storage changes associated with San Luis Reservoir (and the portion of the aqueduct that is allocated to conservation). The same allocation procedure outlined above for transportation facilities applies also to conservation facilities -- except that the hypothetical cost increases are added to the variable OMP&R costs to be reimbursed through the Transportation Charge, and deducted from the minimum OMP&R costs to be reimbursed through the Delta Water Charge.

AND POWER RECOVERY PLANT OF PROJECT TRANSPORTATION FACILITIES[a]

(in acre-feet)[b]

Calendar Year	CALIFORNIA AQUEDUCT													
	NORTH SAN JOAQUIN DIVISION								SAN LUIS DIVISION					
	DELTA PUMPING PLANT								DOS AMIGOS PUMPING PLANT					
	Transportation Water											Deliveries		
	Initial Fill Water	Operational Losses	Reservoir Storage Changes	Deliveries: Water Supply	Deliveries: Recreation	Total	Conservation Water	Total	Initial Fill Water	Operational Losses	Reservoir Storage Changes	Water Supply	Recreation	Total
	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)
1967	5,746	1,183	0	11,538	0	18,467	2,957	21,424	0	0	0	0	0	0
1968	11,079	74,464	0	293,243	0	378,786	531,275	910,061	11,079	25,126	0	189,104	0	225,309
1969	7,336	44,287	0	265,417	0	317,040	531,185	848,225	3,887	9,922	0	192,689	0	206,498
1970	23,947	20,767	-5,355	365,771	0	405,130	-12,995	392,135	7,668	1,901	0	270,300	0	279,869
1971	23,207	-10,754	8,854	651,665	8	672,980	7,708	680,688	23,207	-12,030	0	545,869	0	557,046
1972	145,066	9,057	-4,285	1,033,432	6,489	1,189,759	48,300	1,238,059	145,066	-6,635	-6,558	886,840	6,481	1,025,194
1973	214,941	-4,951	2,902	733,008	1,155	947,055	55,846	1,002,901	214,941	-6,778	1,329	635,716	1,147	846,355
1974	247,894	-11,526	-32,510	873,302	2,118	1,079,278	54,683	1,133,961	247,894	-16,765	-15,295	780,513	2,108	998,455
1975	110,149	-8,092	16,101	1,223,332	3,377	1,344,867	-102,625	1,242,242	110,149	-12,144	-693	1,126,152	3,358	1,226,822
1976	67,834	5,443	-244,124	1,372,093	1,745	1,202,991	-442,348	760,643	67,834	-456	-152,171	1,241,550	1,581	1,158,338
1977	0	39,897	-157,543	573,146	1,111	456,611	-13,507	443,104	0	26,359	-116,219	463,970	737	374,847
1978	67,457	-36,898	35,129	1,451,842	1,177	1,518,707	752,075	2,270,782	67,457	1,905	79,308	1,335,362	680	1,484,712
1979	17,397	60,958	-32,307	1,659,265	1,398	1,688,259	-112,053	1,594,658	17,397	33,884	-51,299	1,530,926	685	1,531,593
1980	0	88,635	-19,130	1,876,571	7,003	1,953,079	-129,045	1,824,034	0	72,388	-11,930	1,737,571	6,130	1,804,159
1981	0	88,959	17,589	2,004,061	13,063	2,123,672	24,295	2,147,967	0	72,712	24,789	1,864,461	12,180	1,974,142
1982	0	81,963	-14,061	2,113,659	15,777	2,197,338	163,470	2,360,808	0	65,716	-6,861	1,974,249	14,880	2,047,984
1983	0	93,397	66,744	2,191,583	18,187	2,369,911	-199,649	2,170,262	0	77,150	73,944	2,051,693	17,280	2,220,067
1984	0	93,637	-28,487	2,336,448	18,837	2,420,435	155,917	2,576,352	0	77,390	-21,287	2,195,848	17,930	2,269,881
1985	0	93,440	21,521	2,403,744	18,877	2,537,582	-13,217	2,524,365	0	77,193	21,521	2,263,544	17,930	2,380,188
1986	0	93,239	-35,239	2,563,350	21,840	2,643,190	21,051	2,664,241	0	76,992	-35,239	2,422,250	19,580	2,483,583
1987	0	93,155	8,461	2,580,051	22,050	2,703,717	-89,419	2,614,298	0	76,908	8,461	2,438,341	19,580	2,543,290
1988	0	93,225	19,199	2,655,512	22,270	2,790,206	280,858	3,071,064	0	76,978	19,199	2,513,222	19,580	2,628,979
1989	0	93,554	-22,189	2,838,813	22,480	2,932,658	26,258	2,958,916	0	77,309	-22,189	2,694,713	19,580	2,769,413
1990	0	92,936	-31,447	2,998,800	22,690	3,082,979	40,428	3,123,407	0	76,693	-31,447	2,852,100	19,580	2,916,926
1991	0	92,685	14,683	3,014,920	22,870	3,145,158	-40,315	3,104,843	0	76,462	14,683	2,863,610	19,580	2,974,335
1992	0	93,375	50,719	3,030,110	23,040	3,197,244	273,685	3,470,929	0	77,195	50,719	2,875,220	19,580	3,022,714
1993	0	93,713	-2,722	3,046,840	23,220	3,161,051	47,498	3,208,549	0	77,572	-2,722	2,887,330	19,580	2,981,760
1994	0	93,574	6,689	3,062,140	23,390	3,185,793	68,419	3,254,212	0	77,464	6,689	2,899,940	19,580	3,003,673
1995	0	93,570	-5,682	3,075,530	23,560	3,186,978	-6,936	3,180,042	0	77,476	-5,682	2,912,340	19,580	3,003,714
1996	0	93,461	3,556	3,077,160	23,740	3,197,917	-3,213	3,194,704	0	77,382	3,556	2,912,860	19,580	3,013,378
1997	0	93,306	-12,330	3,077,450	23,910	3,182,336	169,203	3,351,539	0	77,232	-12,330	2,913,060	19,580	2,997,542
1998	0	93,477	21,336	3,077,490	24,080	3,216,383	11,543	3,227,926	0	77,394	21,336	2,913,980	19,580	3,032,290
1999	0	93,536	-30,256	3,075,870	24,260	3,163,410	-173,109	2,990,301	0	77,442	-30,256	2,914,280	19,580	2,981,046
2000	0	93,474	15,834	3,075,300	24,430	3,209,038	-79,000	3,130,038	0	77,372	15,834	2,914,600	19,580	3,027,386
2001	0	93,186	-8,207	3,120,230	24,430	3,229,639	48,139	3,277,778	0	77,107	-8,207	2,957,960	19,580	3,046,440
2002	0	93,420	342	3,164,320	24,430	3,282,512	251,196	3,533,708	0	77,341	342	3,001,370	19,580	3,098,633
2003	0	93,341	-15,214	3,207,460	24,430	3,310,017	57,036	3,367,053	0	77,262	-15,214	3,042,930	19,580	3,124,558
2004	0	93,442	31,473	3,254,920	24,430	3,404,265	-219,445	3,184,820	0	77,373	31,473	3,088,710	19,580	3,217,136
2005	0	93,349	-30,010	3,298,180	24,430	3,385,949	261,547	3,647,496	0	77,280	-30,010	3,131,400	19,580	3,198,250
2006	0	93,229	2,599	3,344,820	24,430	3,465,078	29,738	3,494,816	0	77,174	2,599	3,176,460	19,580	3,275,813
2007	0	92,927	-30,850	3,390,970	24,430	3,477,477	-249,249	3,228,228	0	76,883	-30,850	3,220,930	19,580	3,286,543
2008	0	93,297	64,495	3,436,620	24,430	3,618,842	629,363	4,248,205	0	77,253	64,495	3,266,000	19,580	3,427,328
2009	0	93,284	-21,289	3,482,760	24,430	3,579,185	-135,690	3,443,495	0	77,240	-21,289	3,310,470	19,580	3,386,001
2010	0	92,762	9,741	3,529,420	24,430	3,656,353	37,442	3,693,795	0	76,750	9,741	3,355,550	19,580	3,461,621
2011	0	92,630	-8,905	3,568,970	24,430	3,677,125	-100,080	3,577,045	0	76,618	-8,905	3,394,520	19,580	3,481,813
2012	0	92,745	6,385	3,609,250	24,430	3,732,810	127,840	3,860,650	0	76,733	6,385	3,433,120	19,580	3,535,818
2013	0	92,853	-9,924	3,648,460	24,430	3,755,819	-91,019	3,664,800	0	76,841	-9,924	3,471,770	19,580	3,558,267
2014	0	92,376	-6,064	3,689,520	24,430	3,800,262	146,155	3,946,417	0	76,380	-6,064	3,511,250	19,580	3,601,146
2015	0	92,306	-530	3,711,990	24,430	3,828,196	-12,062	3,816,134	0	76,326	-530	3,532,050	19,580	3,627,426
2016	0	93,088	3,421	3,733,550	24,430	3,854,489	126,502	3,980,991	0	77,108	3,421	3,553,020	19,580	3,653,129
2017	0	93,117	7,018	3,756,200	24,430	3,880,765	-125,421	3,755,344	0	77,153	7,018	3,574,100	19,580	3,677,851
2018	0	92,874	-356	3,778,850	24,430	3,895,798	131,430	4,027,228	0	76,910	-356	3,595,070	19,580	3,691,204
2019	0	93,086	-3,029	3,800,490	24,430	3,914,977	129,800	4,044,777	0	77,122	-3,029	3,616,140	19,580	3,709,813
2020	0	93,312	-11,344	3,823,150	24,430	3,929,548	-7,937	3,921,611	0	77,136	-11,344	3,637,110	19,580	3,722,482
2021	0	93,085	17,174	3,845,820	24,430	3,980,509	61,871	4,042,380	0	76,909	17,174	3,658,210	19,580	3,771,873
2022	0	93,219	-16,049	3,866,930	24,430	3,968,530	-34,921	3,933,609	0	77,043	-16,049	3,678,640	19,580	3,759,214
2023	0	92,873	-15,678	3,889,720	24,430	3,991,345	162,179	4,153,524	0	76,697	-15,678	3,699,860	19,580	3,780,459
2024	0	92,819	11,399	3,912,410	24,430	4,041,058	36,316	4,077,374	0	76,668	11,399	3,720,960	19,580	3,828,607
2025	0	92,787	2,817	3,933,930	24,430	4,053,964	-40,176	4,013,788	0	76,636	2,817	3,741,810	19,580	3,840,843
2026	0	92,515	-72	3,956,500	24,430	4,073,373	-44,920	4,028,453	0	76,394	-72	3,762,800	19,580	3,858,702
2027	0	92,350	-8,055	3,957,190	24,430	4,065,915	18,883	4,084,798	0	76,229	-8,055	3,763,490	19,580	3,851,244
2028	0	92,057	-16,440	3,957,700	24,430	4,057,747	123,192	4,180,939	0	75,936	-16,440	3,764,000	19,580	3,843,076
2029	0	91,865	-2,147	3,958,400	24,430	4,072,548	55,148	4,127,696	0	75,744	-2,147	3,764,700	19,580	3,857,877
2030	0	91,700	-8,815	3,959,000	24,430	4,066,315	44,771	4,111,086	0	75,579	-8,815	3,765,300	19,580	3,851,644
2031	0	91,542	-10,174	3,959,600	24,430	4,065,398	58,169	4,123,567	0	75,421	-10,174	3,765,900	19,580	3,850,727
2032	0	91,483	24,377	3,960,300	24,430	4,100,590	59,562	4,160,152	0	75,362	24,377	3,766,600	19,580	3,885,919
2033	0	91,953	4,252	3,960,900	24,430	4,081,535	19,692	4,101,227	0	75,832	4,252	3,767,200	19,580	3,866,864
2034	0	91,569	-6,817	3,961,500	24,430	4,070,682	-100,794	3,969,888	0	75,448	-6,817	3,767,800	19,580	3,856,011
2035	0	91,433	-3,260	3,962,200	24,430	4,074,803	51,808	4,126,611	0	75,312	-3,260	3,768,500	19,580	3,860,132

a) Includes entitlement water, surplus water (delivered prior to May 1, 1973), and nonproject water.

b) Metric conversion is acre-feet times 1.2335 equals cubic dekametres.

c) For the period 1968 through 1983 deliveries are from nonproject water.

d) For the period June 1962 through November 1967, deliveries were nonproject water.

TABLE B-6: ANNUAL WATER QUANTITIES CONVEYED THRU EACH PUMPING

(in acre-feet)[b]

Calendar Year	CALIFORNIA AQUEDUCT (Continued)											
	SOUTH SAN JOAQUIN DIVISION											
	BUENA VISTA PUMPING PLANT						WHEELER RIDGE PUMPING PLANT					
	Initial Fill Water	Operational Losses	Reservoir Storage Changes	Deliveries: Water Supply	Deliveries: Recreation	Total	Initial Fill Water	Operational Losses	Reservoir Storage Changes	Deliveries: Water Supply	Deliveries: Recreation	Total
	(28)	(29)	(30)	(31)	(32)	(33)	(34)	(35)	(36)	(37)	(38)	(39)
1970	4,779	1,012	0	3	0	5,794	198	2	0	0	0	200
1971	7,853	8,399	0	101,512	0	117,764	7,533	-112	0	3,552	0	10,973
1972	100,274	20,044	-6,558	223,626	6,481	343,867	100,274	12,765	-6,558	84,955	6,481	197,917
1973	204,638	35,695	1,329	311,096	1,147	553,905	204,638	21,543	1,329	229,685	1,147	458,342
1974	237,554	19,672	-15,295	388,949	2,108	632,988	237,554	11,843	-15,295	336,198	2,108	572,408
1975	103,352	26,342	-693	672,531	3,358	804,890	103,352	19,763	-693	621,706	3,358	747,486
1976	61,122	29,428	-152,171	785,055	1,581	725,015	61,122	18,552	-152,171	740,486	1,581	669,570
1977	0	25,173	-116,219	271,944	560	181,458	0	16,415	-116,219	246,349	560	147,105
1978	65,027	17,751	121,904	762,043	674	967,399	65,027	28,820	121,904	631,121	674	847,546
1979	12,302	46,157	-51,299	737,714	502	745,376	12,302	50,663	-51,299	625,561	502	637,729
1980	0	50,701	-11,930	1,092,179	6,130	1,137,080	0	47,071	-11,930	1,024,979	6,130	1,066,250
1981	0	51,025	24,789	1,186,571	12,030	1,274,415	0	47,395	24,789	1,111,481	12,030	1,195,695
1982	0	44,029	-6,861	1,253,169	14,730	1,305,067	0	40,399	-6,861	1,168,189	14,730	1,216,457
1983	0	55,463	73,944	1,283,323	17,130	1,429,860	0	51,833	73,944	1,180,853	17,130	1,323,760
1984	0	55,703	-21,287	1,381,388	17,780	1,433,584	0	52,073	-21,287	1,264,328	17,780	1,312,894
1985	0	55,506	21,521	1,404,294	17,780	1,499,101	0	51,876	21,521	1,272,644	17,780	1,363,821
1986	0	55,305	-35,239	1,522,610	17,780	1,560,456	0	51,675	-35,239	1,379,270	17,780	1,413,486
1987	0	55,221	8,461	1,496,911	17,780	1,578,373	0	51,591	8,461	1,341,781	17,780	1,419,613
1988	0	55,291	19,199	1,532,502	17,780	1,624,772	0	51,661	19,199	1,366,682	17,780	1,455,322
1989	0	55,622	-22,189	1,685,303	17,780	1,736,516	0	51,992	-22,189	1,511,993	17,780	1,559,576
1990	0	55,006	-31,447	1,805,900	17,780	1,847,239	0	51,376	-31,447	1,625,200	17,780	1,662,909
1991	0	54,775	14,683	1,817,410	17,780	1,904,648	0	51,145	14,683	1,636,710	17,780	1,720,318
1992	0	55,508	50,719	1,829,020	17,780	1,953,027	0	51,878	50,719	1,648,320	17,780	1,768,697
1993	0	55,885	-2,722	1,841,130	17,780	1,912,073	0	52,255	-2,722	1,660,430	17,780	1,727,743
1994	0	55,777	6,689	1,853,740	17,780	1,933,986	0	52,147	6,689	1,673,040	17,780	1,749,656
1995	0	55,789	-5,682	1,866,140	17,780	1,934,027	0	52,159	-5,682	1,685,440	17,780	1,749,697
1996	0	55,695	3,556	1,866,660	17,780	1,943,691	0	52,065	3,556	1,685,960	17,780	1,759,361
1997	0	55,545	-12,330	1,866,860	17,780	1,927,855	0	51,915	-12,330	1,686,160	17,780	1,743,525
1998	0	55,707	21,336	1,867,780	17,780	1,962,603	0	52,077	21,336	1,687,080	17,780	1,778,273
1999	0	55,755	-30,256	1,868,080	17,780	1,911,359	0	52,125	-30,256	1,687,380	17,780	1,727,029
2000	0	55,685	15,834	1,868,400	17,780	1,957,699	0	52,055	15,834	1,687,700	17,780	1,773,369
2001	0	55,420	-8,207	1,911,380	17,780	1,976,373	0	51,790	-8,207	1,730,640	17,780	1,792,003
2002	0	55,654	342	1,954,380	17,780	2,028,156	0	52,024	342	1,773,600	17,780	1,843,746
2003	0	55,575	-15,214	1,995,570	17,780	2,053,711	0	51,945	-15,214	1,814,740	17,780	1,869,251
2004	0	55,686	31,473	2,040,950	17,780	2,145,889	0	52,056	31,473	1,860,080	17,780	1,961,389
2005	0	55,593	-30,010	2,083,250	17,780	2,126,613	0	51,963	-30,010	1,902,340	17,780	1,942,073
2006	0	55,487	2,599	2,127,930	17,780	2,203,796	0	51,857	2,599	1,946,980	17,780	2,019,216
2007	0	55,196	-30,850	2,172,010	17,780	2,214,136	0	51,566	-30,850	1,991,010	17,780	2,029,506
2008	0	55,566	64,495	2,216,700	17,780	2,354,541	0	51,936	64,495	2,035,660	17,780	2,169,871
2009	0	55,553	-21,289	2,260,780	17,780	2,312,824	0	51,923	-21,289	2,079,700	17,780	2,128,114
2010	0	55,063	9,741	2,305,460	17,780	2,388,044	0	51,433	9,741	2,124,340	17,780	2,203,294
2011	0	54,931	-8,905	2,344,060	17,780	2,407,866	0	51,301	-8,905	2,162,890	17,780	2,223,066
2012	0	55,046	6,385	2,382,250	17,780	2,461,461	0	51,416	6,385	2,201,040	17,780	2,276,621
2013	0	55,154	-9,924	2,420,520	17,780	2,483,530	0	51,524	-9,924	2,239,270	17,780	2,298,650
2014	0	54,693	-6,064	2,459,620	17,780	2,526,029	0	51,063	-6,064	2,278,330	17,780	2,341,109
2015	0	54,639	-530	2,480,010	17,780	2,551,899	0	51,009	-530	2,298,680	17,780	2,366,939
2016	0	55,421	3,421	2,500,610	17,780	2,577,232	0	51,791	3,421	2,319,230	17,780	2,392,222
2017	0	55,466	7,018	2,521,290	17,780	2,601,554	0	51,836	7,018	2,339,870	17,780	2,416,504
2018	0	55,223	-356	2,541,870	17,780	2,614,517	0	51,593	-356	2,360,410	17,780	2,429,427
2019	0	55,435	-3,029	2,562,560	17,780	2,632,746	0	51,805	-3,029	2,381,060	17,780	2,447,616
2020	0	55,449	-11,344	2,583,140	17,780	2,645,025	0	51,819	-11,344	2,401,590	17,780	2,459,845
2021	0	55,222	17,174	2,603,860	17,780	2,694,036	0	51,592	17,174	2,422,270	17,780	2,508,816
2022	0	55,356	-16,049	2,623,900	17,780	2,680,987	0	51,726	-16,049	2,442,270	17,780	2,495,727
2023	0	55,010	-15,678	2,644,720	17,780	2,701,832	0	51,380	-15,678	2,463,050	17,780	2,516,532
2024	0	54,981	11,399	2,665,450	17,780	2,749,610	0	51,351	11,399	2,483,730	17,780	2,564,260
2025	0	54,949	2,817	2,685,890	17,780	2,761,436	0	51,319	2,817	2,504,130	17,780	2,576,046
2026	0	54,707	-72	2,706,500	17,780	2,778,915	0	51,077	-72	2,524,700	17,780	2,593,485
2027	0	54,542	-8,055	2,707,190	17,780	2,771,457	0	50,912	-8,055	2,525,390	17,780	2,586,027
2028	0	54,249	-16,440	2,707,700	17,780	2,763,289	0	50,619	-16,440	2,525,900	17,780	2,577,859
2029	0	54,057	-2,147	2,708,400	17,780	2,778,090	0	50,427	-2,147	2,526,600	17,780	2,592,660
2030	0	53,892	-8,815	2,709,000	17,780	2,771,857	0	50,262	-8,815	2,527,200	17,780	2,586,427
2031	0	53,734	-10,174	2,709,600	17,780	2,770,940	0	50,104	-10,174	2,527,800	17,780	2,585,510
2032	0	53,675	24,377	2,710,300	17,780	2,806,132	0	50,045	24,377	2,528,500	17,780	2,620,702
2033	0	54,145	4,252	2,710,900	17,780	2,787,077	0	50,515	4,252	2,529,100	17,780	2,601,647
2034	0	53,761	-6,817	2,711,500	17,780	2,776,224	0	50,131	-6,817	2,529,700	17,780	2,590,794
2035	0	53,625	-3,260	2,712,200	17,780	2,780,345	0	49,995	-3,260	2,530,400	17,780	2,594,915

AND POWER RECOVERY PLANT OF PROJECT TRANSPORTATION FACILITIES[a]

(in acre-feet)[b]

Calendar Year	CALIFORNIA AQUEDUCT (Continued)											
	SOUTH SAN JOAQUIN DIVISION (Continued)						TEHACHAPI DIVISION					
	WIND GAP PUMPING PLANT						A. D. EDMONSTON PUMPING PLANT					
	Initial Fill Water	Operational Losses	Reservoir Storage Changes	Deliveries: Water Supply	Deliveries: Recreation	Total	Initial Fill Water	Operational Losses	Reservoir Storage Changes	Deliveries: Water Supply	Deliveries: Recreation	Total
	(40)	(41)	(42)	(43)	(44)	(45)	(46)	(47)	48)	(49)	(50)	(51)
1971	7,366	-159	0	0	0	7,207	5,446	8	0	0	0	5,454
1972	100,274	13,160	-6,558	78,891	6,481	192,248	100,274	16,067	-6,558	74,123	6,481	190,387
1973	204,638	32,414	1,329	209,769	1,147	449,297	204,638	34,051	1,329	207,808	1,147	448,973
1974	237,554	17,655	-15,295	318,198	2,108	560,220	237,554	18,181	-15,295	313,634	2,108	556,182
1975	103,352	25,326	-693	586,286	3,358	717,629	103,352	20,183	-693	573,219	3,358	699,419
1976	61,122	21,468	-152,171	700,935	1,581	632,935	61,122	21,096	-152,171	685,768	1,581	617,396
1977	0	15,698	-116,219	240,191	560	140,230	0	18,424	-116,219	236,086	560	138,851
1978	65,027	26,705	121,904	599,973	674	814,283	65,027	20,887	121,904	590,329	674	798,821
1979	12,302	50,580	-51,299	586,959	502	599,044	12,302	46,332	-51,299	568,338	502	576,175
1980	0	46,821	-11,930	986,979	6,130	1,028,000	0	45,271	-11,930	962,379	6,130	1,001,850
1981	0	47,145	24,789	1,068,681	12,030	1,152,645	0	45,595	24,789	1,041,271	12,030	1,123,685
1982	0	40,149	-6,861	1,120,989	14,730	1,169,007	0	38,599	-6,861	1,093,469	14,730	1,139,937
1983	0	51,583	73,944	1,133,653	17,130	1,276,310	0	50,033	73,944	1,106,123	17,130	1,247,230
1984	0	51,823	-21,287	1,217,128	17,780	1,265,444	0	50,273	-21,287	1,189,488	17,780	1,236,254
1985	0	51,626	21,521	1,225,444	17,780	1,316,371	0	50,076	21,521	1,197,494	17,780	1,286,871
1986	0	51,425	-35,239	1,330,970	17,780	1,364,936	0	49,875	-35,239	1,297,710	17,780	1,330,126
1987	0	51,341	8,461	1,292,381	17,780	1,369,963	0	49,791	8,461	1,253,811	17,780	1,329,843
1988	0	51,411	19,199	1,316,082	17,780	1,404,472	0	49,861	19,199	1,272,202	17,780	1,359,042
1989	0	51,742	-22,189	1,460,193	17,780	1,507,526	0	50,192	-22,189	1,411,003	17,780	1,456,786
1990	0	51,126	-31,447	1,572,200	17,780	1,609,659	0	49,576	-31,447	1,517,900	17,780	1,553,809
1991	0	50,895	14,683	1,583,710	17,780	1,667,068	0	49,345	14,683	1,529,410	17,780	1,611,218
1992	0	51,628	50,719	1,595,320	17,780	1,715,447	0	50,078	50,719	1,541,020	17,780	1,659,597
1993	0	52,005	-2,722	1,607,430	17,780	1,674,493	0	50,455	-2,722	1,553,130	17,780	1,618,643
1994	0	51,897	6,689	1,620,040	17,780	1,696,406	0	50,347	6,689	1,565,740	17,780	1,640,556
1995	0	51,909	-5,682	1,632,440	17,780	1,696,447	0	50,359	-5,682	1,578,140	17,780	1,640,597
1996	0	51,815	3,556	1,632,960	17,780	1,706,111	0	50,265	3,556	1,578,660	17,780	1,650,261
1997	0	51,665	-12,330	1,633,160	17,780	1,690,275	0	50,115	-12,330	1,578,860	17,780	1,634,425
1998	0	51,827	21,336	1,634,080	17,780	1,725,023	0	50,277	21,336	1,579,780	17,780	1,669,173
1999	0	51,875	-30,256	1,634,380	17,780	1,673,779	0	50,325	-30,256	1,580,080	17,780	1,617,929
2000	0	51,805	15,834	1,634,700	17,780	1,720,119	0	50,255	15,834	1,580,400	17,780	1,664,269
2001	0	51,540	-8,207	1,677,640	17,780	1,738,753	0	49,990	-8,207	1,623,270	17,780	1,682,833
2002	0	51,774	342	1,720,600	17,780	1,790,496	0	50,224	342	1,666,150	17,780	1,734,496
2003	0	51,695	-15,214	1,761,740	17,780	1,816,001	0	50,145	-15,214	1,707,220	17,780	1,759,931
2004	0	51,806	31,473	1,807,080	17,780	1,908,139	0	50,256	31,473	1,752,490	17,780	1,851,999
2005	0	51,713	-30,010	1,849,340	17,780	1,888,823	0	50,163	-30,010	1,794,670	17,780	1,832,603
2006	0	51,607	2,599	1,893,980	17,780	1,965,966	0	50,057	2,599	1,839,240	17,780	1,909,676
2007	0	51,316	-30,850	1,938,010	17,780	1,976,256	0	49,766	-30,850	1,883,200	17,780	1,919,896
2008	0	51,686	64,495	1,982,660	17,780	2,116,621	0	50,136	64,495	1,927,780	17,780	2,060,191
2009	0	51,673	-21,289	2,026,700	17,780	2,074,864	0	50,123	-21,289	1,971,740	17,780	2,018,354
2010	0	51,183	9,741	2,071,340	17,780	2,150,044	0	49,633	9,741	2,016,310	17,780	2,093,464
2011	0	51,051	-8,905	2,109,890	17,780	2,169,816	0	49,501	-8,905	2,054,790	17,780	2,113,166
2012	0	51,166	6,385	2,148,040	17,780	2,223,371	0	49,616	6,385	2,092,860	17,780	2,166,641
2013	0	51,274	-9,924	2,186,270	17,780	2,245,400	0	49,724	-9,924	2,131,020	17,780	2,188,600
2014	0	50,813	-6,064	2,225,330	17,780	2,287,859	0	49,263	-6,064	2,170,010	17,780	2,230,989
2015	0	50,759	-530	2,245,680	17,780	2,313,689	0	49,209	-530	2,190,280	17,780	2,256,739
2016	0	51,541	3,421	2,266,230	17,780	2,338,972	0	49,991	3,421	2,210,760	17,780	2,281,952
2017	0	51,586	7,018	2,286,870	17,780	2,363,254	0	50,036	7,018	2,231,330	17,780	2,306,164
2018	0	51,343	-356	2,307,410	17,780	2,376,177	0	49,793	-356	2,251,790	17,780	2,319,007
2019	0	51,555	-3,029	2,328,060	17,780	2,394,366	0	50,005	-3,029	2,272,370	17,780	2,337,126
2020	0	51,569	-11,344	2,348,590	17,780	2,406,595	0	50,019	-11,344	2,292,830	17,780	2,349,285
2021	0	51,342	17,174	2,369,270	17,780	2,455,566	0	49,792	17,174	2,313,440	17,780	2,398,186
2022	0	51,476	-16,049	2,389,270	17,780	2,442,477	0	49,926	-16,049	2,333,360	17,780	2,385,017
2023	0	51,130	-15,678	2,410,050	17,780	2,463,282	0	49,580	-15,678	2,354,070	17,780	2,405,752
2024	0	51,101	11,399	2,430,730	17,780	2,511,010	0	49,551	11,399	2,374,680	17,780	2,453,410
2025	0	51,069	2,817	2,451,130	17,780	2,522,796	0	49,519	2,817	2,395,000	17,780	2,465,116
2026	0	50,827	-72	2,471,700	17,780	2,540,235	0	49,277	-72	2,415,500	17,780	2,482,485
2027	0	50,662	-8,055	2,472,390	17,780	2,532,777	0	49,112	-8,055	2,416,190	17,780	2,475,027
2028	0	50,369	-16,440	2,472,900	17,780	2,524,609	0	48,819	-16,440	2,416,700	17,780	2,466,859
2029	0	50,177	-2,147	2,473,600	17,780	2,539,410	0	48,627	-2,147	2,417,400	17,780	2,481,660
2030	0	50,012	-8,815	2,474,200	17,780	2,533,177	0	48,462	-8,815	2,418,000	17,780	2,475,427
2031	0	49,854	-10,174	2,474,800	17,780	2,532,260	0	48,304	-10,174	2,418,600	17,780	2,474,510
2032	0	49,795	24,377	2,475,500	17,780	2,567,452	0	48,245	24,377	2,419,300	17,780	2,509,702
2033	0	50,265	4,252	2,476,100	17,780	2,548,397	0	48,715	4,252	2,419,900	17,780	2,490,647
2034	0	49,881	-6,817	2,476,700	17,780	2,537,544	0	48,331	-6,817	2,420,500	17,780	2,479,794
2035	0	49,745	-3,260	2,477,400	17,780	2,541,665	0	48,195	-3,260	2,421,200	17,780	2,483,915

TABLE B-6: ANNUAL WATER QUANTITIES CONVEYED THRU EACH PUMPING

(in acre-feet)[b]

Calendar Year	CALIFORNIA AQUEDUCT (Continued)											
	MOJAVE DIVISION											
	COTTONWOOD POWERPLANT						PEARBLOSSOM PUMPING PLANT					
	Initial Fill Water	Operational Losses	Reservoir Storage Changes	Deliveries: Water Supply	Deliveries: Recreation	Total	Initial Fill Water	Operational Losses	Reservoir Storage Changes	Deliveries: Water Supply	Deliveries: Recreation	Total
	(52)	(53)	(54)	(55)	(56)	(57)	(58)	(59)	(60)	(61)	(62)	(63)
1971	0	0	0	0	0	0	21	0	0	0	0	21
1972	0	0	0	0	0	0	35,243	5,282	-153	1,794	0	42,166
1973	0	0	0	0	0	0	80,177	21,522	-2,700	52,201	72	151,272
1974	0	0	0	0	0	0	76,694	10,847	-11,149	102,839	44	179,275
1975	0	0	0	0	0	0	10,000	2,364	-8,397	190,351	70	194,388
1976	0	0	0	0	0	0	4,168	7,040	-16,055	236,713	152	232,018
1977	0	0	0	0	0	0	0	11,398	-17,534	102,326	580	96,770
1978	0	0	0	0	0	0	19,922	5,696	69,130	374,845	498	470,091
1979	0	0	0	0	0	0	12,302	6,836	-32,518	362,114	502	349,236
1980	0	0	0	0	0	0	0	18,235	5,657	572,209	1,330	597,431
1981	0	0	0	0	0	0	0	17,722	7,459	671,441	3,430	700,052
1982	0	0	0	0	0	0	0	11,512	1,428	697,974	5,630	716,544
1983	0	0	0	0	0	0	0	22,070	35,721	716,113	6,630	780,534
1984	0	27,615	1,088	872,608	12,080	913,391	0	22,265	1,088	808,168	6,830	838,351
1985	0	27,304	-1,936	892,144	12,080	929,592	0	21,954	-1,936	824,489	6,830	851,337
1986	0	27,387	-1,000	879,390	12,080	917,857	0	22,037	-1,000	810,010	6,830	837,877
1987	0	27,314	-12,156	837,421	12,080	864,659	0	21,964	-12,156	765,331	6,830	781,969
1988	0	27,129	4,672	841,542	12,080	885,423	0	21,779	4,672	765,752	6,830	799,033
1989	0	27,609	10,953	806,273	12,080	856,915	0	22,259	10,953	725,773	6,830	765,815
1990	0	27,124	-18,975	813,000	12,080	833,229	0	21,774	-18,975	726,800	6,830	736,429
1991	0	27,152	7,715	808,110	12,080	855,057	0	21,802	7,715	718,760	6,830	755,107
1992	0	27,581	8,417	803,320	12,080	851,398	0	22,231	8,417	710,520	6,830	747,998
1993	0	27,722	7,647	798,930	12,080	846,379	0	22,372	7,647	702,380	6,830	739,229
1994	0	27,538	5,519	795,140	12,080	840,277	0	22,188	5,519	694,540	6,830	729,077
1995	0	27,659	-9,004	791,140	12,080	821,875	0	22,309	-9,004	686,200	6,830	706,335
1996	0	27,503	9,168	787,460	12,080	836,211	0	22,153	9,168	678,060	6,830	716,211
1997	0	27,517	-12,489	783,460	12,080	810,568	0	22,167	-12,489	669,620	6,830	686,128
1998	0	27,498	19,695	780,080	12,080	839,353	0	22,148	19,695	661,780	6,830	710,453
1999	0	27,708	-10,878	776,180	12,080	805,090	0	22,358	-10,878	653,440	6,830	671,750
2000	0	27,747	-5,032	772,300	12,080	807,095	0	22,397	-5,032	645,200	6,830	669,395
2001	0	27,457	-6,966	780,060	12,080	812,631	0	22,107	-6,966	651,360	6,830	673,331
2002	0	27,651	8,722	787,630	12,080	836,083	0	22,301	8,722	657,320	6,830	695,173
2003	0	27,651	1,561	795,590	12,080	836,882	0	22,301	1,561	663,680	6,830	694,372
2004	0	27,656	1,526	803,540	12,080	844,802	0	22,306	1,526	670,040	6,830	700,702
2005	0	27,547	-7,466	810,810	12,080	842,971	0	22,197	-7,466	675,900	6,830	697,461
2006	0	27,526	16,210	818,170	12,080	873,986	0	22,176	16,210	682,160	6,830	727,376
2007	0	27,658	-6,021	825,220	12,080	858,937	0	22,308	-6,021	688,120	6,830	711,237
2008	0	27,456	1,347	832,890	12,080	873,773	0	22,106	1,347	694,680	6,830	724,963
2009	0	27,467	-1,224	839,840	12,080	878,163	0	22,117	-1,224	700,540	6,830	728,263
2010	0	27,018	-2,221	847,290	12,080	884,167	0	21,668	-2,221	706,900	6,830	733,177
2011	0	27,118	-3,995	854,660	12,080	889,863	0	21,768	-3,995	713,160	6,830	737,763
2012	0	27,096	-1,653	861,720	12,080	899,243	0	21,746	-1,653	719,120	6,830	746,043
2013	0	27,127	-4,786	868,970	12,080	903,391	0	21,777	-4,786	725,280	6,830	749,101
2014	0	27,030	2,585	876,850	12,080	918,545	0	21,680	2,585	732,040	6,830	763,135
2015	0	26,942	-10,455	884,010	12,080	912,577	0	21,592	-10,455	738,100	6,830	756,067
2016	0	27,153	10,548	891,280	12,080	941,061	0	21,803	10,548	744,260	6,830	783,441
2017	0	27,234	-6,593	898,530	12,080	931,251	0	21,884	-6,593	750,420	6,830	772,541
2018	0	27,141	1,399	905,780	12,080	946,400	0	21,791	1,399	756,580	6,830	786,600
2019	0	27,172	-4,125	913,250	12,080	948,377	0	21,822	-4,125	762,940	6,830	787,467
2020	0	27,146	-10,716	920,600	12,080	949,110	0	21,796	-10,716	769,200	6,830	787,110
2021	0	26,997	10,227	927,900	12,080	977,204	0	21,647	10,227	775,400	6,830	814,104
2022	0	27,093	-7,197	934,810	12,080	966,786	0	21,743	-7,197	781,200	6,830	802,576
2023	0	26,882	-1,220	942,100	12,080	979,842	0	21,532	-1,220	787,400	6,830	814,542
2024	0	26,840	1,155	949,600	12,080	989,675	0	21,490	1,155	793,800	6,830	823,275
2025	0	26,782	-6,720	956,610	12,080	988,752	0	21,432	-6,720	799,700	6,830	821,242
2026	0	26,510	-1,305	963,900	12,080	1,001,185	0	21,160	-1,305	805,900	6,830	832,585
2027	0	26,606	-7,405	963,900	12,080	995,181	0	21,256	-7,405	805,900	6,830	826,581
2028	0	26,420	-11,452	963,900	12,080	990,948	0	21,070	-11,452	805,900	6,830	822,348
2029	0	26,212	8,283	963,900	12,080	1,010,475	0	20,862	8,283	805,900	6,830	841,875
2030	0	26,051	2,786	963,900	12,080	1,004,817	0	20,701	2,786	805,900	6,830	836,217
2031	0	25,970	-9,803	963,900	12,080	992,147	0	20,620	-9,803	805,900	6,830	823,547
2032	0	25,776	-3,380	963,900	12,080	998,376	0	20,426	-3,380	805,900	6,830	829,776
2033	0	25,900	6,890	963,900	12,080	1,008,770	0	20,550	6,890	805,900	6,830	840,170
2034	0	25,705	-6,171	963,900	12,080	995,514	0	20,355	-6,171	805,900	6,830	826,914
2035	0	25,788	5,763	963,900	12,080	1,007,531	0	20,438	5,763	805,900	6,830	838,931

AND POWER RECOVERY PLANT OF PROJECT TRANSPORTATION FACILITIES[a]

(in acre-feet)[b]

Calendar Year	CALIFORNIA AQUEDUCT (Continued)											
	SANTA ANA DIVISION						WEST BRANCH, CALIFORNIA AQUEDUCT					
	DEVIL CANYON POWERPLANT						OSO PUMPING PLANT					
	Initial Fill Water	Operational Losses	Reservoir Storage Changes	Deliveries: Water Supply	Deliveries: Recreation	Total	Initial Fill Water	Operational Losses	Reservoir Storage Changes	Deliveries: Water Supply	Deliveries: Recreation	Total
	(64)	(65)	(66)	(67)	(68)	(69)	(70)	(71)	(72)	(73)	(74)	(75)
1971	0	0	0	0	0	0	2,444	133	0	0	0	2,577
1972	37	0	0	1,275	0	1,312	63,883	6,557	-6,405	71,991	6,481	142,507
1973	40,848	14,745	0	51,812	0	107,405	124,461	16,995	4,029	155,317	1,075	301,877
1974	74,666	8,367	-4,925	102,198	0	180,306	160,860	12,702	-4,146	209,172	2,064	380,652
1975	10,000	1,995	-6,719	189,526	0	194,802	93,352	23,008	7,704	374,306	3,288	501,658
1976	4,168	5,180	-9,182	235,711	23	235,900	56,954	15,845	-136,116	420,708	1,429	358,820
1977	0	8,082	-5,235	101,137	469	104,453	0	4,407	-98,685	122,447	-20	28,149
1978	14,820	3,754	21,686	373,636	481	414,377	45,105	9,061	52,774	171,139	176	278,255
1979	12,302	5,620	-27,107	356,854	485	348,154	0	25,355	-18,781	145,598	0	152,172
1980	0	13,157	25,870	566,484	1,150	606,661	0	21,636	-17,587	298,500	4,550	307,099
1981	0	13,035	4,140	665,305	3,250	685,730	0	22,473	17,330	292,400	4,750	336,953
1982	0	13,353	2,636	663,826	5,250	685,065	0	22,426	-8,289	311,600	5,050	330,787
1983	0	13,243	24,061	679,747	6,250	723,301	0	22,563	38,223	327,900	5,250	393,936
1984	0	13,224	3,251	769,268	6,250	791,993	0	22,608	-22,375	315,500	5,700	321,433
1985	0	13,080	-10,258	783,189	6,250	792,261	0	22,722	23,457	303,900	5,700	355,779
1986	0	13,035	1,037	767,110	6,250	787,432	0	22,438	-34,239	416,800	5,700	410,699
1987	0	13,162	3,540	720,431	6,250	743,383	0	22,427	20,617	414,800	5,700	463,544
1988	0	12,980	-10,554	718,852	6,250	727,528	0	22,682	14,527	429,000	5,700	471,909
1989	0	13,237	14,463	676,773	6,250	710,723	0	22,533	-33,142	603,000	5,700	598,091
1990	0	12,782	-13,438	675,800	6,250	681,394	0	22,402	-12,472	703,200	5,700	718,830
1991	0	13,088	8,158	667,800	6,250	695,296	0	22,143	6,968	719,600	5,700	754,411
1992	0	13,353	7,440	659,600	6,250	686,643	0	22,447	42,302	736,000	5,700	806,449
1993	0	13,343	-3,612	651,500	6,250	667,481	0	22,683	-10,369	752,500	5,700	770,514
1994	0	13,253	8,026	643,700	6,250	671,229	0	22,759	1,170	768,900	5,700	798,529
1995	0	13,299	-4,899	635,400	6,250	650,050	0	22,650	3,322	785,300	5,700	816,972
1996	0	13,245	94	627,300	6,250	646,889	0	22,712	-5,612	789,500	5,700	812,300
1997	0	13,303	-1,648	618,900	6,250	636,805	0	22,548	159	793,700	5,700	822,107
1998	0	13,199	9,643	611,100	6,250	640,192	0	22,729	1,641	798,000	5,700	828,070
1999	0	13,351	-11,543	602,800	6,250	610,858	0	22,567	-19,378	802,200	5,700	811,089
2000	0	13,259	-5,111	594,600	6,250	608,998	0	22,458	20,866	806,400	5,700	855,424
2001	0	13,203	8,103	600,500	6,250	628,056	0	22,483	-1,241	841,500	5,700	868,442
2002	0	13,302	-5,499	606,300	6,250	620,353	0	22,523	-8,380	876,800	5,700	896,643
2003	0	13,237	-163	612,300	6,250	631,624	0	22,444	-16,775	909,900	5,700	921,269
2004	0	13,221	7,399	618,400	6,250	645,270	0	22,550	29,947	947,200	5,700	1,005,397
2005	0	13,204	-7,507	624,100	6,250	636,047	0	22,566	-22,544	982,100	5,700	987,822
2006	0	13,121	10,255	630,100	6,250	659,726	0	22,481	-13,611	1,019,300	5,700	1,033,870
2007	0	13,181	-5,407	635,800	6,250	649,824	0	22,058	-24,829	1,056,200	5,700	1,059,129
2008	0	13,061	754	642,100	6,250	662,165	0	22,630	63,148	1,093,100	5,700	1,184,578
2009	0	13,153	1,178	647,700	6,250	668,281	0	22,606	-20,065	1,130,100	5,700	1,138,341
2010	0	13,106	-847	653,800	6,250	672,309	0	22,565	11,962	1,167,200	5,700	1,207,427
2011	0	13,011	-6,994	659,900	6,250	672,167	0	22,333	-4,910	1,198,300	5,700	1,221,423
2012	0	13,018	-2,685	665,600	6,250	682,183	0	22,470	8,038	1,229,300	5,700	1,265,508
2013	0	12,875	-1,545	671,600	6,250	689,180	0	22,547	-5,138	1,260,200	5,700	1,283,309
2014	0	12,887	4,846	678,000	6,250	701,983	0	22,183	-8,649	1,291,300	5,700	1,310,534
2015	0	12,730	-6,940	683,800	6,250	695,840	0	22,217	9,925	1,304,400	5,700	1,342,242
2016	0	12,890	3,864	689,800	6,250	712,804	0	22,788	-7,127	1,317,600	5,700	1,338,961
2017	0	12,878	-5,278	695,700	6,250	709,550	0	22,752	13,611	1,330,900	5,700	1,372,963
2018	0	12,769	-1,994	701,500	6,250	718,525	0	22,602	-1,755	1,344,100	5,700	1,370,647
2019	0	12,829	747	707,700	6,250	727,526	0	22,783	1,096	1,357,200	5,700	1,386,779
2020	0	12,749	-6,046	713,700	6,250	726,653	0	22,823	-628	1,370,300	5,700	1,398,195
2021	0	12,723	889	719,700	6,250	739,562	0	22,745	6,947	1,383,600	5,700	1,418,992
2022	0	12,633	-4,478	725,400	6,250	739,805	0	22,783	-8,852	1,396,600	5,700	1,416,231
2023	0	12,625	-1,155	731,300	6,250	749,020	0	22,648	-14,458	1,410,000	5,700	1,423,890
2024	0	12,621	-771	737,500	6,250	755,600	0	22,661	10,244	1,423,100	5,700	1,461,705
2025	0	12,539	-5,076	743,300	6,250	757,013	0	22,687	9,537	1,436,400	5,700	1,474,324
2026	0	12,411	-2,355	749,300	6,250	765,606	0	22,717	1,233	1,449,600	5,700	1,479,250
2027	0	12,295	-2,239	749,300	6,250	765,606	0	22,456	-650	1,450,290	5,700	1,477,796
2028	0	12,183	-2,127	749,300	6,250	765,606	0	22,349	-4,988	1,450,800	5,700	1,473,861
2029	0	12,072	-2,016	749,300	6,250	765,606	0	22,365	-10,430	1,451,500	5,700	1,469,135
2030	0	11,966	-1,910	749,300	6,250	765,606	0	22,361	-11,601	1,452,100	5,700	1,468,560
2031	0	11,864	-1,808	749,300	6,250	765,606	0	22,284	-371	1,452,700	5,700	1,480,313
2032	0	11,767	-1,711	749,300	6,250	765,606	0	22,419	27,757	1,453,400	5,700	1,509,276
2033	0	11,674	-1,618	749,300	6,250	765,606	0	22,765	-2,638	1,454,000	5,700	1,479,827
2034	0	11,584	-1,528	749,300	6,250	765,606	0	22,576	-646	1,454,600	5,700	1,482,230
2035	0	11,499	-1,443	749,300	6,250	765,606	0	22,357	-9,023	1,455,300	5,700	1,474,334

TABLE B-6: ANNUAL WATER QUANTITIES CONVEYED THRU EACH PUMPING

(in acre-feet) [b]

Calendar Year	CALIFORNIA AQUEDUCT (Continued)											
	WEST BRANCH, CALIFORNIA AQUEDUCT (Continued)											
	PYRAMID POWERPLANT						CASTAIC POWERPLANT					
	Initial Fill Water	Operational Losses	Reservoir Storage Changes	Deliveries: Water Supply	Deliveries: Recreation	Total	Initial Fill Water	Operational Losses	Reservoir Storage Changes	Deliveries: Water Supply	Deliveries: Recreation	Total
	(76)	(77)	(78)	(79)	(80)	(81)	(82)	(83)	(84)	(85)	(86)	(87)
1972	0	0	0	0	0	0	57,364	1,788	-6,162	71,938	6,481	131,409
1973	0	0	0	0	0	0	37,198	6,430	4,542	155,297	1,075	204,542
1974	0	0	0	0	0	0	82,364	1,772	-950	209,136	541	292,863
1975	0	0	0	0	0	0	90,460	5,002	-1,534	374,280	1,563	469,771
1976	0	0	0	0	0	0	55,990	-7,695	-132,036	420,684	1,429	338,372
1977	0	0	0	0	0	0	0	-1,485	-102,532	122,447	-20	18,410
1978	0	0	0	0	0	0	45,105	-2,264	129,523	171,139	176	343,679
1979	0	0	0	0	0	0	0	-2,339	-20,400	145,598	0	122,859
1980	0	0	0	0	0	0	0	12,740	-20,889	298,250	2,330	292,431
1981	0	0	0	0	0	0	0	12,804	17,330	292,000	2,430	324,564
1982	0	20,661	-8,289	311,600	5,050	329,022	0	12,909	-8,289	310,950	2,530	318,100
1983	0	20,653	38,223	327,900	5,250	392,026	0	12,894	38,223	327,100	2,630	380,847
1984	0	20,698	-22,375	315,500	5,700	319,523	0	12,939	-22,375	314,450	2,700	307,714
1985	0	20,812	23,457	303,900	5,700	353,869	0	13,053	23,457	302,700	2,700	341,910
1986	0	20,528	-34,239	416,800	5,320	408,409	0	12,769	-34,239	415,100	5,000	398,630
1987	0	20,517	20,617	414,800	5,320	461,254	0	12,758	20,617	412,700	5,000	451,075
1988	0	20,772	14,527	429,000	5,320	469,619	0	13,013	14,527	426,150	5,000	458,690
1989	0	20,623	-33,142	603,000	5,320	595,801	0	12,864	-33,142	599,500	5,000	584,222
1990	0	20,492	-12,472	703,200	5,320	716,540	0	12,733	-12,472	698,700	5,000	703,961
1991	0	20,233	6,968	719,600	5,320	752,121	0	12,474	6,968	715,100	5,000	739,542
1992	0	20,537	42,302	736,000	5,320	804,159	0	12,778	42,302	731,500	5,000	791,580
1993	0	20,773	-10,369	752,500	5,320	768,224	0	13,014	-10,369	748,100	5,000	755,745
1994	0	20,849	1,170	768,900	5,320	796,239	0	13,090	1,170	764,500	5,000	783,760
1995	0	20,740	3,322	785,300	5,320	814,682	0	12,981	3,322	780,900	5,000	802,203
1996	0	20,802	-5,612	789,500	5,320	810,010	0	13,043	-5,612	785,100	5,000	797,531
1997	0	20,638	159	793,700	5,320	819,817	0	12,879	159	789,300	5,000	807,338
1998	0	20,819	1,641	798,000	5,320	825,780	0	13,060	1,641	793,700	5,000	813,401
1999	0	20,657	-19,378	802,200	5,320	808,799	0	12,898	-19,378	797,900	5,000	796,420
2000	0	20,548	20,866	806,400	5,320	853,134	0	12,789	20,866	802,100	5,000	840,755
2001	0	20,573	-1,241	841,500	5,320	866,152	0	12,814	-1,241	837,200	5,000	853,773
2002	0	20,613	-8,380	876,800	5,320	894,353	0	12,854	-8,380	872,400	5,000	881,874
2003	0	20,534	-16,775	909,900	5,320	918,979	0	12,775	-16,775	905,500	5,000	906,500
2004	0	20,640	29,947	947,200	5,320	1,003,107	0	12,881	29,947	942,800	5,000	990,628
2005	0	20,656	-22,544	982,100	5,320	985,532	0	12,897	-22,544	977,700	5,000	973,053
2006	0	20,571	-13,611	1,019,300	5,320	1,031,580	0	12,812	-13,611	1,014,800	5,000	1,019,001
2007	0	20,148	-24,829	1,056,200	5,320	1,056,839	0	12,389	-24,829	1,051,700	5,000	1,044,260
2008	0	20,720	63,148	1,093,100	5,320	1,182,288	0	12,961	63,148	1,088,600	5,000	1,169,709
2009	0	20,696	-20,065	1,130,100	5,320	1,136,051	0	12,937	-20,065	1,125,600	5,000	1,123,472
2010	0	20,655	11,962	1,167,200	5,320	1,205,137	0	12,896	11,962	1,162,600	5,000	1,192,458
2011	0	20,423	-4,910	1,198,300	5,320	1,219,133	0	12,664	-4,910	1,193,700	5,000	1,206,454
2012	0	20,560	8,038	1,229,300	5,320	1,263,218	0	12,801	8,038	1,224,700	5,000	1,250,539
2013	0	20,637	-5,138	1,260,200	5,320	1,281,019	0	12,878	-5,138	1,255,600	5,000	1,268,340
2014	0	20,273	-8,649	1,291,300	5,320	1,308,244	0	12,514	-8,649	1,286,600	5,000	1,295,465
2015	0	20,307	9,925	1,304,400	5,320	1,339,952	0	12,548	9,925	1,299,700	5,000	1,327,173
2016	0	20,878	-7,127	1,317,600	5,320	1,336,671	0	13,119	-7,127	1,312,900	5,000	1,323,892
2017	0	20,842	13,611	1,330,900	5,320	1,370,673	0	13,083	13,611	1,326,100	5,000	1,357,794
2018	0	20,692	-1,755	1,344,100	5,320	1,368,357	0	12,933	-1,755	1,339,300	5,000	1,355,478
2019	0	20,873	1,096	1,357,200	5,320	1,384,489	0	13,114	1,096	1,352,400	5,000	1,371,610
2020	0	20,913	-628	1,370,300	5,320	1,395,905	0	13,154	-628	1,365,500	5,000	1,383,026
2021	0	20,835	6,947	1,383,600	5,320	1,416,702	0	13,076	6,947	1,378,700	5,000	1,403,723
2022	0	20,873	-8,852	1,396,600	5,320	1,413,941	0	13,114	-8,852	1,391,700	5,000	1,400,962
2023	0	20,738	-14,458	1,410,000	5,320	1,421,600	0	12,979	-14,458	1,405,100	5,000	1,408,621
2024	0	20,751	10,244	1,423,100	5,320	1,459,415	0	12,992	10,244	1,418,200	5,000	1,446,436
2025	0	20,777	9,537	1,436,400	5,320	1,472,034	0	13,018	9,537	1,431,400	5,000	1,458,955
2026	0	20,807	1,233	1,449,600	5,320	1,476,960	0	13,048	1,233	1,444,600	5,000	1,463,881
2027	0	20,546	-650	1,450,290	5,320	1,475,506	0	12,787	-650	1,445,290	5,000	1,462,427
2028	0	20,439	-4,988	1,450,800	5,320	1,471,571	0	12,680	-4,988	1,445,800	5,000	1,458,492
2029	0	20,455	-10,430	1,451,500	5,320	1,466,845	0	12,696	-10,430	1,446,500	5,000	1,453,766
2030	0	20,451	-11,601	1,452,100	5,320	1,466,270	0	12,692	-11,601	1,447,100	5,000	1,453,191
2031	0	20,374	-371	1,452,700	5,320	1,478,023	0	12,615	-371	1,447,700	5,000	1,464,944
2032	0	20,509	27,757	1,453,400	5,320	1,506,986	0	12,750	27,757	1,448,400	5,000	1,493,907
2033	0	20,855	-2,638	1,454,000	5,320	1,477,537	0	13,096	-2,638	1,449,000	5,000	1,464,458
2034	0	20,666	-646	1,454,600	5,320	1,479,940	0	12,907	-646	1,449,600	5,000	1,466,861
2035	0	20,447	-9,023	1,455,300	5,320	1,472,044	0	12,688	-9,023	1,450,300	5,000	1,458,965

AND POWER RECOVERY PLANT OF PROJECT TRANSPORTATION FACILITIES[a]

(in acre-feet)[b]

Calendar Year	CALIFORNIA AQUEDUCT (Continued)						
	COASTAL BRANCH, CALIFORNIA AQUEDUCT						
	LAS PERILLAS AND BADGER HILL PUMPING PLANTS				DEVIL'S DEN, SAWTOOTH AND POLONIO PUMPING PLANTS AND SAN LUIS OBISPO POWERPLANT		
	Initial Fill Water	Operational Losses	Water Supply Delivery	Total	Operational Losses	Water Supply Delivery	Total
	(76)	(77)	(78)	(79)	(80)	(81)	(82)
1968	210	873	79,039	80,122	0	0	0
1969	0	1,042	62,064	63,106	0	0	0
1970	0	638	83,649	84,287	0	0	0
1971	0	3,455	110,971	114,426	0	0	0
1972	0	1,745	121,755	123,500	0	0	0
1973	0	5,479	78,645	84,124	0	0	0
1974	0	7,344	78,174	85,518	0	0	0
1975	0	5,819	85,216	91,035	0	0	0
1976	0	6,562	90,058	96,620	0	0	0
1977	0	5,777	40,579	46,356	0	0	0
1978	0	9,085	92,604	101,689	0	0	0
1979	0	10,896	123,155	134,051	0	0	0
1980	0	590	108,860	109,450	0	0	0
1981	0	590	113,660	114,250	0	0	0
1982	0	590	119,210	119,800	0	0	0
1983	0	590	124,920	125,510	0	0	0
1984	0	590	130,300	130,890	0	0	0
1985	0	590	135,020	135,610	0	0	0
1986	0	590	135,100	135,690	0	0	0
1987	0	590	135,100	135,690	0	0	0
1988	0	590	135,200	135,790	0	0	0
1989	0	590	135,300	135,890	0	0	0
1990	0	590	135,300	135,890	0	0	0
1991	0	590	135,300	135,890	0	0	0
1992	0	590	135,300	135,890	0	0	0
1993	0	590	135,300	135,890	0	0	0
1994	0	590	135,300	135,890	0	0	0
1995	0	590	135,300	135,890	0	0	0
1996	0	590	135,300	135,890	0	0	0
1997	0	590	135,300	135,890	0	0	0
1998	0	590	135,300	135,890	0	0	0
1999	0	590	135,300	135,890	0	0	0
2000	0	590	135,300	135,890	0	0	0
2001	0	590	135,300	135,890	0	0	0
2002	0	590	135,300	135,890	0	0	0
2003	0	590	135,300	135,890	0	0	0
2004	0	590	135,300	135,890	0	0	0
2005	0	590	135,300	135,890	0	0	0
2006	0	590	135,300	135,890	0	0	0
2007	0	590	135,300	135,890	0	0	0
2008	0	590	135,300	135,890	0	0	0
2009	0	590	135,300	135,890	0	0	0
2010	0	590	135,300	135,890	0	0	0
2011	0	590	135,300	135,890	0	0	0
2012	0	590	135,300	135,890	0	0	0
2013	0	590	135,300	135,890	0	0	0
2014	0	590	135,300	135,890	0	0	0
2015	0	590	135,300	135,890	0	0	0
2016	0	590	135,300	135,890	0	0	0
2017	0	590	135,300	135,890	0	0	0
2018	0	590	135,300	135,890	0	0	0
2019	0	590	135,300	135,890	0	0	0
2020	0	590	135,300	135,890	0	0	0
2021	0	590	135,300	135,890	0	0	0
2022	0	590	135,300	135,890	0	0	0
2023	0	590	135,300	135,890	0	0	0
2024	0	590	135,300	135,890	0	0	0
2025	0	590	135,300	135,890	0	0	0
2026	0	590	135,300	135,890	0	0	0
2027	0	590	135,300	135,890	0	0	0
2028	0	590	135,300	135,890	0	0	0
2029	0	590	135,300	135,890	0	0	0
2030	0	590	135,300	135,890	0	0	0
2031	0	590	135,300	135,890	0	0	0
2032	0	590	135,300	135,890	0	0	0
2033	0	590	135,300	135,890	0	0	0
2034	0	590	135,300	135,890	0	0	0
2035	0	590	135,300	135,890	0	0	0

TABLE B-7: RECONCILIATION OF CAPITAL COSTS ALLOCATED TO WATER SUPPLY AND POWER GENERATION

(in thousands of dollars)

Project Facility	Project Costs Allocated to Water Supply and Power Generation							Project Costs Allocated to Other Purposes	Total, State Water Project
	Misc. Income Credited to Construction (a	Allowances for Future Price Escalation (b	Costs of Construction of Water Delivery Structures (c	Additional Costs of Requested Excess Capacity and Future Enlargement (d	Capital Cost Component of Delta Water Charge (e	Capital Cost Component of Transportation Water Charge (f	Water Supply and Power Total		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
CONSERVATION FACILITIES									
Upper Feather Division									
Frenchman Dam and Lake	173	0	0	0	532	0	705	2,631	3,336
Grizzly Valley Dam and Lake Davis	29	4	0	0	246	0	279	5,410	5,689
Antelope Dam and Lake	0	0	0	0	0	0	0	5,038	5,038
Abbey Bridge Dam and Res.	0	0	0	0	0	0	0	517	517
Dixie Refuge Dam and Res.	0	0	0	0	0	0	0	235	235
Total, Upper Feather Division	202	4	0	0	778	0	984	13,831	14,815
Oroville Division									
Multipurpose Facilities	3,160	204	149	0	341,011	0	344,524	82,638	427,162
Specific Power Facilities	0	0	0	0	109,594	0	109,594	5	109,599
Total, Oroville Division	3,160	204	149	0	450,605	0	454,118	82,643	536,761
California Aqueduct									
North San Joaquin Division	172	2,705	0	0	58,178	0	61,055	1,854	62,909
San Luis Division	395	122	0	0	83,246	0	83,763	3,574	87,337
Total, California Aqueduct	567	2,827	0	0	141,424	0	144,818	5,428	150,246
Delta Facilities	271	419,270	0	0	640,858	0	1,060,399	259,028	1,319,427
Additional Conservation Facilities	3	5,332,602	0	0	1,524,858	0	6,857,463	157,067	7,014,530
TOTAL CONSERVATION FACILITIES	4,203	5,754,907	149	0	2,758,523	0	8,517,782	517,997	9,035,779
TRANSPORTATION FACILITIES									
Upper Feather Division									
Grizzly Valley Pipeline	0	0	0	0	0	342	342	0	342
North Bay Aqueduct	20	7,470	86	0	0	39,734	47,310	0	47,310
South Bay Aqueduct	1,609	18	316	0	0	48,102	50,045	20,867	70,912
California Aqueduct									
North San Joaquin Division	383	6,047	18	0	0	130,012	136,460	5,105	141,565
San Luis Division	84	10,765	0	0	0	121,483	132,332	4,813	137,145
South San Joaquin Division	300	514	3,279	2,093	0	255,618	261,804	8,048	269,852
Tehachapi Division	23	3,526	17	5,229	0	295,350	304,145	9,238	313,383
Mojave Division	572	140,881	505	148,780 (g	0	277,560	568,298	9,373	577,671
Santa Ana Division	349	94	2,909	9,710	0	168,812	181,874	11,131	193,005
West Branch	36,204	5,627	2,758	37	0	439,270	483,896	19,054	502,950
Coastal Branch	10	68,695	37	0	0	154,774	223,566	107	223,673
Total California Aqueduct	37,925	236,149	9,573	165,849	0	1,842,879	2,292,375	66,869	2,359,244
TOTAL, TRANSPORTATION FACILITIES	39,554	243,637	9,975	165,849	0	1,931,057	2,390,072	87,736	2,477,808
SAN JOAQUIN DRAINAGE FACILITIES	0	0	0	0	0	0	0	11,888	11,888
FUTURE OFF-AQUEDUCT POWER GENERATING FACILITIES (h	0	0	0	0	0	316,616	316,616	0	316,616
UNASSIGNED AND DAVIS-GRUNSKY	0	0	0	0	0	0	0	146,328	146,328
TOTAL	43,757	5,998,544	10,124	165,849	2,758,523	2,247,673	11,224,470	763,949	11,988,419 (h

a) Miscellaneous project receipts, including those from sale of Airpoint Reservoir Land, that are applied for accounting purposes to reduce the capital costs of the particular facilities.
b) These allowances are included for planning the future financial program, but not for determining current water charges. The costs shown in this appendix are based on prices prevailing on December 31, 1979.
c) See Table B-8.
d) From Table B-9.
e) See Table B-13. A portion of these costs will be offset by power generation sales and credits.
f) See Table B-10.
g) Cost of future enlargement of the California Aqueduct in the Mojave Division.
h) Costs of future off-aqueduct power generating facilities. Costs of $1,699,087 incurred prior to 1980 for Reid Gardner Unit No. 4 have been capitalized and allocated to transportation pumping plants.

TABLE B-8: CAPITAL COSTS OF REQUESTED DELIVERY STRUCTURES[a]

(in dollars)

Project Area and Water Supply Contractor	Calendar Year 1952-79	1980	1981	1982	1983	1984	1985	Total
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
FEATHER RIVER AREA								
County of Butte	104,924	0	0	0	0	0	0	104,924
Thermalito Irrigation District (b	43,939	0	0	0	0	0	0	43,939
Subtotal	148,863	0	0	0	0	0	0	148,863
NORTH BAY AREA								
Napa County Flood Control and Water Conservation District	10,065	0	0	0	20,000	0	0	30,065
Solano County Flood Control and Water Conservation District	0	0	0	0	55,000	0	1,000	56,000
Subtotal	10,065	0	0	0	75,000	0	1,000	86,065
SOUTH BAY AREA								
Alameda County Flood Control and Water Conservation District, Zone 7	154,111	4,200	0	0	0	0	0	158,311
Alameda County Water District	143,789	0	0	0	0	0	0	143,789
Santa Clara Valley Water District	13,865	0	0	0	0	0	0	13,865
Subtotal	311,765	4,200	0	0	0	0	0	315,965
SAN JOAQUIN VALLEY								
Devil's Den Water District	75,841	0	0	0	0	0	0	75,841
Dudley Ridge Water District	283,509	0	0	0	0	0	0	283,509
Empire West Side Irrigation District	6,358	0	0	0	0	0	0	6,358
Green Valley Water District (c	5,292	0	0	0	0	0	0	5,292
Hacienda Water District	20,659	0	0	0	0	0	0	20,659
Kern County Water Agency	2,692,256	10,500	5,000	12,000	0	0	11,000	2,730,756
Oak Flat Water District	13,333	0	0	0	0	0	0	13,333
Tracy Golf and Country Club (c	1,028	0	3,500	0	0	0	0	4,528
Tulare Lake Basin Water Storage District	256,498	4,000	0	0	0	0	0	260,498
Subtotal	3,354,774	14,500	8,500	12,000	0	0	11,000	3,400,774
SOUTHERN CALIFORNIA AREA								
Antelope Valley-East Kern Water Agency	319,724	5,000	8,000	5,000	10,000	0	0	347,724
Castaic Lake Water Agency	345,690	8,000	5,000	0	0	0	0	358,690
Coachella Valley Water District	14,206	0	0	0	0	0	8,000	22,206
Crestline-Lake Arrowhead Water Agency	12,097	0	0	3,000	0	0	0	15,097
Desert Water Agency	23,438	0	0	0	0	0	12,000	35,438
Littlerock Creek Irrigation District	23,732	0	0	0	0	0	0	23,732
Mojave Water Agency	65,378	10,000	10,000	0	0	4,000	0	89,378
Palmdale Water District	24,232	5,000	1,000	0	0	0	0	30,232
San Bernardino Valley Municipal Water District	597,553	5,000	0	80,000	0	0	5,000	687,553
San Gabriel Valley Municipal Water District	131,052	0	0	0	0	0	0	131,052
San Gorgonio Pass Water Agency	66,530	0	0	0	0	0	0	66,530
The Metropolitan Water District of Southern California	4,235,447	10,000	0	0	0	20,000	0	4,265,447
Ventura County Flood Control District	79,699	15,000	5,000	0	0	0	0	99,699
Subtotal	5,938,778	58,000	29,000	88,000	10,000	24,000	25,000	6,172,778
TOTAL	9,764,245	76,700	37,500	100,000	85,000	24,000	37,000	10,124,445

a) Approximate only, not be construed as invoice amounts.
b) Not a project water supply contractor. A delivery structure was constructed on the Thermalito Power Canal at the District's expense as a part of a water exchange agreement.
c) Not a project water supply contractor. District has contracted for surplus water.

TABLE B-9: CAPITAL COSTS OF

(in dollars unless otherwise indicated)

Calendar Year	Total Advance Payments and Credits for Excess Capacity	Total Incremental Costs for Excess Capacity	Overpayment (+) or Underpayment (-)[a]	Annual Surplus Money Investment Fund Interest Rate [b] Jan-Jun	Jul-Dec	Net Over or Underpayment With Interest[c]
	(1)	(2)	(3)	(4)	(5)	(6)
			THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA			
1965	0	158,000	-158,000	3.968%	4.184%	-163,412
1966	8,056,000	435,800	7,620,200	4.540%	5.057%	7,701,103
1967	9,094,963	1,878,270	7,216,693	4.815%	4.744%	15,524,533
1968	1,523,252	2,887,351	-1,364,099	5.330%	5.540%	14,959,187
1969	8,310,651	3,059,310	5,251,341	5.946%	6.389%	21,369,973
1970	3,426,736	2,397,102	1,029,634	7.071%	7.125%	23,986,083
1971	1,086,045	1,146,648	-60,603	5.154%	5.580%	25,238,017
1972	-4,244,807	487,394	-4,732,201	4.477%	4.977%	21,532,965
1973	-15,913,829	25,041	-15,938,870	6.023%	8.717%	6,014,116
1974	0	37,775	-37,775	9.222%	10.351%	6,576,393
1975	0	2,085	-2,085	7.089%	6.791%	7,038,515
1976	0	0	0	6.048%	6.021%	7,469,662
1977	0	0	0	5.788%	6.182%	7,923,403
1978	0	0	0	7.171%	8.096%	8,539,736
1979	0	0	0	8.979%	9.671%	9,354,605
1980	0	0	0	11.500%	11.500%	10,461,314
Totals	11,339,011	12,514,776	-1,175,765	-	-	10,461,314
			SAN GABRIEL VALLEY MUNICIPAL WATER DISTRICT			
1967	0	25,730	-25,730	4.815%	4.744%	-26,611
1968	184,422	44,053	140,369	5.330%	5.540%	117,587
1969	49,052	38,075	10,977	5.946%	6.389%	136,751
1970	44,911	17,959	26,952	7.071%	7.125%	175,186
1971	61,588	5,900	55,688	5.154%	5.580%	242,927
1972	-20,263	6,835	-27,098	4.477%	4.977%	226,230
1973	-180,465	0	-180,465	6.023%	8.717%	49,198
1974	0	0	0	9.222%	10.351%	54,130
1975	0	0	0	7.089%	6.791%	57,952
1976	0	0	0	6.048%	6.021%	61,501
1977	0	0	0	5.788%	6.182%	65,237
1978	0	0	0	7.171%	8.096%	70,312
1979	0	0	0	8.979%	9.671%	77,021
1980	0	0	0	11.500%	11.500%	86,133
Totals	139,245	138,552	693	-	-	86,133
			ANTELOPE VALLEY-EAST KERN WATER AGENCY			
1968	85,495	1,645	83,850	5.330%	5.540%	86,962
1969	52,625	6,326	46,299	5.946%	6.389%	140,964
1970	101,648	15,076	86,572	7.071%	7.125%	243,222
1971	34,062	11,748	22,314	5.154%	5.580%	279,673
1972	-12,794	2,018	-14,812	4.477%	4.977%	277,552
1973	-205,354	308	-205,662	6.023%	8.717%	77,288
1974	0	96	-96	9.222%	10.351%	84,933
1975	0	0	0	7.089%	6.791%	90,929
1976	0	190	-190	6.048%	6.021%	96,300
1977	0	0	0	5.788%	6.182%	102,150
1978	0	0	0	7.171%	8.096%	110,096
1979	0	0	0	8.979%	9.671%	120,601
1980	0	0	0	11.500%	11.500%	134,869
Totals	55,682	37,407	18,275	-	-	134,869

a) Overpayment or underpayment for each calendar year - column (1) minus column (2).

b) Interest rates shown are annual rates. Interest is credited daily at applicable rates on funds deposited in the State's Surplus Money Investment Fund.

c) Amounts shown are end-of-year balances. Interest on overpayments is credited at applicable Surplus Money Investment Fund Interest Rates shown in columns (4) and (5). Interest on underpayments is charged at the current project interest rate of 4.584 percent.

d) Actual payments are shown for 1965 through 1976 with 1981 adjusted to reflect overpayments and underpayments without interest for prior years.

e) Interest for overpayments and underpayments under provisions of Amendment 2 of the contract.

f) Actual payments are shown for 1965 through 1973 with 1974 adjusted to reflect overpayments and underpayments without interest for prior years.

g) Interest for overpayments and underpayments under the provisions of Amendment 5 of the contract.

h) Amount, in excess of incremental costs, under the provisions of the contract, reduce the Transportation Charge Capital Cost Component of the Agency's Statement of Charges for January 1981.

REQUESTED EXCESS PEAKING CAPACITY

(in dollars)

Reach Number	Item	ANNUAL REQUIRED ADVANCE OF FUNDS — Incremental Costs and Advance Payments by Calendar Year													Reach Totals
		1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1981	
		(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
		THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA													
8C	Incremental Costs		1,000	1,000											2,000
8D	Incremental Costs		43,500	43,500											87,000
9	Incremental Costs	13,500	27,000	27,000	13,500										81,000
10A	Incremental Costs	14,800	29,700	29,700	14,800										89,000
11B	Incremental Costs	10,100	18,300	18,300	9,200										55,900
12D	Incremental Costs	1,800		19,300	25,800	12,900									59,800
12E	Incremental Costs	1,800		12,400	18,800	10,800									43,800
13B	Incremental Costs			12,600	37,800	31,600									82,000
14A	Incremental Costs	2,500	500	11,100	80,216	107,504	124,069	37,519	6,413	381	87				370,289
14B	Incremental Costs	1,200	1,800		19,100	19,100	12,800								54,000
14C	Incremental Costs	1,800	900		13,500	13,500	9,000								38,700
15A	Incremental Costs	700		14,000	66,947	133,357	128,099	54,821	5,327	946	2,076				406,273
16A	Incremental Costs	700		18,900	137,894	182,000	211,608	133,927	26,203	5,767	6,156				723,155
17E	Incremental Costs		51,500	444,600	537,247	860,024	998,985	699,281	193,286	17,947	29,456	2,085			3,834,411
17F	Incremental Costs.	109,100	261,600	261,600	261,600	261,600	239,500								1,395,000
25	Incremental Costs			964,270	1,650,947	1,426,925	673,041	221,100	256,165						5,192,448
28J	Incremental Costs		304,612	13,706	296,668	65,966	230,169	1,209,586	2,017,134	235,900	4,900				4,378,641
Totals Unadjusted for past payments	Incremental Costs	158,000	740,412	1,891,976	3,184,019	3,125,276	2,627,271	2,356,234	2,504,528	260,941	42,675	2,085			16,893,417
Current Adjustments	8C thru 25 1. Advance Payments Applied to Incremental Costs Amendment 2 (d	0	8,056,000	9,094,963	1,523,252	8,310,651	3,426,736	1,086,045	-4,244,807	-14,381,396				-356,668	12,514,776
	8C thru 25 2. Interest Credits-Amendment 2 (e									-1,532,433				-10,104,646 (h	-11,637,079
	28J 3. Advance Payments Applied to Incremental Costs Amendment 5 (f	0	1,240,000	1,483,180	2,469,325	-927,035	1,729,160	3,215,258	2,967,475	1,690,000	-9,488,722				4,378,641
	28J 4. Interest Credits-Amendment 5 (g										-2,721,803				-2,721,803
	5. Net Required Advance of Funds	0	9,296,000	10,578,143	3,992,577	7,383,616	5,155,896	4,301,303	-1,277,332	-14,223,829	-12,210,525			-10,461,314	2,534,535
		SAN GABRIEL VALLEY MUNICIPAL WATER DISTRICT													
25	Incremental Costs			25,730	44,053	38,075	17,959	5,900	6,835						138,552
Totals Unadjusted for past payments	Incremental Costs			25,730	44,053	38,075	17,959	5,900	6,835						138,552
Current Adjustments	25 1. Advance Payments Applied to Incremental Costs (d			0	184,422	49,052	44,911	61,588	-20,263	-174,133				-7,025	138,552
	2. Interest Credit									-6,332				-79,108	-85,440
	3. Net Required Advance of Funds			0	184,422	49,052	44,911	61,588	-20,263	-180,465				-86,133 (h	53,112
		ANTELOPE VALLEY-EAST KERN WATER AGENCY													
29A	Incremental Costs				1,645	6,326	13,376	10,048	2,018	308	96		190		34,007
29F	Incremental Costs						1,700	1,700							3,400
Totals Unadjusted for past payments	Incremental Costs				1,645	6,326	15,076	11,748	2,018	308	96		190		37,407
Current Adjustments	29A and 29F 1. Advance Payments Applied to Incremental Costs (d				85,495	52,625	101,648	34,062	-12,794	-189,120	0		0	-34,509	37,407
	2. Interest Credit									-16,234				-100,360	-116,594
	3. Net Required Advance of Funds				85,495	52,625	101,648	34,062	-12,794	-205,354	0		0	-134,869 (h	-79,187

TABLE B-10: CAPITAL COSTS OF EACH AQUEDUCT REACH TO BE REIMBURSED

(in dollars)

Calendar Year	UPPER FEATHER DIVISION	NORTH BAY AQUEDUCT				SOUTH BAY AQUEDUCT			
		Reach 1	Reach 2	Reach 3	Total	Reach 1	Reach 2	Reach 4	Reach 5
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1952	0	0	0	0	0	97	34	30	57
1953	0	0	0	0	0	477	166	144	297
1954	0	0	0	0	0	1,466	508	437	959
1955	0	0	0	0	0	1,944	674	560	1,266
1956	0	0	0	0	0	18,789	6,515	5,090	12,545
1957	0	13,290	3,391	9,953	26,634	45,090	15,639	12,285	33,218
1958	2	19,202	5,011	25,798	50,011	195,985	80,961	7,714	21,930
1959	14	7,517	2,118	17,653	27,288	496,140	148,516	24,945	17,118
1960	28	8,797	4,292	4,838	17,927	1,130,378	67,351	71,779	68,028
1961	10	1,551	10,318	2,526	14,395	3,273,247	180,596	307,885	74,398
1962	32	217	1,751-	414	1,120-	1,548,884	203,535	695,446	35,102
1963	51	2,510	1,063-	983	2,430	480,716	69,182	2,284,291	206,587
1964	7,791	39,879	12,046	21,934	73,859	2,549,118	15,903	181,900	264,410
1965	3,139	72,793	17,900	170,361	261,054	807,505	153,454	85,425	447,830
1966	48-	59,615	12,972	438,949	511,536	898,074	149,529	142,096	1,690,200
1967	47	47,257	11,597	1,551,023	1,609,877	607,614	50,423	293,304	3,496,284
1968	51,573	70,586	19,560	831,158	921,304	965,119	19,543	89,300	2,931,101
1969	234,232	63,650	23,628	46,428	133,706	455,173	9,618	3,860	896,727
1970	16,227	59,090	42,733	9,415	111,238	52,481	3,380	10,517	154,358
1971	27,204	20,819	31,516	8,480	60,815	24,505	4,645	5,035	20,395
1972	9	15,536	12,948	10,058	38,542	26,918	825	2,945	26,090
1973	25	18,487	29,011	39,878	87,376	24,468	4,010	6,016	12,708
1974	51	67,336	29,968	134,155	231,459	17,213	1,219	1,836	66,157
1975	22	62,836	73,098	45,050	180,984	57,642	568	1,181	7,422
1976	51	51,978	75,603	13,167	140,748	104,160	2,846	8,915	12,697
1977	28	48,784	65,658	23,016	137,458	174,742	3,625	3,225	16,115
1978	38	55,721	57,093	25,309	138,123	227,331	4,482	3,659	12,779
1979	22	292,324	89,984	60,474	442,782	88,768	16,071	8,458	29,946
1980	0	953,640	498,852	256,000	1,708,492	4,000	66,000	1,000	17,892
1981	0	1,003,175	538,159	229,000	1,770,334	2,000	77,000	1,000	20,664
1982	0	4,252,376	1,937,953	465,000	6,655,329	1,000	14,000	1,000	4,284
1983	0	10,033,004	4,266,178	2,233,000	16,532,182	1,000	0	1,000	756
1984	0	3,906,000	1,910,000	1,083,000	6,899,000	0	0	1,000	756
1985	0	388,000	183,000	122,000	693,000	0	0	0	0
1986	0	116,000	40,000	12,000	168,000	0	0	0	0
1987	0	44,000	8,000	4,000	56,000	0	0	0	0
1988	0	21,000	3,000	0	24,000	0	0	0	0
1989	0	6,000	2,000	0	8,000	0	0	0	0
1990	0	1,000	0	0	1,000	0	0	0	0
1991	0	0	0	0	0	0	0	0	0
1992	0	0	0	0	0	0	0	0	0
1993	0	0	0	0	0	0	0	0	0
1994	0	0	0	0	0	0	0	0	0
1995	0	0	0	0	0	0	0	0	0
1996	0	0	0	0	0	0	0	0	0
1997	0	0	0	0	0	0	0	0	0
1998	0	0	0	0	0	0	0	0	0
1999	0	0	0	0	0	0	0	0	0
2000	0	0	0	0	0	0	0	0	0
TOTAL	340,548	21,823,970	10,014,773	7,895,020	39,733,763	14,282,044	1,370,818	4,263,278	10,601,076

THRU CAPITAL COST COMPONENT OF TRANSPORTATION CHARGE

Calendar Year	SOUTH BAY AQUEDUCT (continued)					CALIFORNIA AQUEDUCT NORTH SAN JOAQUIN DIVISION			
	Reach 6	Reach 7	Reach 8	Reach 9	Total	Reach 1	Reach 2A	Reach 2B	Subtotal
	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
1952	8	66	72	132	496	4,029	3,293	1,505	8,827
1953	38	327	336	640	2,425	10,602	8,624	3,980	23,206
1954	123	1,005	1,003	1,954	7,455	13,853	11,209	5,201	30,263
1955	160	1,293	1,149	2,454	9,500	7,400	5,976	2,771	16,147
1956	1,559	11,959	11,043	28,372	95,872	9,920	5,041	2,408	17,369
1957	3,659	28,675	27,385	563,114	729,065	12,003	5,478	2,623	20,104
1958	2,243	17,872	17,385	560,904	904,994	18,665	17,263	8,026	43,954
1959	357	3,200	3,568	149,874	843,718	123,679	100,724	45,700	270,103
1960	1,102	2,944	4,498	359,749	1,705,829	192,199	102,556	49,172	343,927
1961	4,726	18,325	22,765	1,367-	3,880,575	154,391	196,751	43,016	394,158
1962	17,295	160,939	178,242	209,042	3,048,485	614,752	493,223	168,898	1,276,873
1963	265,414	1,250,386	939,832	129,902	5,626,310	2,001,427	1,531,975	686,889	4,220,291
1964	100,603	1,716,371	2,327,770	2,942,657	10,098,732	4,693,541	2,379,598	702,947	7,776,086
1965	42,345	368,476	637,266	1,921,844	4,464,145	5,901,476	6,902,119	2,988,022	15,791,617
1966	17,663	34,915	140,350	777,872	3,850,699	8,588,740	14,171,215	5,700,582	28,460,537
1967	41,567-	137,856	147,183	379,764	5,070,861	9,718,648	10,716,280	6,674,249	27,109,177
1968	84,553	2,130	68,057	253,152	4,412,955	6,419,133	895,372	1,308,583	8,623,088
1969	4,279	11,572	162,300	32,000	1,575,529	3,557,438	795,540	445,760	4,798,738
1970	2,487	6,820	20,086	15,718-	234,411	2,245,869	150,311	116,059	2,512,239
1971	4,350	6,923	17,750	39,084	122,687	98,543	216,405	69,696	384,644
1972	1,084	203	4,800	32,199	95,064	160,273	43,900	7,775	211,948
1973	288	989	7,449	9,693	65,621	106,018	25,604	22,510	154,132
1974	538	6,095	30,717	11,611	135,386	177,753	17,497	46,250	241,500
1975	128	696	1,107	3,503	72,247	239,971	14,924	170,460	425,355
1976	701	3,529	8,362	26,186	167,396	643,726	45,722	66,215	755,663
1977	270	1,310	8,651	24,938	232,876	260,057	20,365	22,662	303,084
1978	231	1,202	1,629	17,115	268,428	350,549	36,320	9,736	396,605
1979	1,365	1,716	2,128	7,284	155,736	672,175	59,417	26,007	757,599
1980	0	0	1,000	2,000	91,892	732,081	95,375	150,391	977,847
1981	0	0	1,000	2,000	103,664	1,995,853	87,143	48,926	2,131,922
1982	0	0	1,000	1,000	22,284	2,354,597	18,071	12,047	2,384,715
1983	0	0	0	1,000	3,756	1,527,342	18,071	11,378	1,556,791
1984	0	0	0	1,000	2,756	3,321,736	20,079	13,386	3,355,201
1985	0	0	0	0	0	7,142,101	21,418	14,055	7,177,574
1986	0	0	0	0	0	5,373,141	10,039	6,693	5,389,873
1987	0	0	0	0	0	1,587,579	4,685	3,346	1,595,610
1988	0	0	0	0	0	27,441	669	669	28,779
1989	0	0	0	0	0	8,032	669	669	9,370
1990	0	0	0	0	0	8,032	4,016	2,677	14,725
1991	0	0	0	0	0	8,032	4,016	2,677	14,725
1992	0	0	0	0	0	4,016	2,008	1,339	7,363
1993	0	0	0	0	0	0	0	0	0
1994	0	0	0	0	0	0	0	0	0
1995	0	0	0	0	0	0	0	0	0
1996	0	0	0	0	0	0	0	0	0
1997	0	0	0	0	0	0	0	0	0
1998	0	0	0	0	0	0	0	0	0
1999	0	0	0	0	0	0	0	0	0
2000	0	0	0	0	0	0	0	0	0
TOTAL	516,002	3,797,794	4,795,883	8,474,954	48,101,849	71,086,813	39,258,961	19,665,955	130,011,729

TABLE B-10: CAPITAL COSTS OF EACH AQUEDUCT REACH TO BE REIMBURSED

(in dollars)

Calendar Year	CALIFORNIA AQUEDUCT (continued)								
	SAN LUIS DIVISION						SOUTH SAN JOAQUIN DIVISION		
	Reach 3	Reach 4	Reach 5	Reach 6	Reach 7	Subtotal	Reach 8C	Reach 8D	Reach 9
	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)
1952	2,503	3,651	4,100	1,039	1,430	12,723	14	747	1,140
1953	7,028	10,434	11,301	2,915	3,980	35,658	46	2,748	4,305
1954	8,739	12,903	14,086	3,622	4,904	44,254	51	2,797	4,141
1955	4,290	6,228	7,007	1,777	2,391	21,693	21	913	1,132
1956	3,309	5,761	6,024	1,486	3,658	20,238	100	3,959	4,500
1957	3,558	6,289	6,539	1,610	4,113	22,109	241	10,909	13,587
1958	11,977	19,947	22,668	5,667	7,726	67,985	387	19,577	25,792
1959	22,071	38,428	40,825	10,094	20,243	131,661	450	21,169	26,433
1960	207,882	46,712	42,212	12,421	38,707	347,934	1,719	45,833	26,010
1961	185,206	301,003	175,436	39,433	72,067	773,145	4,061	77,866	31,721
1962	497,887	565,706	259,917	23,036	27,733	1,374,279	6,304	163,917	64,118
1963	2,783,664	2,092,542	2,570,232	68,244	31,511	7,546,193	6,027	165,732	83,601
1964	4,366,313	5,073,503	1,083,372	166,044	258,655	10,947,887	4,126	93,176	121,226
1965	3,876,982	5,851,094	2,952,082	1,102,804	686,879	14,469,841	15,479	505,026	580,132
1966	2,321,946	8,771,970	5,930,853	4,351,329	7,929,023	29,305,121	207,030	5,346,026	2,611,921
1967	44,714-	2,121,295	7,141,273	229,259	6,866,513	16,313,626	217,692	5,126,083	3,459,909
1968	120,381	407,017	1,001,842	185,072	474,232	2,188,544	57,013	637,713	966,961
1969	6,091-	130,581	101,310	110,562	165,269	501,631	57,042	123,079	87,569
1970	32,523	20,823-	108,404	851,149-	1,250,782	519,737	14,399	119,141	86,526
1971	100,359	237,227	313,965	27,768	350,773	1,030,092	6,928	36,185	23,750
1972	16,055	93,454	17,543	15,038	289,398	431,488	8,948	15,910	17,078
1973	6,780	106,676	42,738	14,206	42,613	213,013	2,971	13,729	13,629
1974	6,964	120,472	57,047	16,078	73,826	274,387	5,389	25,622	17,225
1975	19,075	110,334	24,220	8,910	156,931	319,470	5,044	17,016	13,379
1976	17,557	81,299	13,415	5,285	42,879	160,435	18,491	80,473	63,943
1977	35,854	73,844	9,681	4,144	9,930	133,453	21,391	72,318	100,755
1978	8,574	37,871	7,202	3,635	7,187	64,469	4,382	44,997	17,853
1979	35,559-	196,967	19,962	9,690	249,274-	58,214-	521	16,489	6,294
1980	8,497	194,776	525,740	236,680	296,820	1,262,513	3,880	9,700	23,183
1981	12,038	300,700	1,110,650	496,640	621,770	2,541,798	3,880	4,850	14,550
1982	2,832	500,520	2,192,200	978,730	1,222,200	4,896,482	2,910	4,850	7,760
1983	1,416	335,620	939,930	396,730	506,340	2,180,036	970	2,910	5,820
1984	1,416	931,200	1,445,300	520,890	706,160	3,604,966	970	2,910	6,790
1985	1,416	1,680,040	2,620,940	941,870	1,274,580	6,518,846	970	1,940	6,790
1986	708	1,860,460	2,912,910	1,043,720	1,413,290	7,231,088	970	1,940	3,880
1987	708	1,217,350	1,907,990	682,880	926,350	4,735,278	970	970	1,940
1988	708	328,830	515,070	184,300	249,290	1,278,198	970	970	970
1989	0	970	0	0	0	970	0	0	0
1990	0	2,910	1,940	970	1,940	7,760	0	0	970
1991	0	2,910	1,940	970	1,940	7,760	0	0	970
1992	0	1,940	970	970	970	4,850	0	0	970
1993	0	0	0	0	0	0	0	0	0
1994	0	0	0	0	0	0	0	0	0
1995	0	0	0	0	0	0	0	0	0
1996	0	0	0	0	0	0	0	0	0
1997	0	0	0	0	0	0	0	0	0
1998	0	0	0	0	0	0	0	0	0
1999	0	0	0	0	0	0	0	0	0
2000	0	0	0	0	0	0	0	0	0
TOTAL	14,610,852	33,860,611	36,160,836	11,055,369	25,795,729	121,483,397	682,757	12,820,190	8,549,223

THRU CAPITAL COST COMPONENT OF TRANSPORTATION CHARGE

Calendar Year	CALIFORNIA AQUEDUCT (continued)								
	SOUTH SAN JOAQUIN DIVISION (continued)								
	Reach 10A	Reach 11B	Reach 12D	Reach 12E	Reach 13B	Reach 14A	Reach 14B	Reach 14C	Reach 15A
	(28)	(29)	(30)	(31)	(32)	(33)	(34)	(35)	(36)
1952	715	1,315	2,036	1,024	1,710	818	219	219	1,966
1953	2,642	4,928	7,694	3,852	6,415	2,673	754	763	7,217
1954	2,901	4,994	7,780	3,900	6,499	2,964	833	841	7,275
1955	1,128	1,604	2,474	1,246	2,083	1,217	333	336	2,318
1956	4,555	6,401	9,498	4,873	8,284	7,226	1,687	1,629	10,225
1957	13,649	19,309	29,916	15,033	25,111	16,099	3,943	3,976	27,642
1958	25,806	49,570	80,813	40,208	63,482	34,692	12,684	12,151	50,917
1959	26,525	69,170	110,867	55,376	88,953	66,677	22,733	22,454	72,867
1960	48,843	68,208	80,158	41,002	65,330	86,771	23,923	22,942	75,400
1961	70,446	47,365	90,757	52,908	28,781	249,656	93,888	67,429	154,469
1962	59,318	57,614	71,089	46,094	50,523	214,040	63,222	48,937	137,425
1963	54,037	94,481	178,862	88,830	69,591	437,630	107,369	80,146	104,905
1964	127,504	343,088	299,208	179,419	88,665	1,124,883	703,521	498,858	587,404
1965	640,023	1,083,106	1,568,415	1,074,733	202,068	3,481,940	1,702,352	1,477,328	490,414
1966	2,880,166	3,815,918	692,638	479,522	430,037	5,056,821	1,002,724	745,050	1,882,107
1967	3,756,864	4,769,322	1,935,128	1,279,828	1,273,794	2,867,894	540,656	411,598	1,770,426
1968	1,055,309	1,361,159	4,861,332	3,235,788	8,582,494	10,502,323	1,368,417	1,445,322	7,737,172
1969	149,264	235,745	726,461	544,181	3,810,039	15,544,433	1,258,446	1,166,838	9,795,426
1970	76,496	87,589	72,751	74,882	329,983	11,346,827	1,015,440	760,082	9,089,669
1971	16,041	46,294	45,248	43,847	348,785	3,008,945	198,788	37,560	3,369,000
1972	20,298	33,593	45,198	25,456	84,282	1,428,099	104,697	20,743	1,032,110
1973	14,691	16,919	10,265	16,787	25,808	700,328	20,146	13,855	821,675
1974	22,911	15,632	20,410	33,229	30,665	540,200	31,928	17,131	801,564
1975	16,356	13,921	11,166	14,085	26,619	277,054	25,956	21,727	380,996
1976	78,383	55,769	38,538	61,554	108,348	521,616	61,463	43,999	446,568
1977	77,793	54,435	23,480	56,001	83,620	303,074	51,400	31,014	234,919
1978	50,106	16,900	2,933-	28,079	44,290	158,401	687-	1,531	98,441
1979	140	7,018	13,798	14,058	25,912	177,601	10,016	8,080	117,609
1980	25,996	25,123	27,936	24,153	27,257	36,860	12,610	45,590	23,280
1981	15,520	16,490	13,580	13,580	16,878	37,830	13,580	252,200	24,250
1982	7,760	10,670	6,790	6,790	10,670	40,740	14,550	9,700	26,190
1983	5,820	8,730	4,850	4,850	8,730	41,710	13,580	1,940	25,220
1984	6,790	10,670	5,820	5,820	10,670	53,350	17,460	1,940	32,010
1985	6,790	11,640	5,820	5,820	11,640	56,260	17,460	1,940	33,950
1986	3,880	5,820	3,880	3,880	5,820	26,190	8,730	1,940	16,490
1987	1,940	2,910	1,940	1,940	2,910	11,640	3,880	970	7,760
1988	970	970	970	970	970	970	970	970	970
1989	0	0	0	0	0	1,940	970	0	970
1990	970	1,940	970	970	1,940	10,670	2,910	0	5,820
1991	970	1,940	970	970	1,940	10,670	2,910	0	5,820
1992	970	970	0	0	970	4,850	1,940	0	2,910
1993	0	0	0	0	0	0	0	0	0
1994	0	0	0	0	0	0	0	0	0
1995	0	0	0	0	0	0	0	0	0
1996	0	0	0	0	0	0	0	0	0
1997	0	0	0	0	0	0	0	0	0
1998	0	0	0	0	0	0	0	0	0
1999	0	0	0	0	0	0	0	0	0
2000	0	0	0	0	0	0	0	0	0
TOTAL	9,371,286	12,479,240	11,106,573	7,585,538	16,012,566	58,494,582	8,538,401	7,279,729	39,513,766

TABLE B-10: CAPITAL COSTS OF EACH AQUEDUCT REACH TO BE REIMBURSED

(in dollars)

Calendar Year	CALIFORNIA AQUEDUCT (continued)								
	SOUTH SAN JOAQUIN DIVISION (continued)		TEHACHAPI DIVISION			MOJAVE DIVISION			
	Reach 16A	Subtotal	Reach 17E	Reach 17F	Subtotal	Reach 18A	Reach 19	Reach 19C	Reach 20A
	(37)	(38)	(39)	(40)	(41)	(42)	(43)	(44)	(45)
1952	4,568	16,491	9,980	4,188	14,168	4,208	1,563	0	2,634
1953	16,986	61,023	32,234	13,666	45,900	12,971	4,819	0	7,453
1954	17,076	62,052	47,566	20,582	68,148	17,118	6,360	0	9,779
1955	5,373	20,178	26,622	11,687	38,309	5,773	2,145	0	2,602
1956	22,377	85,314	48,847	18,113	66,960	6,210	2,307	0	2,511
1957	64,451	243,866	123,100	50,537	173,637	22,988	8,542	0	9,293
1958	136,891	552,970	168,754	74,157	242,911	39,003	14,570	123	15,832
1959	211,640	795,314	155,722	59,540	215,262	39,725	24,122	1,102	24,281
1960	210,629	796,768	209,024	46,614	255,638	21,962	26,837	5,318	41,681
1961	212,105	1,181,452	398,788	87,956	486,744	35,861	31,289	2,262	34,286
1962	176,117	1,158,718	362,995	84,897	447,892	70,001	272,918	1,841	9,780
1963	495,443	1,966,654	1,225,260	128,213	1,353,473	28,332	424,574	4,137	20,550
1964	1,829,595	6,000,673	1,918,964	797,112	2,716,076	98,266	726,255	8,564	44,347
1965	1,304,361	14,125,377	2,648,241	2,350,184	4,998,425	124,314	736,115	9,156	111,260
1966	2,978,980	28,128,940	5,695,318	9,590,276	15,285,594	376,438	1,703,904	13,373	163,560
1967	3,540,339	30,949,533	26,989,965	12,753,535	39,743,500	1,341,294	907,089	24,103	646,904
1968	7,795,169	49,606,172	34,317,955	7,628,685	41,946,640	140,313	7,312,015	71,388	1,942,840
1969	13,512,089	47,010,612	41,523,719	7,080,243	48,603,962	213,912	2,521,360	7,423	6,096,685
1970	14,296,572	37,370,357	36,469,069	6,982,630	43,451,699	2,244,967	1,162,827	6,217	3,686,001
1971	8,129,890	15,311,261	20,717,361	7,030,969	27,748,330	1,539,583	292,628	6,994	1,105,291
1972	3,112,214	5,948,626	10,289,372	35,797	10,325,169	133,143	424,118	3,619	485,469
1973	1,514,469	3,185,272	3,178,616	37,243	3,215,859	23,726	75,712	2,538	89,162
1974	1,062,354	2,624,260	4,937,759	157,943	5,095,702	26,941	209,927	2,695	141,565
1975	503,780	1,327,099	2,206,016	423,428	2,629,444	44,887	70,813	5,061	68,575
1976	634,762	2,213,907	1,153,075	179,627	1,332,702	124,661	87,014	6,785	61,682
1977	580,712	1,690,912	616,867	32,414	649,281	269,463	138,024	7,521	121,616
1978	143,406	604,766	344,448	28,704	373,152	562,469	46,779	5,865	42,842
1979	268,734	666,270	1,171,600	63,205	1,234,805	751,694	336,503	10,649	29,537
1980	39,770	325,338	1,626,302	11,640	1,637,942	1,822,939	4,264,055	5,271	290,242
1981	45,590	472,778	7,418,754	36,860	7,455,614	6,631,890	549,990	137,835	13,580
1982	49,470	198,850	17,130,200	5,820	17,136,020	12,642,980	16,490	364,195	13,580
1983	51,410	176,540	12,452,860	3,880	12,456,740	5,757,920	12,610	1,001,928	10,670
1984	65,960	221,160	3,602,580	3,880	3,606,460	3,001,180	15,520	8,206,749	12,610
1985	69,840	230,860	159,080	4,850	163,930	36,860	15,520	10,878,731	12,610
1986	32,010	115,430	50,440	2,910	53,350	2,910	7,760	2,569,000	6,790
1987	14,550	54,320	21,340	1,940	23,280	1,940	3,880	526,000	2,910
1988	970	12,610	970	970	1,940	970	970	128,000	970
1989	1,940	5,820	2,910	0	2,910	0	0	5,000	0
1990	12,610	39,770	20,370	970	21,340	970	2,910	4,000	1,940
1991	12,610	39,770	20,370	970	21,340	970	2,910	2,000	1,940
1992	6,790	20,370	9,700	0	9,700	0	970	0	970
1993	0	0	0	0	0	0	0	0	0
1994	0	0	0	0	0	0	0	0	0
1995	0	0	0	0	0	0	0	0	0
1996	0	0	0	0	0	0	0	0	0
1997	0	0	0	0	0	0	0	0	0
1998	0	0	0	0	0	0	0	0	0
1999	0	0	0	0	0	0	0	0	0
2000	0	0	0	0	0	0	0	0	0
TOTAL	63,184,602	255,618,453	239,503,113	55,846,835	295,349,948	38,221,752	22,464,714	24,035,443	15,386,830

THRU CAPITAL COST COMPONENT OF TRANSPORTATION CHARGE

Calendar Year	CALIFORNIA AQUEDUCT (continued)								
	MOJAVE DIVISION (continued)							SANTA ANA DIVISION	
	Reach 20B	Reach 21	Reach 22A	Reach 22B	Reach 23	Reach 24	Subtotal	Reach 25	Reach 26A
	(46)	(47)	(48)	(49)	(50)	(51)	(52)	(53)	(54)
1952	917	5,954	36	2,071	2,133	2,481	21,997	3,429	5,759
1953	3,498	18,356	73	5,917	7,083	7,651	67,821	10,570	17,758
1954	4,678	24,232	380	8,805	8,073	10,100	89,525	13,953	23,441
1955	2,275	8,174	185	2,833	2,803	3,408	30,198	4,708	7,908
1956	2,731	8,785	221	2,989	3,047	3,662	32,463	5,059	8,500
1957	10,109	32,521	822	11,064	11,274	13,556	120,169	18,726	31,460
1958	17,234	55,104	1,438	19,254	19,108	23,275	204,941	31,889	53,508
1959	19,137	58,349	1,896	26,149	20,954	46,952	262,667	40,452	59,802
1960	38,243	45,141	11,346	140,662	17,640	112,950	461,780	67,527	96,373
1961	36,747	21,461	14,275	216,976	9,749	381,525	784,431	27,695	58,042
1962	10,301	8,038	3,969	166,204	4,422	286,019	833,493	10,194	37,079
1963	24,394	19,160	9,395	181,668	6,607	326,539	1,045,356	31,302	111,795
1964	72,939	34,742	23,340	269,795	7,046	250,511	1,535,805	71,610	208,327
1965	353,016	93,544	67,422	850,190	12,158	638,741	2,995,916	287,183	212,169
1966	1,348,926	164,856	183,537	1,795,181	31,941	1,047,309	6,829,025	426,867	374,202
1967	1,753,691	505,817	371,797	3,184,240	63,213	2,370,863	11,169,011	3,274,903	653,587
1968	2,356,554	1,174,255	1,178,219	4,717,247	105,079	2,673,275	21,671,185	8,500,594	1,304,076
1969	5,776,445	2,421,215	1,553,488	7,933,036	267,580	11,429,770	38,220,914	7,002,268	1,816,480
1970	5,394,456	3,296,870	2,112,830	23,902,238	1,273,407	17,253,564	60,333,377	2,229,145	7,423,418
1971	1,122,135	848,580	444,743	17,251,574	1,977,102	5,539,449	30,128,079	1,168,140	10,092,231
1972	653,696	498,647	334,164	3,897,349	49,424	811,038	7,290,667	1,126,972	5,679,711
1973	84,686	64,883	36,498	1,664,224	24,957	4,343,985	6,410,371	140,868	1,862,259
1974	120,864	105,530	55,628	5,852,052	132,606	789,540	7,437,348	70,538	1,978,716
1975	172,753	171,283	19,465	4,924,350	19,576	382,757	5,879,520	171,481	3,896,172
1976	105,853	46,182	25,439	3,192,448	86,599	210,803	3,947,466	488,780	1,538,487
1977	123,918	73,579	51,008	1,697,090	61,848	239,652	2,783,719	78,448	800,803
1978	61,872	29,590	14,581	508,487	37,057	199,674	1,509,216	58,774	133,619
1979	29,591	15,844	7,637	453,095	10,581	92,348	1,737,479	30,542	80,126
1980	1,198,832	125,038	118,701	919,936	21,207	660,664	9,426,885	19,198	129,602
1981	96,030	11,640	7,760	327,084	4,850	243,470	8,024,129	6,790	102,917
1982	15,520	11,640	6,790	386,642	3,880	57,230	13,518,947	4,850	103,984
1983	12,610	8,730	4,850	65,960	1,940	9,700	6,886,918	1,940	9,700
1984	14,550	10,670	4,850	82,450	1,940	10,670	11,361,189	1,940	12,610
1985	15,520	10,670	4,850	85,360	1,940	9,700	11,071,761	1,940	12,610
1986	7,760	5,820	2,910	39,770	1,940	4,850	2,649,510	1,940	6,790
1987	3,880	2,910	1,940	17,460	970	2,910	564,800	970	3,880
1988	970	970	970	970	970	970	136,730	970	970
1989	0	0	0	2,910	0	0	7,910	0	0
1990	2,910	1,940	970	15,520	0	1,940	33,100	0	1,940
1991	2,910	1,940	970	15,520	0	1,940	31,100	0	1,940
1992	970	970	0	7,760	0	970	12,610	0	970
1993	0	0	0	0	0	0	0	0	0
1994	0	0	0	0	0	0	0	0	0
1995	0	0	0	0	0	0	0	0	0
1996	0	0	0	0	0	0	0	0	0
1997	0	0	0	0	0	0	0	0	0
1998	0	0	0	0	0	0	0	0	0
1999	0	0	0	0	0	0	0	0	0
2000	0	0	0	0	0	0	0	0	0
TOTAL	21,074,121	10,043,630	6,679,393	84,844,530	4,312,704	50,496,411	277,559,528	25,433,155	38,953,721

TABLE B-10: CAPITAL COSTS OF EACH AQUEDUCT REACH TO BE REIMBURSED

(in dollars)

Calendar Year	CALIFORNIA AQUEDUCT (continued)								
	SANTA ANA DIVISION (continued)				WEST BRANCH				
	Reach 28G[a]	Reach 28H	Reach 28J	Subtotal	Reach 29A	Reach 29 F	Reach 29G	Reach 29H	Reach 29J
	(55)	(56)	(57)	(58)	(59)	(60)	(61)	(62)	(63)
1952	4,922	4.170	3,106	21,386	3,007	139	180	472	569
1953	16,026	11,842	9,748	65,944	9,352	353	244	1,803	1,731
1954	18,531	18,618	12,507	87,050	7,601	1,234	2,293	2,418	4,282
1955	6,226	6,255	4,269	29,366	1,047	601	1,117	1,178	2,086
1956	6,683	6,713	4,609	31,564	502	718	1,332	1,405	2,488
1957	24,732	24,848	17,062	116,828	1,860	2,656	4,931	5,202	9,209
1958	42,012	42,208	29,286	198,903	3,350	4,647	8,963	9,133	16,301
1959	47,056	47,262	45,602	240,174	8,181	9,413	19,969	18,766	36,600
1960	60,789	60,219	122,368	407,276	22,374	15,416	35,426	30,614	71,741
1961	32,825	35,009	722,892	876,463	22,453	11,994	21,450	20,252	40,742
1962	21,793	20,901	61,489	151,456	41,038	28,934	88,985	59,609	111,872
1963	41,258	38,588	1,871,018	2,093,961	86,720	56,844	158,965	108,102	215,776
1964	92,193	46,980	104,427	523,537	154,850	68,140	213,746	147,329	299,577
1965	99,647	79,011	155,399	833,409	371,983	79,892	414,427	130,974	606,382
1966	175,685	317,520	610,701	1,904,975	503,312	209,115	1,268,711	358,722	3,324,070
1967	237,474	287,722	1,207,337	5,661,023	1,628,627	895,644	1,207,666	912,841	31,977,002
1968	896,068	273,721	823,321	11,797,780	4,010,519	308,944	407,120	1,136,094	37,192,844
1969	1,147,431	1,483,335	971,559	12,421,073	6,776,407	337,383	707,648	1,215,077	9,931,033
1970	1,882,906	1,027,540	3,976,970	16,539,979	8,192,116	6,216,230	2,677,927	3,071,319	8,699,781
1971	16,556,376	6,584,482	12,492,005	46,893,234	4,368,318	3,876,376	1,155,587	8,480,386	6,011,114
1972	1,580,496	12,302,641	22,212,648	42,902,468	1,925,439	439,161	1,013,866	19,325,650	23,674,722-
1973	215,330	253,365	3,767,469	6,239,291	797,345	171,622	444,737	9,677,660	1,873,207
1974	160,885	104,960	2,038,246	4,353,345	576,770	173,319	174,698	4,119,509	3,551,730-
1975	160,241	127,786	1,648,923	6,004,603	363,310	432,240	995,373	682,940	627,563
1976	183,391	122,147	1,540,112	3,872,917	407,893	669,039	1,312,578	726,432	671,011
1977	130,813	91,660	326,345	1,428,069	427,487	3,105,321	2,218,933	201,664	1,173,357
1978	149,355	156,090	299,326	797,164	1,346,984	2,283,130	6,916,268	77,704	201,665
1979	28,798	17,819	120,338	277,623	886,438	2,221,448	20,690,885	611,107	339,921
1980	66,659	73,003	1,200,620	1,489,082	456,041	5,275,032	26,245,590	161,738	205,242
1981	9,700	63,050	88,270	270,727	68,385	2,069,010	23,974,520	29,100	39,770
1982	7,760	16,490	19,400	152,484	69,452	158,110	10,047,260	19,400	24,250
1983	5,820	2,910	4,850	25,220	36,860	7,760	710,040	7,760	9,700
1984	6,790	3,880	4,850	30,070	47,530	8,730	4,504,680	8,730	11,640
1985	6,790	3,880	5,820	31,040	50,440	9,700	231,830	8,730	12,610
1986	3,880	1,940	2,910	17,460	23,280	4,850	2,910	3,880	5,820
1987	1,940	1,940	1,940	10,670	10,670	2,910	1,940	2,910	2,910
1988	970	970	970	4,850	970	970	970	970	970
1989	0	0	0	0	1,940	0	0	0	0
1990	970	0	970	3,880	8,730	1,940	970	970	1,940
1991	970	0	970	3,880	8,730	1,940	970	970	1,940
1992	970	0	0	1,940	4,850	970	0	970	970
1993	0	0	0	0	0	0	0	0	0
1994	0	0	0	0	0	0	0	0	0
1995	0	0	0	0	0	0	0	0	0
1996	0	0	0	0	0	0	0	0	0
1997	0	0	0	0	0	0	0	0	0
1998	0	0	0	0	0	0	0	0	0
1999	0	0	0	0	0	0	0	0	0
2000	0	0	0	0	0	0	0	0	0
TOTAL	24,133,161	23,761,475	56,530,652	168,812,164	33,733,161	29,161,875	107,885,705	51,380,490	76,533,234

a) Includes excess capacity costs in the following years allocated to the Metropolitan Water District and repaid under Article 24(c) of their contract; 1970, $362,000; 1971, $6,198,000; 1972, $139,000.

THRU CAPITAL COST COMPONENT OF TRANSPORTATION CHARGE

Calendar Year	CALIFORNIA AQUEDUCT (continued)								GRAND TOTAL
	WEST BRANCH (continued)		COASTAL BRANCH					TOTAL	
	Reach 30	Subtotal	Reach 31A	Reach 33A	Reach 34	Reach 35	Subtotal		
	(64)	(65)	(66)	(67)	(68)	(69)	(70)	(71)	(72)
1952	1,448	5,815	0	0	0	0	0	101,407	101,903
1953	4,470	17,953	0	0	0	0	0	317,505	319,930
1954	5,909	23,737	0	0	0	0	0	405,029	412,484
1955	1,999	8,028	0	0	0	0	0	163,919	173,419
1956	2,136	8,581	0	0	0	0	0	262,489	358,361
1957	7,907	31,765	0	0	0	0	0	728,478	1,484,177
1958	14,331	56,725	0	0	0	0	0	1,368,389	2,323,396
1959	45,653	138,582	28,046	49,114	7,441	8,236	92,837	2,146,600	3,017,620
1960	87,117	262,688	34,404	70,450	8,507	14,265	127,626	3,003,637	4,727,421
1961	118,530	235,421	13,801	17,868	1,501	3,931	37,101	4,768,915	8,663,895
1962	354,005	684,443	10,121	7,798	524	1,689	20,132	5,947,286	8,994,683
1963	432,675	1,059,082	20,470	14,299	880	2,943	38,592	19,323,602	24,952,393
1964	1,410,463	2,294,105	315,418	26,963	1,687	5,639	349,707	32,143,876	42,324,258
1965	3,478,911	5,082,569	747,023	36,178	2,118	7,060	792,379	59,089,533	63,817,871
1966	9,631,335	15,295,265	2,258,915	35,864	1,736	5,764	2,302,279	127,511,736	131,873,923
1967	18,038,030	54,659,810	6,310,419	38,331	1,891	6,213	6,356,854	191,962,534	198,643,319
1968	16,182,767	59,238,288	2,707,580	30,784	1,324	4,369	2,744,057	197,815,754	203,201,586
1969	16,628,705	35,596,253	423,797	26,549	907	2,905	454,158	187,607,341	189,550,808
1970	22,606,073	51,463,446	269,194	24,368	851	2,787	297,200	212,488,034	212,849,910
1971	17,372,724	41,264,505	164,446	32,230	1,315	3,804	201,795	162,961,940	163,172,646
1972	3,927,270	2,956,664	131,332	17,597	522	1,660	151,111	70,218,141	70,351,756
1973	13,801,511	26,766,082	182,493	16,149	542	1,758	200,942	46,384,962	46,537,984
1974	3,076,329	4,568,895	190,937	18,760	460	1,396	211,553	24,806,990	25,173,886
1975	1,854,121	4,955,547	64,597	35,989	2,253	6,651	109,490	21,650,528	21,903,781
1976	1,291,242	5,078,195	198,220	68,818	5,088	14,988	287,114	17,648,399	17,956,594
1977	356,953	7,483,715	917,725	80,680	1,834	5,390	1,005,629	15,477,862	15,848,224
1978	793,514	11,619,265	31,982	71,831	1,300	3,845	108,958	15,473,595	15,880,184
1979	245,957	24,995,756	25,030	88,067	1,490	4,401	118,988	29,730,306	30,328,846
1980	2,217,145	34,560,788	18,000	118,323	4,151	4,151	144,625	49,825,020	51,625,404
1981	255,110	26,435,895	18,000	316,714	81,872	154,416	571,002	47,903,865	49,777,863
1982	1,870,160	12,188,632	20,000	939,432	191,469	464,427	1,615,328	52,091,458	58,769,071
1983	3,746,140	4,518,260	25,000	1,777,557	300,107	789,746	2,892,410	30,692,915	47,228,853
1984	686,760	5,268,070	72,000	7,714,219	381,526	1,163,330	9,331,075	36,778,191	43,679,947
1985	13,580	326,890	194,000	28,504,581	1,607,150	7,296,870	37,602,601	63,123,502	63,816,502
1986	5,820	46,560	680,000	34,836,314	3,374,251	9,942,751	48,833,316	64,336,587	64,504,587
1987	2,910	24,250	1,072,000	23,101,493	2,168,019	5,557,818	31,899,330	38,907,538	38,963,538
1988	970	5,820	253,000	2,872,000	371,000	631,000	4,127,000	5,595,927	5,619,927
1989	0	1,940	31,000	1,166,000	125,000	307,000	1,629,000	1,657,920	1,665,920
1990	1,940	16,490	31,000	24,000	13,000	16,000	84,000	221,065	222,065
1991	1,940	16,490	16,000	6,000	6,000	6,000	34,000	169,065	169,065
1992	970	8,730	2,000	0	0	0	2,000	67,563	67,563
1993	0	0	0	0	0	0	0	0	0
1994	0	0	0	0	0	0	0	0	0
1995	0	0	0	0	0	0	0	0	0
1996	0	0	0	0	0	0	0	0	0
1997	0	0	0	0	0	0	0	0	0
1998	0	0	0	0	0	0	0	0	0
1999	0	0	0	0	0	0	0	0	0
2000	0	0	0	0	0	0	0	0	0
TOTAL	140,575,530	439,269,995	17,477,950	102,185,320	8,667,716	26,443,203	154,774,189	1,842,879,403	1,931,055,563

TABLE B-11: MINIMUM OMP&R COSTS OF EACH AQUEDUCT REACH TO BE

(in dollars)

Calendar Year	UPPER FEATHER DIVISION	NORTH BAY AQUEDUCT				SOUTH BAY AQUEDUCT			
		Reach 1	Reach 2	Reach 3	Total	Reach 1	Reach 2	Reach 4	Reach 5
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1961	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	37,396	5,522	0	0
1963	0	0	0	0	0	147,719	20,639	0	0
1964	0	0	0	0	0	149,750	15,574	19,405	0
1965	0	0	0	0	0	259,939	45,718	46,485	0
1966	0	0	0	0	0	270,890	23,799	63,921	0
1967	0	0	0	0	0	438,050	32,798	108,127	0
1968	0	0	0	130	130	410,919	44,277	66,973	706
1969	0	0	0	80,875	80,875	487,377	48,339	75,644	706
1970	0	0	0	94,872	94,872	381,734	44,852	64,833	71,376
1971	54	0	0	45,579	45,579	357,850	25,666	50,344	38,735
1972	40	0	0	37,890	37,890	347,885	30,601	56,790	100,089
1973	1	0	0	32,982	32,982	386,817	36,162	58,273	28,797
1974	143	0	0	46,478	46,478	456,275	57,065	83,101	61,610
1975	1,068	0	0	37,695	37,695	624,877	46,098	81,342	36,675
1976	139	0	0	60,923	60,923	614,279	47,835	123,742	91,323
1977	893	0	0	79,964	79,964	511,621	48,922	104,270	102,078
1978	39	0	0	59,552	59,552	689,459	124,857	176,206	50,560
1979	3,158	0	0	72,207	72,207	640,366	81,598	194,333	103,630
1980	200	0	0	91,598	91,598	834,674	115,112	154,770	129,142
1981	200	0	0	101,622	101,622	912,148	133,172	194,576	142,890
1982	200	0	0	105,842	105,842	1,010,794	151,114	228,965	158,850
1983	200	0	0	125,696	125,696	1,257,574	156,928	239,494	178,923
1984	200	237,791	73,875	122,932	434,598	1,286,081	156,915	239,805	182,110
1985	200	295,889	66,549	154,401	516,839	1,291,884	156,953	240,087	184,624
1986	200	294,249	65,237	154,236	513,722	1,301,297	156,927	240,137	185,436
1987	200	292,385	64,426	154,725	511,536	1,292,297	156,537	239,341	185,609
1988	200	293,513	64,052	153,987	511,552	1,282,798	155,824	238,224	184,469
1989	200	292,858	63,747	152,377	508,982	1,265,362	155,229	237,428	184,850
1990	200	295,046	63,603	151,857	510,506	1,254,444	154,541	236,254	182,859
1991	200	293,444	63,460	152,597	509,501	1,250,575	154,313	235,993	183,223
1992	200	296,462	64,167	155,043	515,672	1,272,189	155,856	238,225	183,594
1993	200	296,183	64,112	154,882	515,177	1,272,071	155,764	238,205	184,230
1994	200	298,108	64,119	156,775	519,002	1,291,305	155,669	238,092	184,149
1995	200	298,174	64,137	156,798	519,109	1,275,476	155,699	238,142	184,096
1996	200	299,012	64,540	156,758	520,310	1,296,629	156,853	239,989	186,061
1997	200	299,149	64,573	157,817	521,539	1,298,010	156,848	239,886	185,204
1998	200	300,216	64,601	158,818	523,635	1,299,053	156,902	240,037	185,940
1999	200	299,245	64,613	158,819	522,677	1,289,124	156,984	240,271	187,058
2000	200	300,319	64,642	160,819	525,780	1,296,065	156,910	240,063	186,209
2001	200	300,390	64,670	159,819	524,879	1,289,098	156,952	240,180	186,526
2002	200	300,329	64,646	159,819	524,794	1,286,013	156,845	239,881	185,216
2003	200	300,347	64,654	158,819	523,820	1,278,077	156,925	240,105	186,196
2004	200	300,333	64,648	158,819	523,800	1,279,096	156,949	240,170	186,397
2005	200	299,290	64,630	158,819	522,739	1,273,034	156,872	239,953	185,451
2006	200	300,425	64,685	158,819	523,929	1,272,059	156,901	240,037	185,699
2007	200	316,939	66,614	163,471	547,024	1,394,554	166,995	262,339	195,830
2008	200	315,936	66,614	162,471	545,021	1,383,526	166,960	262,242	195,410
2009	200	315,973	66,628	161,471	544,072	1,378,630	167,090	262,608	196,992
2010	200	315,959	66,622	161,471	544,052	1,378,616	167,072	262,558	196,485
2011	200	318,473	66,828	162,471	547,772	1,375,666	167,136	262,735	197,245
2012	200	318,481	66,831	162,471	547,783	1,372,661	167,128	262,715	197,159
2013	200	318,525	66,849	161,471	546,845	1,368,764	167,258	263,077	198,708
2014	200	317,542	66,856	161,471	545,869	1,366,745	167,233	263,008	198,256
2015	200	317,580	66,871	160,471	544,922	1,363,831	167,341	263,310	199,598
2016	200	316,611	66,883	158,471	541,965	1,343,738	167,226	262,987	198,012
2017	200	316,641	66,896	158,471	542,008	1,343,854	167,371	263,392	199,557
2018	200	315,592	66,876	158,471	540,939	1,343,773	167,270	263,109	198,367
2019	200	315,588	66,874	158,471	540,933	1,342,805	167,309	263,220	198,835
2020	200	316,646	66,897	159,471	543,014	1,343,853	167,369	263,388	201,727
2021	200	316,817	66,966	159,471	543,254	1,344,794	167,294	263,179	200,782
2022	200	297,944	64,753	154,541	517,238	1,192,167	155,081	236,261	189,625
2023	200	297,886	64,730	154,541	517,157	1,193,085	154,980	235,974	188,325
2024	200	299,072	64,805	154,541	518,418	1,195,164	155,078	236,249	189,315
2025	200	299,028	64,787	154,541	518,356	1,195,137	155,045	236,158	188,905
2026	200	300,236	64,870	154,541	519,647	1,197,180	155,098	236,307	189,265
2027	200	296,501	64,426	153,094	514,021	1,179,772	153,655	233,107	187,561
2028	200	296,501	64,426	153,094	514,021	1,179,743	153,618	233,004	187,099
2029	200	296,514	64,432	153,094	514,040	1,179,777	153,661	233,125	187,637
2030	200	296,483	64,419	153,094	513,996	1,179,745	153,621	233,011	187,132
2031	200	296,532	64,439	153,094	514,065	1,179,783	153,668	233,142	187,712
2032	200	296,496	64,424	153,094	514,014	1,179,740	153,614	232,991	187,045
2033	200	296,509	64,430	153,094	514,033	1,180,755	153,634	233,048	187,297
2034	200	296,532	64,439	153,094	514,065	1,179,805	153,697	233,223	188,075
2035	200	296,527	64,437	153,094	514,058	1,179,773	153,655	233,108	187,566

REIMBURSED THRU MINIMUM OMP&R COMPONENT OF TRANSPORTATION CHARGE

(in dollars)

Calendar Year	SOUTH BAY AQUEDUCT (continued)					CALIFORNIA AQUEDUCT			
						NORTH SAN JOAQUIN DIVISION			
	Reach 6	Reach 7	Reach 8	Reach 9	Total	Reach 1	Reach 2A	Reach 2B	Subtotal
	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
1961	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	42,918	0	0	0	0
1963	0	0	0	0	168,358	0	0	0	0
1964	0	0	0	0	184,729	0	0	0	0
1965	2,634	6,490	4,704	12,904	378,874	0	0	0	0
1966	4,707	10,328	9,233	25,519	408,397	0	0	0	0
1967	2,712	7,659	10,812	34,347	634,505	0	0	0	0
1968	3,109	7,960	10,166	40,372	584,482	962,889	219,434	99,101	1,281,424
1969	3,944	5,975	8,795	38,566	669,346	896,700	289,811	180,833	1,367,344
1970	2,464	1,991-	6,870	28,210	598,348	933,524	294,137	145,611	1,373,272
1971	3,116	9,394	9,895	31,068	526,068	1,059,747	244,727	109,249	1,413,723
1972	5,123	10,245	12,050	44,689	607,472	1,064,129	221,682	105,769	1,391,580
1973	4,177	7,498	4,886	43,805	570,415	1,105,315	212,661	96,243	1,414,219
1974	7,806	7,561	5,519	48,038	726,975	1,221,581	222,152	112,480	1,556,213
1975	18,116	14,681	18,321	68,364	908,474	1,377,841	437,033	193,080	2,007,954
1976	10,872	5,555	19,917	49,906	963,429	1,454,603	205,394	433,887	2,093,884
1977	240-	2,226	8,388	89,571	866,836	1,845,110	279,631	188,236	2,312,977
1978	1,408-	16,713	5,329-	103,764	1,154,822	1,939,278	290,062	178,882	2,408,222
1979	1,905	25,905	11,524	100,418	1,159,679	1,724,132	188,428	126,060	2,038,620
1980	10,884	14,782	14,616	66,339	1,340,319	3,031,476	410,915	245,972	3,688,363
1981	9,833	17,673	15,297	82,534	1,508,123	2,852,905	526,710	257,036	3,636,651
1982	11,052	19,915	17,778	95,180	1,693,648	2,573,438	645,749	294,278	3,513,465
1983	11,382	20,667	18,389	98,440	1,981,797	3,798,544	696,349	313,056	4,807,949
1984	11,363	20,633	18,358	98,271	2,013,536	3,945,934	701,011	314,347	4,961,292
1985	11,351	20,612	18,341	98,136	2,021,988	4,038,479	707,590	316,259	5,062,328
1986	11,344	20,600	18,330	98,076	2,032,147	4,232,946	711,270	317,193	5,261,409
1987	11,248	20,488	18,174	97,662	2,021,356	4,250,182	713,208	317,135	5,280,525
1988	11,200	20,404	18,098	97,246	2,008,263	4,265,623	705,844	314,411	5,285,878
1989	11,152	20,318	18,023	96,826	1,989,188	4,258,575	710,570	315,426	5,284,571
1990	11,112	20,244	17,958	96,469	1,973,881	4,158,512	701,566	312,325	5,172,403
1991	11,091	20,208	17,925	96,290	1,969,618	4,174,215	704,954	313,175	5,192,344
1992	11,205	20,411	18,106	97,284	1,996,870	4,144,841	701,457	313,117	5,159,415
1993	11,191	20,389	18,085	97,174	1,997,109	4,172,987	708,207	315,046	5,196,240
1994	11,183	20,373	18,074	97,099	2,015,944	4,141,618	702,964	313,369	5,157,951
1995	11,186	20,376	18,076	97,115	2,000,166	4,220,041	711,163	315,892	5,247,096
1996	11,260	20,512	18,195	97,776	2,027,275	4,226,067	714,299	317,523	5,257,889
1997	11,264	20,521	18,202	97,817	2,027,752	4,173,224	708,305	315,732	5,197,261
1998	11,264	20,521	18,202	97,817	2,029,736	4,195,179	711,721	316,777	5,223,677
1999	11,265	20,521	18,202	97,817	2,021,242	4,221,866	720,234	319,379	5,261,479
2000	11,265	20,521	18,202	97,817	2,027,052	4,152,864	711,172	316,610	5,180,646
2001	11,265	20,521	18,202	97,817	2,020,561	4,190,174	714,079	317,498	5,221,751
2002	11,265	20,521	18,202	97,817	2,015,760	4,157,095	705,596	314,905	5,177,596
2003	11,265	20,521	18,202	97,817	2,009,108	4,219,676	714,395	317,595	5,251,666
2004	11,265	20,521	18,202	97,817	2,010,417	4,194,132	716,463	318,227	5,228,822
2005	11,265	20,521	18,202	97,817	2,003,115	4,179,728	709,900	316,221	5,205,849
2006	11,265	20,521	18,202	97,817	2,002,501	4,151,594	711,439	316,692	5,179,725
2007	13,788	23,256	22,188	107,844	2,186,794	4,276,152	751,496	340,115	5,367,763
2008	13,788	23,256	22,188	107,844	2,175,214	4,343,219	746,284	338,522	5,428,025
2009	13,788	23,256	22,188	107,844	2,172,396	4,268,040	756,333	341,594	5,365,967
2010	13,788	23,256	22,188	107,844	2,171,807	4,237,689	751,441	340,099	5,329,229
2011	13,788	23,256	22,188	107,844	2,169,858	4,218,610	754,733	341,105	5,314,448
2012	13,788	23,256	22,188	107,844	2,166,739	4,226,220	752,961	340,565	5,319,746
2013	13,788	23,256	22,188	107,844	2,164,883	4,247,136	761,775	343,258	5,352,169
2014	13,788	23,256	22,188	107,844	2,162,318	4,192,360	755,445	341,323	5,289,128
2015	13,788	23,256	22,188	107,844	2,161,156	4,197,134	761,696	343,234	5,302,064
2016	13,788	23,256	22,188	107,844	2,139,039	4,057,068	754,606	341,067	5,152,741
2017	13,788	23,256	22,188	107,844	2,141,250	4,093,430	764,753	344,168	5,202,351
2018	13,788	23,256	22,188	107,844	2,139,595	4,069,357	756,999	341,798	5,168,154
2019	13,788	23,256	22,188	107,844	2,139,245	4,081,648	759,463	342,551	5,183,662
2020	13,788	23,256	22,188	107,844	2,143,413	4,077,934	762,338	343,430	5,183,702
2021	13,788	23,256	22,188	107,844	2,143,125	4,067,471	757,789	342,039	5,167,299
2022	10,708	19,919	17,323	95,608	1,916,692	3,804,040	721,620	325,932	4,851,592
2023	10,708	19,919	17,323	95,608	1,915,922	3,777,409	714,008	323,604	4,815,021
2024	10,708	19,919	17,323	95,608	1,919,364	3,805,873	719,645	325,326	4,850,844
2025	10,708	19,919	17,323	95,608	1,918,803	3,783,980	717,529	324,680	4,826,189
2026	10,708	19,919	17,323	95,608	1,921,408	3,792,392	719,243	325,205	4,836,840
2027	10,352	19,534	16,762	94,196	1,894,939	3,747,609	708,724	311,326	4,767,659
2028	10,352	19,534	16,762	94,196	1,894,308	3,732,051	704,943	310,171	4,747,165
2029	10,352	19,534	16,762	94,196	1,895,044	3,753,378	708,717	311,324	4,773,419
2030	10,352	19,534	16,762	94,196	1,894,353	3,739,803	706,234	310,566	4,756,603
2031	10,352	19,534	16,762	94,196	1,895,149	3,750,799	708,382	311,221	4,770,402
2032	10,352	19,534	16,762	94,196	1,894,234	3,733,324	704,741	310,108	4,748,173
2033	10,352	19,534	16,762	94,196	1,895,578	3,737,878	706,195	310,553	4,754,626
2034	10,352	19,534	16,762	94,196	1,895,644	3,755,416	711,251	312,098	4,778,765
2035	10,352	19,534	16,762	94,196	1,894,946	3,746,911	707,504	310,953	4,765,368

TABLE B-11: MINIMUM OMP&R COSTS OF EACH AQUEDUCT REACH TO BE

(in dollars)

Calendar Year	CALIFORNIA AQUEDUCT (continued)								
	SAN LUIS DIVISION						SOUTH SAN JOAQUIN DIVISION		
	Reach 3	Reach 4	Reach 5	Reach 6	Reach 7	Subtotal	Reach 8C	Reach 8D	Reach 9
	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)
1961	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0	0	0
1967	0	0	0	0	0	0	0	0	0
1968	115,571	411,724	125,055	42,853	99,937	795,140	0	0	0
1969	86,757	443,040	177,192	34,330	225,821	967,140	21,115	129,255	82,572
1970	86,300	465,475	217,013	63,453	184,843	1,017,084	25,138	150,563	123,018
1971	96,315	520,611	168,745	61,669	151,891	999,231	30,989	182,956	113,549
1972	112,398	622,453	167,646	70,733	148,605	1,121,835	33,597	179,579	125,054
1973	112,445	587,500	151,899	56,023	147,774	1,055,641	49,045	216,443	122,278
1974	115,793	644,688	144,860	61,345	144,169	1,110,855	33,327	190,919	125,907
1975	128,552	805,536	171,827	78,187	151,209	1,335,311	75,291	240,055	152,480
1976	50,477	848,815	212,245	86,748	167,928	1,366,213	37,630	126,898	117,140
1977	70,974	1,071,928	259,820	94,154	188,385	1,685,261	36,481	119,786	170,449
1978	44,029	937,727	195,161	102,621	194,761	1,474,299	43,494	174,562	124,238
1979	205,694	784,500	125,391	86,990	162,241	1,364,816	58,628	140,873	118,818
1980	180,327	1,449,401	225,336	85,656	136,197	2,076,917	60,840	230,453	178,151
1981	192,205	1,305,374	230,270	92,963	162,647	1,983,459	71,552	271,151	209,371
1982	204,935	1,202,690	253,810	102,837	179,415	1,943,687	81,666	309,714	238,696
1983	242,270	1,975,146	298,174	118,070	200,752	2,834,412	84,828	334,797	260,418
1984	247,333	2,102,352	305,976	120,524	203,746	2,979,931	84,769	338,556	264,056
1985	254,377	2,128,435	311,665	122,323	205,892	3,022,692	84,747	341,415	266,816
1986	258,723	2,261,795	317,133	123,967	207,938	3,169,556	84,757	344,325	269,477
1987	261,925	2,265,177	318,343	124,260	208,120	3,177,825	84,697	345,571	270,652
1988	254,661	2,248,175	306,697	120,098	202,292	3,131,923	84,309	342,608	268,083
1989	260,065	2,227,177	310,265	121,065	203,167	3,121,739	83,988	344,256	269,861
1990	250,801	2,215,490	303,782	118,872	200,131	3,089,076	83,635	340,413	266,484
1991	254,579	2,169,817	305,645	119,402	200,660	3,050,103	83,509	341,188	267,307
1992	249,919	2,193,561	301,661	118,496	200,283	3,063,920	85,277	346,037	269,770
1993	257,238	2,187,739	307,189	120,200	202,352	3,074,718	85,244	348,820	272,408
1994	251,751	2,216,464	303,464	118,987	200,761	3,091,427	85,147	346,774	270,538
1995	260,426	2,205,952	309,604	120,952	203,255	3,100,189	85,223	350,024	273,570
1996	263,108	2,222,592	311,066	121,653	204,658	3,123,077	85,770	351,560	274,637
1997	256,716	2,228,035	306,949	120,354	203,049	3,115,103	86,164	351,755	274,183
1998	260,338	2,233,361	309,373	121,128	204,026	3,128,226	86,188	353,030	275,377
1999	269,361	2,222,018	316,076	123,267	206,726	3,137,448	86,258	356,557	278,679
2000	259,757	2,234,227	309,264	121,092	203,982	3,128,322	86,188	352,973	275,324
2001	262,836	2,212,516	311,551	121,821	204,902	3,113,626	86,211	354,177	276,450
2002	253,844	2,206,594	305,415	119,863	202,431	3,088,147	86,149	350,948	273,427
2003	263,174	2,195,998	311,859	121,920	205,027	3,097,978	86,215	354,338	276,600
2004	265,363	2,193,921	312,930	122,261	205,459	3,099,934	86,226	354,901	277,128
2005	258,407	2,182,725	308,650	120,895	203,735	3,074,412	86,181	352,649	275,020
2006	260,040	2,178,665	309,535	121,177	204,090	3,073,507	86,191	353,116	275,457
2007	277,860	2,270,819	329,338	127,527	215,956	3,221,500	89,185	369,078	287,053
2008	272,336	2,249,846	325,725	126,373	214,502	3,188,782	89,147	367,177	285,273
2009	282,987	2,243,040	333,685	128,915	217,707	3,206,334	89,230	371,364	289,193
2010	277,801	2,236,957	330,110	127,773	216,267	3,188,908	89,193	369,483	287,433
2011	281,290	2,238,044	333,155	128,746	217,494	3,198,729	89,224	371,086	288,932
2012	279,415	2,234,517	332,038	128,388	217,044	3,191,402	89,763	373,660	290,508
2013	288,754	2,235,479	339,099	130,643	219,888	3,213,863	89,837	377,376	293,985
2014	282,048	2,228,128	335,013	129,338	218,244	3,192,771	89,795	375,226	291,973
2015	288,672	2,217,264	339,651	130,819	220,111	3,196,517	89,843	377,665	294,257
2016	281,158	2,145,808	334,155	129,065	217,897	3,108,083	89,785	374,774	291,550
2017	291,913	2,152,755	341,839	131,518	220,993	3,139,018	89,865	378,817	295,335
2018	283,694	2,153,789	336,388	129,777	218,798	3,122,446	89,809	375,949	292,651
2019	286,307	2,152,156	338,129	130,333	219,497	3,126,422	89,826	376,864	293,508
2020	289,353	2,156,601	340,631	131,132	220,506	3,138,223	89,853	378,181	294,740
2021	284,529	2,153,021	336,631	129,855	218,894	3,122,930	89,811	376,077	292,771
2022	274,968	2,045,859	322,290	125,367	208,775	2,977,259	89,855	378,299	294,851
2023	266,900	2,043,914	316,549	123,534	206,463	2,957,360	89,795	375,279	292,023
2024	272,874	2,043,697	320,429	124,773	208,025	2,969,798	89,835	377,319	293,934
2025	270,631	2,043,545	318,796	124,253	207,368	2,964,593	89,818	376,462	293,130
2026	272,449	2,043,477	320,097	124,667	207,893	2,968,583	89,832	377,145	293,771
2027	266,144	2,017,400	313,325	122,371	204,188	2,923,428	84,418	348,739	273,709
2028	262,136	2,018,352	310,553	121,485	203,073	2,915,599	84,389	347,282	272,344
2029	266,136	2,017,221	313,054	122,283	204,079	2,922,773	84,415	348,596	273,576
2030	263,507	2,015,831	310,955	121,614	203,234	2,915,141	84,394	347,493	272,541
2031	265,782	2,018,868	312,734	122,182	203,951	2,923,517	84,413	348,429	273,419
2032	261,922	2,015,862	309,599	121,181	202,688	2,911,252	83,258	340,350	267,552
2033	263,464	2,017,559	310,759	121,551	203,155	2,916,488	83,269	340,961	268,123
2034	268,822	2,020,121	314,627	122,785	204,714	2,931,069	83,309	342,996	270,028
2035	264,852	2,018,297	311,872	121,907	203,603	2,920,531	83,281	341,546	268,670

REIMBURSED THRU MINIMUM OMP&R COMPONENT OF TRANSPORTATION CHARGE

(in dollars)

Calendar Year	CALIFORNIA AQUEDUCT (continued)								
	SOUTH SAN JOAQUIN DIVISION (continued)								
	Reach 10A	Reach 11B	Reach 12D	Reach 12E	Reach 13B	Reach 14A	Reach 14B	Reach 14C	Reach 15A
	(28)	(29)	(30)	(31)	(32)	(33)	(34)	(35)	(36)
1961	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0	0	0
1967	0	0	0	0	0	0	0	0	0
1968	0	0	0	0	0	0	0	0	0
1969	80,276	56,673	0	0	0	0	0	0	0
1970	113,207	82,257	90,320	118,354	146,192	0	0	0	0
1971	124,523	77,013	91,204	87,698	160,312	663,624	145,766	107,066	508,222
1972	112,821	80,836	94,597	110,905	140,111	841,553	119,713	97,320	584,186
1973	112,868	88,460	71,178	110,172	212,254	922,240	115,168	95,339	664,290
1974	135,845	94,074	71,842	185,586	135,729	861,362	137,955	110,893	818,055
1975	199,364	119,005	59,267	112,396	103,722	1,109,203	173,188	114,961	947,448
1976	132,108	65,271	30,670	140,688	128,331	1,078,276	169,984	109,567	995,267
1977	185,757	103,671	87,294	167,503	132,393	1,342,760	195,470	114,559	1,287,427
1978	161,145	101,946	69,579	162,764	144,508	1,298,094	133,540	126,255	1,313,039
1979	159,100	82,367	51,656	157,311	138,672	1,369,212	172,842	221,077	1,168,343
1980	199,686	139,090	109,343	187,264	218,270	1,817,569	162,391	224,914	1,799,656
1981	234,221	163,011	128,729	220,829	257,770	1,706,320	190,569	150,704	1,615,400
1982	266,739	185,810	147,169	252,650	294,357	1,632,573	217,272	171,116	1,515,910
1983	290,430	200,221	165,022	269,857	316,374	2,456,820	237,834	186,305	2,310,339
1984	294,326	202,338	168,682	271,926	319,422	2,554,918	242,478	189,591	2,389,685
1985	297,284	203,954	171,406	273,515	321,765	2,556,642	245,388	191,085	2,381,645
1986	300,144	205,363	174,031	275,086	323,921	2,664,924	246,965	193,078	2,482,147
1987	301,389	205,960	175,273	275,659	324,871	2,663,091	247,758	193,751	2,476,674
1988	298,611	204,213	173,146	273,585	322,178	2,648,727	245,771	192,302	2,461,084
1989	300,502	205,074	175,186	274,193	323,319	2,644,907	246,929	193,061	2,458,424
1990	296,857	202,945	172,239	271,707	320,033	2,653,491	244,477	191,188	2,469,964
1991	297,729	203,352	173,172	272,012	320,575	2,645,007	245,027	191,569	2,462,589
1992	300,066	205,561	173,791	275,422	325,966	2,682,479	247,491	193,859	2,493,579
1993	302,895	207,065	176,435	276,944	328,161	2,672,967	249,472	195,331	2,482,013
1994	300,881	205,923	174,700	275,702	326,451	2,682,950	247,875	194,154	2,487,868
1995	304,137	207,726	177,593	277,596	329,117	2,676,616	250,110	195,790	2,482,130
1996	305,317	208,643	178,084	279,007	330,700	2,680,988	251,048	196,577	2,484,414
1997	304,690	208,526	177,251	279,087	331,255	2,702,388	251,230	196,851	2,504,432
1998	305,973	209,234	178,396	279,825	332,297	2,700,333	251,830	197,289	2,499,866
1999	309,516	211,186	181,559	281,864	335,184	2,690,535	254,454	199,211	2,490,304
2000	305,915	209,202	178,344	279,791	332,250	2,698,565	251,896	197,339	2,498,051
2001	307,124	209,867	179,424	280,486	333,236	2,680,147	252,792	197,993	2,481,552
2002	303,881	208,081	176,528	278,621	330,593	2,684,262	250,833	196,560	2,490,442
2003	307,287	209,958	179,568	280,580	333,368	2,672,055	253,011	198,154	2,477,911
2004	307,853	210,270	180,074	280,907	333,829	2,670,225	253,035	198,172	2,476,916
2005	305,590	209,023	178,055	279,604	331,986	2,668,159	252,103	197,488	2,476,826
2006	306,059	209,280	178,472	279,874	332,367	2,664,580	252,216	197,572	2,474,023
2007	318,129	217,202	186,283	290,030	346,914	2,909,283	262,673	205,662	2,705,434
2008	316,219	216,149	184,577	288,932	345,358	2,892,129	261,557	204,847	2,692,207
2009	320,426	218,469	188,334	291,353	348,785	2,875,369	264,574	207,055	2,673,419
2010	318,536	217,427	186,646	290,265	347,246	2,872,019	263,349	206,159	2,671,288
2011	320,146	218,313	188,084	291,192	348,558	2,872,808	264,759	207,190	2,671,672
2012	321,641	219,430	189,094	292,590	351,180	2,880,249	266,180	208,415	2,675,915
2013	325,376	221,486	192,426	294,740	354,221	2,877,983	268,892	210,400	2,671,923
2014	323,216	220,296	190,499	293,497	352,461	2,869,287	267,857	209,642	2,665,264
2015	325,667	221,648	192,686	294,907	354,458	2,853,630	269,491	210,838	2,647,977
2016	322,762	220,046	190,093	293,236	352,092	2,764,622	267,350	209,270	2,564,775
2017	326,823	222,287	193,719	295,573	355,401	2,774,680	270,266	211,404	2,572,903
2018	323,943	220,696	191,147	293,915	353,053	2,775,319	268,505	210,116	2,575,328
2019	324,862	221,205	191,968	294,445	353,802	2,776,215	269,238	210,654	2,575,514
2020	326,185	221,933	193,149	295,206	354,880	2,776,460	270,203	211,358	2,575,748
2021	324,071	220,768	191,261	293,989	353,157	2,777,174	268,501	210,115	2,577,164
2022	326,303	221,999	193,254	295,273	354,977	2,531,057	270,082	211,270	2,329,497
2023	323,269	220,326	190,546	293,527	352,504	2,533,305	268,116	209,831	2,333,711
2024	325,319	221,455	192,377	294,707	354,174	2,530,026	269,236	210,651	2,329,266
2025	324,457	220,980	191,606	294,211	353,472	2,533,067	268,681	210,246	2,333,790
2026	325,143	221,359	192,219	294,606	354,032	2,533,698	269,199	210,625	2,333,918
2027	304,554	207,590	178,760	277,041	327,594	2,410,442	251,300	196,511	2,239,001
2028	303,089	206,783	177,452	276,197	326,400	2,413,140	250,465	195,900	2,242,561
2029	304,410	207,511	178,631	276,959	327,478	2,410,303	251,187	196,428	2,238,975
2030	303,302	206,900	177,641	276,320	326,573	2,410,228	250,362	195,826	2,239,701
2031	304,242	207,419	178,481	276,862	327,339	2,412,075	251,115	196,376	2,239,895
2032	298,345	203,578	173,875	272,372	319,685	2,386,057	246,274	192,454	2,222,305
2033	298,958	203,916	174,422	272,724	320,185	2,386,543	246,671	192,744	2,222,391
2034	301,003	205,042	176,247	273,901	321,850	2,386,320	248,012	193,726	2,221,756
2035	299,546	204,240	174,947	273,063	320,663	2,386,057	247,033	193,010	2,221,533

TABLE B-11: MINIMUM OMP&R COSTS OF EACH AQUEDUCT REACH TO BE

(in dollars)

Calendar Year	CALIFORNIA AQUEDUCT (continued)								
	SOUTH SAN JOAQUIN DIVISION (continued)		TEHACHAPI DIVISION			MOJAVE DIVISION			
	Reach 16A	Subtotal	Reach 17E	Reach 17F	Subtotal	Reach 18A	Reach 19	Reach 19C	Reach 20A
	(37)	(38)	(39)	(40)	(41)	(42)	(43)	(44)	(45)
1961	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0	0	0
1967	0	0	0	0	0	0	0	0	0
1968	0	0	0	0	0	0	0	0	0
1969	0	369,891	0	0	0	0	0	0	0
1970	0	849,049	0	0	0	0	0	0	0
1971	9,867	2,302,789	3,328	0	3,328	0	0	0	0
1972	1,061,578	3,581,850	1,366,705	28,206	1,394,911	34,692	128,509	0	123,520
1973	1,192,788	3,972,523	1,704,271	51,457	1,755,728	33,224	135,949	0	149,717
1974	1,288,758	4,190,252	2,203,748	18,877	2,222,625	27,502	80,829	0	103,815
1975	1,474,647	4,881,027	2,304,701	38,706	2,343,407	36,713	110,530	0	124,073
1976	1,656,871	4,788,701	2,663,367	43,662	2,807,029	107,099	180,678	0	164,309
1977	1,887,630	5,831,180	3,711,903	96,584	3,808,487	84,593	204,585	0	163,156
1978	2,066,836	5,920,000	3,634,215	46,948	3,681,163	84,913	183,263	0	197,522
1979	1,754,825	5,593,724	3,410,015	49,833	3,459,848	84,299	246,579	0	214,223
1980	2,843,566	8,171,193	6,331,652	46,890	6,378,542	167,793	319,626	0	229,741
1981	2,371,775	7,591,402	4,701,010	42,875	4,743,885	167,131	285,013	0	227,606
1982	1,955,280	7,268,952	3,284,568	45,096	3,329,664	180,852	264,916	0	224,347
1983	3,698,588	10,811,833	13,202,054	49,356	13,251,410	152,096	374,019	0	296,395
1984	3,887,425	11,208,172	13,921,443	50,756	13,972,199	141,013	421,997	0	327,117
1985	3,867,435	11,203,097	13,802,250	50,968	13,853,218	129,615	428,660	0	331,338
1986	4,109,238	11,673,456	14,641,387	51,558	14,692,945	129,669	445,350	49,571	346,489
1987	4,105,086	11,670,432	14,629,476	51,583	14,681,059	129,868	451,997	40,936	350,587
1988	4,075,897	11,590,514	14,526,926	51,326	14,578,252	128,603	449,963	39,135	349,033
1989	4,081,990	11,601,690	14,547,566	51,358	14,598,924	127,874	457,634	38,790	353,702
1990	4,115,717	11,629,150	14,683,635	51,113	14,734,748	126,666	452,986	38,624	350,507
1991	4,105,308	11,608,344	14,651,588	51,144	14,702,732	126,399	456,875	38,517	352,896
1992	4,144,606	11,743,904	14,817,509	52,798	14,870,307	129,737	447,101	44,815	352,483
1993	4,122,572	11,720,327	14,723,185	53,058	14,776,243	130,077	458,516	44,776	359,741
1994	4,126,486	11,725,449	14,734,842	52,722	14,787,564	129,327	448,633	44,750	353,347
1995	4,118,902	11,728,534	14,700,223	52,986	14,753,209	129,877	457,716	44,756	359,194
1996	4,109,150	11,735,895	14,640,024	53,132	14,693,156	131,446	453,947	44,988	357,162
1997	4,151,505	11,819,317	14,769,718	53,216	14,822,934	131,684	456,214	45,001	358,642
1998	4,138,314	11,807,952	14,719,559	53,118	14,772,677	131,508	453,063	45,003	356,619
1999	4,122,775	11,798,082	14,647,118	53,522	14,700,640	132,297	467,158	45,003	365,675
2000	4,134,265	11,800,103	14,698,213	53,166	14,751,379	131,610	454,828	45,003	357,753
2001	4,099,998	11,739,457	14,574,656	53,298	14,627,954	131,859	459,290	45,003	360,617
2002	4,119,815	11,750,140	14,663,840	53,208	14,717,048	131,691	456,265	45,003	358,677
2003	4,093,391	11,722,436	14,561,650	53,360	14,615,010	131,985	461,520	45,003	362,052
2004	4,089,920	11,719,456	14,556,076	53,159	14,609,235	131,580	454,301	45,003	357,416
2005	4,094,460	11,707,144	14,575,585	53,356	14,628,941	131,969	461,267	45,003	361,891
2006	4,088,097	11,697,304	14,556,076	53,242	14,609,318	131,747	457,315	45,003	359,352
2007	4,355,378	12,542,304	14,874,739	58,734	14,933,473	135,314	465,924	60,065	376,843
2008	4,325,250	12,468,822	14,778,123	58,697	14,836,820	135,241	464,674	60,065	376,043
2009	4,283,910	12,421,481	14,606,258	59,079	14,665,337	136,005	478,316	60,065	384,805
2010	4,279,114	12,398,158	14,596,039	58,975	14,655,014	135,796	474,597	60,065	382,416
2011	4,281,061	12,413,025	14,593,252	59,278	14,652,530	136,395	485,309	60,065	389,296
2012	4,286,099	12,444,724	14,577,281	59,286	14,636,567	136,413	485,599	60,065	389,485
2013	4,279,581	12,458,226	14,530,831	59,655	14,590,486	137,139	498,623	60,065	397,850
2014	4,263,623	12,412,636	14,476,949	59,753	14,536,702	137,338	502,148	60,065	400,115
2015	4,224,540	12,357,607	14,321,806	59,898	14,381,704	137,620	507,227	60,065	403,380
2016	4,052,722	11,993,077	13,719,814	59,732	13,779,546	137,293	501,400	60,065	399,636
2017	4,051,252	12,038,325	13,694,731	59,980	13,754,711	137,781	510,108	60,065	405,230
2018	4,057,271	12,027,702	13,724,459	59,895	13,784,354	137,611	507,096	60,065	403,297
2019	4,058,053	12,036,154	13,723,530	60,017	13,783,547	137,853	511,414	60,065	406,071
2020	4,058,170	12,046,066	13,717,956	60,146	13,778,102	138,103	515,871	60,065	408,934
2021	4,059,631	12,034,490	13,736,536	59,850	13,796,386	137,525	505,520	60,065	402,281
2022	3,810,022	11,306,739	13,705,879	60,053	13,765,932	137,927	512,714	60,065	406,905
2023	3,818,846	11,301,078	13,750,471	59,890	13,810,361	137,601	506,880	60,065	403,155
2024	3,807,472	11,295,771	13,705,879	59,857	13,765,736	137,550	505,935	60,065	402,551
2025	3,815,777	11,305,697	13,741,181	59,811	13,800,992	137,455	504,235	60,065	401,459
2026	3,816,797	11,312,344	13,740,252	59,885	13,800,137	137,600	506,875	60,065	403,152
2027	3,653,330	10,752,989	13,095,653	50,266	13,145,919	131,117	494,625	31,691	372,167
2028	3,660,960	10,756,962	13,126,310	50,272	13,176,582	131,121	494,690	31,691	372,208
2029	3,653,213	10,751,682	13,093,795	50,269	13,144,064	131,126	494,770	31,691	372,259
2030	3,654,323	10,745,604	13,104,943	50,160	13,155,103	130,908	490,895	31,691	369,770
2031	3,656,266	10,756,331	13,104,943	50,301	13,155,244	131,186	495,850	31,691	372,951
2032	3,625,395	10,631,500	13,073,956	50,080	13,124,036	130,744	487,956	31,691	367,881
2033	3,625,232	10,636,139	13,070,240	50,125	13,120,365	130,842	489,702	31,691	369,000
2034	3,623,870	10,648,060	13,056,305	50,254	13,106,559	131,093	494,186	31,691	371,882
2035	3,623,229	10,636,818	13,059,092	50,177	13,109,269	130,946	491,574	31,691	370,205

REIMBURSED THRU MINIMUM OMP&R COMPONENT OF TRANSPORTATION CHARGE

(in dollars)

Calendar Year	CALIFORNIA AQUEDUCT (continued)								
	MOJAVE DIVISION (continued)							SANTA ANA DIVISION	
	Reach 20B	Reach 21	Reach 22A	Reach 22B	Reach 23	Reach 24	Subtotal	Reach 25	Reach 26A
	(46)	(47)	(48)	(49)	(50)	(51)	(52)	(53)	(54)
1961	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0	0	0
1967	0	0	0	0	0	0	0	0	0
1968	0	0	0	0	0	0	0	0	0
1969	0	0	0	0	0	0	0	0	0
1970	0	0	0	0	0	0	0	0	0
1971	0	0	0	0	0	0	0	0	0
1972	113,706	71,853	76,421	981,269	48,859	343,928	1,922,757	25	555
1973	137,645	55,753	61,693	1,191,047	61,111	328,641	2,154,780	18,817	631,863
1974	78,989	58,743	70,360	1,347,237	87,774	300,101	2,155,350	21,984	730,956
1975	107,196	122,426	69,838	1,463,090	99,853	376,697	2,510,416	26,645	798,669
1976	135,893	94,997	117,217	1,431,848	95,462	270,382	2,597,885	46,607	990,831
1977	101,142	88,912	77,195	1,706,365	62,826	41,007	2,529,781	56,656	1,287,542
1978	110,287	100,006	65,398	2,106,814	64,991	573,133	3,486,327	61,566	1,169,203
1979	156,012	160,655	96,911	1,858,242	67,202	214,350	3,098,473	70,638	1,048,701
1980	180,744	115,051	79,542	2,120,375	60,367	249,470	3,522,709	33,573	1,039,675
1981	167,379	144,643	99,171	2,162,031	75,234	754,241	4,082,449	49,250	1,235,726
1982	171,249	183,453	117,032	2,071,950	82,267	776,921	4,072,987	64,348	1,356,723
1983	241,353	226,172	149,620	3,678,731	85,159	2,141,786	7,345,331	66,512	1,375,174
1984	272,171	243,455	163,184	3,960,698	85,009	1,098,332	6,712,976	66,392	1,342,498
1985	276,477	245,770	165,036	3,971,359	84,920	2,362,931	7,996,106	66,320	1,342,338
1986	291,601	254,244	171,765	4,123,329	84,867	1,179,121	7,076,006	66,277	1,342,056
1987	295,744	256,503	173,548	4,120,110	84,681	770,113-	5,133,861	66,178	1,340,866
1988	294,401	255,327	172,768	4,072,988	84,312	3,598,899	9,445,429	65,884	1,340,163
1989	299,312	257,683	174,744	4,010,219	83,918	995,682	6,799,558	65,565	1,339,524
1990	296,343	255,666	173,259	3,978,487	83,605	690,600	6,446,743	65,316	1,339,042
1991	298,834	256,901	174,284	3,946,904	83,447	1,401,875	7,136,932	65,191	1,338,778
1992	297,136	256,496	173,920	4,043,780	86,291	1,604,084	7,435,843	66,900	1,363,137
1993	304,456	260,515	177,129	3,976,356	86,193	3,146,324	8,944,083	66,822	1,362,949
1994	298,108	256,855	174,280	3,856,329	86,130	1,111,485	6,759,244	66,771	1,362,842
1995	303,947	260,166	176,876	3,848,801	86,144	912,421	6,579,898	66,783	1,362,864
1996	301,530	259,445	176,104	3,839,314	86,721	2,711,605	8,362,262	67,243	1,363,825
1997	302,986	260,304	176,766	3,839,264	86,758	43,582-	5,614,037	67,270	1,363,886
1998	300,963	259,161	175,869	3,825,955	86,758	2,837,867	8,472,766	67,271	1,363,885
1999	310,017	264,280	179,886	3,836,414	86,758	1,617,737	7,305,225	67,271	1,363,887
2000	302,095	259,802	176,374	3,786,458	86,758	1,504,136	7,104,817	67,271	1,363,887
2001	304,959	261,424	177,645	3,801,295	86,758	642,328-	4,986,522	67,271	1,363,887
2002	303,019	260,325	176,783	3,783,862	86,758	3,449,960	9,052,343	67,271	1,363,887
2003	306,394	262,232	178,280	3,787,705	86,758	1,753,915	7,375,844	67,271	1,363,887
2004	301,758	259,612	176,224	3,779,467	86,758	678,994	6,271,113	67,271	1,363,887
2005	306,233	262,143	178,208	3,777,672	86,758	1,506,622	7,117,766	67,271	1,363,887
2006	303,694	260,707	177,083	3,765,909	86,758	2,327,345	7,914,913	67,271	1,363,887
2007	319,408	269,221	185,081	4,014,929	92,681	1,465,821	7,385,287	69,953	1,426,068
2008	318,608	268,770	184,725	3,976,574	92,681	1,621,569	7,498,950	69,953	1,426,068
2009	327,370	273,721	188,611	4,003,949	92,681	1,210,482	7,156,005	69,953	1,426,068
2010	324,981	272,370	187,552	3,993,784	92,681	1,298,141	7,222,383	69,953	1,426,068
2011	331,861	276,261	190,606	4,014,514	92,681	2,035,903	8,012,891	69,953	1,426,068
2012	332,050	276,367	190,687	4,018,029	92,681	1,729,233	7,710,609	69,953	1,426,068
2013	340,415	281,096	194,395	4,047,826	92,681	1,105,589	7,155,679	69,953	1,426,068
2014	342,680	282,376	195,401	4,049,591	92,681	1,256,881	7,319,276	69,953	1,426,068
2015	345,945	284,221	196,849	4,057,087	92,681	1,065,722	7,150,797	69,953	1,426,068
2016	342,201	282,105	195,190	3,980,902	92,681	2,774,090	8,765,563	69,953	1,426,068
2017	347,795	285,265	197,668	4,005,176	92,681	1,476,327	7,518,096	69,953	1,426,068
2018	345,862	284,174	196,811	4,000,915	92,681	2,278,475	8,306,987	69,953	1,426,068
2019	348,636	285,743	198,041	4,018,071	92,681	857,254	6,915,829	69,953	1,426,068
2020	351,499	287,360	199,311	4,034,401	92,681	905,104	6,993,329	69,953	1,426,068
2021	344,846	283,601	196,362	4,007,186	92,681	3,272,989	9,303,056	69,953	1,426,068
2022	349,470	286,213	198,411	4,016,396	92,681	1,256,120	7,316,902	69,953	1,426,068
2023	345,720	284,094	196,752	4,010,656	92,681	1,667,420	7,705,024	69,953	1,426,068
2024	345,116	283,751	196,480	4,000,274	92,681	1,997,139	8,021,542	69,953	1,426,068
2025	344,024	283,135	195,997	4,001,075	92,681	1,387,014	7,407,140	69,953	1,426,068
2026	345,717	284,092	196,748	4,000,532	92,681	1,828,825	7,856,287	69,953	1,426,068
2027	318,065	269,462	183,070	3,568,482	81,957	743,933	6,194,569	64,957	1,310,964
2028	318,106	269,485	183,088	3,575,511	81,957	23,728	5,481,585	64,957	1,310,964
2029	318,157	269,512	183,113	3,568,609	81,957	3,336,517	8,787,711	64,957	1,310,964
2030	315,668	268,105	182,007	3,557,987	81,957	2,352,214	7,781,202	64,957	1,310,964
2031	318,849	269,905	183,420	3,572,722	81,957	226,318	5,684,849	64,957	1,310,964
2032	313,779	267,038	181,169	3,555,218	81,957	1,271,895	6,689,328	64,957	1,310,964
2033	314,898	267,672	181,667	3,553,306	81,957	2,997,301	8,418,036	64,957	1,310,964
2034	317,780	269,298	182,945	3,569,867	81,957	800,193	6,250,892	64,957	1,310,964
2035	316,103	268,353	182,200	3,558,335	81,957	2,806,715	8,238,079	64,957	1,310,964

TABLE B-11: MINIMUM OMP&R COSTS OF EACH AQUEDUCT REACH TO BE

(in dollars)

Calendar Year	CALIFORNIA AQUEDUCT (continued)								
	SANTA ANA DIVISION (continued)				WEST BRANCH				
	Reach 28G	Reach 28H	Reach 28J	Subtotal	Reach 29A	Reach 29F	Reach 29G	Reach 29H	Reach 29J
	(55)	(56)	(57)	(58)	(59)	(60)	(61)	(62)	(63)
1961	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0	0	0
1967	0	0	0	0	0	0	0	0	0
1968	0	0	0	0	0	0	0	0	0
1969	0	0	0	0	0	0	0	0	0
1970	0	0	0	0	0	0	0	0	0
1971	0	0	0	0	0	0	0	0	0
1972	105	29	0	714	702,099	157,501	192,865	228,136	91,968
1973	127,071	75	0	777,826	784,295	339,419	123,414	263,218	135,258
1974	140,997	31,493	780,868	1,706,298	921,188	168,628	118,957	241,901	42,285
1975	98,804	62,558	643,906	1,630,582	1,099,764	185,019	202,609	822,592	106,160
1976	123,793	90,011	564,027	1,815,269	1,307,434	229,238	215,048	675,855	114,793
1977	114,545	83,170	740,401	2,282,314	1,323,624	122,753	220,582	708,391	27,649
1978	152,725	62,404	725,239	2,171,137	1,242,046	338,377	260,784	409,621	32,984
1979	120,821	73,623	446,368	1,760,151	1,253,728	275,451	228,982	845,035	56,472
1980	83,536	76,190	990,022	2,222,996	1,748,004	241,769	359,355	578,374	78,970
1981	124,642	78,790	783,851	2,272,259	1,387,992	303,002	475,043	550,933	100,926
1982	160,300	81,938	877,649	2,540,958	1,284,998	357,423	614,264	571,145	78,804
1983	165,904	84,452	2,609,391	4,301,433	2,123,812	471,971	1,012,187	973,834	795,116
1984	165,635	84,332	1,584,642	3,243,499	2,135,565	530,958	1,026,850	1,191,835	790,275
1985	165,457	84,239	1,032,181	2,690,535	2,126,849	537,854	1,009,594	1,242,857	789,220
1986	165,253	84,120	2,281,909	3,939,615	2,187,007	565,014	1,010,514	1,343,020	792,620
1987	164,985	83,988	2,628,512	4,284,529	2,186,026	571,217	1,010,480	1,377,552	793,312
1988	164,228	83,585	1,029,325	2,683,185	2,182,635	569,199	1,007,959	1,370,224	793,569
1989	163,476	83,185	3,948,673	5,600,423	2,212,591	577,077	1,006,870	1,406,625	796,647
1990	162,876	82,869	682,955	2,333,058	2,232,546	571,440	1,003,726	1,391,616	799,880
1991	162,564	82,711	3,196,738	4,845,982	2,242,380	575,870	1,003,800	1,407,107	800,543
1992	168,620	84,788	3,012,557	4,696,002	2,277,560	573,686	1,013,209	1,364,826	810,131
1993	168,401	84,691	1,898,437	3,581,300	2,298,080	587,072	1,013,999	1,407,415	813,658
1994	168,274	84,625	3,183,098	4,865,610	2,330,847	576,305	1,014,016	1,365,438	812,623
1995	168,301	84,639	1,769,101	3,451,688	2,338,117	586,341	1,014,542	1,402,743	815,432
1996	169,444	85,225	2,318,199	4,003,936	2,338,689	582,442	1,019,070	1,384,868	816,394
1997	169,514	85,260	2,140,406	3,826,336	2,354,275	585,263	1,019,400	1,393,279	816,453
1998	169,515	85,261	3,420,891	5,106,823	2,348,492	581,498	1,020,197	1,381,832	817,382
1999	169,515	85,261	1,003,637	2,689,571	2,347,510	597,187	1,020,897	1,441,141	818,312
2000	169,515	85,261	1,731,744	3,417,678	2,357,894	583,347	1,020,301	1,390,487	818,312
2001	169,515	85,261	3,335,410	5,021,344	2,345,155	588,161	1,020,533	1,410,059	817,383
2002	169,515	85,261	1,693,047	3,378,981	2,359,866	585,382	1,019,419	1,394,444	818,312
2003	169,515	85,261	2,353,972	4,039,906	2,352,734	590,815	1,020,625	1,418,165	821,099
2004	169,515	85,261	3,179,855	4,865,789	2,349,470	582,207	1,020,306	1,391,023	819,241
2005	169,515	85,261	1,464,278	3,150,212	2,359,234	590,805	1,019,699	1,418,148	822,957
2006	169,515	85,261	3,545,717	5,231,651	2,358,979	586,192	1,019,504	1,401,741	822,028
2007	180,284	89,261	1,745,629	3,511,195	2,605,762	613,226	1,031,370	1,447,423	845,566
2008	180,284	89,261	2,465,790	4,231,356	2,612,185	611,822	1,032,251	1,443,309	844,637
2009	180,284	89,261	2,644,555	4,410,121	2,595,356	626,694	1,033,890	1,503,845	848,353
2010	180,284	89,261	2,355,447	4,121,013	2,596,050	622,458	1,034,652	1,489,557	848,353
2011	180,284	89,261	1,608,030	3,373,596	2,599,490	634,261	1,036,136	1,536,862	849,282
2012	180,284	89,261	2,183,491	3,949,057	2,596,714	634,425	1,036,179	1,540,489	850,211
2013	180,284	89,261	2,408,585	4,174,151	2,593,774	648,491	1,037,797	1,599,144	850,211
2014	180,284	89,261	3,353,265	5,118,831	2,592,141	652,529	1,038,920	1,615,782	849,282
2015	180,284	89,261	1,663,228	3,428,794	2,578,484	657,593	1,041,074	1,641,097	850,211
2016	180,284	89,261	3,197,987	4,963,553	2,533,568	651,753	1,038,886	1,612,960	849,282
2017	180,284	89,261	1,938,287	3,703,853	2,531,276	660,698	1,041,222	1,653,542	850,211
2018	180,284	89,261	2,386,184	4,151,750	2,533,897	657,709	1,040,129	1,639,739	850,211
2019	180,284	89,261	2,831,391	4,596,957	2,532,292	662,289	1,041,299	1,660,018	849,282
2020	180,284	89,261	1,831,968	3,597,534	2,528,837	667,000	1,041,539	1,680,577	850,211
2021	180,284	89,261	2,792,335	4,557,901	2,531,935	655,777	1,040,999	1,634,432	849,282
2022	180,284	89,261	2,035,931	3,801,497	2,288,042	663,656	1,041,366	1,665,917	849,282
2023	180,284	89,261	2,492,414	4,257,980	2,289,557	657,460	1,041,065	1,640,354	850,211
2024	180,284	89,261	2,545,650	4,311,216	2,288,556	656,123	1,041,031	1,637,145	850,211
2025	180,284	89,261	1,897,079	3,662,645	2,289,383	654,258	1,040,947	1,630,111	850,211
2026	180,284	89,261	2,290,517	4,056,083	2,291,401	657,211	1,042,009	1,641,549	850,211
2027	159,946	82,174	2,207,979	3,826,020	2,152,827	608,490	1,019,370	1,579,879	809,117
2028	159,946	82,174	2,213,551	3,831,592	2,153,758	608,496	1,019,369	1,579,684	809,117
2029	159,946	82,174	2,207,860	3,825,901	2,152,822	608,361	1,019,357	1,578,768	809,117
2030	159,946	82,174	2,182,649	3,800,690	2,153,517	604,151	1,019,150	1,561,026	808,188
2031	159,946	82,174	2,221,502	3,839,543	2,153,810	609,429	1,020,346	1,583,816	809,117
2032	159,946	82,174	2,170,771	3,788,812	2,154,253	600,659	1,019,005	1,548,803	809,117
2033	159,946	82,174	2,173,316	3,791,357	2,155,290	602,627	1,019,079	1,555,038	808,188
2034	159,946	82,174	2,207,842	3,825,883	2,152,752	607,114	1,020,239	1,574,691	809,117
2035	159,946	82,174	2,185,194	3,803,235	2,153,522	604,238	1,020,086	1,561,565	809,117

REIMBURSED THRU MINIMUM OMP&R COMPONENT OF TRANSPORTATION CHARGE

(in dollars)

Calendar Year	CALIFORNIA AQUEDUCT (continued)								GRAND TOTAL
	WEST BRANCH (continued)		COASTAL BRANCH					TOTAL	
	Reach 30	Subtotal	Reach 31A[a]	Reach 33A	Reach 34	Reach 35	Subtotal		
	(64)	(65)	(66)	(67)	(68)	(69)	(70)	(71)	(72)
1961	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	42,918
1963	0	0	0	0	0	0	0	0	168,358
1964	0	0	0	0	0	0	0	0	184,729
1965	0	0	0	0	0	0	0	0	378,874
1966	0	0	0	0	0	0	0	0	408,397
1967	0	0	0	0	0	0	0	0	634,505
1968	0	0	0	0	0	0	0	2,076,564	2,661,176
1969	0	0	509,728	0	0	0	509,728	3,214,103	3,964,324
1970	0	0	609,988	0	0	0	609,988	3,849,393	4,542,613
1971	0	0	699,052	0	0	0	699,052	5,418,123	5,989,824
1972	412,058	1,784,627	697,460	0	0	0	697,460	11,895,734	12,541,136
1973	619,577	2,265,181	641,497	0	0	0	641,497	14,037,395	14,640,793
1974	743,832	2,236,791	669,126	0	0	0	669,126	15,847,510	16,621,106
1975	876,920	3,293,064	806,283	0	0	0	806,283	18,808,044	19,755,281
1976	606,379-	1,935,989	841,115	0	0	0	841,115	18,246,085	19,270,576
1977	688,225	3,091,224	872,341	0	0	0	872,341	22,413,565	23,361,258
1978	3,122,643	5,406,455	941,545	0	0	0	941,545	25,489,148	26,703,561
1979	1,314,313	3,973,981	870,588	0	0	0	870,588	22,160,201	23,395,245
1980	1,531,157	4,537,629	1,073,584	0	0	0	1,073,584	31,671,933	33,104,050
1981	2,282,078	5,099,974	1,221,572	0	0	0	1,221,572	30,631,651	32,241,596
1982	2,149,528	5,056,162	1,349,783	0	0	0	1,349,783	29,075,658	30,875,348
1983	4,554,612	9,931,532	1,513,662	0	0	0	1,513,662	54,797,562	56,905,255
1984	1,540,248	7,215,731	1,514,527	0	0	0	1,514,527	51,808,327	54,256,661
1985	5,002,839	10,709,213	1,520,854	0	0	0	1,520,854	56,058,043	58,597,070
1986	282,747	6,180,922	1,529,457	0	0	0	1,529,457	53,523,366	56,069,435
1987	5,285,729	11,224,316	1,527,826	0	0	0	1,527,826	56,980,373	59,513,465
1988	4,691,367	10,614,953	1,510,111	142,961	9,925	20,471	1,683,468	59,013,602	61,533,617
1989	168,739	6,168,549	1,498,639	133,373	9,036	18,450	1,659,498	54,834,952	57,333,322
1990	2,155,070	8,154,278	1,491,605	126,380	8,291	16,399	1,642,675	53,202,131	55,686,718
1991	4,025,104	10,054,804	1,486,217	125,827	8,139	16,189	1,636,372	58,227,613	60,706,932
1992	7,312,196	13,351,608	1,515,629	130,219	8,054	16,137	1,670,039	61,991,038	64,503,780
1993	2,417,460	8,537,684	1,515,080	130,106	8,054	16,137	1,669,377	57,499,972	60,012,458
1994	3,459,190	9,558,419	1,519,781	130,031	8,054	16,137	1,674,003	57,619,667	60,154,813
1995	3,706,903	9,864,078	1,518,970	130,047	8,054	16,137	1,673,208	56,397,900	58,917,375
1996	2,869,937	9,011,400	1,530,186	130,722	8,054	16,137	1,685,099	57,872,714	60,420,499
1997	3,397,739	9,566,409	1,535,972	132,157	8,062	16,159	1,692,350	55,653,747	58,203,238
1998	3,545,863	9,695,264	1,538,489	132,157	8,062	16,159	1,694,867	59,902,252	62,455,823
1999	1,537,300	7,762,347	1,536,581	132,159	8,062	16,159	1,692,961	54,347,753	56,891,872
2000	5,351,935	11,522,276	1,538,540	132,159	8,062	16,159	1,694,920	58,600,141	61,153,173
2001	3,297,997	9,479,288	1,535,889	132,159	8,062	16,159	1,692,269	55,882,211	58,427,851
2002	2,599,100	8,776,523	1,532,814	132,159	8,062	16,159	1,689,194	57,629,972	60,170,726
2003	1,791,292	7,994,730	1,531,896	132,159	8,062	16,159	1,688,276	55,785,846	58,318,974
2004	6,272,554	12,434,801	1,532,071	132,159	8,062	16,159	1,688,451	59,917,601	62,452,018
2005	1,242,501	7,453,344	1,529,339	132,159	8,062	16,159	1,685,719	54,023,387	56,549,441
2006	2,103,063	8,291,507	1,528,497	132,159	8,062	16,159	1,684,877	57,682,802	60,209,432
2007	991,274	7,534,621	1,574,695	141,761	8,124	16,309	1,740,889	56,237,032	58,971,050
2008	9,722,999	16,267,203	1,572,190	141,761	8,124	16,309	1,738,384	65,658,342	68,378,777
2009	1,463,223	8,071,361	1,572,675	141,761	8,124	16,309	1,738,869	57,035,475	59,752,143
2010	4,827,047	11,418,117	1,572,134	141,761	8,124	16,309	1,738,328	60,071,150	62,787,209
2011	3,075,830	9,731,861	1,572,771	141,761	8,124	16,309	1,738,965	58,436,045	61,153,875
2012	4,545,519	11,203,537	1,579,831	143,666	8,136	16,339	1,747,972	60,203,614	62,918,336
2013	3,140,671	9,870,088	1,581,173	143,666	8,136	16,339	1,749,314	58,563,976	61,275,904
2014	2,687,087	9,435,741	1,580,648	143,666	8,136	16,339	1,748,789	59,053,874	61,762,261
2015	5,035,904	11,804,363	1,582,580	143,666	8,136	16,339	1,750,721	59,372,567	62,078,845
2016	2,943,460	9,629,909	1,573,516	143,666	8,136	16,339	1,741,657	59,134,129	61,815,333
2017	5,604,558	12,341,507	1,576,939	143,666	8,136	16,339	1,745,080	59,442,941	62,126,399
2018	3,613,670	10,335,355	1,576,012	143,666	8,136	16,339	1,744,153	58,640,901	61,321,635
2019	4,032,326	10,777,506	1,576,379	143,666	8,136	16,339	1,744,520	58,164,597	60,844,975
2020	3,852,812	10,620,976	1,575,824	143,666	8,136	16,339	1,743,965	57,101,897	59,788,524
2021	4,716,403	11,428,828	1,576,112	143,666	8,136	16,339	1,744,253	61,155,143	63,841,722
2022	2,766,044	9,274,307	1,575,874	143,666	8,136	16,339	1,744,015	55,038,243	57,472,373
2023	2,033,300	8,511,947	1,574,882	143,666	8,136	16,339	1,743,023	55,101,794	57,535,073
2024	5,132,214	11,605,280	1,576,599	143,666	8,136	16,339	1,744,740	58,564,927	61,002,909
2025	5,030,284	11,495,194	1,576,310	143,666	8,136	16,339	1,744,451	57,206,901	59,644,260
2026	4,017,029	10,499,410	1,576,584	143,666	8,136	16,339	1,744,725	57,074,409	59,515,664
2027	3,651,423	9,821,106	1,492,368	125,957	8,024	16,061	1,642,410	53,074,100	55,483,260
2028	3,098,116	9,268,540	1,491,919	125,957	8,024	16,061	1,641,961	51,819,986	54,228,515
2029	2,423,354	8,591,779	1,492,351	125,957	8,024	16,061	1,642,393	54,439,722	56,849,006
2030	2,275,038	8,421,070	1,491,946	125,957	8,024	16,061	1,641,988	53,217,401	55,625,950
2031	3,671,012	9,847,530	1,492,337	125,957	8,024	16,061	1,642,379	52,619,795	55,029,209
2032	7,033,490	13,165,327	1,475,217	122,085	8,000	16,000	1,621,302	56,679,730	59,088,178
2033	3,408,846	9,549,068	1,475,429	122,085	8,000	16,000	1,621,514	54,807,593	57,217,404
2034	3,660,199	9,824,112	1,476,109	122,085	8,000	16,000	1,622,194	52,987,534	55,397,443
2035	2,588,915	8,737,443	1,475,645	122,085	8,000	16,000	1,621,730	53,832,473	56,241,677

a) Includes certain costs to be assigned directly to Kern County Water Agency. Refer to Appendix B text "Project Water Charges, Minimum OMP&R Components".

TABLE B-12: VARIABLE OMP&R COSTS TO BE REIMBURSED

(in dollars)

Calendar Year	NORTH BAY AQUEDUCT			SOUTH BAY AQUEDUCT	CALIFORNIA AQUEDUCT							
	Reach 1 Calhoun and Travis Pumping Plants	Reach 3 Cordelia Pumping Plant (a	Total	Reach 1 South Bay and Del Valle Pumping Plants (b	Reach 1 Delta Pumping Plant	Reach 4 Dos Amigos Pumping Plant(c	Reach 14A Buena Vista Pumping Plant	Reach 15A Wheeler Ridge Pumping Plant	Reach 16A Wind Gap Pumping Plant	Reach 17E A.D. Edmonston Pumping Plant	Reach 18A Cottonwood Powerplant	Reach 22B Pear-blossom Pumping Plant
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
1962	0	0	0	36,970	0	0	0	0	0	0	0	0
1963	0	0	0	57,711	0	0	0	0	0	0	0	0
1964	0	0	0	74,134	0	0	0	0	0	0	0	0
1965	0	0	0	142,609	0	0	0	0	0	0	0	0
1966	0	0	0	192,605	0	0	0	0	0	0	0	0
1967	0	0	0	223,117	13,881	0	0	0	0	0	0	0
1968	0	6,989	6,989	336,671	449,932	202,095	0	0	0	0	0	0
1969	0	8,551	8,551	257,579	291,043	133,714	0	0	0	0	0	0
1970	0	13,598	13,598	396,358	343,517	209,486	1	0	0	0	0	0
1971	0	10,609	10,609	381,662	571,317	223,477	136,425	16,592	0	0	0	0
1972	0	14,434	14,434	598,702	924,689	496,784	231,676	87,635	163,135	489,226	0	21,952
1973	0	14,449	14,449	493,490	682,392	377,642	300,158	272,133	431,162	1,512,539	0	217,727
1974	0	17,473	17,473	565,575	767,187	437,318	341,711	347,690	585,437	2,046,673	0	313,857
1975	0	14,779	14,779	349,758	1,327,456	512,544	539,732	582,789	1,126,459	3,928,524	0	575,535
1976	0	20,856	20,856	571,361	1,470,517	561,606	607,013	598,520	1,219,366	4,225,813	0	866,328
1977	0	22,586	22,586	511,808	797,097	204,245	163,637	170,409	347,159	1,143,952	0	292,871
1978	0	21,712	21,712	586,742	2,214,491	584,821	654,737	575,791	1,028,125	3,608,732	0	1,558,698
1979	0	19,856	19,856	590,863	3,821,766	1,159,085	867,236	710,959	1,404,620	4,757,119	0	1,651,841
1980	0	21,000	21,000	608,003	2,133,223	1,283,828	1,210,165	1,217,395	2,405,701	8,018,409	0	2,090,704
1981	0	24,000	24,000	671,450	3,146,231	1,482,801	1,415,072	1,452,569	2,809,129	9,469,451	0	2,529,667
1982	0	25,000	25,000	695,799	3,162,483	1,673,302	1,671,700	1,603,320	3,364,399	11,463,694	0	2,839,930
1983	0	83,000	83,000	2,422,114	15,424,190	5,886,221	6,615,707	6,253,498	13,934,856	48,891,347	0	10,049,312
1984	76,236	170,000	246,236	2,975,703	18,898,887	8,644,763	9,717,263	9,235,765	20,841,229	74,846,938	-2,530,653	14,998,970
1985	56,782	165,000	221,782	3,313,111	23,046,709	9,567,687	10,439,001	9,776,474	22,033,514	79,025,663	-3,281,486	16,360,482
1986	73,576	182,000	255,576	3,400,365	26,583,174	11,914,590	12,434,486	11,704,459	26,526,518	95,169,360	-3,467,901	17,976,486
1987	85,561	192,000	277,561	3,436,766	28,911,667	12,321,254	12,742,226	11,911,061	26,984,712	96,454,657	-3,465,911	18,066,104
1988	137,224	203,000	340,224	3,470,149	27,540,353	12,755,059	13,125,221	12,205,146	27,646,048	98,465,889	-3,417,154	17,855,073
1989	179,143	212,000	391,143	3,533,606	33,435,751	13,758,271	14,626,001	13,693,678	31,120,189	110,866,645	-3,434,330	17,892,550
1990	247,613	220,000	467,613	3,481,578	31,525,014	14,286,247	15,654,685	14,711,587	33,495,788	119,256,019	-3,557,360	18,295,057
1991	240,680	237,000	477,680	3,645,839	34,806,060	13,902,442	16,260,214	15,325,194	34,931,239	124,515,469	-3,531,773	18,272,042
1992	247,615	255,000	502,615	3,823,832	28,724,994	13,614,693	15,652,935	14,681,706	33,395,868	118,789,269	-3,444,829	17,902,609
1993	255,539	276,000	531,539	3,985,845	33,316,509	14,040,420	16,260,539	15,282,448	34,799,558	123,939,821	-3,146,019	16,408,176
1994	276,340	308,000	584,340	4,276,774	30,732,475	14,118,684	15,923,717	14,853,270	33,728,822	119,754,742	-2,568,605	13,642,344
1995	279,312	324,000	603,312	4,064,429	35,731,756	14,380,394	16,416,833	15,370,108	34,960,265	124,344,129	-2,598,951	13,665,646
1996	260,502	300,000	560,502	4,395,304	34,901,656	14,328,180	16,130,202	15,039,346	34,139,225	121,219,026	-2,485,146	13,122,888
1997	263,482	317,000	580,482	4,367,103	31,003,221	14,468,072	16,369,934	15,295,312	34,766,740	123,435,513	-2,493,913	12,980,591
1998	274,387	345,000	619,387	4,405,497	33,219,372	14,518,078	16,211,241	15,085,339	34,305,069	121,452,875	-2,397,807	12,545,999
1999	279,348	365,000	644,348	4,347,292	38,016,937	14,851,524	16,747,060	15,644,620	35,653,274	126,239,809	-2,483,605	12,878,668
2000	291,245	391,000	682,245	4,370,992	32,803,970	14,723,627	16,338,503	15,208,088	34,622,611	122,068,695	-2,325,060	11,911,640
2001	308,146	393,000	701,146	4,455,758	34,956,700	15,055,441	16,897,801	15,784,067	35,980,534	126,877,078	-2,429,691	12,512,644
2002	305,231	394,000	699,231	4,404,296	30,169,940	15,237,635	17,280,209	16,205,183	36,949,961	130,165,863	-2,423,803	12,357,523
2003	315,205	400,000	715,205	4,424,806	36,133,642	15,553,668	17,854,873	16,796,095	38,217,091	134,742,158	-2,520,634	12,993,433
2004	319,225	405,000	724,225	4,480,888	38,130,683	15,496,750	17,801,442	16,749,927	37,954,354	133,655,665	-2,549,356	13,235,052
2005	318,286	407,000	725,286	4,457,715	34,091,837	15,950,644	18,723,259	17,715,772	40,082,242	141,458,981	-2,587,239	13,421,576
2006	347,096	413,000	760,096	4,549,108	35,769,954	16,075,771	18,969,739	17,978,940	40,515,856	142,857,105	-2,565,950	13,419,996
2007	351,118	418,000	769,118	4,613,066	38,027,100	16,359,552	19,418,368	18,435,885	41,674,244	147,122,063	-2,759,158	14,583,336
2008	358,121	430,000	788,121	4,685,907	35,332,485	16,856,972	20,162,457	19,184,583	43,393,452	153,306,252	-2,745,248	14,715,973
2009	371,070	448,000	819,070	4,835,827	42,487,081	17,667,332	21,322,656	20,330,983	46,060,182	162,963,293	-2,817,007	15,594,796
2010	375,090	456,000	831,090	4,984,703	39,878,738	17,952,461	21,759,683	20,774,135	47,075,248	166,695,116	-2,847,268	15,907,725
2011	474,370	502,000	976,370	5,105,644	42,544,057	18,754,455	22,936,751	21,949,740	49,817,604	176,930,152	-2,892,034	16,542,954
2012	482,359	510,000	992,359	5,191,946	41,866,709	19,162,421	23,498,854	22,504,101	51,091,366	181,780,158	-2,947,061	17,233,773
2013	497,297	526,000	1,023,297	5,352,142	48,609,372	20,061,256	24,804,459	23,798,919	54,106,728	193,058,385	-3,031,466	18,348,599
2014	508,273	538,000	1,046,273	5,533,102	44,519,098	20,716,615	25,750,889	24,739,011	56,287,213	201,307,884	-3,053,533	18,909,957
2015	522,220	552,000	1,074,220	5,746,570	49,394,280	21,001,205	26,324,982	25,283,366	57,532,791	205,939,111	-3,113,901	19,790,632
2016	535,177	539,000	1,074,177	5,608,558	44,475,808	20,733,238	25,711,735	24,697,164	57,456,204	205,949,601	-3,124,486	19,418,153
2017	548,134	552,000	1,100,134	5,813,184	52,313,924	21,274,845	26,982,536	25,965,234	59,129,407	212,003,133	-3,210,491	20,469,560
2018	545,203	549,000	1,094,203	5,782,775	46,851,896	21,517,424	27,163,787	26,163,124	59,595,813	213,741,977	-3,224,942	20,482,910
2019	552,209	556,000	1,108,209	5,855,768	48,965,891	21,612,806	27,780,052	26,776,861	60,983,958	218,956,354	-3,311,196	21,332,306
2020	571,128	594,000	1,165,128	6,024,608	51,351,955	22,146,475	28,314,694	27,319,539	62,212,846	223,572,853	-3,428,207	22,060,725
2021	613,888	589,000	1,202,888	5,970,663	48,332,746	21,590,418	27,683,370	26,689,878	60,798,215	218,467,349	-3,317,713	21,279,598
2022	619,897	595,000	1,214,897	6,030,933	52,562,603	21,948,178	28,274,586	27,289,393	62,147,517	223,969,036	-3,342,832	21,665,796
2023	614,978	590,000	1,204,978	5,983,821	47,018,556	21,780,447	28,170,519	27,198,586	61,735,777	223,069,072	-3,385,794	21,779,407
2024	663,717	598,000	1,261,717	6,192,680	51,856,471	21,831,433	28,295,519	27,304,520	61,739,289	223,726,686	-3,323,910	21,693,659
2025	661,779	596,000	1,257,779	6,171,496	50,411,927	21,797,073	28,364,366	27,383,872	61,697,144	224,395,723	-3,375,885	21,785,014
2026	715,488	637,000	1,352,488	6,359,983	52,104,967	22,020,571	28,876,690	27,896,047	62,720,971	228,718,304	-3,363,345	21,823,743
2027	710,519	632,000	1,342,519	6,312,850	50,980,603	21,669,948	28,569,156	27,592,032	61,846,295	226,137,577	-3,349,526	21,560,323
2028	710,519	633,000	1,343,519	6,314,814	47,917,748	21,556,977	28,591,023	27,668,657	62,032,432	226,820,497	-3,377,475	21,778,484
2029	713,500	635,000	1,348,500	6,336,416	50,933,922	21,373,851	28,470,414	27,518,211	61,849,811	226,129,925	-3,322,175	21,434,834
2030	706,544	629,000	1,335,544	6,276,519	48,982,852	21,035,463	28,092,395	27,125,270	61,124,355	223,249,052	-3,307,742	21,125,541
2031	717,475	638,000	1,355,475	6,371,766	50,716,401	21,310,586	28,577,515	27,622,494	62,479,365	227,707,246	-3,346,538	21,726,135
2032	709,526	632,000	1,341,526	6,305,977	47,949,269	20,801,545	27,865,686	26,893,700	61,043,915	222,053,859	-3,343,237	21,353,403
2033	712,507	634,000	1,346,507	6,327,579	49,090,156	20,922,899	27,933,035	26,941,808	61,443,953	223,092,698	-3,275,749	20,774,684
2034	717,475	638,000	1,355,475	6,373,730	53,038,079	21,172,724	28,184,598	27,170,734	62,286,934	225,727,242	-3,360,422	21,456,433
2035	716,482	637,000	1,353,482	6,359,983	50,056,823	21,079,029	27,905,005	26,868,791	61,901,049	224,122,424	-3,308,076	20,896,877

a) Costs for the period 1968 through 1983 are for an interim facility.
b) The relatively minor estimated costs of Del Valle Pumping Plant have been combined with those of South Bay Pumping Plant to simplify the allocation procedure.
c) Includes extra peaking costs assigned directly to Kern County Water Agency and to Hacienda Water District. Refer to Appendix B text "Project Water Charges, Variable OMP&R Components".

THRU VARIABLE OMP&R COMPONENT OF TRANSPORTATION CHARGE

(in dollars)

Calendar Year	CALIFORNIA AQUEDUCT (continued)											GRAND TOTAL
	Reach 24 Silverwood Lake (d	Reach 26A Devil Canyon Powerplant	Reach 28J Lake Perris (d	Reach 29A Oso Pumping Plant	Reach 29G Pyramid Powerplant	Reach 29H Pyramid Lake (d	Reach 29J Castaic Powerplant	Reach 30 Castaic Lake (d	Reach 31A Las Perillas and Badger Hill Pumping Plants (e	Reach 33A Devil's Den Sawtooth and Polonio PP's and San Luis Obispo Pwp	Total	
	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)
1962	0	0	0	0	0	0	0	0	0	0	0	36,970
1963	0	0	0	0	0	0	0	0	0	0	0	57,711
1964	0	0	0	0	0	0	0	0	0	0	0	74,134
1965	0	0	0	0	0	0	0	0	0	0	0	142,609
1966	0	0	0	0	0	0	0	0	0	0	0	192,605
1967	0	0	0	0	0	0	0	0	0	0	13,881	236,998
1968	0	0	0	0	0	0	0	0	118,676	0	770,703	1,114,363
1969	0	0	0	0	0	0	0	0	78,350	0	503,107	769,237
1970	0	0	0	0	0	0	0	0	136,429	0	689,433	1,099,389
1971	0	0	0	0	0	0	0	0	166,296	0	1,114,107	1,506,378
1972	4,058	-3,024	0	91,724	0	3,534	-193,058	71,538	237,638	0	2,627,507	3,240,643
1973	47,486	-438,508	0	155,530	0	7,281	-1,057,564	0	120,913	0	2,628,891	3,136,830
1974	97,590	-498,163	52,000	186,988	0	42,087	-1,540,853	5,479	118,582	0	3,303,583	3,886,631
1975	25,862	-1,034,732	65,523	346,468	0	0	-2,445,397	10,152	94,848	0	5,655,763	6,020,300
1976	122,099	-1,463,181	103,811	243,678	0	59,956	-1,940,099	1,052,832	141,229	0	7,869,488	8,461,705
1977	258,082	-1,118,254	48,809	17,635	0	0	-531,224	-846,820	62,737	0	1,010,335	1,544,729
1978	0	-2,992,643	0	66,970	0	1,056,724	-1,375,720	0	180,110	0	7,160,836	7,769,290
1979	42,739	-3,243,190	392,574	121,484	0	0	-2,323,918	-932	227,459	0	9,588,842	10,199,561
1980	390,961	-3,650,755	0	344,031	0	0	-2,971,165	266,806	199,916	0	12,939,219	13,568,222
1981	0	-3,930,178	44,316	434,185	0	0	-3,292,273	0	226,823	0	15,787,793	16,483,243
1982	27,616	-4,296,886	74,588	382,434	-1,271,793	0	-3,080,213	88,746	238,818	0	17,942,138	18,662,937
1983	0	-17,079,807	0	1,936,458	-4,154,916	0	-8,049,592	0	742,493	0	80,449,767	82,954,881
1984	269,541	-22,926,165	373,805	2,737,918	-5,079,550	0	-9,952,637	1,597,201	941,736	0	122,615,011	125,836,950
1985	0	-22,803,709	1,032,689	2,634,018	-4,373,830	0	-8,604,504	0	1,086,253	0	135,938,961	139,473,854
1986	299,080	-23,775,157	0	3,947,094	-6,384,619	0	-11,854,170	3,221,129	1,128,074	0	165,422,603	169,078,544
1987	2,399,417	-23,681,536	0	4,061,787	-6,484,763	0	-11,781,237	0	1,138,030	0	169,577,468	173,291,795
1988	0	-23,946,853	1,246,176	4,347,482	-6,893,319	0	-12,372,568	0	1,148,986	0	169,705,539	173,515,912
1989	555,584	-23,257,308	0	5,854,966	-9,251,808	0	-16,230,396	3,464,859	1,152,972	0	194,247,624	198,172,373
1990	869,736	-23,663,076	1,630,727	6,719,633	-10,681,828	0	-18,484,428	1,297,739	1,143,016	0	202,498,556	206,447,747
1991	70,562	-23,770,283	0	7,362,809	-11,638,997	0	-20,081,510	0	1,151,977	0	207,575,445	211,698,964
1992	0	-22,957,753	0	6,794,765	-10,563,722	0	-18,208,156	0	1,164,920	0	195,547,299	199,873,746
1993	0	-20,501,992	448,967	7,958,457	-12,247,387	0	-21,020,783	1,068,037	1,186,825	0	207,793,576	212,310,960
1994	366,881	-15,759,995	0	8,473,311	-12,373,063	0	-21,218,994	0	1,253,534	0	200,927,123	205,788,237
1995	624,981	-15,616,794	624,525	8,977,945	-13,194,334	0	-22,565,302	0	1,247,560	0	212,368,761	217,036,502
1996	0	-15,047,117	0	8,763,084	-12,604,957	0	-21,595,392	562,068	1,272,451	0	207,745,514	212,701,320
1997	1,624,462	-14,936,839	207,063	9,042,946	-13,112,528	0	-22,393,806	0	1,263,490	0	207,520,258	212,467,843
1998	0	-13,873,537	0	8,944,413	-12,678,632	0	-21,662,054	0	1,290,373	0	206,960,729	211,985,613
1999	0	-13,941,809	1,537,021	9,306,001	-13,224,172	0	-22,575,648	2,067,256	1,288,382	0	222,005,318	226,996,958
2000	0	-13,046,238	642,632	9,104,070	-12,718,891	0	-21,719,895	0	1,305,308	0	208,919,060	213,972,297
2001	2,284,539	-13,511,002	0	9,515,972	-13,350,594	0	-22,763,574	129,104	1,299,334	0	219,238,353	224,395,257
2002	0	-13,891,913	692,643	10,045,681	-14,265,986	0	-24,268,746	845,977	1,283,403	0	216,383,570	221,487,097
2003	0	-14,246,473	21,123	10,333,114	-14,584,802	0	-24,777,283	1,752,509	1,289,377	0	229,557,891	234,697,902
2004	874,308	-14,587,174	0	10,194,106	-14,226,314	0	-24,164,047	0	1,289,377	0	229,854,773	235,059,886
2005	0	-14,746,729	970,616	11,190,568	-15,665,911	0	-26,505,461	2,357,032	1,282,408	0	237,739,595	242,922,596
2006	0	-14,535,568	0	11,445,968	-15,975,713	0	-27,017,874	1,401,743	1,285,395	0	239,625,362	244,934,566
2007	94,684	-16,037,661	696,244	11,446,771	-15,930,620	0	-26,922,459	2,636,782	1,287,386	0	250,132,517	255,514,701
2008	0	-15,852,622	0	12,117,860	-16,602,381	0	-27,943,869	0	1,307,299	0	253,233,213	258,707,241
2009	390,608	-16,352,394	0	12,942,709	-17,245,808	0	-28,993,538	2,288,789	1,349,117	0	277,988,799	283,643,696
2010	220,689	-16,594,088	114,518	13,272,933	-17,533,127	0	-29,423,795	0	1,359,074	0	278,612,042	284,427,835
2011	0	-17,081,101	991,404	14,209,645	-18,381,487	0	-30,772,906	584,320	1,390,935	0	297,524,489	303,606,503
2012	0	-17,383,732	382,589	14,519,587	-18,427,560	0	-30,849,911	0	1,414,830	0	303,846,124	310,030,429
2013	576,761	-17,836,892	233,817	15,397,998	-18,981,429	0	-31,725,248	658,892	1,457,644	0	329,537,795	335,913,234
2014	408,164	-17,957,777	0	16,117,557	-19,482,266	0	-32,525,726	1,128,557	1,490,500	0	338,356,143	344,935,518
2015	649,799	-18,473,967	1,093,542	16,238,636	-19,106,250	0	-31,887,770	0	1,530,327	0	352,196,783	359,017,573
2016	0	-18,756,493	0	16,431,083	-19,817,817	0	-33,048,007	928,081	1,492,492	0	342,546,756	349,229,491
2017	245,798	-19,273,044	839,217	16,673,826	-19,626,477	0	-32,728,213	0	1,530,327	0	362,589,582	369,502,900
2018	0	-19,471,584	312,850	16,905,624	-20,011,222	0	-33,347,210	235,778	1,522,361	0	358,438,586	365,315,564
2019	917,516	-20,168,972	0	17,159,203	-20,064,565	0	-33,437,811	0	1,541,279	0	369,043,682	376,007,659
2020	896,402	-20,338,942	986,755	17,315,162	-20,133,390	0	-33,524,345	88,195	1,549,244	0	380,389,961	387,579,697
2021	0	-19,985,449	0	17,136,026	-20,065,932	0	-33,416,572	0	1,536,301	0	366,728,235	373,901,786
2022	513,775	-20,104,409	721,273	17,647,086	-20,496,146	0	-34,109,330	1,223,978	1,552,231	0	381,462,735	388,708,565
2023	12,035	-20,299,244	181,748	17,506,423	-20,474,690	0	-34,074,497	1,949,579	1,540,283	0	373,708,207	380,897,006
2024	0	-19,962,665	121,162	17,664,242	-20,388,716	0	-33,911,920	0	1,559,201	0	378,204,971	385,659,368
2025	301,410	-20,198,905	791,746	17,633,343	-20,406,752	0	-33,938,386	0	1,554,223	0	378,195,913	385,625,188
2026	0	-19,973,012	371,792	18,120,956	-20,810,224	0	-34,585,662	0	1,568,162	0	385,489,960	393,202,431
2027	943,965	-19,976,114	349,255	17,924,367	-20,723,234	0	-34,446,552	87,007	1,556,214	0	380,721,316	388,376,685
2028	1,708,136	-19,870,782	333,053	17,757,955	-20,710,025	0	-34,431,148	667,275	1,557,210	0	380,000,017	387,658,350
2029	0	-19,805,409	314,445	17,651,397	-20,716,465	0	-34,429,420	1,393,145	1,562,188	0	380,358,674	388,043,590
2030	0	-19,793,575	292,756	17,413,977	-20,685,922	0	-34,396,751	1,520,830	1,548,249	0	373,326,750	380,938,813
2031	1,469,109	-19,673,257	284,641	17,688,565	-20,769,553	0	-34,509,584	49,865	1,571,149	0	382,904,139	390,631,380
2032	297,623	-19,675,810	260,080	17,060,098	-20,346,825	0	-33,827,967	0	1,555,218	0	369,940,557	377,588,060
2033	0	-19,678,258	246,382	17,321,820	-20,745,853	0	-34,474,464	343,935	1,560,196	0	371,497,242	379,171,328
2034	846,376	-19,680,626	238,326	17,160,816	-20,652,878	0	-34,337,338	86,095	1,571,149	0	380,908,242	388,637,447
2035	0	-19,682,864	221,571	16,971,757	-20,735,573	0	-34,474,561	1,183,911	1,568,162	0	374,574,325	382,287,790

d) These values represent a proportionate allocation of the total variable OMP&R costs of pumping and power recovery plants (Table B-3) associated with net annual withdrawals from reservoir storage for the project transportation facilities. The allocation is determined annually by applying the following ratio, calculated from the data shown in Table B-6: "Reservoir Storage Changes" (withdrawals, as a positive value) conveyed through each plant, in acre-feet ÷ "Total" annual quantity conveyed through each plant, in acre-feet. The costs so determined are accumulated for all upstream plants for each year, for each respective reservoir.

e) Includes extra peaking costs assigned directly to Kern County Water Agency. Refer to Appendix B text "Project Water Charges, Variable OMP&R Components".

TABLE B-13: CAPITAL AND OPERATING COSTS OF PROJECT CONSERVATION

(in

Calendar Year	INITIAL PROJECT CONSERVATION FACILITIES (Portions of Upper Feather Lakes, Oroville-Thermalito Facilities, Delta Facilities and California Aqueduct)					ADDITIONAL PROJECT		
	Capital Costs (a	Capital Cost Credits (b	Operating Costs (c	Application of Oroville Power Revenues to:		Planning and Pre-operating Costs (a & (d	Ground Water Storage	
				Capital Costs	Operating Costs		Capital Costs	Operating Costs
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1952	171,322	0	0	0	0	0	0	0
1953	312,190	0	0	0	0	0	0	0
1954	308,624	0	0	0	0	0	0	0
1955	194,645	0	0	0	0	0	0	0
1956	1,357,077	0	0	0	0	0	0	0
1957	6,210,803	0	0	0	0	0	0	0
1958	9,511,018	0	0	0	0	0	0	0
1959	11,391,123	0	0	0	0	0	0	0
1960	14,464,898	-4,850,000	0	0	0	0	0	0
1961	18,692,249	-431,527	0	0	0	0	0	0
1962	9,016,364	-479,280	0	0	0	0	0	0
1963	72,963,339	-478,743	-14,000	0	0	0	0	0
1964	62,512,638	-751,330	-14,000	0	0	107,780	0	0
1965	70,953,933	-763,541	-14,000	0	0	551,850	0	0
1966	131,037,809	-748,649	-14,000	0	0	1,081,023	0	0
1967	94,318,754	-812,145	-11,282	0	0	1,189,212	0	0
1968	39,896,265	-409,394	1,307,480	-951,000	0	793,399	0	0
1969	5,288,022	-245,738	2,894,217	-11,007,000	0	601,867	0	0
1970	4,133,456	-192,435	4,822,897	-14,650,000	-1,500,000	516,659	0	0
1971	3,877,454	-187,322	6,030,099	-14,650,000	-1,500,000	408,754	0	0
1972	4,568,725	-196,361	5,382,386	-14,650,000	-1,500,000	287,321	0	0
1973	3,985,068	-135,210	6,086,493	-14,650,000	-1,500,000	203,335	0	0
1974	6,667,158	-130,599	6,875,245	-17,950,000	-1,500,000	201,856	0	0
1975	8,084,472	-230,065	7,625,341	-14,650,000	-1,500,000	146,161	0	0
1976	5,868,099	-131,304	7,098,884	-14,650,000	-1,500,000	55,091	0	0
1977	22,002,192	0	11,310,248	-14,650,000	-1,500,000	3,036	0	0
1978	6,629,812	0	15,981,098	-14,650,000	-1,500,000	347,819	0	0
1979	8,771,757	0	11,539,766	-14,650,000	-1,500,000	-19,683	0	0
1980	10,650,231	0	11,271,783	-14,650,000	-1,500,000	6,630,429	0	0
1981	8,487,937	0	11,708,083	-14,650,000	-1,500,000	8,497,662	0	0
1982	15,788,782	0	9,461,696	-14,650,000	-1,500,000	8,103,703	65,335	0
1983	22,056,358	0	7,400,324	-27,638,000	-3,555,000	3,465,696	388,402	0
1984	50,329,066	0	9,084,019	-15,427,000	-4,558,000	2,178,173	673,142	0
1985	84,695,057	0	15,079,184	-15,427,000	-4,900,000	1,109,107	2,035,870	0
1986	99,693,571	0	19,565,000	-15,427,000	-4,900,000	1,092,560	22,898,643	0
1987	69,568,708	0	20,703,819	-15,427,000	-4,900,000	760,060	28,556,475	0
1988	34,881,169	0	30,503,885	-15,427,000	-4,900,000	756,583	26,766,142	0
1989	31,604,978	0	28,987,518	-15,427,000	-4,900,000	753,080	30,315,491	0
1990	61,776,387	0	26,135,577	-15,427,000	-4,900,000	627,598	33,895,958	0
1991	73,190,307	0	28,461,630	-15,427,000	-4,900,000	64,277	27,542,629	2,250,309
1992	39,527,366	0	29,164,250	-15,427,000	-4,900,000	66,353	30,331,550	2,278,610
1993	7,354,806	0	28,879,063	-15,427,000	-4,900,000	66,121	19,925,508	2,460,469
1994	404,286	0	27,390,649	-15,427,000	-4,900,000	65,969	8,183,759	5,297,947
1995	362,146	0	28,308,759	-15,427,000	-4,900,000	66,001	17,167,637	5,282,548
1996	19,780	0	28,990,982	-15,427,000	-4,900,000	67,380	16,997,212	5,448,810
1997	12,900	0	27,607,658	-15,427,000	-4,900,000	67,465	11,646,159	5,968,881
1998	10,320	0	27,593,997	-15,427,000	-4,900,000	67,465	28,550,000	5,968,889
1999	0	0	27,099,324	-15,427,000	-4,900,000	67,467	24,470,000	5,968,922
2000	0	0	24,903,683	-15,427,000	-4,900,000	67,467	0	5,968,922
2001	0	0	27,541,657	-15,427,000	-4,900,000	67,467	0	5,968,922
2002	0	0	27,230,070	-15,427,000	-4,900,000	67,467	0	5,968,922
2003	0	0	28,370,248	-15,427,000	-4,900,000	67,467	0	5,968,922
2004	0	0	24,843,833	-15,427,000	-4,900,000	67,467	0	5,968,922
2005	0	0	28,324,867	-15,427,000	-4,900,000	67,467	0	5,968,922
2006	0	0	25,595,335	-15,427,000	-4,900,000	67,467	0	5,968,922
2007	0	0	22,549,118	-15,427,000	-4,900,000	67,467	0	5,968,922
2008	0	0	35,174,106	-15,427,000	-4,900,000	67,467	0	5,968,922
2009	0	0	25,750,985	-15,427,000	-4,900,000	67,467	0	5,968,922
2010	0	0	26,987,804	-15,427,000	-4,900,000	67,467	0	5,968,922
2011	0	0	25,611,386	-15,427,000	-4,900,000	0	0	5,968,922
2012	0	0	27,709,449	-15,427,000	-4,900,000	0	0	5,968,922
2013	0	0	26,911,230	-15,427,000	-4,900,000	0	0	5,968,922
2014	0	0	27,145,308	-15,427,000	-4,900,000	0	0	5,968,922
2015	0	0	30,697,238	-15,427,000	-4,900,000	0	0	5,968,922
2016	0	0	29,134,925	-15,427,000	-4,900,000	0	0	5,968,922
2017	0	0	27,295,412	-15,427,000	-4,900,000	0	0	5,968,922
2018	0	0	28,610,790	-15,427,000	-4,900,000	0	0	5,968,922
2019	0	0	29,221,994	-15,427,000	-4,900,000	0	0	5,968,922
2020	0	0	28,436,417	-15,427,000	-4,900,000	0	0	5,968,922
2021	0	0	27,388,028	-15,427,000	-4,900,000	0	0	5,968,922
2022	0	0	29,247,877	-15,427,000	-4,900,000	0	0	5,968,922
2023	0	0	28,006,896	-15,427,000	-4,900,000	0	0	5,968,922
2024	0	0	30,120,570	-15,427,000	-4,900,000	0	0	5,968,922
2025	0	0	26,913,493	-15,427,000	-4,900,000	0	0	5,968,922
2026	0	0	27,302,519	-15,427,000	-4,900,000	0	0	5,968,922
2027	0	0	28,562,525	-15,427,000	-4,900,000	0	0	5,968,922
2028	0	0	27,394,150	-15,427,000	-4,900,000	0	0	5,968,922
2029	0	0	28,910,529	-15,427,000	-4,900,000	0	0	5,968,922
2030	0	0	27,446,700	-15,427,000	-4,900,000	0	0	5,968,922
2031	0	0	28,367,287	-15,427,000	-4,900,000	0	0	5,968,922
2032	0	0	26,279,849	-15,427,000	-4,900,000	0	0	5,968,922
2033	0	0	26,391,768	-15,427,000	-4,900,000	0	0	5,968,922
2034	0	0	25,685,497	-15,427,000	-4,900,000	0	0	5,968,922
2035	0	0	27,670,750	-15,427,000	-4,900,000	0	0	5,968,922
TOTAL 1952-2035	1,233,603,421	-11,173,643	1,524,018,365	-1,035,550,000	-277,513,000	41,790,766	330,409,912	255,806,577

a) Reimbursed thru payments of the capital cost component of the Delta Water Charge, except for a portion of the costs of the Initial Project Conservation Facilities that will be reimbursed through project power revenues shown in column 4.

b) Negotiated settlements as to the magnitude of project planning costs from 1952 through 1976 to be reimbursed through water charges. Credits are applied to the reimbursable capital costs of the Initial Conservation Facilities.

FACILITIES TO BE REIMBURSED THRU DELTA WATER CHARGE

dollars)

CONSERVATION FACILITIES						Total	Calendar Year
Los Vaqueros Reservoir		Glenn Reservoir Complex		Cottonwood Creek Project			
Capital Costs	Operating Costs	Capital Costs	Operating Costs	Capital Costs	Operating Costs		
(9)	(10)	(11)	(12)	(13)	(14)	(15)	
0	0	0	0	0	0	171,322	1952
0	0	0	0	0	0	312,190	1953
0	0	0	0	0	0	308,624	1954
0	0	0	0	0	0	194,645	1955
0	0	0	0	0	0	1,357,077	1956
0	0	0	0	0	0	6,210,803	1957
0	0	0	0	0	0	9,511,018	1958
0	0	0	0	0	0	11,391,123	1959
0	0	0	0	0	0	9,614,898	1960
0	0	0	0	0	0	18,260,722	1961
0	0	0	0	0	0	8,537,084	1962
0	0	0	0	0	0	72,470,596	1963
0	0	0	0	0	0	61,855,088	1964
0	0	0	0	0	0	70,728,242	1965
0	0	0	0	0	0	131,356,183	1966
0	0	0	0	0	0	94,684,539	1967
0	0	0	0	0	0	40,636,750	1968
0	0	0	0	0	0	-2,468,632	1969
0	0	0	0	0	0	-6,869,423	1970
0	0	0	0	0	0	-6,021,015	1971
0	0	0	0	0	0	-6,107,929	1972
0	0	0	0	0	0	-6,010,314	1973
0	0	0	0	0	0	-5,836,340	1974
0	0	0	0	0	0	-524,091	1975
0	0	0	0	0	0	-3,259,230	1976
0	0	0	0	0	0	17,165,476	1977
0	0	0	0	0	0	6,808,729	1978
0	0	0	0	0	0	4,141,840	1979
0	0	0	0	0	0	12,402,443	1980
0	0	0	0	0	0	12,543,682	1981
1,915,599	0	0	0	0	0	19,185,115	1982
1,917,483	0	0	0	0	0	4,035,263	1983
1,916,597	0	0	0	0	0	44,195,997	1984
4,790,177	0	958,035	0	0	0	88,340,430	1985
20,115,421	0	957,876	0	0	0	143,996,071	1986
41,184,428	0	957,777	0	0	0	141,404,267	1987
54,530,542	0	1,913,351	0	0	0	129,024,672	1988
129,001,569	0	2,866,702	0	34,552,690	1,279,944	239,034,972	1989
196,652,312	0	11,455,472	0	34,552,690	1,208,371	345,977,365	1990
229,950,107	0	40,074,285	0	34,552,690	1,172,521	416,931,755	1991
2,850,000	11,179,037	51,666,056	0	34,552,690	1,371,791	182,660,703	1992
950,000	13,938,237	85,127,245	0	34,552,690	1,349,567	174,276,706	1993
950,000	13,142,892	99,454,441	0	34,552,690	1,334,929	170,450,562	1994
950,000	12,788,584	99,458,716	0	34,552,690	1,338,045	179,948,126	1995
0	13,115,230	950,000	12,010,379	34,552,690	1,470,354	93,295,817	1996
0	13,048,836	950,000	11,991,487	34,552,690	1,478,540	86,997,616	1997
0	13,255,937	0	12,049,438	34,552,690	1,478,563	103,200,299	1998
0	13,223,638	0	12,040,889	34,552,690	1,478,663	98,574,593	1999
0	13,374,688	0	12,082,689	34,552,690	1,478,663	72,101,802	2000
0	13,299,638	0	12,062,739	34,552,690	1,478,663	74,644,776	2001
0	13,170,438	0	12,025,689	34,552,690	1,478,663	74,166,939	2002
0	13,198,938	0	9,660,189	34,552,690	1,478,663	72,970,117	2003
0	13,197,038	0	9,660,189	34,552,690	1,478,663	69,441,802	2004
0	13,131,488	0	9,651,639	34,552,690	1,478,663	72,848,736	2005
0	13,146,688	0	9,653,539	34,552,690	1,478,663	70,136,304	2006
0	13,159,038	0	9,654,489	34,552,690	1,478,663	67,103,387	2007
0	13,285,388	0	9,670,639	34,552,690	1,478,663	79,870,875	2008
0	13,589,388	0	15,296,539	34,552,690	1,478,663	76,377,654	2009
0	13,653,038	0	15,394,389	34,552,690	1,478,663	77,775,973	2010
0	13,893,388	0	15,754,439	34,552,690	1,478,663	76,932,488	2011
0	14,062,488	0	16,008,089	34,552,690	1,478,663	79,453,301	2012
0	14,380,738	0	16,484,989	34,552,690	1,478,663	79,450,232	2013
0	14,614,438	0	16,835,539	34,552,690	1,478,663	80,268,560	2014
0	14,905,138	0	17,271,589	34,552,690	1,478,663	84,547,240	2015
0	14,588,788	0	2,643,489	34,552,690	1,478,663	68,040,477	2016
0	14,863,338	0	2,825,889	34,552,690	1,478,663	66,657,914	2017
0	14,802,538	0	2,785,989	34,552,690	1,478,663	67,872,592	2018
0	14,944,088	0	2,880,039	34,552,690	1,478,663	68,719,396	2019
0	15,006,788	0	2,921,839	34,552,690	1,478,663	68,038,319	2020
0	14,910,838	0	2,858,189	34,552,690	1,478,663	66,830,330	2021
0	15,021,988	0	2,932,289	34,552,690	1,478,663	68,875,429	2022
0	14,932,688	0	2,872,439	34,552,690	1,478,663	67,485,298	2023
0	15,078,038	0	2,969,339	34,552,690	1,478,663	69,841,222	2024
0	15,039,088	0	2,943,689	34,552,690	1,478,663	66,569,545	2025
0	15,141,688	0	3,012,089	34,552,690	1,478,663	67,129,571	2026
0	15,054,288	0	2,954,139	34,552,690	1,478,663	68,244,227	2027
0	15,059,988	0	2,956,989	34,552,690	1,478,663	67,084,402	2028
0	15,097,038	0	2,982,639	34,552,690	1,478,663	68,663,481	2029
0	14,987,788	0	2,909,489	34,552,690	1,478,663	67,017,252	2030
0	15,164,488	0	3,026,339	34,552,690	1,478,663	68,231,389	2031
0	15,042,888	0	2,945,589	34,552,690	1,478,663	65,941,601	2032
0	15,082,788	0	2,972,189	34,552,690	1,478,663	66,120,020	2033
0	15,168,288	0	3,029,189	34,552,690	1,478,663	65,556,249	2034
0	15,143,588	0	3,013,039	34,552,690	1,478,663	67,500,652	2035
687,674,235	621,885,359	396,789,956	313,694,447	68,193,156	1,623,976,430	5,773,605,981	TOTAL 1952-2035

a) Reimbursed through payments of the minimum OMP&R component of the Delta Water Charge, except for those costs that will be reimbursed through project power revenues shown in column 5. San Luis power credits are included in these costs.

d) Under the long-term amendments of Articles 22(e) and 22(g), those planning and pre-operating costs of Additional Project Conservation Facilities which are incurred through the previous year (1979) will be included in current calculations of the Delta Water Charge.

TABLE B-14: CAPITAL COSTS OF TRANSPORTATION

(in dollars)

Calendar Year	NORTH BAY AREA			SOUTH BAY AREA				CENTRAL COASTAL AREA		
	Napa County FC & WCD	Solano County FC & WCD	Total	Alameda County FC & WCD Zone 7	Alameda County Water District	Santa Clara Valley Water District	Total	San Luis Obispo County FC & WCD	Santa Barbara County FC & WCD	Total
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1952	0	0	0	83	99	410	592	122	287	409
1953	0	0	0	324	407	1,809	2,540	340	795	1,135
1954	0	0	0	819	1,089	5,151	7,059	427	996	1,423
1955	0	0	0	977	1,322	6,298	8,597	213	499	712
1956	0	0	0	8,845	12,070	63,816	84,731	228	534	762
1957	16,594	10,040	26,634	21,564	29,314	649,599	700,477	295	688	983
1958	35,437	14,574	50,011	67,765	67,956	733,416	869,137	731	1,704	2,435
1959	21,488	5,800	27,288	154,259	142,963	493,061	790,283	22,750	59,632	82,382
1960	10,049	7,878	17,927	296,499	274,644	1,018,678	1,589,821	32,668	86,183	118,851
1961	7,250	7,145	14,395	853,511	797,754	1,914,724	3,565,989	14,611	36,576	51,187
1962	-197	-923	-1,120	545,147	576,593	1,686,095	2,807,835	19,304	46,088	65,392
1963	1,559	871	2,430	657,505	1,077,966	3,244,012	4,979,483	72,916	171,998	244,914
1964	42,604	31,255	73,859	712,837	1,244,232	7,247,341	9,204,410	145,893	343,988	489,881
1965	206,465	54,589	261,054	361,014	468,339	3,414,971	4,244,324	260,559	612,549	873,108
1966	467,845	43,691	511,536	593,057	562,541	2,245,949	3,401,547	599,881	1,403,949	2,003,830
1967	1,574,452	35,425	1,609,877	797,382	772,456	2,402,710	3,972,548	945,921	2,212,076	3,157,997
1968	867,044	54,260	921,304	736,727	681,581	1,998,485	3,416,793	357,489	837,223	1,194,712
1969	81,172	52,534	133,706	269,840	258,284	765,262	1,293,386	82,763	194,976	277,739
1970	49,950	61,288	111,238	58,767	56,935	135,765	251,467	53,271	126,046	179,317
1971	29,314	31,501	60,815	12,090	14,389	84,098	110,577	35,878	86,108	121,986
1972	21,397	17,145	38,542	12,297	11,729	63,626	87,652	23,123	54,990	78,113
1973	58,786	28,590	87,376	10,498	10,529	39,389	60,416	26,525	62,989	89,514
1974	172,891	58,568	231,459	15,850	17,920	73,705	107,475	29,016	68,593	97,609
1975	99,163	81,821	180,984	16,766	15,611	41,543	73,920	23,239	58,337	81,576
1976	63,956	76,792	140,748	34,003	32,852	109,609	176,464	50,248	126,512	176,760
1977	68,574	68,884	137,458	45,787	42,840	132,414	221,041	124,828	294,736	419,564
1978	70,219	67,904	138,123	58,329	53,857	146,737	258,923	28,496	68,888	97,384
1979	212,667	230,115	442,782	36,283	34,085	90,564	160,932	33,818	81,657	115,475
1980	834,220	874,272	1,708,492	25,588	23,455	58,958	108,001	51,187	122,912	174,099
1981	842,588	927,746	1,770,334	40,088	36,706	90,615	167,409	162,032	482,398	644,430
1982	2,929,300	3,726,029	6,655,329	26,685	24,489	60,044	111,218	431,694	1,303,745	1,735,439
1983	7,925,343	8,606,839	16,532,182	15,113	13,853	34,031	62,997	734,437	2,209,791	2,944,228
1984	3,398,284	3,500,716	6,899,000	32,020	29,311	70,867	132,198	2,609,096	6,801,541	9,410,637
1985	349,308	343,692	693,000	68,193	62,349	148,574	279,116	10,051,068	27,673,562	37,724,630
1986	74,102	93,898	168,000	51,303	46,906	111,775	209,984	12,749,493	35,871,900	48,621,393
1987	24,701	31,299	56,000	15,158	13,859	33,026	62,043	8,341,975	22,977,521	31,319,496
1988	9,554	14,446	24,000	262	240	571	1,073	1,064,619	2,922,379	3,986,998
1989	3,185	4,815	8,000	77	70	167	314	424,025	1,185,040	1,609,065
1990	398	602	1,000	77	70	167	314	15,617	48,672	64,289
1991	0	0	0	77	70	167	314	5,725	18,301	24,026
1992	0	0	0	38	35	84	157	275	648	923
1993	0	0	0	0	0	0	0	0	0	0
1994	0	0	0	0	0	0	0	0	0	0
1995	0	0	0	0	0	0	0	0	0	0
1996	0	0	0	0	0	0	0	0	0	0
1997	0	0	0	0	0	0	0	0	0	0
1998	0	0	0	0	0	0	0	0	0	0
1999	0	0	0	0	0	0	0	0	0	0
2000	0	0	0	0	0	0	0	0	0	0
TOTAL	20,569,662	19,164,101	39,733,763	6,653,504	7,511,770	29,418,283	43,583,557	39,626,796	108,658,007	148,284,803

FACILITIES ALLOCATED TO EACH CONTRACTOR

(in dollars)

Calendar Year	SAN JOAQUIN VALLEY AREA									
	Devil's Den Water District (a	Dudley Ridge Water District	Empire West Side Irrigation District (b	Hacienda Water District	Kern County Water Agency		County of Kings	Oak Flat Water District	Tulare Lake Basin Water Storage District	Total
					Municipal and Industrial	Agricultural				
	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
1952	87	397	19	60	956	9,434	19	13	739	11,724
1953	243	1,094	55	160	2,953	28,322	57	33	2,032	34,949
1954	303	1,374	68	203	3,447	33,457	70	43	2,559	41,524
1955	153	686	37	100	1,529	15,200	37	22	1,292	19,056
1956	163	738	34	109	2,772	25,118	34	26	1,330	30,324
1957	209	950	38	139	6,222	51,819	39	30	1,596	61,042
1958	521	2,348	103	347	14,790	123,516	105	61	4,098	145,889
1959	3,719	7,471	367	1,100	26,825	261,557	375	383	13,823	315,620
1960	5,426	13,075	636	1,926	34,699	362,113	650	500	24,022	443,047
1961	5,932	22,225	1,081	3,273	52,538	556,654	1,104	601	40,834	684,242
1962	11,799	49,972	2,439	7,361	96,478	1,047,132	2,495	1,887	92,030	1,311,593
1963	48,348	211,737	10,837	31,193	369,721	4,051,308	11,087	6,015	400,163	5,140,409
1964	96,788	332,515	17,178	48,984	609,319	6,822,405	17,572	11,993	631,660	8,588,414
1965	175,629	545,226	27,831	80,319	1,117,868	12,345,848	28,474	21,895	1,028,928	15,372,018
1966	415,534	1,126,351	53,409	165,926	2,262,898	25,660,262	54,630	39,056	2,042,442	31,820,508
1967	656,196	865,435	40,071	127,489	2,054,277	24,308,035	40,989	34,923	1,549,635	29,677,050
1968	243,820	200,766	9,821	29,574	1,133,031	11,862,957	10,043	12,290	370,148	13,872,450
1969	52,257	95,133	4,823	14,014	633,010	6,604,010	4,934	7,333	178,855	7,594,369
1970	31,959	54,845	2,735	8,078	426,419	4,269,863	2,796	4,016	102,179	4,902,890
1971	17,859	25,986	1,314	3,827	196,374	1,674,403	1,344	542	48,803	1,970,452
1972	12,287	11,826	599	1,742	85,409	745,939	612	345	22,222	880,981
1973	14,942	6,780	340	999	41,146	470,528	345	222	12,654	547,956
1974	16,197	9,645	477	1,420	46,752	497,008	487	327	17,879	590,192
1975	7,748	13,523	686	1,991	37,292	393,681	702	427	25,432	481,482
1976	18,505	17,663	839	2,602	54,133	669,849	861	1,156	32,092	797,700
1977	69,646	9,302	415	1,368	36,239	887,300	423	470	16,317	1,021,480
1978	-9,775	8,862	-31,170	1,307	22,030	250,385	426	649	16,011	258,725
1979	4,557	12,268	621	1,807	27,978	293,860	636	1,227	23,056	366,010
1980	10,111	39,709	2,053	5,850	73,125	773,993	2,100	1,390	75,462	983,793
1981	19,493	82,122	4,260	12,100	152,934	1,538,782	4,354	3,488	156,354	1,973,887
1982	29,889	128,449	6,665	18,922	245,174	2,339,627	6,814	3,966	244,609	3,024,115
1983	16,368	65,661	3,407	9,673	134,036	1,212,829	3,481	2,584	125,034	1,573,073
1984	32,260	121,854	6,325	17,951	205,807	2,252,680	6,466	5,587	232,083	2,881,013
1985	67,209	239,217	12,420	35,240	386,932	4,429,027	12,697	11,974	455,689	5,650,405
1986	99,060	221,408	11,494	32,617	356,837	4,376,214	11,752	8,998	421,756	5,540,136
1987	103,715	111,957	5,813	16,493	180,374	2,631,461	5,941	2,661	213,264	3,271,679
1988	23,807	23,382	1,214	3,446	37,729	566,818	1,242	47	44,524	702,209
1989	2,323	178	10	27	329	21,563	10	14	340	24,794
1990	2,372	396	21	59	1,124	29,482	22	20	752	34,248
1991	1,267	396	21	59	1,124	20,850	22	20	752	24,511
1992	195	215	12	33	587	7,410	12	11	410	8,885
1993	0	0	0	0	0	0	0	0	0	0
1994	0	0	0	0	0	0	0	0	0	0
1995	0	0	0	0	0	0	0	0	0	0
1996	0	0	0	0	0	0	0	0	0	0
1997	0	0	0	0	0	0	0	0	0	0
1998	0	0	0	0	0	0	0	0	0	0
1999	0	0	0	0	0	0	0	0	0	0
2000	0	0	0	0	0	0	0	0	0	0
TOTAL	2,309,121	4,683,137	199,418	689,888	11,173,217	124,522,699	236,259	187,245	8,673,860	152,674,844

a) Costs from Table B-10 allocated to Devil's Den are reduced herein by $14,088 in 1978 in accordance with a letter of agreement with the District.

b) Costs from Table B-10 allocated to Empire are reduced by $31,588 in 1978 in accordance with a letter of agreement with the District.

TABLE B-14: CAPITAL COSTS OF TRANSPORTATION

(in dollars)

Calendar Year	SOUTHERN CALIFORNIA AREA									
	Antelope Valley-East Kern Water Agency	Castaic Lake Water Agency	Coachella Valley Water District	Crestline-Lake Arrowhead Water Agency	Desert Water Agency	Littlerock Creek Irrigation District	Mojave Water Agency	Palmdale Water District	San Bernardino Valley Municipal Water District	San Gabriel Valley Municipal Water District
	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)
1952	3,244	806	875	258	1,441	72	1,742	428	6,253	1,592
1953	10,312	2,586	2,744	826	4,526	230	5,470	1,366	19,603	4,991
1954	13,106	3,264	3,564	1,062	5,879	295	7,105	1,742	25,312	6,466
1955	5,566	1,459	1,413	413	2,331	120	2,835	737	9,495	2,441
1956	10,071	2,809	2,260	631	3,732	196	4,583	1,305	13,528	3,542
1957	27,128	7,321	6,540	1,871	10,781	554	13,157	3,557	41,869	10,852
1958	50,727	13,878	11,933	3,390	19,682	1,021	24,075	6,614	74,887	19,469
1959	72,215	21,667	16,320	4,746	26,918	1,386	32,664	9,285	101,409	26,246
1960	86,617	28,267	22,663	6,981	37,377	1,588	44,422	11,055	151,213	38,494
1961	129,455	40,991	35,229	12,770	58,103	2,291	64,817	16,789	240,705	58,801
1962	202,857	65,142	44,596	14,147	73,546	3,413	86,383	25,474	258,710	65,658
1963	585,525	185,721	114,845	32,332	189,405	9,846	231,593	73,527	595,662	157,219
1964	1,118,299	362,734	214,139	56,692	353,155	18,851	439,152	140,810	1,049,408	282,372
1965	1,951,601	684,035	394,570	106,211	650,723	33,577	805,346	250,221	1,958,756	525,053
1966	4,060,076	1,537,093	833,507	221,418	1,374,620	71,085	1,707,192	530,405	4,045,537	1,089,828
1967	5,107,157	2,896,906	1,103,643	303,099	1,820,130	90,579	2,235,676	670,191	5,962,060	1,587,922
1968	6,105,593	3,064,675	1,391,725	379,264	2,295,234	110,647	2,821,202	808,063	8,221,346	2,186,485
1969	6,004,090	2,475,139	1,739,363	555,279	2,868,613	124,976	3,351,648	891,834	11,209,139	2,849,050
1970	5,173,250	2,667,832	2,097,646	711,089	3,459,527	109,093	3,961,190	755,905	14,114,653	3,537,288
1971	2,661,228	1,796,950	1,103,978	348,720	1,820,708	49,889	2,150,668	358,260	8,386,970	2,046,178
1972	1,005,361	321,521	342,012	94,904	564,045	19,753	689,249	138,730	2,770,528	718,556
1973	365,322	812,955	162,988	84,515	268,835	6,493	244,710	47,488	1,809,812	414,875
1974	465,722	244,368	266,490	76,205	439,495	8,396	533,066	60,994	1,663,041	438,004
1975	260,706	202,097	198,920	54,248	328,056	5,095	402,849	34,956	1,575,977	419,207
1976	244,071	198,024	140,643	38,299	231,952	4,366	285,713	31,881	989,924	263,246
1977	200,054	242,182	92,998	26,353	153,374	3,781	186,778	26,983	604,417	158,885
1978	152,475	335,521	46,144	13,926	76,104	2,697	90,958	19,684	282,875	71,812
1979	276,487	719,181	63,592	17,076	104,875	4,581	129,469	34,074	320,097	85,703
1980	1,032,221	994,856	256,215	71,508	422,549	20,319	515,656	150,146	1,290,930	341,548
1981	1,654,244	893,532	289,333	75,622	477,165	25,618	593,209	192,059	1,354,470	367,221
1982	3,189,119	679,405	524,405	133,214	864,838	47,345	1,083,138	355,135	2,372,488	649,924
1983	2,555,202	358,751	284,235	71,993	468,759	26,048	587,447	195,354	1,275,154	349,699
1984	9,020,508	268,609	150,546	38,194	248,275	13,685	311,537	102,514	677,930	185,868
1985	11,318,146	139,532	82,452	20,963	135,979	7,423	171,473	55,513	373,246	102,416
1986	2,960,151	119,134	71,990	18,269	118,730	6,581	149,861	49,292	324,596	89,177
1987	723,365	60,125	36,261	9,207	59,799	3,318	75,469	24,867	163,635	44,946
1988	169,144	12,515	7,520	1,920	12,405	694	15,645	5,189	34,278	9,403
1989	5,747	278	216	55	359	12	449	95	970	268
1990	8,458	1,567	1,427	384	2,358	86	2,914	615	7,073	1,892
1991	6,458	1,567	1,427	384	2,358	86	2,914	615	7,073	1,892
1992	2,080	796	663	178	1,094	40	1,351	282	3,334	885
1993	0	0	0	0	0	0	0	0	0	0
1994	0	0	0	0	0	0	0	0	0	0
1995	0	0	0	0	0	0	0	0	0	0
1996	0	0	0	0	0	0	0	0	0	0
1997	0	0	0	0	0	0	0	0	0	0
1998	0	0	0	0	0	0	0	0	0	0
1999	0	0	0	0	0	0	0	0	0	0
2000	0	0	0	0	0	0	0	0	0	0
TOTAL	68,993,158	22,465,791	12,162,030	3,608,616	20,057,835	836,126	24,064,775	6,084,034	74,388,363	19,215,374

FACILITIES ALLOCATED TO EACH CONTRACTOR

(in dollars)

Calendar Year	SOUTHERN CALIFORNIA AREA (Continued)				FEATHER RIVER AREA				FUTURE CONTRACTOR	GRAND TOTAL
	San Gorgonio Pass Water Agency	The Metropolitan Water District of Southern California (c	Ventura County Flood Control District	Total	City of Yuba City	County of Butte	Plumas County FC & WCD	Total	South Bay	
	(31)	(32)	(33)	(34)	(35)	(36)	(37)	(38)	(39)	(40)
1952	986	71,025	381	100,264	0	0	0	0	75	101,903
1953	3,098	223,994	1,224	314,367	0	0	0	0	336	319,930
1954	4,017	288,144	1,538	401,070	0	0	0	0	984	412,484
1955	1,515	114,821	690	161,916	0	0	0	0	1,218	173,419
1956	2,192	184,790	1,342	260,261	0	0	0	0	11,563	358,361
1957	6,721	532,115	3,476	725,648	0	0	0	0	29,099	1,484,177
1958	12,052	974,948	6,596	1,361,842	0	0	2	2	36,650	2,323,396
1959	16,264	1,404,034	10,186	2,046,303	0	0	14	14	58,693	3,017,620
1960	23,949	1,967,788	13,156	2,855,554	0	0	28	28	124,177	4,727,421
1961	36,840	3,310,937	19,195	4,678,654	0	0	10	10	321,149	8,663,895
1962	40,838	3,633,677	29,729	5,784,192	0	0	32	32	266,781	8,994,683
1963	97,114	11,493,078	87,340	18,691,501	0	0	51	51	731,899	24,952,393
1964	173,870	18,488,081	168,517	30,959,029	0	0	7,791	7,791	1,093,823	42,324,258
1965	323,600	34,594,886	314,983	57,136,575	0	0	3,139	3,139	470,666	63,817,871
1966	671,077	76,480,324	700,167	123,381,617	0	0	-48	-48	814,221	131,873,923
1967	981,684	134,636,177	1,319,167	186,702,250	0	0	47	47	1,511,409	198,643,319
1968	1,354,182	152,330,564	1,406,763	195,864,212	0	0	51,573	51,573	1,269,011	203,201,586
1969	1,776,358	144,617,995	1,120,538	187,012,164	0	0	234,232	234,232	433,354	189,550,808
1970	2,210,202	167,330,512	1,182,177	212,115,637	0	0	16,227	16,227	78,407	212,849,910
1971	1,274,336	138,103,541	763,887	162,786,779	0	0	27,204	27,204	16,299	163,172,646
1972	447,320	45,648,019	67,705	53,682,230	0	0	9	9	14,224	53,927,224
1973	263,896	40,961,275	299,822	46,267,881	0	0	25	25	9,711	46,537,984
1974	271,847	19,553,970	90,035	24,674,086	0	0	51	51	35,467	25,173,886
1975	260,868	17,246,975	87,316	21,534,804	0	0	22	22	8,527	21,903,781
1976	163,407	13,967,563	87,488	17,404,668	0	0	51	51	18,294	17,956,594
1977	98,602	12,116,839	114,518	14,966,513	0	0	28	28	22,889	15,848,224
1978	44,593	13,761,945	158,176	15,346,411	0	0	38	38	24,405	15,834,508
1979	52,882	27,068,895	343,338	29,567,007	0	0	22	22	23,375	30,328,846
1980	211,086	42,859,166	469,810	49,562,080	0	0	0	0	15,009	51,625,404
1981	226,076	38,622,696	429,469	47,056,626	0	0	0	0	21,089	49,777,863
1982	399,423	36,613,660	319,726	50,072,010	0	0	0	0	11,150	58,769,071
1983	214,856	19,565,613	157,583	27,588,658	0	0	0	0	5,679	47,228,853
1984	114,146	13,086,921	126,615	27,047,971	0	0	0	0	11,751	43,679,947
1985	62,786	6,907,803	67,156	24,741,207	0	0	0	0	24,463	63,816,502
1986	54,649	5,926,863	57,377	15,122,227	0	0	0	0	18,404	64,504,587
1987	27,546	2,991,391	28,953	7,282,583	0	0	0	0	5,438	38,963,538
1988	5,764	625,052	6,024	1,555,913	0	0	0	0	94	5,619,927
1989	164	14,972	134	45,975	0	0	0	0	28	1,665,920
1990	1,166	93,501	745	153,586	0	0	0	0	28	222,065
1991	1,166	93,501	745	142,954	0	0	0	0	28	169,065
1992	546	45,960	375	66,014	0	0	0	0	14	67,563
1993	0	0	0	0	0	0	0	0	0	0
1994	0	0	0	0	0	0	0	0	0	0
1995	0	0	0	0	0	0	0	0	0	0
1996	0	0	0	0	0	0	0	0	0	0
1997	0	0	0	0	0	0	0	0	0	0
1998	0	0	0	0	0	0	0	0	0	0
1999	0	0	0	0	0	0	0	0	0	0
2000	0	0	0	0	0	0	0	0	0	0
TOTAL	11,933,684	1,248,554,011	10,064,162	1,667,221,239	0	0	340,548	340,548	7,539,881	1,914,585,355

c) Costs from Table B-10, allocated to MWD, are reduced herein by $16,421,217 in 1972 under provisions of Contract Amendment No. 7.

TABLE B-15: CAPITAL COST COMPONENT OF

(in dollars)

Calendar Year	NORTH BAY AREA			SOUTH BAY AREA				CENTRAL COASTAL AREA		
	Napa County FC & WCD	Solano County FC & WCD	Total	Alameda County FC & WCD, Zone 7	Alameda County Water District	Santa Clara Valley Water District	Total	San Luis Obispo County FC & WCD	Santa Barbara County FC & WCD	Total
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1963	0	0	0	104,550	102,088	364,224	570,862	0	0	0
1964	0	0	0	122,724	156,763	528,762	808,249	8,340	20,723	29,063
1965	0	0	0	155,034	219,871	896,351	1,271,256	14,057	34,240	48,297
1966	18,975	0	18,975	171,398	243,626	1,069,560	1,484,584	23,285	56,001	79,286
1967	42,705	0	42,705	198,279	272,158	1,183,476	1,653,913	41,655	99,063	140,718
1968	122,562	0	122,562	234,421	311,337	1,305,342	1,851,100	55,953	132,632	188,585
1969	166,539	0	166,539	267,814	345,907	1,406,707	2,020,428	59,634	141,360	200,994
1970	170,656	0	170,656	280,045	359,008	1,445,521	2,084,574	61,570	145,968	207,538
1971	173,189	0	173,189	282,709	361,895	1,452,407	2,097,011	62,835	149,007	211,842
1972	174,676	0	174,676	330,379	362,625	1,456,673	2,149,677	63,777	151,326	215,103
1973	175,761	27,666	203,427	331,002	363,220	1,459,900	2,154,122	64,249	152,478	216,727
1974	178,743	29,117	207,860	331,535	363,754	1,461,898	2,157,187	64,620	153,399	218,019
1975	187,512	32,087	219,599	332,339	364,663	1,465,636	2,162,638	65,073	154,499	219,572
1976	192,542	36,237	228,779	333,189	365,455	1,467,743	2,166,387	171,107	402,251	573,358
1977	195,785	40,132	235,917	334,914	367,121	1,473,303	2,175,338	173,655	408,668	582,323
1978	199,264	43,626	242,890	337,236	369,294	1,480,019	2,186,549	179,987	423,617	603,604
1979	202,825	47,070	249,895	340,194	372,026	1,487,461	2,199,681	181,432	427,111	608,543
1980	213,612	58,742	272,354	342,035	373,755	1,492,055	2,207,845	183,147	431,253	614,400
1981	255,924	103,085	359,009	343,333	374,944	1,495,045	2,213,322	185,743	437,487	623,230
1982	298,660	150,141	448,801	345,366	376,806	1,499,641	2,221,813	193,962	461,954	655,916
1983	447,236	339,127	786,363	346,719	378,048	1,502,687	2,227,454	215,857	528,081	743,938
1984	849,213	775,670	1,624,883	347,486	378,751	1,504,413	2,230,650	253,108	640,162	893,270
1985	1,021,576	953,228	1,974,804	349,110	380,237	1,508,007	2,237,354	385,443	985,140	1,370,583
1986	1,039,293	970,660	2,009,953	352,569	383,400	1,515,543	2,251,512	895,238	2,388,757	3,283,995
1987	1,043,072	975,449	2,018,521	355,185	385,792	1,521,243	2,262,220	1,545,446	4,218,178	5,763,624
1988	1,044,339	977,055	2,021,394	355,963	386,503	1,522,937	2,265,403	1,973,331	5,396,763	7,370,094
1989	1,044,832	977,800	2,022,632	355,976	386,515	1,522,967	2,265,458	2,028,270	5,547,571	7,575,841
1990	1,044,998	978,050	2,023,048	355,980	386,519	1,522,975	2,265,474	2,050,291	5,609,115	7,659,406
1991	1,045,018	978,082	2,023,100	355,984	386,522	1,522,984	2,265,490	2,051,108	5,611,659	7,662,767
1992	1,045,018	978,082	2,023,100	355,988	386,526	1,522,993	2,265,507	2,051,409	5,612,623	7,664,032
1993	1,045,018	978,082	2,023,100	355,990	386,528	1,522,997	2,265,515	2,051,424	5,612,657	7,664,081
1994	1,045,018	978,082	2,023,100	355,990	386,528	1,522,997	2,265,515	2,051,424	5,612,657	7,664,081
1995	1,045,018	978,082	2,023,100	355,990	386,528	1,522,997	2,265,515	2,051,424	5,612,657	7,664,081
1996	1,045,018	978,082	2,023,100	355,990	386,528	1,522,997	2,265,515	2,051,424	5,612,657	7,664,081
1997	1,045,018	978,082	2,023,100	355,990	386,528	1,522,997	2,265,515	2,051,424	5,612,657	7,664,081
1998	1,045,018	978,082	2,023,100	355,990	386,528	1,522,997	2,265,515	2,051,424	5,612,657	7,664,081
1999	1,045,018	978,082	2,023,100	355,990	386,528	1,522,997	2,265,515	2,051,424	5,612,657	7,664,081
2000	1,045,018	978,082	2,023,100	355,990	386,528	1,522,997	2,265,515	2,051,424	5,612,657	7,664,081
2001	1,045,018	978,082	2,023,100	355,990	386,528	1,522,997	2,265,515	2,051,424	5,612,657	7,664,081
2002	1,045,018	978,082	2,023,100	355,990	386,528	1,522,997	2,265,515	2,051,424	5,612,657	7,664,081
2003	1,045,018	978,082	2,023,100	355,990	386,528	1,522,997	2,265,515	2,051,424	5,612,657	7,664,081
2004	1,045,018	978,082	2,023,100	355,990	386,528	1,522,997	2,265,515	2,051,424	5,612,657	7,664,081
2005	1,045,018	978,082	2,023,100	355,990	386,528	1,522,997	2,265,515	2,051,424	5,612,657	7,664,081
2006	1,045,018	978,082	2,023,100	355,990	386,528	1,522,997	2,265,515	2,051,424	5,612,657	7,664,081
2007	1,045,018	978,082	2,023,100	355,990	386,528	1,522,997	2,265,515	2,051,424	5,612,657	7,664,081
2008	1,045,018	978,082	2,023,100	355,990	386,528	1,522,997	2,265,515	2,051,424	5,612,657	7,664,081
2009	1,045,018	978,082	2,023,100	355,990	386,528	1,522,997	2,265,515	2,051,424	5,612,657	7,664,081
2010	1,045,018	978,082	2,023,100	355,990	386,528	1,522,997	2,265,515	2,051,424	5,612,657	7,664,081
2011	1,045,018	978,082	2,023,100	355,990	386,528	1,522,997	2,265,515	2,051,424	5,612,657	7,664,081
2012	1,045,018	978,082	2,023,100	355,990	386,528	1,522,997	2,265,515	2,051,424	5,612,657	7,664,081
2013	1,045,018	978,082	2,023,100	245,476	284,440	1,158,773	1,688,689	2,051,424	5,612,657	7,664,081
2014	1,045,018	978,082	2,023,100	210,322	229,765	994,235	1,434,322	2,043,083	5,591,935	7,635,018
2015	1,045,018	978,082	2,023,100	172,508	166,657	626,646	965,811	2,037,367	5,578,418	7,615,785
2016	1,026,043	978,082	2,004,125	153,500	142,902	453,437	749,839	2,028,138	5,556,657	7,584,795
2017	1,002,314	978,082	1,980,396	122,493	114,370	339,521	576,384	2,009,768	5,513,594	7,523,362
2018	922,457	978,082	1,900,539	81,081	75,191	217,655	373,927	1,995,471	5,480,025	7,475,496
2019	878,480	978,082	1,856,562	43,063	40,621	116,291	199,975	1,991,790	5,471,298	7,463,088
2020	874,363	978,082	1,852,445	29,222	27,520	77,476	134,218	1,989,854	5,466,689	7,456,543
2021	871,829	978,082	1,849,911	26,225	24,632	70,590	121,447	1,988,589	5,463,650	7,452,239
2022	870,342	978,082	1,848,424	25,612	23,903	66,325	115,840	1,987,647	5,461,332	7,448,979
2023	869,257	950,415	1,819,672	24,988	23,308	63,097	111,393	1,987,175	5,460,179	7,447,354
2024	866,275	948,965	1,815,240	24,456	22,774	61,100	108,330	1,986,803	5,459,258	7,446,061
2025	857,506	945,994	1,803,500	23,652	21,865	57,361	102,878	1,986,351	5,458,158	7,444,509
2026	852,477	941,844	1,794,321	22,801	21,073	55,254	99,128	1,880,317	5,210,406	7,090,723
2027	849,233	937,949	1,787,182	21,077	19,407	49,695	90,179	1,877,768	5,203,990	7,081,758
2028	845,755	934,456	1,780,211	18,754	17,234	42,979	78,967	1,871,437	5,189,041	7,060,478
2029	842,193	931,012	1,773,205	15,796	14,502	35,536	65,834	1,869,992	5,185,547	7,055,539
2030	831,407	919,340	1,750,747	13,955	12,773	30,943	57,671	1,868,277	5,181,405	7,049,682
2031	789,095	874,996	1,664,091	12,658	11,584	27,952	52,194	1,865,680	5,175,171	7,040,851
2032	746,358	827,941	1,574,299	10,624	9,722	23,356	43,702	1,857,462	5,150,703	7,008,165
2033	597,783	638,955	1,236,738	9,271	8,480	20,311	38,062	1,835,566	5,084,577	6,920,143
2034	195,805	202,411	398,216	8,504	7,777	18,585	34,866	1,798,315	4,972,495	6,770,810
2035	23,435	24,865	48,300	6,883	6,290	15,006	28,179	1,665,970	4,627,534	6,293,504
TOTAL	52,242,346	48,892,709	101,135,055	17,492,177	19,322,479	76,140,537	112,955,193	100,806,306	275,728,945	376,535,251

a) Unadjusted for prior overpayments or underpayments of charges.
b) Determined at the current project interest rate of 4.584 percent per annum.

TRANSPORTATION CHARGE FOR EACH CONTRACTOR[a][b]

(in dollars)

Calendar Year	SAN JOAQUIN VALLEY AREA									
	Devil's Den Water District	Dudley Ridge Water District	Empire West Side Irrigation District	Hacienda Water District	Kern County Water Agency		County of Kings	Oak Flat Water District	Tulare Lake Basin Water Storage District	Total
					Municipal and Industrial	Agricultural				
	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
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	65,058	0	0	0	0	65,058
1966	0	0	0	0	121,757	0	0	0	0	121,757
1967	0	0	0	0	236,532	0	0	0	0	236,532
1968	33,793	71,888	3,129	0	340,726	401,571	8,584	4,109	58,355	922,155
1969	45,666	72,014	9,386	12,801	398,194	824,686	9,093	4,466	209,363	1,585,669
1970	52,060	78,926	9,386	13,335	430,301	1,003,067	9,343	4,645	151,485	1,752,548
1971	61,193	89,986	9,386	12,268	451,929	1,332,252	9,485	5,002	162,918	2,134,419
1972	70,326	100,543	9,386	13,868	461,889	1,994,930	9,553	9,586	524,004	3,194,085
1973	79,460	110,597	9,386	15,468	466,221	2,300,848	9,584	5,538	193,653	3,190,755
1974	88,593	167,856	9,386	17,602	468,308	2,576,606	9,602	6,201	328,641	3,672,795
1975	97,726	203,875	9,386	20,045	470,679	3,086,067	9,626	6,388	393,003	4,296,795
1976	106,860	155,444	9,386	20,802	472,571	3,326,751	9,662	7,215	275,374	4,384,065
1977	115,993	152,825	9,386	22,402	475,317	3,645,164	9,706	6,610	261,049	4,698,452
1978	115,993	163,382	9,386	24,536	477,155	4,051,906	9,727	6,967	279,627	5,138,679
1979	115,993	193,766	9,386	26,136	478,272	4,449,169	9,749	7,146	316,027	5,605,644
1980	115,993	206,112	9,386	27,736	479,691	4,855,049	9,781	10,183	316,784	6,030,715
1981	115,993	195,053	9,386	29,870	483,400	5,313,495	9,888	7,682	335,362	6,500,129
1982	115,993	206,112	9,386	31,470	491,157	5,736,610	10,108	8,039	353,941	6,962,816
1983	115,993	215,664	9,386	33,070	503,592	6,218,323	10,454	8,218	372,519	7,487,219
1984	115,993	226,724	9,386	34,670	510,391	6,652,641	10,631	8,575	391,097	7,960,108
1985	115,993	237,281	9,386	36,804	520,829	7,075,755	10,958	8,754	409,676	8,425,436
1986	115,993	247,838	9,386	38,404	540,455	7,495,423	11,602	9,111	428,730	8,896,942
1987	115,993	258,395	9,386	40,004	558,653	7,922,847	12,202	9,290	447,309	9,374,079
1988	115,993	268,952	9,386	41,605	567,905	8,321,833	12,507	9,647	465,887	9,813,715
1989	115,993	279,509	9,386	43,738	569,852	8,609,654	12,571	10,004	484,465	10,135,172
1990	115,993	290,066	9,386	45,338	569,869	8,908,678	12,571	10,183	524,004	10,486,088
1991	115,993	290,066	9,386	45,338	569,928	8,908,678	12,572	10,183	524,004	10,486,148
1992	115,993	290,066	9,386	45,338	569,987	8,908,678	12,573	10,183	524,004	10,486,208
1993	115,993	290,066	9,386	45,338	570,018	8,908,678	12,574	10,183	524,004	10,486,240
1994	115,993	290,066	9,386	45,338	570,018	8,908,678	12,574	10,183	524,004	10,486,240
1995	115,993	290,066	9,386	45,338	570,018	8,908,678	12,574	10,183	524,004	10,486,240
1996	115,993	290,066	9,386	45,338	570,018	8,908,678	12,574	10,183	524,004	10,486,240
1997	115,993	290,066	9,386	45,338	570,018	8,908,678	12,574	10,183	524,004	10,486,240
1998	115,993	290,066	9,386	45,338	570,018	8,908,678	12,574	10,183	524,004	10,486,240
1999	115,993	290,066	9,386	45,338	570,018	8,908,678	12,574	10,183	524,004	10,486,240
2000	115,993	290,066	9,386	45,338	570,018	8,908,678	12,574	10,183	524,004	10,486,240
2001	115,993	290,066	9,386	45,338	570,018	8,908,678	12,574	10,183	524,004	10,486,240
2002	115,993	290,066	9,386	45,338	570,018	8,908,678	12,574	10,183	524,004	10,486,240
2003	115,993	290,066	9,386	45,338	570,018	8,908,678	12,574	10,183	524,004	10,486,240
2004	115,993	290,066	9,386	45,338	570,018	8,908,678	12,574	10,183	524,004	10,486,240
2005	115,993	290,066	9,386	45,338	570,018	8,908,678	12,574	10,183	524,004	10,486,240
2006	115,993	290,066	9,386	45,338	570,018	8,908,678	12,574	10,183	524,004	10,486,240
2007	115,993	290,066	9,386	45,338	570,018	8,908,678	12,574	10,183	524,004	10,486,240
2008	115,993	290,066	9,386	45,338	570,018	8,908,678	12,574	10,183	524,004	10,486,240
2009	115,993	290,066	9,386	45,338	570,018	8,908,678	12,574	10,183	524,004	10,486,240
2010	115,993	290,066	9,386	45,338	570,018	8,908,678	12,574	10,183	524,004	10,486,240
2011	115,993	290,066	9,386	45,338	570,018	8,908,678	12,574	10,183	524,004	10,486,240
2012	115,993	290,066	9,386	45,338	570,018	8,908,678	12,574	10,183	524,004	10,486,240
2013	115,993	290,066	9,386	45,338	570,018	8,908,678	12,574	10,183	524,004	10,486,240
2014	115,993	290,066	9,386	45,338	570,018	8,908,678	12,574	10,183	524,004	10,486,240
2015	115,993	290,066	9,386	45,338	504,960	8,908,678	12,574	10,183	524,004	10,421,182
2016	115,993	290,066	9,386	45,338	448,261	8,908,678	12,574	10,183	524,004	10,364,483
2017	115,993	290,066	9,386	45,338	333,486	8,908,678	12,574	10,183	524,004	10,249,708
2018	115,993	290,066	9,386	45,338	229,292	8,908,678	3,991	10,183	524,004	10,136,931
2019	115,993	290,066	9,386	45,338	171,824	8,908,678	3,481	10,183	524,004	10,078,953
2020	115,993	290,066	9,386	45,338	139,717	8,908,678	3,231	10,183	524,004	10,046,596
2021	115,993	290,066	9,386	45,338	118,089	8,908,678	3,089	10,183	524,004	10,024,826
2022	115,993	290,066	9,386	45,338	108,129	8,908,678	3,021	10,183	524,004	10,014,798
2023	115,993	290,066	9,386	45,338	103,797	8,908,678	2,990	10,183	524,004	10,010,435
2024	115,993	290,066	9,386	45,338	101,710	8,908,678	2,972	10,183	524,004	10,008,330
2025	115,993	290,066	9,386	45,338	99,338	8,908,678	2,948	10,183	524,004	10,005,934
2026	115,993	290,066	9,386	45,338	97,447	8,908,678	2,912	10,183	524,004	10,004,007
2027	115,993	290,066	9,386	45,338	94,701	8,908,678	2,868	10,183	524,004	10,001,217
2028	115,993	290,066	9,386	45,338	92,863	8,908,678	2,847	10,183	524,004	9,999,358
2029	115,993	290,066	9,386	45,338	91,746	8,908,678	2,825	10,183	524,004	9,998,219
2030	115,993	290,066	9,386	45,338	90,327	8,908,678	2,793	10,183	524,004	9,996,768
2031	115,993	290,066	9,386	45,338	86,618	8,908,678	2,687	10,183	524,004	9,992,953
2032	115,993	290,066	9,386	45,338	78,861	8,908,678	2,466	10,183	524,004	9,984,975
2033	115,993	290,066	9,386	45,338	66,426	8,908,678	2,120	10,183	524,004	9,972,194
2034	115,993	290,066	9,386	45,338	59,627	8,908,678	1,944	10,183	524,004	9,965,219
2035	116,043	290,008	9,263	45,361	49,196	8,908,796	1,614	10,213	523,904	9,954,398
TOTAL	7,479,314	17,245,720	631,868	2,642,205	28,457,429	506,993,953	627,281	631,824	31,263,353	595,972,947

TABLE B-15: CAPITAL COST COMPONENT OF

(in dollars)

Calendar Year	SOUTHERN CALIFORNIA AREA									
	Antelope Valley East Kern Water Agency	Castaic Lake Water Agency	Coachella Valley Water District	Crestline Lake Arrowhead Water Agency	Desert Water Agency	Littlerock Creek Irrigation District	Mojave Water Agency	Palmdale Water District	San Bernardino Valley Municipal Water District	San Gabriel Valley Municipal Water District
	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)
1963	33,998	0	0	0	0	0	0	0	52,743	0
1964	63,696	20,292	14,462	4,373	37,472	1,154	28,527	8,293	82,956	35,300
1965	120,416	38,690	25,323	7,248	41,139	2,110	50,802	15,435	136,182	35,653
1966	219,403	73,384	45,336	12,635	74,144	3,813	91,649	28,126	235,531	62,284
1967	425,332	151,347	87,612	23,866	143,866	7,419	178,239	55,029	440,723	117,561
1968	684,369	298,279	143,589	39,239	236,184	12,013	291,633	89,021	743,122	198,101
1969	994,048	453,721	214,178	58,475	352,599	17,625	434,726	130,006	1,160,112	309,001
1970	1,298,578	579,261	302,400	86,639	498,097	23,964	604,723	175,241	1,728,646	453,506
1971	1,560,968	714,575	408,794	122,706	673,566	29,497	805,637	213,581	2,444,548	632,919
1972	1,695,947	805,717	464,788	140,393	765,913	32,028	914,720	231,752	2,869,939	736,702
1973	1,746,940	822,025	482,135	145,207	794,522	33,030	949,679	238,788	3,010,462	773,148
1974	1,765,469	863,258	490,402	149,494	808,157	33,359	962,091	241,197	3,102,256	794,190
1975	1,789,091	875,653	503,918	153,359	830,448	33,785	989,128	244,290	3,186,607	816,406
1976	1,802,314	885,903	514,008	156,110	847,088	34,043	1,009,561	246,063	3,266,541	837,669
1977	1,814,693	895,947	521,141	158,053	858,852	34,265	1,024,052	247,681	3,316,751	851,020
1978	1,824,840	908,231	525,858	159,389	866,632	34,456	1,033,526	249,049	3,347,407	859,079
1979	1,832,574	925,249	528,198	160,096	870,492	34,593	1,038,139	250,047	3,361,754	862,722
1980	1,846,597	961,726	531,424	160,962	875,811	34,826	1,044,706	251,776	3,377,990	867,068
1981	1,898,952	1,012,185	544,419	164,589	897,243	35,856	1,070,860	259,391	3,443,467	884,392
1982	1,982,856	1,057,506	559,094	168,424	921,445	37,156	1,100,948	269,133	3,512,166	903,018
1983	2,144,610	1,091,966	585,692	175,181	965,310	39,557	1,155,886	287,145	3,632,500	935,982
1984	2,274,211	1,110,162	600,109	178,833	989,086	40,878	1,185,681	297,054	3,697,176	953,719
1985	2,731,736	1,123,786	607,745	180,770	1,001,678	41,572	1,201,482	302,253	3,731,561	963,146
1986	3,305,798	1,130,863	611,927	181,833	1,008,575	41,949	1,210,180	305,069	3,750,492	968,341
1987	3,456,762	1,136,938	615,598	182,765	1,014,630	42,284	1,217,822	307,583	3,767,046	972,889
1988	3,493,865	1,140,022	617,458	183,237	1,017,697	42,454	1,221,693	308,858	3,775,440	975,194
1989	3,502,594	1,140,668	617,846	183,336	1,018,338	42,490	1,222,501	309,126	3,777,209	975,679
1990	3,502,892	1,140,683	617,857	183,339	1,018,356	42,491	1,222,524	309,131	3,777,259	975,693
1991	3,503,334	1,140,765	617,932	183,359	1,018,480	42,495	1,222,676	309,163	3,777,629	975,792
1992	3,503,674	1,140,847	618,007	183,379	1,018,604	42,500	1,222,830	309,195	3,778,001	975,892
1993	3,503,785	1,140,889	618,042	183,389	1,018,662	42,502	1,222,902	309,210	3,778,178	975,939
1994	3,503,785	1,140,889	618,042	183,389	1,018,662	42,502	1,222,902	309,210	3,778,178	975,939
1995	3,503,785	1,140,889	618,042	183,389	1,018,662	42,502	1,222,902	309,210	3,778,178	975,939
1996	3,503,785	1,140,889	618,042	183,389	1,018,662	42,502	1,222,902	309,210	3,778,178	975,939
1997	3,503,785	1,140,889	618,042	183,389	1,018,662	42,502	1,222,902	309,210	3,778,178	975,939
1998	3,503,785	1,140,889	618,042	183,389	1,018,662	42,502	1,222,902	309,210	3,778,178	975,939
1999	3,503,785	1,140,889	618,042	183,389	1,018,662	42,502	1,222,902	309,210	3,778,178	975,939
2000	3,503,785	1,140,889	618,042	183,389	1,018,662	42,502	1,222,902	309,210	3,778,178	975,939
2001	3,503,785	1,140,889	618,042	183,389	1,018,662	42,502	1,222,902	309,210	3,778,178	975,939
2002	3,503,785	1,140,889	618,042	183,389	1,018,662	42,502	1,222,902	309,210	3,778,178	975,939
2003	3,503,785	1,140,889	618,042	183,389	1,018,662	42,502	1,222,902	309,210	3,778,178	975,939
2004	3,503,785	1,140,889	618,042	183,389	1,018,662	42,502	1,222,902	309,210	3,778,178	975,939
2005	3,503,785	1,140,889	618,042	183,389	1,018,662	42,502	1,222,902	309,210	3,778,178	975,939
2006	3,503,785	1,140,889	618,042	183,389	1,018,662	42,502	1,222,902	309,210	3,778,178	975,939
2007	3,503,785	1,140,889	618,042	183,389	1,018,662	42,502	1,222,902	309,210	3,778,178	975,939
2008	3,503,785	1,140,889	618,042	183,389	1,018,662	42,502	1,222,902	309,210	3,778,178	975,939
2009	3,503,785	1,140,889	618,042	183,389	1,018,662	42,502	1,222,902	309,210	3,778,178	975,939
2010	3,503,785	1,140,889	618,042	183,389	1,018,662	42,502	1,222,902	309,210	3,778,178	975,939
2011	3,503,785	1,140,889	618,042	183,389	1,018,662	42,502	1,222,902	309,210	3,778,178	975,939
2012	3,503,785	1,140,889	618,042	183,389	1,018,662	42,502	1,222,902	309,210	3,778,178	975,939
2013	3,469,787	1,140,889	618,042	183,389	1,005,041	42,502	1,222,902	309,210	3,725,435	962,582
2014	3,440,089	1,120,598	603,580	179,016	995,434	41,348	1,194,374	300,917	3,695,222	954,608
2015	3,383,368	1,102,200	592,719	176,141	977,522	40,392	1,172,100	293,775	3,641,996	940,286
2016	3,284,382	1,067,505	572,706	170,754	944,517	38,689	1,131,252	281,084	3,542,647	913,655
2017	3,078,453	989,543	530,430	159,523	874,796	35,083	1,044,663	254,182	3,337,455	858,378
2018	2,819,415	842,610	474,453	144,150	782,478	30,489	931,268	220,189	3,035,056	777,838
2019	2,509,737	687,168	403,864	124,913	666,062	24,877	788,175	179,204	2,618,066	666,938
2020	2,205,206	561,628	315,642	96,749	520,565	18,538	618,178	133,970	2,049,532	522,433
2021	1,942,816	426,314	209,249	60,683	345,096	13,005	417,265	95,630	1,333,630	343,020
2022	1,807,838	335,172	153,254	42,995	252,749	10,474	308,182	77,459	908,239	239,237
2023	1,756,845	318,864	135,907	38,182	224,140	9,472	273,223	70,422	767,716	202,791
2024	1,738,316	277,631	127,640	33,895	210,505	9,143	260,811	68,014	675,922	181,748
2025	1,714,694	265,236	114,124	30,030	188,213	8,717	233,773	64,920	591,571	159,533
2026	1,701,471	254,986	104,035	27,278	171,574	8,459	213,341	63,147	511,637	138,270
2027	1,689,092	244,942	96,901	25,336	159,809	8,237	198,849	61,530	461,427	124,918
2028	1,678,945	232,659	92,184	23,999	152,030	8,046	189,376	60,161	430,771	116,860
2029	1,671,211	215,641	89,844	23,293	148,170	7,909	184,762	59,163	416,424	113,217
2030	1,657,188	179,164	86,618	22,427	142,851	7,676	178,195	57,435	400,188	108,870
2031	1,604,833	128,704	73,623	18,800	121,419	6,646	152,041	49,819	334,711	91,547
2032	1,520,929	83,384	58,948	14,964	97,217	5,347	121,953	40,078	266,012	72,921
2033	1,359,175	48,924	32,350	8,208	53,352	2,945	67,016	22,065	145,678	39,957
2034	1,229,574	30,728	17,933	4,556	29,576	1,624	37,220	12,157	81,002	22,220
2035	772,084	17,128	10,295	2,634	17,006	919	21,417	6,946	46,666	12,763
TOTAL	174,931,705	57,029,047	30,892,431	9,166,984	50,917,786	2,124,239	61,124,997	15,454,153	188,864,779	48,785,436

TRANSPORTATION CHARGE FOR EACH CONTRACTOR[a,b]

(in dollars)

Calendar Year	SOUTHERN CALIFORNIA AREA (continued)				FEATHER RIVER AREA				FUTURE CONTRACTOR	GRAND TOTAL
	San Gorgonio Pass Water Agency	The Metropolitan Water District of Southern California	Ventura County Flood Control District	Total	City of Yuba City	County of Butte	Plumas County FC & WCD	Total	South Bay	
	(31)	(32)	(33)	(34)	(35)	(36)	(37)	(38)	(39)	(40)
1963	0	707,289	0	794,030	0	0	0	0	46,050	1,410,942
1964	21,929	1,290,223	9,491	1,618,168	0	0	0	0	83,172	2,538,652
1965	22,056	2,227,948	18,039	2,741,041	0	0	403	403	138,651	4,264,706
1966	38,469	3,982,618	34,015	4,901,407	0	0	562	562	162,524	6,769,095
1967	72,506	7,861,739	69,528	9,634,767	0	0	560	560	203,822	11,913,017
1968	122,298	14,690,554	136,436	17,684,838	0	0	562	562	280,481	21,050,283
1969	190,983	22,416,837	207,788	26,940,099	0	0	3,178	3,178	344,846	31,261,753
1970	281,080	29,751,935	264,622	36,048,692	0	0	15,058	15,058	366,826	40,645,892
1971	393,183	38,239,023	324,583	46,563,580	0	0	15,881	15,881	370,803	51,566,725
1972	457,818	45,243,705	363,328	54,722,750	0	0	17,261	17,261	371,629	60,845,181
1973	480,506	47,558,995	366,762	57,402,199	0	0	17,262	17,262	372,351	63,556,843
1974	493,891	49,636,572	381,969	59,722,305	0	0	17,263	17,263	372,843	66,368,272
1975	507,679	50,628,359	386,535	60,945,258	0	0	17,265	17,265	374,642	68,235,769
1976	520,911	51,503,134	390,964	62,014,309	0	0	17,267	17,267	375,075	69,759,240
1977	529,199	52,211,576	395,402	62,858,632	0	0	17,269	17,269	376,003	70,943,934
1978	534,200	52,826,148	401,210	63,570,025	0	0	17,271	17,271	377,164	72,136,182
1979	536,462	53,524,161	409,233	64,333,720	0	0	17,272	17,272	378,401	73,393,156
1980	539,144	54,897,109	426,647	65,815,786	0	0	17,274	17,274	379,587	75,337,961
1981	549,850	57,070,948	450,476	68,282,628	0	0	17,274	17,274	380,348	78,375,940
1982	561,317	59,029,911	472,259	70,575,233	0	0	17,274	17,274	381,418	81,263,271
1983	581,576	60,886,974	488,476	72,970,855	0	0	17,274	17,274	381,983	84,615,086
1984	592,474	61,879,352	496,468	74,295,203	0	0	17,274	17,274	382,271	87,403,659
1985	598,263	62,543,127	502,890	75,530,009	0	0	17,274	17,274	382,867	89,938,327
1986	601,448	62,893,494	506,297	76,516,266	0	0	17,274	17,274	384,108	93,360,050
1987	604,235	63,195,757	509,223	77,023,532	0	0	17,274	17,274	385,047	96,844,297
1988	605,648	63,349,194	510,708	77,241,468	0	0	17,274	17,274	385,326	99,114,674
1989	605,945	63,381,449	511,019	77,288,200	0	0	17,274	17,274	385,331	99,689,908
1990	605,954	63,382,227	511,026	77,289,432	0	0	17,274	17,274	385,332	100,126,054
1991	606,015	63,387,115	511,065	77,295,820	0	0	17,274	17,274	385,333	100,135,932
1992	606,076	63,392,039	511,104	77,302,148	0	0	17,274	17,274	385,335	100,143,604
1993	606,105	63,394,477	511,124	77,305,204	0	0	17,274	17,274	385,336	100,146,750
1994	606,105	63,394,477	511,124	77,305,204	0	0	17,274	17,274	385,336	100,146,750
1995	606,105	63,394,477	511,124	77,305,204	0	0	17,274	17,274	385,336	100,146,750
1996	606,105	63,394,477	511,124	77,305,204	0	0	17,274	17,274	385,336	100,146,750
1997	606,105	63,394,477	511,124	77,305,204	0	0	17,274	17,274	385,336	100,146,750
1998	606,105	63,394,477	511,124	77,305,204	0	0	17,274	17,274	385,336	100,146,750
1999	606,105	63,394,477	511,124	77,305,204	0	0	17,274	17,274	385,336	100,146,750
2000	606,105	63,394,477	511,124	77,305,204	0	0	17,274	17,274	385,336	100,146,750
2001	606,105	63,394,477	511,124	77,305,204	0	0	17,274	17,274	385,336	100,146,750
2002	606,105	63,394,477	511,124	77,305,204	0	0	17,274	17,274	385,336	100,146,750
2003	606,105	63,394,477	511,124	77,305,204	0	0	17,274	17,274	385,336	100,146,750
2004	606,105	63,394,477	511,124	77,305,204	0	0	17,274	17,274	385,336	100,146,750
2005	606,105	63,394,477	511,124	77,305,204	0	0	17,274	17,274	385,336	100,146,750
2006	606,105	63,394,477	511,124	77,305,204	0	0	17,274	17,274	385,336	100,146,750
2007	606,105	63,394,477	511,124	77,305,204	0	0	17,274	17,274	385,336	100,146,750
2008	606,105	63,394,477	511,124	77,305,204	0	0	17,274	17,274	385,336	100,146,750
2009	606,105	63,394,477	511,124	77,305,204	0	0	17,274	17,274	385,336	100,146,750
2010	606,105	63,394,477	511,124	77,305,204	0	0	17,274	17,274	385,336	100,146,750
2011	606,105	63,394,477	511,124	77,305,204	0	0	17,274	17,274	385,336	100,146,750
2012	606,105	63,394,477	511,124	77,305,204	0	0	17,274	17,274	385,336	100,146,750
2013	597,794	62,687,188	511,124	76,475,885	0	0	17,274	17,274	339,286	98,694,555
2014	592,868	62,104,253	501,632	75,723,939	0	0	17,274	17,274	302,164	97,622,057
2015	584,049	61,166,529	493,085	74,564,162	0	0	16,871	16,871	246,684	95,853,595
2016	567,636	59,411,858	477,109	72,403,794	0	0	16,711	16,711	222,812	93,346,559
2017	533,599	55,532,738	441,596	67,670,439	0	0	16,714	16,714	181,514	88,198,517
2018	483,807	48,703,923	374,687	59,620,363	0	0	16,711	16,711	104,855	79,628,822
2019	415,122	40,977,639	303,336	50,365,101	0	0	14,096	14,096	40,490	70,018,265
2020	325,024	33,642,542	246,501	41,256,508	0	0	2,215	2,215	18,510	60,767,035
2021	212,922	25,155,453	186,541	30,741,624	0	0	1,392	1,392	14,533	50,205,972
2022	148,287	18,150,772	147,796	22,582,454	0	0	12	12	13,706	42,024,213
2023	125,599	15,835,481	144,362	19,903,004	0	0	12	12	12,985	39,304,855
2024	112,214	13,757,905	129,155	17,582,899	0	0	11	11	12,492	36,973,363
2025	98,425	12,766,118	124,588	16,359,942	0	0	8	8	10,694	35,727,465
2026	85,194	11,891,342	120,159	15,290,893	0	0	7	7	10,261	34,289,340
2027	76,906	11,182,900	115,722	14,446,569	0	0	4	4	9,333	33,416,242
2028	71,905	10,568,328	109,914	13,735,178	0	0	3	3	8,172	32,662,367
2029	69,643	9,870,315	101,891	12,971,483	0	0	1	1	6,934	31,871,215
2030	66,961	8,497,367	84,477	11,489,417	0	0	0	0	5,749	30,350,034
2031	56,255	6,323,529	60,648	9,022,575	0	0	0	0	4,988	27,777,652
2032	44,788	4,364,566	38,865	6,729,972	0	0	0	0	3,918	25,345,031
2033	24,529	2,507,503	22,648	4,334,350	0	0	0	0	3,352	22,504,839
2034	13,631	1,515,125	14,655	3,010,001	0	0	0	0	3,064	20,182,176
2035	7,850	851,882	8,231	1,775,821	0	0	0	0	2,477	18,102,679
TOTAL	30,298,223	3,168,944,308	25,548,765	3,864,082,853	0	0	863,692	863,692	19,265,262	5,070,810,253

TABLE B-16: MINIMUM OMP&R COMPONENT OF

(in dollars)

Calendar Year	NORTH BAY AREA			SOUTH BAY AREA				CENTRAL COASTAL AREA		
	Napa County FC & WCD	Solano County FC & WCD	Total	Alameda County FC & WCD, Zone 7	Alameda County Water District	Santa Clara Valley Water District	Total	San Luis Obispo County FC & WCD	Santa Barbara County FC & WCD	Total
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1962	0	0	0	9,699	8,868	0	18,567	0	0	0
1963	0	0	0	38,048	34,788	82,896	155,732	0	0	0
1964	0	0	0	41,148	38,323	91,320	170,791	0	0	0
1965	0	0	0	78,529	75,616	195,792	349,937	0	0	0
1966	0	0	0	79,753	78,779	218,544	377,076	0	0	0
1967	0	0	0	127,896	123,666	335,224	586,786	0	0	0
1968	130	0	130	125,685	120,222	332,693	578,600	11,301	26,385	37,686
1969	80,875	0	80,875	145,063	137,733	371,827	654,623	62,339	145,535	207,874
1970	94,872	0	94,872	128,629	119,913	319,871	568,413	73,343	171,231	244,574
1971	45,579	0	45,579	112,657	107,968	295,103	515,728	73,201	170,898	244,099
1972	37,890	0	37,890	121,971	117,083	333,400	572,454	78,438	183,117	261,555
1973	32,982	0	32,982	122,278	116,364	324,707	563,349	74,962	175,004	249,966
1974	46,478	0	46,478	153,919	146,454	401,934	702,307	75,878	177,145	253,023
1975	37,695	0	37,695	188,600	181,557	512,546	882,703	91,809	214,335	306,144
1976	60,923	0	60,923	202,432	192,853	523,409	918,694	93,958	219,352	313,310
1977	79,964	0	79,964	179,336	168,577	498,929	846,842	108,089	252,343	360,432
1978	59,552	0	59,552	244,010	233,121	657,679	1,134,810	113,402	264,747	378,149
1979	72,207	0	72,207	232,765	227,008	650,902	1,110,675	105,212	245,626	350,838
1980	91,598	0	91,598	294,013	279,613	744,642	1,318,268	137,488	320,973	458,461
1981	101,622	0	101,622	323,494	308,663	830,844	1,463,001	151,285	353,188	504,473
1982	105,842	0	105,842	356,363	340,740	921,793	1,618,896	163,086	380,736	543,822
1983	125,696	0	125,696	430,146	408,789	1,088,119	1,927,054	191,625	447,366	638,991
1984	247,003	187,595	434,598	438,509	416,429	1,106,228	1,961,166	193,381	451,464	644,845
1985	298,683	218,156	516,839	441,129	418,821	1,111,855	1,971,805	194,858	454,914	649,772
1986	297,343	216,379	513,722	445,233	422,569	1,120,742	1,988,544	197,632	461,391	659,023
1987	296,767	214,769	511,536	443,132	420,573	1,115,488	1,979,193	197,617	461,351	658,968
1988	296,329	215,223	511,552	440,582	418,174	1,109,279	1,968,035	254,951	608,716	863,667
1989	294,337	214,645	508,982	436,333	414,228	1,099,426	1,949,987	250,333	596,631	846,964
1990	294,631	215,875	510,506	432,233	410,417	1,089,888	1,932,538	246,237	585,789	832,026
1991	294,677	214,824	509,501	431,454	409,682	1,087,955	1,929,091	245,335	583,531	828,866
1992	298,605	217,067	515,672	436,913	414,824	1,101,314	1,953,051	249,661	593,574	843,235
1993	298,311	216,866	515,177	437,220	415,094	1,101,856	1,954,170	249,840	593,998	843,838
1994	300,973	218,029	519,002	441,211	418,735	1,110,445	1,970,391	250,190	594,812	845,002
1995	301,030	218,079	519,109	438,392	416,160	1,104,326	1,958,878	250,653	595,891	846,544
1996	301,484	218,826	520,310	444,145	421,531	1,117,908	1,983,584	252,232	599,581	851,813
1997	302,611	218,928	521,539	443,809	421,225	1,117,195	1,982,229	252,911	601,179	854,090
1998	304,048	219,587	523,635	444,403	421,772	1,118,516	1,984,691	253,400	602,314	855,714
1999	303,667	219,010	522,677	442,638	420,165	1,114,723	1,977,526	253,473	602,490	855,963
2000	306,106	219,674	525,780	443,370	420,827	1,116,274	1,980,471	253,177	601,795	854,972
2001	305,145	219,734	524,879	442,230	419,788	1,113,807	1,975,825	253,041	601,481	854,522
2002	305,112	219,682	524,794	440,943	418,605	1,110,954	1,970,502	252,320	599,799	852,119
2003	304,122	219,698	523,820	439,953	417,704	1,108,831	1,966,488	252,693	600,672	853,365
2004	304,114	219,686	523,800	439,986	417,736	1,108,916	1,966,638	252,605	600,464	853,069
2005	303,691	219,048	522,739	438,281	416,172	1,105,163	1,959,616	252,040	599,143	851,183
2006	304,165	219,764	523,929	437,852	415,781	1,104,238	1,957,871	251,809	598,607	850,416
2007	316,159	230,865	547,024	475,186	451,836	1,202,752	2,129,774	261,528	621,391	882,919
2008	314,760	230,261	545,021	473,246	450,059	1,198,510	2,121,815	261,390	621,070	882,460
2009	313,780	230,292	544,072	471,750	448,702	1,195,320	2,115,772	261,238	620,710	881,948
2010	313,772	230,280	544,052	471,371	448,355	1,194,475	2,114,201	260,875	619,867	880,742
2011	315,855	231,917	547,772	470,680	447,727	1,193,006	2,111,413	260,928	619,992	880,920
2012	315,860	231,923	547,783	470,056	447,156	1,191,641	2,108,853	262,253	623,104	885,357
2013	314,884	231,961	546,845	469,699	446,839	1,190,927	2,107,465	262,717	624,184	886,901
2014	314,496	231,373	545,869	468,635	445,864	1,188,595	2,103,094	262,195	622,966	885,161
2015	313,517	231,405	544,922	468,299	445,566	1,187,918	2,101,783	262,501	623,687	886,188
2016	311,135	230,830	541,965	462,104	439,893	1,174,354	2,076,351	260,246	618,417	878,663
2017	311,153	230,855	542,008	462,811	440,552	1,175,968	2,079,331	261,067	620,336	881,403
2018	310,728	230,211	540,939	462,313	440,089	1,174,832	2,077,234	260,679	619,425	880,104
2019	310,725	230,208	540,933	462,311	440,088	1,174,845	2,077,244	260,828	619,775	880,603
2020	312,155	230,859	543,014	462,975	440,697	1,176,373	2,080,045	260,841	619,810	880,651
2021	312,250	231,004	543,254	462,894	440,616	1,176,157	2,079,667	260,686	619,448	880,134
2022	298,926	218,312	517,238	415,814	395,236	1,052,685	1,863,735	258,176	613,585	871,761
2023	298,894	218,263	517,157	415,501	394,942	1,051,949	1,862,392	257,747	612,584	870,331
2024	299,396	219,022	518,418	416,462	395,827	1,054,087	1,866,376	258,201	613,646	871,847
2025	299,372	218,984	518,356	416,162	395,551	1,053,418	1,865,131	258,003	613,187	871,190
2026	299,886	219,761	519,647	416,797	396,137	1,054,822	1,867,756	258,116	613,447	871,563
2027	296,775	217,246	514,021	411,187	390,737	1,040,169	1,842,093	243,067	578,134	821,201
2028	296,775	217,246	514,021	410,936	390,504	1,039,606	1,841,046	242,858	577,647	820,505
2029	296,783	217,257	514,040	411,259	390,802	1,040,331	1,842,392	243,091	578,190	821,281
2030	296,765	217,231	513,996	411,018	390,580	1,039,784	1,841,382	242,907	577,769	820,676
2031	296,792	217,273	514,065	411,251	390,797	1,040,316	1,842,364	243,074	578,159	821,233
2032	296,772	217,242	514,014	410,937	390,505	1,039,603	1,841,045	239,861	570,610	810,471
2033	296,780	217,253	514,033	411,262	390,804	1,040,321	1,842,387	239,950	570,821	810,771
2034	296,792	217,273	514,065	411,375	390,911	1,040,603	1,842,889	240,246	571,508	811,754
2035	296,790	217,268	514,058	411,182	390,733	1,040,156	1,842,071	240,059	571,068	811,127
TOTAL	16,805,586	11,495,019	28,300,605	26,651,858	25,341,815	67,651,024	119,644,697	14,551,133	34,492,105	49,043,238

a) Unadjusted for prior overpayments or underpayments of charges.

TRANSPORTATION CHARGE FOR EACH CONTRACTOR[a]

(in dollars)

Calendar Year	SAN JOAQUIN VALLEY AREA									
	Devil's Den Water District	Dudley Ridge Water District	Empire West Side Irrigation District	Hacienda Water District	Kern County Water Agency		County of Kings	Oak Flat Water District	Tulare Lake Basin Water Storage District	Total
					Municipal and Industrial	Agricultural				
	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
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	8,041	36,338	1,887	5,353	58,341	651,729	1,931	1,991	69,223	834,834
1969	43,785	43,699	2,147	6,436	77,387	1,162,371	2,197	2,004	80,787	1,420,813
1970	51,493	45,125	2,202	6,647	92,840	1,341,516	2,253	2,073	83,094	1,627,243
1971	51,397	46,118	2,222	6,792	102,429	1,596,223	2,274	2,198	84,369	1,894,022
1972	55,068	47,896	2,320	7,055	117,421	1,677,066	2,372	2,165	87,821	1,999,184
1973	52,635	48,021	2,290	7,074	120,508	1,666,218	2,343	2,218	87,361	1,988,668
1974	53,286	50,716	2,453	7,471	130,200	1,765,701	2,511	2,429	92,978	2,107,745
1975	64,481	64,290	3,113	9,473	156,177	2,164,472	3,184	3,065	117,901	2,586,156
1976	65,984	63,624	3,185	9,375	152,287	2,142,078	3,256	2,789	118,790	2,561,368
1977	75,910	72,783	3,667	10,721	182,407	2,421,489	3,751	3,571	136,372	2,910,671
1978	79,625	71,753	3,562	10,570	178,400	2,420,825	3,644	3,747	133,363	2,905,489
1979	73,860	63,023	3,141	9,283	160,263	2,201,831	3,213	3,210	117,379	2,635,203
1980	96,601	105,837	5,281	15,591	258,895	3,319,601	5,399	5,783	197,234	4,010,222
1981	106,251	104,303	5,161	15,364	253,174	3,376,421	5,279	5,686	193,531	4,065,170
1982	114,502	102,476	5,032	15,095	248,881	3,434,978	5,146	5,427	189,321	4,120,858
1983	134,613	141,062	7,012	20,781	357,300	4,491,093	7,171	7,563	262,354	5,428,949
1984	135,861	146,354	7,283	21,560	370,309	4,617,865	7,448	7,817	272,362	5,586,859
1985	136,906	148,900	7,412	21,935	374,438	4,669,901	7,581	7,983	277,160	5,652,216
1986	138,868	154,981	7,725	22,831	389,336	4,818,695	7,902	8,315	288,688	5,837,341
1987	138,859	155,479	7,750	22,901	390,222	4,827,455	7,926	8,347	289,611	5,848,550
1988	145,434	154,683	7,712	22,785	387,893	4,748,584	7,887	8,360	288,149	5,771,487
1989	144,551	154,508	7,701	22,758	387,927	4,740,672	7,876	8,357	287,784	5,762,134
1990	143,459	151,922	7,571	22,379	383,841	4,688,730	7,742	8,173	282,936	5,696,753
1991	142,988	151,581	7,551	22,330	383,187	4,678,532	7,723	8,206	282,270	5,684,368
1992	145,112	151,382	7,536	22,301	384,399	4,704,841	7,708	8,151	281,799	5,713,229
1993	145,267	152,261	7,580	22,429	385,767	4,720,984	7,752	8,209	283,418	5,733,667
1994	145,522	151,861	7,562	22,371	384,957	4,715,731	7,733	8,147	282,696	5,726,580
1995	145,849	153,607	7,649	22,629	388,068	4,749,301	7,824	8,293	285,962	5,769,182
1996	146,816	154,241	7,680	22,721	389,148	4,769,247	7,854	8,308	287,141	5,793,156
1997	146,982	153,068	7,619	22,549	388,025	4,757,072	7,793	8,210	284,902	5,776,220
1998	147,323	153,782	7,656	22,654	389,132	4,771,796	7,830	8,253	286,235	5,794,661
1999	147,381	154,664	7,696	22,784	390,724	4,788,605	7,873	8,311	287,852	5,815,890
2000	147,166	153,047	7,616	22,546	387,847	4,758,065	7,791	8,181	284,836	5,777,095
2001	147,075	153,512	7,638	22,614	388,073	4,761,492	7,815	8,248	285,697	5,782,164
2002	146,564	152,232	7,577	22,425	385,925	4,734,609	7,751	8,178	283,327	5,748,588
2003	146,831	153,745	7,651	22,649	388,330	4,762,050	7,827	8,298	286,143	5,783,524
2004	146,768	153,404	7,634	22,597	387,813	4,756,225	7,808	8,259	285,478	5,775,986
2005	146,368	152,506	7,589	22,467	386,085	4,735,644	7,762	8,223	283,815	5,750,459
2006	146,206	152,053	7,566	22,398	385,307	4,726,695	7,739	8,179	282,944	5,739,087
2007	150,991	158,298	7,874	23,319	402,846	4,942,138	8,055	8,457	294,535	5,996,513
2008	150,895	158,702	7,897	23,379	402,603	4,941,099	8,077	8,560	295,344	5,996,556
2009	150,786	158,044	7,860	23,283	401,341	4,929,864	8,039	8,452	294,007	5,981,676
2010	150,530	157,065	7,810	23,138	399,387	4,908,778	7,989	8,393	292,179	5,955,269
2011	150,568	157,020	7,806	23,130	399,584	4,910,710	7,984	8,367	292,063	5,957,232
2012	151,090	157,036	7,803	23,131	399,959	4,918,936	7,981	8,376	292,042	5,966,354
2013	151,417	158,068	7,854	23,286	402,021	4,942,267	8,034	8,427	293,936	5,995,310
2014	151,049	156,568	7,780	23,064	398,968	4,910,088	7,957	8,324	291,120	5,954,918
2015	151,263	156,905	7,793	23,115	399,093	4,915,612	7,972	8,343	291,721	5,961,817
2016	149,669	152,716	7,578	22,496	388,412	4,806,931	7,752	8,096	283,791	5,827,441
2017	150,250	154,201	7,651	22,716	391,482	4,842,693	7,828	8,175	286,543	5,871,539
2018	149,973	153,260	7,606	22,577	389,647	4,822,075	7,779	8,120	284,805	5,845,842
2019	150,080	153,616	7,624	22,628	390,374	4,830,032	7,798	8,146	285,465	5,855,763
2020	150,092	153,853	7,634	22,665	390,953	4,835,781	7,808	8,145	285,894	5,862,825
2021	149,979	153,257	7,605	22,577	389,727	4,822,701	7,779	8,119	284,799	5,846,543
2022	148,195	145,263	7,187	21,400	372,373	4,621,969	7,352	7,616	269,526	5,600,881
2023	147,891	144,222	7,138	21,246	370,416	4,599,704	7,300	7,559	267,597	5,573,073
2024	148,211	145,097	7,180	21,375	371,925	4,617,840	7,344	7,615	269,230	5,595,817
2025	148,074	144,565	7,154	21,296	371,113	4,608,074	7,317	7,576	268,232	5,583,401
2026	148,152	144,831	7,167	21,337	371,659	4,614,066	7,332	7,593	268,728	5,590,865
2027	141,370	142,219	7,060	20,949	360,108	4,459,013	7,219	7,499	264,289	5,409,726
2028	141,222	141,697	7,033	20,873	359,204	4,448,454	7,193	7,467	263,325	5,396,468
2029	141,389	142,302	7,064	20,961	360,215	4,460,297	7,224	7,508	264,452	5,411,412
2030	141,258	141,855	7,041	20,896	359,362	4,450,686	7,201	7,482	263,622	5,399,403
2031	141,377	142,260	7,059	20,957	360,186	4,459,749	7,221	7,504	264,375	5,410,688
2032	139,944	141,492	7,029	20,842	357,385	4,421,532	7,189	7,468	263,064	5,365,945
2033	140,011	141,707	7,038	20,873	357,824	4,426,394	7,200	7,478	263,465	5,371,990
2034	140,218	142,423	7,074	20,982	359,243	4,442,137	7,235	7,517	264,789	5,391,618
2035	140,086	141,977	7,052	20,913	358,297	4,431,874	7,213	7,496	263,964	5,378,872
TOTAL	8,717,718	8,961,356	445,080	1,320,098	22,559,370	281,177,897	455,241	474,803	16,659,985	340,771,548

TABLE B-16: MINIMUM OMP&R COMPONENT OF

(in dollars)

Calendar Year	SOUTHERN CALIFORNIA AREA									
	Antelope Valley East Kern Water Agency	Castaic Lake Water Agency	Coachella Valley Water District	Crestline Lake Arrowhead Water Agency	Desert Water Agency	Littlerock Creek Irrigation District	Mojave Water Agency	Palmdale Water District	San Bernardino Valley Municipal Water District	San Gabriel Valley Municipal Water District
	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)
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	62,545	18,955	11,243	2,845	18,543	1,046	23,432	7,855	50,282	13,841
1969	82,944	25,138	14,912	3,771	24,590	1,388	31,075	10,418	66,689	18,357
1970	103,528	31,373	18,620	4,710	30,710	1,732	38,786	13,001	83,284	22,917
1971	171,666	52,027	30,938	7,828	51,023	2,875	64,320	21,561	138,370	38,050
1972	348,454	142,287	101,814	29,522	167,912	6,316	203,233	46,061	522,520	137,406
1973	387,097	165,860	114,621	32,698	189,038	7,004	229,964	51,502	681,793	179,032
1974	415,822	177,466	122,384	34,571	201,832	7,312	246,454	53,746	730,828	192,709
1975	482,624	223,143	140,823	40,087	232,249	8,640	282,969	62,513	836,915	221,037
1976	533,562	196,151	149,709	41,248	246,903	9,519	303,613	69,652	889,679	236,933
1977	647,864	261,571	173,748	44,805	286,542	11,359	358,479	83,554	997,484	270,459
1978	642,748	321,124	190,156	54,255	313,612	11,353	381,092	83,311	1,149,985	302,525
1979	613,005	270,649	177,623	47,544	292,938	11,100	362,713	80,253	1,012,276	271,670
1980	979,517	390,322	250,645	66,307	413,367	17,186	513,304	126,804	1,336,521	360,460
1981	853,392	368,342	235,228	67,527	387,933	15,122	470,603	110,728	1,391,899	366,034
1982	755,993	337,746	216,726	63,127	357,429	13,577	431,820	98,406	1,335,789	349,677
1983	1,532,365	697,114	420,564	128,243	693,608	26,841	824,608	197,155	2,492,116	642,910
1984	1,606,469	645,483	433,086	121,052	714,247	28,218	872,632	207,140	2,358,900	624,808
1985	1,603,879	736,863	446,125	136,900	735,764	28,195	872,814	206,913	2,640,505	679,776
1986	1,734,553	640,862	453,839	127,101	748,475	29,612	913,885	217,409	2,465,868	652,755
1987	1,727,251	773,860	434,264	102,804	716,176	29,654	914,703	217,673	2,033,835	568,597
1988	1,714,515	754,660	475,620	156,620	784,412	29,465	907,654	216,271	2,990,169	753,951
1989	1,716,898	637,802	447,927	123,780	738,721	29,529	905,544	216,709	2,406,337	639,681
1990	1,720,063	691,515	444,308	119,834	732,752	29,570	904,521	217,054	2,336,111	625,795
1991	1,717,407	740,642	450,378	128,422	742,768	29,535	902,002	216,783	2,488,782	655,146
1992	1,737,331	832,008	457,584	132,277	754,654	29,756	912,600	218,453	2,561,243	671,360
1993	1,734,904	703,632	471,464	151,091	777,557	29,748	908,639	218,308	2,895,641	735,918
1994	1,733,174	730,668	446,515	124,587	736,394	29,689	900,158	217,940	2,424,642	642,576
1995	1,736,185	739,067	445,148	122,266	734,136	29,766	901,558	218,444	2,383,384	634,764
1996	1,734,003	716,005	462,759	144,579	763,196	29,716	899,858	218,092	2,780,226	711,903
1997	1,743,370	733,331	436,304	110,545	719,550	29,880	903,528	219,289	2,175,353	594,532
1998	1,740,584	736,082	464,825	146,355	766,608	29,824	901,460	218,898	2,811,795	718,342
1999	1,740,510	684,198	453,146	131,293	747,336	29,861	903,165	219,091	2,544,085	666,403
2000	1,738,237	783,442	449,681	129,288	741,624	29,792	898,399	218,621	2,508,524	658,649
2001	1,730,429	726,918	426,876	102,214	703,994	29,670	896,715	217,708	2,027,440	564,505
2002	1,733,161	709,400	468,683	153,406	772,974	29,708	896,461	218,005	2,937,147	741,936
2003	1,729,833	687,446	451,013	132,106	743,819	29,663	895,864	217,663	2,558,590	667,980
2004	1,727,185	804,190	439,013	118,403	724,018	29,604	893,821	217,231	2,315,082	620,126
2005	1,727,836	672,583	447,827	128,842	738,561	29,632	894,502	217,410	2,500,659	656,445
2006	1,724,663	693,976	455,177	138,848	750,690	29,571	892,313	216,956	2,678,480	690,759
2007	1,810,720	694,517	467,094	133,355	770,332	30,814	935,210	226,140	2,590,551	681,645
2008	1,802,747	922,469	466,109	134,653	768,712	30,676	929,879	225,121	2,613,655	685,235
2009	1,792,766	702,453	461,400	129,379	760,941	30,550	928,843	224,066	2,519,989	666,786
2010	1,788,818	789,748	461,152	130,186	760,536	30,470	926,471	223,518	2,534,375	669,182
2011	1,791,464	745,408	470,187	139,797	775,441	30,547	929,521	224,001	2,705,076	703,013
2012	1,791,982	784,358	467,253	136,010	770,596	30,557	929,951	224,072	2,637,781	689,953
2013	1,794,388	749,099	462,640	128,651	762,990	30,634	933,632	224,559	2,507,021	665,076
2014	1,787,752	735,412	463,180	130,289	763,879	30,532	931,529	223,775	2,536,147	670,396
2015	1,778,338	794,705	459,927	127,575	758,518	30,391	928,860	222,670	2,487,857	660,519
2016	1,720,869	720,311	464,681	145,729	766,366	29,416	902,463	215,384	2,810,818	718,995
2017	1,725,722	792,739	453,282	129,966	747,559	29,521	906,397	216,122	2,530,641	665,012
2018	1,724,801	739,750	461,099	139,904	760,457	29,497	905,557	215,963	2,707,269	699,323
2019	1,726,601	751,682	447,514	122,364	738,045	29,541	907,584	216,252	2,395,518	638,851
2020	1,728,015	747,698	448,901	123,188	740,319	29,575	909,425	216,491	2,410,147	642,021
2021	1,725,396	768,863	471,516	152,409	777,639	29,502	906,025	216,016	2,929,485	742,756
2022	1,675,745	696,547	442,558	125,068	729,866	28,705	888,812	209,975	2,443,784	645,046
2023	1,675,074	676,610	446,266	130,087	735,985	28,676	887,760	209,810	2,533,000	662,267
2024	1,673,572	757,787	449,038	134,064	740,562	28,649	886,514	209,606	2,603,642	675,834
2025	1,674,711	755,337	442,951	126,469	730,522	28,663	886,852	209,725	2,468,669	649,561
2026	1,675,949	729,287	447,785	132,076	738,497	28,691	887,495	209,917	2,568,319	669,111
2027	1,578,374	692,097	410,258	111,737	676,600	27,415	832,939	200,634	2,188,652	584,440
2028	1,579,445	677,846	403,275	102,828	665,079	27,434	833,752	200,769	2,030,225	553,671
2029	1,578,403	659,678	436,835	144,193	720,453	27,416	832,967	200,642	2,765,381	696,960
2030	1,577,209	655,059	426,088	131,703	702,711	27,385	831,591	200,437	2,543,466	653,430
2031	1,579,390	693,025	405,307	105,352	668,427	27,436	833,661	200,778	2,075,090	562,410
2032	1,569,520	778,026	413,436	117,781	681,843	27,247	828,312	199,428	2,296,102	604,611
2033	1,570,239	682,767	431,257	139,413	711,245	27,267	828,606	199,539	2,680,519	679,657
2034	1,572,063	690,293	409,715	112,159	675,706	27,310	830,620	199,835	2,196,164	585,507
2035	1,570,481	661,320	429,562	137,092	708,453	27,276	829,148	199,601	2,639,285	671,705
TOTAL	97,206,120	41,498,792	25,651,582	7,405,178	42,304,934	1,673,821	51,189,637	12,269,427	144,487,856	37,893,697

TRANSPORTATION CHARGE FOR EACH CONTRACTOR[a]

(in dollars)

Calendar Year	SOUTHERN CALIFORNIA AREA (continued)				FEATHER RIVER AREA				FUTURE CONTRACTOR	GRAND TOTAL
	San Gorgonio Pass Water Agency	The Metropolitan Water District of Southern California	Ventura County Flood Control District	Total	City of Yuba City	County of Butte	Plumas County FC & WCD	Total	South Bay	
	(31)	(32)	(33)	(34)	(35)	(36)	(37)	(38)	(39)	(40)
1962	0	0	0	0	0	0	0	0	0	18,567
1963	0	0	0	0	0	0	0	0	12,626	168,358
1964	0	0	0	0	0	0	0	0	13,938	184,729
1965	0	0	0	0	0	0	0	0	28,937	378,874
1966	0	0	0	0	0	0	0	0	31,321	408,397
1967	0	0	0	0	0	0	0	0	47,719	634,505
1968	8,478	934,915	9,135	1,163,115	0	0	0	0	46,811	2,661,176
1969	11,246	1,244,656	12,117	1,547,301	0	0	0	0	52,838	3,964,324
1970	14,042	1,560,072	15,122	1,937,897	0	0	0	0	69,614	4,542,613
1971	23,330	2,607,897	25,073	3,234,958	0	0	54	54	55,384	5,989,824
1972	84,980	7,733,206	66,052	9,589,763	0	0	40	40	80,250	12,541,136
1973	110,878	9,525,857	76,435	11,751,779	0	0	1	1	54,048	14,640,793
1974	119,280	11,050,812	81,602	13,434,818	0	0	143	143	76,592	16,621,106
1975	136,838	13,088,406	100,934	15,857,178	0	0	1,068	1,068	84,337	19,755,281
1976	146,485	12,391,611	94,513	15,309,578	0	0	139	139	106,564	19,270,576
1977	166,819	15,640,708	120,643	19,064,035	0	0	893	893	98,421	23,361,258
1978	187,377	18,345,030	140,513	22,123,081	0	0	39	39	102,441	26,703,561
1979	167,689	15,671,457	121,959	19,100,876	0	0	3,158	3,158	122,288	23,395,245
1980	222,361	22,217,873	179,728	27,074,395	0	0	200	200	150,906	33,104,050
1981	226,765	21,280,995	166,175	25,940,743	0	0	200	200	166,387	32,241,596
1982	216,792	19,972,616	151,895	24,301,593	0	0	200	200	184,137	30,875,348
1983	399,329	40,199,516	313,793	48,568,162	0	0	200	200	216,203	56,905,255
1984	386,332	37,110,130	300,401	45,408,898	0	0	200	200	220,095	54,256,661
1985	422,342	40,744,190	330,131	49,584,397	0	0	200	200	221,841	58,597,070
1986	403,639	38,156,335	302,745	46,847,078	0	0	200	200	223,527	56,069,435
1987	348,474	42,078,599	346,308	50,292,198	0	0	200	200	222,820	59,513,465
1988	470,102	42,604,189	339,507	52,197,135	0	0	200	200	221,541	61,533,617
1989	395,278	39,485,138	301,498	48,044,842	0	0	200	200	220,213	57,333,322
1990	386,207	37,969,518	319,343	46,496,591	0	0	200	200	218,104	55,686,718
1991	405,503	42,724,250	335,334	51,536,952	0	0	200	200	217,954	60,706,932
1992	415,836	46,169,180	366,114	55,258,396	0	0	200	200	219,997	64,503,780
1993	458,234	41,335,902	324,054	50,745,092	0	0	200	200	220,314	60,012,458
1994	397,274	42,155,439	332,988	50,872,044	0	0	200	200	221,594	60,154,813
1995	392,122	40,930,073	335,886	49,602,799	0	0	200	200	220,663	58,917,375
1996	442,705	41,816,814	328,257	51,048,113	0	0	200	200	223,323	60,420,499
1997	365,702	40,480,251	334,417	48,846,052	0	0	200	200	222,908	58,203,238
1998	446,883	43,756,717	335,185	53,073,558	0	0	200	200	223,364	62,455,823
1999	412,810	38,646,400	318,149	47,496,447	0	0	200	200	223,169	56,891,872
2000	407,845	42,876,841	350,611	51,791,554	0	0	200	200	223,101	61,153,173
2001	346,196	40,963,081	331,673	49,067,419	0	0	200	200	222,842	58,427,851
2002	462,465	41,403,079	326,141	50,852,566	0	0	200	200	221,957	60,170,726
2003	414,019	40,122,834	318,767	48,969,597	0	0	200	200	221,980	58,318,974
2004	382,709	44,482,037	356,852	53,110,271	0	0	200	200	222,054	62,452,018
2005	406,494	38,509,450	313,843	47,244,084	0	0	200	200	221,160	56,549,441
2006	429,036	41,895,665	320,699	50,916,833	0	0	200	200	221,096	60,209,432
2007	421,932	40,088,201	325,328	49,175,839	0	0	200	200	238,781	58,971,050
2008	424,413	49,191,459	399,588	58,594,716	0	0	200	200	238,009	68,378,777
2009	412,348	41,033,895	327,020	49,990,436	0	0	200	200	238,039	59,752,143
2010	413,979	43,971,153	355,425	53,055,013	0	0	200	200	237,732	62,787,209
2011	436,068	42,127,033	341,023	51,418,579	0	0	200	200	237,759	61,153,875
2012	427,501	43,928,463	353,788	53,172,265	0	0	200	200	237,524	62,918,336
2013	411,112	42,489,130	342,307	51,501,239	0	0	200	200	237,944	61,275,904
2014	414,652	43,010,553	337,500	52,035,596	0	0	200	200	237,423	61,762,261
2015	408,242	43,332,158	356,401	52,346,161	0	0	200	200	237,774	62,078,845
2016	447,206	42,984,153	329,186	52,255,577	0	0	200	200	235,136	61,815,333
2017	411,733	43,554,221	353,090	52,516,005	0	0	200	200	235,913	62,126,399
2018	434,241	42,588,399	335,725	51,741,985	0	0	200	200	235,331	61,321,635
2019	394,563	42,546,531	339,692	51,254,738	0	0	200	200	235,494	60,844,975
2020	396,598	41,454,278	338,430	50,185,086	0	0	200	200	236,703	59,788,524
2021	462,687	44,728,005	345,277	54,255,576	0	0	200	200	236,348	63,841,722
2022	399,082	39,800,457	318,263	48,403,908	0	0	200	200	214,650	57,472,373
2023	410,397	39,790,158	311,739	48,497,829	0	0	200	200	214,091	57,535,073
2024	419,319	43,018,674	338,231	51,935,492	0	0	200	200	214,759	61,002,909
2025	402,095	41,878,418	337,496	50,591,469	0	0	200	200	214,513	59,644,260
2026	414,891	41,619,736	329,028	50,450,782	0	0	200	200	214,851	59,515,664
2027	360,888	38,707,021	312,824	46,683,879	0	0	200	200	212,140	55,483,260
2028	340,706	37,721,136	308,214	45,444,380	0	0	200	200	211,895	54,228,515
2029	434,621	39,247,724	302,217	48,047,490	0	0	200	200	212,191	56,849,006
2030	406,127	38,382,497	300,655	46,838,358	0	0	200	200	211,935	55,625,950
2031	346,432	38,417,959	313,177	46,228,444	0	0	200	200	212,215	55,029,209
2032	374,216	42,113,549	340,556	50,344,627	0	0	200	200	211,876	59,088,178
2033	423,384	39,782,646	309,412	48,465,951	0	0	200	200	212,072	57,217,404
2034	361,644	38,651,583	311,937	46,624,536	0	0	200	200	212,381	55,397,443
2035	418,162	38,888,731	302,393	47,483,209	0	0	200	200	212,140	56,241,677
TOTAL	23,470,135	2,364,929,660	18,860,514	2,868,841,353	0	0	16,735	16,735	13,434,998	3,420,053,174

TABLE B-17: UNIT VARIABLE OMP&R COMPONENT

(in dollars per acre-foot)[b]

Calendar Year	NORTH BAY AQUEDUCT				SOUTH BAY AQUEDUCT		CALIFORNIA AQUEDUCT			
	Reach 1		Reach 3		Reach 1		Reach 1		Reach 4	
	Calhoun and Travis Pumping Plants		Cordelia Pumping Plant[c]		South Bay and Del Valle Pumping Plant[d]		Delta Pumping Plant		Dos Amigos Pumping Plant	
	Unit Rate	Cumulative Unit Rate	Unit Rate	Cumulative Unit Rate	Unit Rate	Cumulative Unit Rate	Unit Rate	Cumulative Unit Rate	Unit Rate	Cumulative Unit Rate
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1962	0	0	0	0	4.1511341	4.1511341	0	0	0	0
1963	0	0	0	0	4.5639383	4.5639383	0	0	0	0
1964	0	0	0	0	3.5452154	3.5452154	0	0	0	0
1965	0	0	0	0	4.1911773	4.1911773	0	0	0	0
1966	0	0	0	0	3.5074573	3.5074573	0	0	0	0
1967	0	0	0	0	3.9306767	5.1337448	1.2030681	1.2030681	0	0
1968	0	0	5.7570016	5.7570016	3.3315620	4.8658936	1.5343316	1.5343316	1.0686976	2.6030292
1969	0	0	3.1823595	3.1823595	3.6949019	4.7914519	1.0965500	1.0965500	.6939369	1.7904869
1970	0	0	3.7584301	3.7584301	4.4256141	5.3647728	.9391587	.9391587	.7750129	1.7141716
1971	0	0	4.2082507	4.2082507	3.8714396	4.7481431	.8767035	.8767035	.4093968	1.2861003
1972	0	0	3.9577735	3.9577735	4.3250690	5.2255579	.9004889	.9004889	.5643464	1.4648353
1973	0	0	3.8103903	3.8103903	5.2455409	6.1805866	.9350457	.9350457	.5970606	1.5321063
1974	0	0	3.5878850	3.5878850	6.3321503	7.2263003	.8941500	.8941500	.5714959	1.4656459
1975	0	0	2.1606725	2.1606725	3.7365711	4.8305677	1.0939966	1.0939966	.4591787	1.5531753
1976	0	0	2.9283909	2.9283909	4.5191527	5.7245717	1.2054190	1.2054190	.5155282	1.7209472
1977	0	0	2.7456844	2.7456844	4.7519869	6.5112716	1.7592847	1.7592847	.5939005	2.3531852
1978	0	0	3.5982764	3.5982764	5.2120561	6.8224862	1.6104301	1.6104301	.4629980	2.0734281
1979	0	0	3.0263679	3.0263679	4.8356085	7.2155327	2.3799242	2.3799242	.7844925	3.1644167
1980	0	0	3.1818182	3.1818182	4.5104080	5.6726305	1.1622225	1.1622225	.7567645	1.9189870
1981	0	0	3.5901272	3.5901272	4.9626755	6.5350039	1.5723284	1.5723284	.7966050	2.3689334
1982	0	0	3.7453184	3.7453184	5.1575050	6.6637376	1.5062326	1.5062326	.8536436	2.3598762
1983	0	0	12.2962963	12.2962963	17.9031266	24.9410485	7.0379219	7.0379219	2.8689580	9.9068799
1984	5.0403967	5.0403967	24.4780418	29.5184385	21.9123932	30.1009576	8.1885644	8.1885644	3.9886121	12.1771765
1985	3.4814224	3.4814224	22.8848821	26.3663045	24.4871471	34.1160772	9.6289301	9.6289301	4.2461043	13.8750344
1986	4.0672195	4.0672195	24.3641232	28.4313427	25.0026838	35.5220331	10.5193493	10.5193493	4.9935960	15.5129453
1987	4.1115329	4.1115329	25.0325945	29.1441274	25.1759285	36.4503688	11.2744403	11.2744403	5.0858686	16.3603089
1988	5.0748521	5.0748521	25.7614213	30.8362734	25.3499087	35.7623056	10.4123969	10.4123969	5.0965844	15.5089813
1989	5.3063685	5.3063685	26.2376238	31.5439923	25.5134007	37.4455315	11.9321308	11.9321308	5.1760555	17.1081863
1990	6.8212948	6.8212948	26.5060241	33.3273189	24.6920426	35.3159942	10.6239516	10.6239516	5.0648722	15.6888238
1991	6.6284770	6.6284770	27.2101033	33.8385803	25.0383834	36.5846848	11.5463014	11.5463014	4.8556169	16.4019183
1992	6.8157170	6.8157170	27.9299014	34.7456184	25.6306187	35.1104706	9.4798519	9.4798519	4.7351830	14.2150349
1993	7.0318932	7.0318932	28.9308176	35.9627108	25.9140823	36.8992643	10.9851820	10.9851820	4.8864304	15.8716124
1994	7.6001100	7.6001100	30.9236948	38.5238048	27.3276294	37.3721267	10.0444973	10.0444973	4.8728250	14.9173223
1995	7.6797360	7.6797360	31.2439730	38.9237090	25.8075370	37.4597309	11.6521939	11.6521939	4.9530587	16.6052526
1996	7.1370411	7.1370411	27.5229358	34.6599769	27.7131400	39.0760282	11.3628882	11.3628882	4.9284339	16.2913221
1997	7.1950300	7.1950300	27.7583187	34.9533487	27.5197114	37.6350835	10.1153721	10.1153721	4.9880081	15.1033802
1998	7.4663129	7.4663129	28.8702929	36.3366058	27.9164628	38.7107698	10.7943070	10.7943070	4.9822161	15.7765231
1999	7.5765663	7.5765663	29.2702486	36.8468149	27.8869203	40.3721661	12.4852458	12.4852458	5.1507717	17.6360175
2000	7.8714865	7.8714865	30.0769231	37.9484096	28.1999484	38.8846227	10.6846743	10.6846743	5.0605541	15.7452284
2001	8.1541678	8.1541678	29.6380090	37.7921768	28.4585681	39.7206818	11.2621137	11.2621137	5.1180259	16.3801396
2002	7.9116382	7.9116382	29.1420118	37.0536500	28.0082417	37.5846597	9.5764180	9.5764180	5.1004791	14.6768971
2003	7.9859387	7.9859387	28.8184438	36.8043825	27.8587546	39.1840619	11.3253073	11.3253073	5.1400229	16.4653302
2004	7.9290859	7.9290859	28.6421499	36.5712358	27.9165659	39.6525250	11.7359591	11.7359591	5.0267821	16.7627412
2005	7.7536175	7.7536175	28.2638889	36.0175064	27.6739198	38.1055266	10.4316068	10.4316068	5.1431309	15.5747377
2006	8.2957935	8.2957935	28.1718963	36.4676898	27.9669741	38.7048036	10.7378295	10.7378295	5.0826867	15.8205162
2007	8.2344747	8.2344747	28.0160858	36.2505605	28.0702568	39.3874419	11.3171851	11.3171851	5.1282577	16.4454428
2008	8.2269929	8.2269929	28.1413613	36.3683542	28.4132125	38.6943856	10.2811731	10.2811731	5.1613509	15.4425240
2009	8.3725181	8.3725181	28.8288288	37.2013469	29.0283150	41.3067783	12.2784633	12.2784633	5.3732715	17.6517348
2010	8.3150078	8.3150078	28.8607595	37.1757673	29.6408575	40.9469217	11.3060642	11.3060642	5.3536237	16.6596879
2011	10.3710101	10.3710101	31.5723270	41.9433371	30.2556681	42.2161032	11.9604351	11.9604351	5.5443642	17.5047993
2012	10.4023938	10.4023938	31.8750000	42.2773938	30.4638033	42.0722754	11.6084721	11.6084721	5.5860031	17.1944752
2013	10.5807872	10.5807872	32.6708075	43.2515947	31.3009065	44.6605029	13.3595964	13.3595964	5.7949588	19.1545552
2014	10.6489210	10.6489210	33.0061350	43.6550560	32.0629426	44.1650949	12.1021523	12.1021523	5.9184581	18.0206104
2015	10.7985939	10.7985939	33.6585366	44.4571305	32.9807736	46.3250428	13.3442692	13.3442692	5.9635492	19.3078184
2016	10.9242090	10.9242090	32.6666667	43.5908757	32.0800664	44.0153213	11.9352549	11.9352549	5.8471132	17.7823681
2017	11.0466344	11.0466344	33.2530120	44.2996464	32.9545578	46.9063998	13.9518420	13.9518420	5.9635047	19.9153467
2018	10.8498109	10.8498109	32.8742515	43.7240624	32.4729054	44.8836716	12.4107662	12.4107662	5.9915067	18.4022729
2019	10.8318752	10.8318752	32.8994083	43.7312835	32.7778785	45.6785158	12.9006373	12.9006373	5.9848247	18.8854620
2020	11.0640837	11.0640837	34.9411765	46.0052602	33.4069424	46.8787599	13.4718175	13.4718175	6.1080817	19.5798992
2021	11.7490526	11.7490526	34.4444444	46.1934970	32.8220714	45.3896762	12.5676048	12.5676048	5.9019078	18.4695126
2022	11.7227118	11.7227118	34.5930233	46.3157351	33.0299195	46.6794200	13.6495005	13.6495005	5.9925279	19.6420284
2023	11.4927677	11.4927677	34.1040462	45.5968139	32.4925119	44.6293333	12.1368214	12.1368214	5.9118813	18.0487027
2024	12.2366704	12.2366704	34.1714286	46.4080990	33.3387887	46.5957561	13.2569674	13.2569674	5.8683668	19.1253342
2025	12.0608529	12.0608529	33.8636364	45.9244893	33.1053320	45.9419071	12.8365751	12.8365751	5.8357557	18.6723308
2026	12.8916757	12.8916757	35.9887006	48.8803763	33.8296968	47.0070000	13.1773032	13.1773032	5.8558419	19.0331451
2027	12.8021441	12.8021441	35.7062147	48.5083588	33.5789894	46.4882980	12.9093086	12.9093086	5.7702898	18.6795984
2028	12.8021441	12.8021441	35.7627119	48.5648560	33.5894362	45.7474131	12.1579769	12.1579769	5.7522699	17.9102468
2029	12.8558559	12.8558559	35.8757062	48.7315621	33.7043404	46.6122257	12.9078853	12.9078853	5.6962698	18.6041551
2030	12.7305225	12.7305225	35.5367232	48.2672457	33.3857394	45.8006394	12.4149000	12.4149000	5.6067819	18.0216819
2031	12.9274775	12.9274775	36.0451977	48.9726752	33.8923723	46.7338333	12.8414610	12.8414610	5.6741589	18.5156199
2032	12.7842523	12.7842523	35.7062147	48.4904670	33.5424309	45.6602573	12.1178264	12.1178264	5.5275923	17.6454187
2033	12.8379640	12.8379640	35.8192090	48.6571730	33.6573351	46.0643540	12.4070189	12.4070189	5.5602471	17.9672660
2034	12.9274775	12.9274775	36.0451977	48.9726752	33.9028191	47.3142807	13.4114616	13.4114616	5.6295719	19.0410335
2035	12.9095856	12.9095856	35.9887006	48.8982862	33.8296968	46.4967497	12.6670529	12.6670529	5.6090577	18.2761106

a) Unit rates as shown constitute the rate for the indicated pumping plants, powerplants, and reservoirs. Cumulative unit rates as shown constitute the total rate, cumulative from the Sacramento-San Joaquin Delta, applicable to deliveries from or downstream of the indicated pumping plants and powerplants. Excludes extra peaking service costs.

b) Metric conversion is dollars per acre-foot times .8107 equals dollars per cubic dekametre.

c) For the period 1968 through 1983, rates are for an interim facility.

OF TRANSPORTATION CHARGE[a]

(in dollars per acre-foot)[b]

Calendar Year	CALIFORNIA AQUEDUCT (Continued)											
	Reach 14A		Reach 15A		Reach 16A		Reach 17E		Reach 18A		Reach 22B	
	Buena Vista Pumping Plant		Wheeler Ridge Pumping Plant		Wind Gap Pumping Plant		A.D. Edmonston Pumping Plant		Cottonwood Powerplant		Pearblossom Pumping Plant	
	Unit Rate	Cumulative Unit Rate	Unit Rate	Cumulative Unit Rate	Unit Rate	Cumulative Unit Rate	Unit Rate	Cumulative Unit Rate	Unit Rate	Cumulative Unit Rate	Unit Rate	Cumulative Unit Rate
	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)
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	.3333333	2.0475049	0	0	0	0	0	0	0	0	0	0
1971	1.3439298	2.6300301	4.6711712	7.3012013	0	0	0	0	0	0	0	0
1972	1.0672954	2.5321307	1.1178389	3.6499696	2.2553270	5.9052966	7.2408159	13.1461125	0	0	13.3773690	26.5234815
1973	.9749081	2.5070144	1.2016196	3.7086340	2.0873866	5.7960206	7.3928434	13.1888640	0	0	4.3984406	17.5873046
1974	.9145106	2.3801565	1.0834746	3.4636311	1.9327526	5.3963837	6.8602256	12.2566093	0	0	3.4230204	15.6796297
1975	.8145662	2.3677415	.9526191	3.3203606	1.9544540	5.2748146	6.9742716	12.2490862	0	0	3.1630777	15.4121639
1976	.9591213	2.6800685	1.0173467	3.6974152	2.2220234	5.9194386	7.9194844	13.8389230	0	0	3.9261131	17.7650361
1977	1.0774240	3.4306092	1.3494189	4.7800281	2.8899834	7.6700115	9.8599536	17.5299651	0	0	3.4540000	20.9839651
1978	.9554107	3.0288388	1.0386360	4.0674748	1.9649801	6.0324549	7.0266207	13.0590756	0	0	4.1582467	17.2173223
1979	1.2673638	4.4317805	1.2426510	5.6744315	2.6326967	8.3071282	9.2387752	17.5459034	0	0	5.0195132	22.5654166
1980	1.1513571	3.0703441	1.2373444	4.3076885	2.5433550	6.8510435	8.7035804	15.5546239	0	0	3.7875339	19.3421578
1981	1.1956562	3.5645896	1.3104848	4.8750744	2.6361431	7.5112175	9.1209311	16.6321486	0	0	3.7847674	20.4169160
1982	1.3491157	3.7089919	1.3892041	5.0981960	3.0394027	8.1375987	10.6203523	18.7579510	0	0	4.1027474	22.8606984
1983	5.1551379	15.0620178	5.2957464	20.3577642	12.2919941	32.6497583	44.2006422	76.8504005	0	0	14.0331372	90.8835377
1984	7.1825381	19.3597146	7.4732633	26.8329779	17.5336612	44.3666391	64.4675911	108.8342302	-2.9205588	105.9136714	18.7006526	124.6143240
1985	7.4883294	21.3633638	7.7444407	29.1078045	18.1318037	47.2396082	66.5627243	113.8023325	-3.7209867	110.0813458	20.0931704	130.1745162
1986	8.3658757	23.8788210	8.7151986	32.5940196	20.4886391	53.0826587	75.4453738	128.5280325	-3.9526865	124.5753460	22.2488698	146.8242158
1987	8.6025502	24.9628591	8.9821245	33.9449836	21.1365464	55.0815300	77.9044409	132.9859709	-4.2178474	128.7681235	24.0998679	152.8679914
1988	8.6239613	24.1329426	8.9999956	33.1329382	21.1761433	54.3090815	78.0454527	132.3545342	-4.1121584	128.2423758	23.6429027	151.8852785
1989	8.8714961	25.9796824	9.2817037	35.2613861	21.8611122	57.1224983	80.6683629	137.7908612	-4.2781366	133.5127246	24.7729014	158.2856260
1990	8.8222598	24.5110836	9.2307821	33.7418657	21.7398823	55.4817480	80.2285842	135.7103322	-4.4801611	131.2301711	25.8468643	157.0770354
1991	8.9490968	25.3510151	9.3659494	34.7169645	22.0627596	56.7797241	81.4376433	138.2173674	-4.3728082	133.8445592	25.4372962	159.2818554
1992	8.5580994	22.7731343	8.9070727	31.6802070	20.9336484	52.6138554	77.0848328	129.6986882	-4.2882401	125.4104481	25.1964885	150.6069366
1993	8.8994053	24.7710177	9.2820661	34.0530838	21.8391414	55.8922252	80.5249013	136.4171265	-3.9556745	132.4614520	23.4815783	155.9430303
1994	8.6016815	23.5190038	8.8913361	32.4103399	20.8520148	53.2623547	76.6070970	129.8694517	-3.2405979	126.6288538	19.7134305	146.3422843
1995	8.8398662	25.4451188	9.1683240	34.6134428	21.5347357	56.1481785	79.2436913	135.3918698	-3.3228885	132.0689813	20.1797508	152.2487321
1996	8.6672683	24.9585904	8.9501376	33.9087280	20.9784416	54.8871696	77.0599667	131.9471363	-3.1559013	128.7912350	19.3535793	148.1448143
1997	8.8277557	23.9311359	9.1387810	33.0699169	21.4520653	54.5219822	78.8034975	133.3254797	-3.2347688	130.0907109	19.7534303	149.8441412
1998	8.6794167	24.4559398	8.9416856	33.3976254	20.9935064	54.3911318	76.8796130	131.2707448	-3.0737963	128.1969485	18.9579603	147.1549088
1999	9.1157381	26.7517556	9.4446165	36.1963721	22.2352262	58.4315983	81.4892524	139.9208507	-3.2480842	136.6727665	20.0634488	156.7362153
2000	8.7686357	24.5138641	9.0385045	33.5523686	21.2462225	54.7985911	77.4897146	132.2883057	-3.0306228	129.2576829	18.6093490	147.8670319
2001	8.9167162	25.2968558	9.2071344	34.5039902	21.6576679	56.1616581	78.9547210	135.1163791	-3.1761044	131.9402747	19.6649702	151.6052449
2002	8.9050246	23.5819217	9.2089502	32.7908719	21.6496786	54.4405505	78.7799718	133.2205223	-3.0989729	130.1215494	18.9584616	149.0800110
2003	9.0238473	25.4891775	9.3425725	34.8317500	21.9033966	56.7351466	79.7157859	136.4509325	-3.1689074	133.2820251	19.5826679	152.8646930
2004	8.7473064	25.5100476	9.0334722	34.5435198	21.0716227	55.6151425	76.5225947	132.1377372	-3.1960151	128.9417221	19.9272954	148.8690175
2005	9.1190668	24.6938045	9.4620925	34.1558970	22.0318168	56.1877138	80.1640357	136.3517495	-3.2207509	133.1309986	20.0803654	153.2113640
2006	8.9720324	24.7925486	9.2992804	34.0918290	21.5467581	55.6385871	78.2508960	133.8894831	-3.1362064	130.7532767	19.6727982	150.4260749
2007	9.0690876	25.5145304	9.4052958	34.9198262	21.8514672	56.7712934	79.4245492	136.1958426	-3.3681164	132.8277262	21.3800863	154.2078125
2008	9.0957085	24.5382325	9.4242570	33.9624895	21.8864818	55.8489713	79.5247653	135.3737366	-3.2960511	132.0776855	21.1838156	153.2615011
2009	9.5262175	27.1779523	9.8826836	37.0606359	22.9814506	60.0420865	83.6020880	143.6441745	-3.3638395	140.2803350	22.3376981	162.6180331
2010	9.4474274	26.1071153	9.7893360	35.8964513	22.7513484	58.6477997	82.7645233	141.4123230	-3.3692726	138.0430504	22.5744278	160.6174782
2011	9.8349987	27.3397980	10.2045014	37.5442994	23.7454417	61.2897411	86.6079419	147.8976830	-3.4117614	144.4859216	23.4264387	167.9123603
2012	9.8752730	27.0697482	10.2367912	37.3065394	23.8148773	61.1214167	86.9688699	148.0902866	-3.4306643	144.6596223	24.0549004	168.7145227
2013	10.2897621	29.4443173	10.6752919	40.1196092	24.8612710	64.9808802	91.0182213	155.9991015	-3.5078944	152.4912071	25.4666929	177.9579000
2014	10.5161041	28.5367145	10.9106433	39.4473578	25.4184903	64.8658481	93.2369431	158.1027912	-3.4913919	154.6113993	25.9118955	180.5232948
2015	10.6598078	29.9676262	11.0493353	41.0169615	25.7391498	66.7561113	94.4750662	161.2311775	-3.5646316	157.6665459	27.1981967	184.8647426
2016	10.3115744	28.0939425	10.6816883	38.7756308	25.4331935	64.2088243	93.4591199	157.6679442	-3.5056166	154.1623276	26.0905503	180.2528779
2017	10.7299355	30.6452822	11.1282264	41.7735086	25.9308002	67.7043088	95.2935707	162.9978795	-3.5994591	159.3984204	27.5192492	186.9176696
2018	10.7023215	29.1045944	11.1017768	40.2063712	25.8700448	66.0764160	95.0792165	161.1556325	-3.5682583	157.5873742	27.1445663	184.7319405
2019	10.8613921	29.7468541	11.2688311	41.0156852	26.2501177	67.2658029	96.5629757	163.8287786	-3.6451738	160.1836048	28.1403597	188.3239645
2020	11.0096967	30.5895959	11.4295929	42.0191888	26.6180138	68.6372026	97.9944004	166.6316030	-3.7677406	162.8638624	29.0852873	191.9491497
2021	10.6316661	29.1011787	11.0185396	40.1197183	25.6611593	65.7808776	94.4339810	160.2148586	-3.5755071	156.6393515	27.4433815	184.0827330
2022	10.8421018	30.4841302	11.2476946	41.7318248	26.1869906	67.9188154	96.6503999	164.5692153	-3.6036917	160.9655236	27.9918766	188.9574002
2023	10.7151267	28.7638294	11.1133842	39.8772136	25.7837032	65.6609168	95.3942164	161.0551332	-3.5985394	157.4565938	27.7028258	185.1594196
2024	10.6187345	29.7440687	10.9967666	40.7408353	25.4075434	66.1483787	94.2440026	160.3923813	-3.5031708	156.8892105	27.3554422	184.2446527
2025	10.5869976	29.2593284	10.9649084	40.2242368	25.2400966	65.4643334	93.9570413	159.4213747	-3.5539750	155.8673997	27.4723384	183.3397381
2026	10.6786765	29.7118216	11.0595683	40.7713899	25.3998414	66.1712313	94.7801743	160.9514056	-3.4978545	157.4535511	27.1593287	184.6128798
2027	10.5845600	29.2641584	10.9608108	40.2249692	25.0965454	65.3215146	93.9056895	159.2272041	-3.5018757	155.7253284	27.0011999	182.7265283
2028	10.6236573	28.5339041	11.0257413	39.5596454	25.2527753	64.8124207	94.4983035	159.3107242	-3.5460992	155.7646250	27.4133540	183.1779790
2029	10.5604228	29.1645779	10.9453166	40.1098945	25.1304107	65.2403052	94.0267155	159.2670207	-3.4538209	155.8131998	26.6640886	182.4772884
2030	10.4220033	28.4436852	10.7910209	39.2347061	24.8403415	64.0750476	92.8467758	156.9218234	-3.4384366	153.4833868	26.2758754	179.7592622
2031	10.5865154	29.1021353	10.9716429	40.0737782	25.3504449	65.4242231	94.5460837	159.9703068	-3.5075454	156.4627614	27.2908140	183.7535754
2032	10.2942405	27.9396592	10.6504643	38.5901235	24.6929420	63.2830655	91.9127533	155.1958188	-3.4806526	151.7151662	26.6079390	178.3231052
2033	10.3201734	28.2874394	10.6706821	38.9581215	24.8575364	63.8156579	92.3533014	156.1689593	-3.4041467	152.7648126	25.8300993	178.5949119
2034	10.4206661	29.4616996	10.7697162	40.2314158	25.2185767	65.4499925	93.5198376	158.9698301	-3.5087395	155.4610906	26.8296302	182.2907208
2035	10.3285539	28.6046645	10.6624980	39.2671625	25.0923004	64.3594629	92.9685416	157.3280045	-3.4371159	153.8908886	25.9763755	179.8672641

d) 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.

TABLE B-17: UNIT VARIABLE OMP&R COMPONENT OF TRANSPORTATION CHARGE[a]

(in dollars per acre-foot)[b]

Calendar Year	CALIFORNIA AQUEDUCT (continued)											
	Reach 26A Devil Canyon Powerplant		Reach 29A Oso Pumping Plant		Reach 29 G Pyramid Powerplant		Reach 29J Castaic Powerplant		Reach 31A Las Perillas and Badger Hill Pumping Plants		Reach 33 Devil's Den, Sawtooth, and Polonio Pumping Plants and San Luis Obispo Powerplant	
	Unit Rate	Cumulative Unit Rate	Unit Rate	Cumulative Unit Rate	Unit Rate	Cumulative Unit Rate	Unit Rate	Cumulative Unit Rate	Unit Rate	Cumulative Unit Rate	Unit Rate	Cumulative Unit Rate
	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)	(31)	(32)	(33)	(34)
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	1.5014866	4.1045158	0	0
1969	0	0	0	0	0	0	0	0	1.2624065	3.0528934	0	0
1970	0	0	0	0	0	0	0	0	1.6309699	3.3451415	0	0
1971	0	0	0	0	0	0	0	0	1.4985537	2.7846540	0	0
1972	-2.3717647	24.1517168	1.3985359	14.5446484	0	0	-2.9350830	11.6095654	1.9517720	3.4166073	0	0
1973	-8.4634448	9.1238598	1.0046872	14.1935512	0	0	-6.8099448	7.3836064	1.5374531	3.0695594	0	0
1974	-5.1212842	10.5583455	.9120198	13.1686291	0	0	-7.4013274	5.7673017	1.5168982	2.9825441	0	0
1975	-5.6602419	9.7519220	.9294374	13.1785236	0	0	-6.5604921	6.6180315	1.1130304	2.6662057	0	0
1976	-6.4591343	11.3059018	.8562352	14.6951582	0	0	-6.7213324	7.9738258	1.5682005	3.2891477	0	0
1977	-11.6603815	9.3235836	.8855260	18.4154911	0	0	-26.6745694	-8.2590783	1.5460460	3.8992312	0	0
1978	-8.0095146	9.2078077	.7094993	13.7685749	0	0	-8.0386119	5.7299630	1.9449484	4.0183765	0	0
1979	-9.9570497	12.6083669	.9703361	18.5162395	0	0	-18.5619445	-.0457050	1.8469327	5.0113494	0	0
1980	-6.4445863	12.8975715	1.2392563	16.7938802	0	0	-10.2436446	6.5502356	1.8364505	3.7554375	0	0
1981	-5.9346285	14.4822875	1.4849008	18.1170494	0	0	-11.2749075	6.8421419	1.9956273	4.3645607	0	0
1982	-6.5177215	16.3429769	1.2608633	20.0188143	-4.1930327	15.8257816	-10.0422801	5.7835015	2.0033386	4.3632148	0	0
1983	-25.1267119	65.7568258	5.9056359	82.7560364	-12.6712900	70.0847464	-24.6089636	45.4757828	5.9437480	15.8506279	0	0
1984	-29.9563520	94.6579720	9.3404469	118.1746771	-17.3289540	100.8457231	-33.7473652	67.0983579	7.2274444	19.4046209	0	0
1985	-29.5029042	100.6716120	8.6673840	122.4697165	-14.3923330	108.0773835	-28.4258474	79.6515361	8.0451266	21.9201610	0	0
1986	-30.9931522	115.8310636	10.3175552	138.8455877	-16.6891531	122.1564346	-30.8734185	91.2830161	8.3499186	23.8628639	0	0
1987	-32.8713451	119.9966463	9.7921577	142.7781286	-15.6334691	127.1446595	-28.5467337	98.5979258	8.4236121	24.7839210	0	0
1988	-33.8090080	118.0762705	10.1339907	142.4885249	-16.0683427	126.4201822	-29.0333638	97.3868184	8.4984172	24.0073985	0	0
1989	-34.3650057	123.9206203	10.2744295	148.0652907	-16.2352869	131.8300038	-28.5815630	103.2484408	8.5215965	25.6297828	0	0
1990	-35.7252915	121.3517439	9.7283348	145.4386670	-15.4645933	129.9740737	-26.9181709	103.0559028	8.4480118	24.1368356	0	0
1991	-35.5949131	123.6869423	10.2318079	148.4491753	-16.1742593	132.2749160	-28.0821004	104.1928156	8.5142424	24.9161607	0	0
1992	-34.8055685	115.8013681	9.2320177	138.9307059	-14.3528832	124.5778227	-24.8915325	99.6862902	8.6099039	22.8249388	0	0
1993	-31.6443454	124.2986849	10.7237900	147.1409165	-16.5029993	130.6379172	-28.4819275	102.1559897	8.7718034	24.6434158	0	0
1994	-24.4834473	121.8588370	11.0200429	140.8894946	-16.0919014	124.7975932	-27.7553878	97.0422054	9.2648485	24.1821708	0	0
1995	-24.7688653	127.4798668	11.4325035	146.8243733	-16.8016478	130.0227255	-28.8965322	101.1261933	9.2206948	25.8259474	0	0
1996	-23.9871146	124.1576997	11.1790006	143.1261369	-16.0800481	127.0460888	-27.6987747	99.3473141	9.4046637	25.6959858	0	0
1997	-24.1989320	125.6452092	11.3934056	144.7188853	-16.5207610	128.1981243	-28.3717294	99.8263949	9.3384331	24.4418133	0	0
1998	-22.7025642	124.4523446	11.2085376	142.4792824	-15.8880100	126.5912724	-27.2924959	99.2987765	9.5371249	25.3136480	0	0
1999	-23.5799469	133.1562684	11.8877612	151.8086119	-16.8929494	134.9156625	-28.9795563	105.9361062	9.5224095	27.1584270	0	0
2000	-22.1314363	125.7355956	11.2897693	143.5780750	-15.7724343	127.8056407	-27.0787869	100.7268538	9.6475092	25.3927376	0	0
2001	-22.4995870	129.1056579	11.3250458	146.4414249	-15.8886655	130.5527594	-27.2294374	103.3233220	9.6033555	25.9834951	0	0
2002	-23.1223206	125.9576904	11.5677680	144.7882903	-16.4275194	128.3607709	-28.0816495	100.2791214	9.4856098	24.1625069	0	0
2003	-23.2733415	129.5913515	11.5696164	148.0205489	-16.3300791	131.6904698	-27.8673451	103.8231247	9.5297635	25.9950937	0	0
2004	-23.5885737	125.2804438	10.7623585	142.9000957	-15.0193349	127.8807608	-25.6300880	102.2506728	9.5297635	26.2925047	0	0
2005	-23.9164717	129.2948923	11.6622350	148.0139845	-16.3262081	131.6877764	-27.7357032	103.9520732	9.4782557	25.0529934	0	0
2006	-23.0686685	127.3574064	11.3812204	145.2707035	-15.8853409	129.3853626	-26.9779227	102.4074399	9.5003326	25.3208488	0	0
2007	-25.4407345	128.7670780	11.0985969	147.2944395	-15.4460614	131.8483781	-26.2045640	105.6438141	9.5150480	25.9604908	0	0
2008	-24.6887120	128.5727891	11.0857744	146.4595110	-15.1883460	131.2711650	-25.6695471	105.6016179	9.6622247	25.1047487	0	0
2009	-25.2468643	137.3711688	11.6597301	155.3039046	-15.5362738	139.7676308	-26.2164064	113.5512244	9.9713008	27.6230356	0	0
2010	-25.4139095	135.2035687	11.3716013	152.7839243	-15.0215276	137.7623967	-25.3086143	112.4537824	10.0448928	26.7045807	0	0
2011	-26.1616548	141.7507055	11.9069582	159.8046412	-15.4027489	144.4018923	-25.8838904	118.5180019	10.2803769	27.7851762	0	0
2012	-26.2231686	142.4913541	11.8112641	159.9015507	-14.9902872	144.9112635	-25.1897697	119.7214938	10.4569845	27.6514597	0	0
2013	-26.6200417	151.3378583	12.2687153	168.2678168	-15.1238978	153.1439190	-25.3689153	127.7750037	10.7734220	29.9279772	0	0
2014	-26.4863968	154.0368980	12.5658166	170.6686078	-15.1890622	155.4795456	-25.4484012	130.0311444	11.0162602	29.0368706	0	0
2015	-27.2936312	157.5711114	12.4491230	173.6803005	-14.6475391	159.0327614	-24.5347157	134.4980457	11.3106208	30.6184392	0	0
2016	-27.1912047	153.0616732	12.5382840	170.2062282	-15.1226442	155.0835840	-25.3067301	129.7768539	11.0309830	28.8133511	0	0
2017	-27.9148757	159.0027939	12.5282335	175.5261130	-14.746770	160.7793424	-24.6800490	136.0992934	11.3106208	31.2259675	0	0
2018	-27.8361924	156.8957481	12.5940979	173.7497304	-14.9076594	158.8420710	-24.9310841	133.9109869	11.2517443	29.6540172	0	0
2019	-28.4993246	159.8246399	12.6430909	176.4718695	-14.7837938	161.6880757	-24.7247937	136.9632820	11.3915669	30.2770289	0	0
2020	-28.7413647	163.2077850	12.6418310	179.2734340	-14.6994242	164.5740098	-24.5620666	140.0119432	11.4504361	31.0303353	0	0
2021	-27.7691385	156.3135945	12.3851012	172.5999598	-14.5026973	158.0972625	-24.2377399	133.8595226	11.3547746	29.8242872	0	0
2022	-27.8870789	161.0703213	12.7163476	177.2855629	-14.7693570	162.5162059	-24.6633218	137.8528841	11.4725129	31.1145413	0	0
2023	-27.8016614	157.3577582	12.5483333	173.5996665	-14.6714972	158.9281693	-24.4983994	134.4297699	11.3842055	29.4329082	0	0
2024	-27.0963471	157.1483056	12.4125093	172.8048906	-14.3269735	158.4779171	-23.9119447	134.5659724	11.5240281	30.6493623	0	0
2025	-27.3614853	155.9782528	12.2760673	171.6974420	-14.2068727	157.4905693	-23.7099245	133.7806448	11.4872358	30.1595666	0	0
2026	-26.7396023	157.8732775	12.5006595	173.4520651	-14.3558389	159.0962262	-23.9413415	135.1548847	11.5902587	30.6234038	0	0
2027	-26.7396023	155.9869260	12.3647022	171.5919063	-14.2954347	157.2964716	-23.8442036	133.4522680	11.5019512	30.1815496	0	0
2028	-26.5946203	156.5833587	12.2823401	171.5930643	-14.3241481	157.2689162	-23.8956495	133.3732667	11.5093126	29.4195594	0	0
2029	-26.5031883	155.9741001	12.2488130	171.5158337	-14.3757520	157.1400817	-23.9718258	133.1682559	11.5461050	30.1502601	0	0
2030	-26.4835967	153.2756655	12.0888506	169.0106740	-14.3602472	154.6504268	-23.9582759	130.6921509	11.4430820	29.4647639	0	0
2031	-26.3190204	157.4345550	12.1794479	172.1497547	-14.3008598	157.8488949	-23.8435318	134.0053631	11.6123356	30.1279555	0	0
2032	-26.3190204	152.0040848	11.7380611	166.9338799	-13.9994668	152.9344131	-23.3554039	129.5790092	11.4945898	29.1400085	0	0
2033	-26.3190204	152.2758915	11.9348721	168.1038314	-14.2940585	153.8097729	-23.8345611	129.9752118	11.5313821	29.4986481	0	0
2034	-26.3190191	155.9717017	11.8028606	170.7726907	-14.2046295	156.5680612	-23.6978387	132.8702225	11.6123356	30.6533691	0	0
2035	-26.3190204	153.5482437	11.7347901	169.0627946	-14.3372074	154.7255872	-23.9169413	130.8086459	11.5902587	29.8663693	0	0

TABLE B-18: VARIABLE OMP&R COMPONENT OF TRANSPORTATION CHARGE FOR EACH CONTRACTOR[a]

(in dollars)

Calendar Year	NORTH BAY AREA			SOUTH BAY AREA				CENTRAL COASTAL AREA		
	Napa County FC & WCD	Solano County FC & WCD	Total	Alameda County FC & WCD, Zone 7	Alameda County Water District	Santa Clara Valley Water District	Total	San Luis Obispo County FC & WCD	Santa Barbara County FC & WCD	Total
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1962	0	0	0	2,051	34,919	0	36,970	0	0	0
1963	0	0	0	7,900	49,811	0	57,711	0	0	0
1964	0	0	0	5,931	68,203	0	74,134	0	0	0
1965	0	0	0	10,918	68,765	62,926	142,609	0	0	0
1966	0	0	0	19,330	52,135	121,140	192,605	0	0	0
1967	0	0	0	19,399	56,949	160,650	236,998	0	0	0
1968	6,989	0	6,989	29,842	120,757	341,124	491,723	0	0	0
1969	8,551	0	8,551	31,792	3,895	298,335	334,022	0	0	0
1970	13,598	0	13,598	49,619	0	430,850	480,469	0	0	0
1971	10,609	0	10,609	23,821	28,304	415,965	468,090	0	0	0
1972	14,434	0	14,434	54,811	144,596	523,945	723,352	0	0	0
1973	14,449	0	14,449	18,387	15,581	547,489	581,457	0	0	0
1974	17,473	0	17,473	9,495	29	635,915	645,439	0	0	0
1975	14,779	0	14,779	22,307	4,763	425,091	452,161	0	0	0
1976	20,856	0	20,856	98,068	121,933	503,762	723,763	0	0	0
1977	22,586	0	22,586	82,328	122,672	496,290	701,290	0	0	0
1978	21,712	0	21,712	74,938	40,000	653,097	768,035	0	0	0
1979	19,856	0	19,856	139,440	78,461	663,765	881,666	0	0	0
1980	21,000	0	21,000	124,798	140,681	499,192	764,671	0	0	0
1981	24,000	0	24,000	146,384	169,256	568,546	884,186	0	0	0
1982	25,000	0	25,000	152,000	180,587	566,418	899,005	0	0	0
1983	83,000	0	83,000	578,383	700,844	2,095,047	3,374,274	0	0	0
1984	205,006	41,230	246,236	710,382	878,948	2,498,380	4,087,710	0	0	0
1985	190,101	31,681	221,782	818,786	1,033,718	2,763,401	4,615,905	0	0	0
1986	212,382	43,194	255,576	866,737	1,122,496	2,841,763	4,830,996	0	0	0
1987	223,535	54,026	277,561	904,334	1,191,927	2,879,579	4,975,840	0	0	0
1988	242,990	97,234	340,224	900,852	1,205,190	2,789,460	4,895,502	0	0	0
1989	254,875	136,268	391,143	958,606	1,306,849	2,920,751	5,186,206	0	0	0
1990	276,617	190,996	467,613	918,216	1,271,376	2,789,963	4,979,555	0	0	0
1991	294,734	182,946	477,680	991,811	1,371,925	2,963,359	5,327,095	0	0	0
1992	317,227	185,388	502,615	989,764	1,369,308	2,879,059	5,238,131	0	0	0
1993	343,084	188,455	531,539	1,081,518	1,494,420	3,099,538	5,675,476	0	0	0
1994	383,697	200,643	584,340	1,136,113	1,535,995	3,176,630	5,848,738	0	0	0
1995	403,639	199,673	603,312	1,179,607	1,535,849	3,184,077	5,899,533	0	0	0
1996	377,794	182,708	560,502	1,273,878	1,602,117	3,321,462	6,197,457	0	0	0
1997	399,167	181,315	580,482	1,267,926	1,543,038	3,161,347	5,972,311	0	0	0
1998	434,222	185,165	619,387	1,270,100	1,587,142	3,251,705	6,108,947	0	0	0
1999	459,480	184,868	644,348	1,287,468	1,655,259	3,350,889	6,293,616	0	0	0
2000	493,329	188,916	682,245	1,205,423	1,594,270	3,227,424	6,027,117	0	0	0
2001	501,124	200,022	701,146	1,253,982	1,628,548	3,336,538	6,219,068	0	0	0
2002	500,965	198,266	699,231	1,208,347	1,544,730	3,157,111	5,910,188	0	0	0
2003	510,845	204,360	715,205	1,282,494	1,610,465	3,330,645	6,223,604	0	0	0
2004	517,117	207,108	724,225	1,320,826	1,633,685	3,410,116	6,364,627	0	0	0
2005	518,652	206,634	725,286	1,291,015	1,569,947	3,277,076	6,138,038	0	0	0
2006	534,616	225,480	760,096	1,333,768	1,594,638	3,367,318	6,295,724	0	0	0
2007	540,858	228,260	769,118	1,380,136	1,626,702	3,466,094	6,472,932	0	0	0
2008	555,708	232,413	788,121	1,378,294	1,598,078	3,405,105	6,381,477	0	0	0
2009	578,109	240,961	819,070	1,494,893	1,710,100	3,676,303	6,881,296	0	0	0
2010	587,377	243,713	831,090	1,505,618	1,695,202	3,685,224	6,886,044	0	0	0
2011	666,899	309,471	976,370	1,576,771	1,747,747	3,799,449	7,123,967	0	0	0
2012	676,438	315,921	992,359	1,595,801	1,746,000	3,828,577	7,170,378	0	0	0
2013	696,351	326,946	1,023,297	1,718,983	1,853,411	4,064,105	7,636,499	0	0	0
2014	711,577	334,696	1,046,273	1,725,530	1,832,851	4,063,189	7,621,570	0	0	0
2015	729,097	345,123	1,074,220	1,836,325	1,927,122	4,308,229	8,071,676	0	0	0
2016	719,249	354,928	1,074,177	1,770,736	1,831,038	4,093,425	7,695,199	0	0	0
2017	735,374	364,760	1,100,134	1,913,781	1,951,307	4,409,201	8,274,289	0	0	0
2018	730,192	364,011	1,094,203	1,857,287	1,871,649	4,263,949	7,992,885	0	0	0
2019	739,059	369,150	1,108,209	1,916,214	1,904,795	4,339,459	8,160,468	0	0	0
2020	782,089	383,039	1,165,128	1,994,222	1,959,532	4,500,361	8,454,115	0	0	0
2021	789,909	412,979	1,202,888	1,956,748	1,897,289	4,402,799	8,256,836	0	0	0
2022	796,631	418,266	1,214,897	2,039,424	1,955,868	4,527,904	8,523,196	0	0	0
2023	788,825	416,153	1,204,978	1,975,295	1,869,969	4,373,674	8,218,938	0	0	0
2024	812,142	449,575	1,261,717	2,089,820	1,952,362	4,612,980	8,655,162	0	0	0
2025	808,271	449,508	1,257,779	2,086,681	1,929,560	4,548,249	8,564,490	0	0	0
2026	865,183	487,305	1,352,488	2,162,322	1,974,294	4,700,700	8,837,316	0	0	0
2027	858,598	483,921	1,342,519	2,138,462	1,952,509	4,648,829	8,739,800	0	0	0
2028	859,598	483,921	1,343,519	2,104,381	1,921,391	4,574,742	8,600,514	0	0	0
2029	862,549	485,951	1,348,500	2,144,163	1,957,713	4,661,223	8,763,099	0	0	0
2030	854,330	481,214	1,335,544	2,106,829	1,923,627	4,580,064	8,610,520	0	0	0
2031	866,816	488,659	1,355,475	2,149,756	1,962,821	4,673,383	8,785,960	0	0	0
2032	858,281	483,245	1,341,526	2,100,372	1,917,731	4,566,026	8,584,129	0	0	0
2033	861,232	485,275	1,346,507	2,118,960	1,934,703	4,606,436	8,660,099	0	0	0
2034	866,816	488,659	1,355,475	2,176,457	1,987,199	4,731,428	8,895,084	0	0	0
2035	865,500	487,982	1,353,482	2,138,850	1,952,863	4,649,675	8,741,388	0	0	0
TOTAL	30,997,148	15,132,581	46,129,729	82,307,006	89,430,414	205,747,920	377,485,340	0	0	0

a) Unadjusted for prior overpayments or underpayments of charges.

TABLE B-18: VARIABLE OMP&R COMPONENT OF

(in dollars)

Calendar Year	SAN JOAQUIN VALLEY AREA									
	Devil's Den Water District	Dudley Ridge Water District	Empire West Side Irrigation District	Hacienda Water District	Kern County Water Agency		County of Kings	Oak Flat Water District	Tulare Lake Basin Water Storage District	Total
					Municipal and Industrial	Agricultural				
	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
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	30,299	68,616	5,149	0	0	439,176	2,343	4,732	65,336	615,651
1969	30,438	56,176	100	5,088	0	318,697	179	3,307	12,679	426,664
1970	39,269	69,265	6,757	16,418	0	468,062	0	5,551	0	605,322
1971	34,780	52,798	7,703	8,564	0	763,788	4,759	6,323	148,964	1,027,679
1972	47,507	62,172	8,488	8,571	0	1,111,838	2,051	7,353	369,932	1,617,912
1973	28,909	33,793	4,596	4,443	0	760,677	2,299	3,005	72,874	910,596
1974	28,931	48,938	4,396	4,837	46,540	668,053	2,198	3,104	101,114	908,111
1975	28,528	62,989	4,660	5,837	34,475	839,164	2,485	3,912	128,137	1,110,187
1976	38,483	71,284	5,163	6,712	95,096	968,307	2,754	4,957	94,499	1,287,255
1977	19,788	26,245	1,736	3,954	83,795	485,623	3,601	2,590	38,595	665,927
1978	45,658	109,380	941	5,225	191,065	1,576,018	4,292	6,290	19,766	1,958,635
1979	95,908	121,969	5,503	26,897	217,633	2,670,074	6,329	14,634	463,970	3,622,917
1980	52,989	70,427	9,211	11,898	146,330	1,534,741	4,222	4,881	147,152	1,981,851
1981	55,430	91,914	10,660	13,266	198,397	1,992,470	5,448	6,761	166,773	2,541,119
1982	55,412	96,755	7,080	13,923	211,731	2,177,371	5,900	6,778	175,339	2,750,289
1983	201,304	425,005	29,721	61,423	900,584	9,437,963	27,739	32,374	774,718	11,890,831
1984	246,439	549,190	36,532	79,152	1,087,217	12,732,784	37,750	39,305	999,746	15,808,115
1985	278,386	654,902	41,625	95,738	1,266,521	15,102,512	47,175	47,182	1,193,253	18,727,294
1986	303,059	764,788	46,539	111,693	1,579,991	17,782,483	57,398	53,649	1,396,165	22,095,765
1987	314,756	840,920	49,081	122,702	1,826,335	19,669,962	65,441	58,627	1,536,233	24,484,057
1988	304,894	829,730	46,527	120,970	1,921,855	19,837,205	62,036	56,227	1,516,778	24,696,222
1989	325,498	951,215	51,324	140,287	2,241,422	22,281,377	68,433	66,820	1,739,903	27,866,279
1990	306,538	905,245	47,067	133,355	2,243,394	21,593,378	62,755	60,557	1,725,771	27,078,060
1991	316,435	946,391	49,206	139,417	2,321,077	22,408,356	65,607	65,814	1,804,211	28,116,514
1992	289,877	820,207	42,646	120,828	2,078,989	19,935,206	56,860	54,035	1,563,654	24,962,302
1993	312,972	915,792	47,615	134,909	2,264,764	21,854,085	63,487	62,616	1,745,877	27,402,117
1994	307,114	860,729	44,751	126,797	2,142,735	20,757,890	59,669	57,254	1,640,906	25,997,845
1995	327,990	958,123	49,816	141,145	2,323,010	22,638,350	66,421	66,418	1,826,577	28,397,850
1996	326,339	940,010	48,874	138,477	2,274,934	22,242,452	65,166	64,768	1,792,046	27,893,066
1997	310,411	871,465	45,310	128,379	2,181,260	21,070,296	60,413	57,658	1,661,372	26,386,564
1998	321,483	910,306	47,330	134,101	2,227,325	21,722,565	63,106	61,528	1,735,418	27,223,162
1999	344,913	1,017,599	52,908	149,907	2,442,857	23,883,645	70,544	71,166	1,939,962	29,973,501
2000	322,487	908,500	47,236	133,835	2,232,619	21,746,718	62,981	60,903	1,731,975	27,247,254
2001	329,991	945,134	49,140	139,231	2,318,293	22,478,759	65,520	64,194	1,801,816	28,192,078
2002	306,864	846,857	44,030	124,754	2,171,719	20,677,062	58,708	54,586	1,614,459	25,899,039
2003	330,137	950,049	49,396	139,955	2,361,964	22,610,505	65,861	64,554	1,811,187	28,383,608
2004	333,915	967,210	50,288	142,484	2,375,285	22,784,653	67,051	66,895	1,843,902	28,631,683
2005	318,173	898,663	46,724	132,386	2,311,581	21,713,404	62,299	59,460	1,713,221	27,255,911
2006	321,574	912,844	47,461	134,475	2,330,620	21,898,887	63,282	61,206	1,740,257	27,510,606
2007	329,698	948,902	49,337	139,786	2,414,039	22,603,742	65,782	64,508	1,808,998	28,424,792
2008	318,830	891,034	46,328	131,261	2,331,283	21,581,679	61,770	58,603	1,698,678	27,119,466
2009	350,813	1,018,505	52,955	150,040	2,600,470	24,136,957	70,607	69,987	1,941,691	30,392,025
2010	339,148	961,264	49,979	141,608	2,510,275	23,067,559	66,638	64,445	1,832,566	29,033,482
2011	352,872	1,010,027	52,514	148,791	2,644,653	24,165,339	70,019	68,174	1,925,528	30,437,917
2012	351,174	992,121	51,583	146,153	2,631,874	23,878,635	68,778	66,168	1,891,392	30,077,878
2013	380,085	1,105,218	57,464	162,814	2,880,873	26,165,711	76,618	76,150	2,107,001	33,011,934
2014	368,768	1,039,789	54,061	153,175	2,804,488	25,113,463	72,083	68,982	1,982,267	31,657,076
2015	388,854	1,114,061	57,924	164,116	2,962,107	26,562,490	77,231	76,062	2,123,860	33,526,705
2016	365,929	1,026,042	53,347	151,150	2,801,981	24,790,060	71,129	68,031	1,956,060	31,283,729
2017	396,570	1,149,115	59,747	169,281	3,063,095	27,232,902	79,661	79,525	2,190,689	34,420,585
2018	376,606	1,061,811	55,207	156,420	2,922,459	25,628,509	73,609	70,741	2,024,250	32,369,612
2019	384,518	1,089,691	56,656	160,526	3,002,068	26,225,689	75,542	73,534	2,077,401	33,145,625
2020	394,086	1,129,760	58,739	166,429	3,103,882	27,030,234	78,319	76,789	2,153,789	34,192,027
2021	378,769	1,065,691	55,409	156,991	2,965,219	25,676,219	73,878	71,635	2,031,647	32,475,458
2022	395,155	1,133,345	58,927	166,957	3,124,470	27,018,290	78,568	77,802	2,160,623	34,214,137
2023	373,798	1,041,411	54,146	153,414	2,960,484	25,275,381	72,195	69,180	1,985,357	31,985,366
2024	389,246	1,103,532	57,376	162,565	3,074,806	26,367,918	76,501	75,565	2,103,786	33,411,295
2025	383,027	1,077,393	56,017	158,715	3,038,192	25,870,543	74,689	73,168	2,053,956	32,785,700
2026	388,917	1,098,212	57,100	161,782	3,099,189	26,301,112	76,132	75,111	2,093,646	33,351,201
2027	383,306	1,077,813	56,039	158,776	3,050,730	25,873,007	74,718	73,583	2,054,756	32,802,728
2028	373,628	1,033,421	53,731	152,237	2,975,122	25,091,102	71,641	69,300	1,970,127	31,790,309
2029	382,909	1,073,460	55,813	158,135	3,042,672	25,792,879	74,417	73,575	2,046,457	32,700,317
2030	374,202	1,039,851	54,065	153,185	2,967,486	25,106,653	72,087	70,765	1,982,385	31,820,679
2031	382,626	1,068,351	55,546	157,382	3,039,180	25,726,792	74,063	73,196	2,036,718	32,613,854
2032	370,077	1,018,141	52,936	149,987	2,917,582	24,665,380	70,581	69,072	1,940,996	31,254,752
2033	374,633	1,036,711	53,902	152,722	2,956,381	25,022,617	71,869	70,720	1,976,399	31,715,954
2034	389,299	1,098,667	57,123	161,848	3,082,918	26,208,291	76,164	76,445	2,094,514	33,245,269
2035	379,303	1,054,532	54,828	155,347	2,994,414	25,364,462	73,104	72,202	2,010,372	32,158,564
TOTAL	18,850,724	52,191,466	2,782,089	7,663,626	134,613,805	1,239,178,171	3,612,955	3,564,992	99,110,446	1,561,568,274

TRANSPORTATION CHARGE FOR EACH CONTRACTOR[a]

(in dollars)

Calendar Year	SOUTHERN CALIFORNIA AREA									
	Antelope Valley East Kern Water Agency	Castaic Lake Water Agency	Coachella Valley Water District	Crestline Lake Arrowhead Water Agency	Desert Water Agency	Littlerock Creek Irrigation District	Mojave Water Agency	Palmdale Water District	San Bernardino Valley Municipal Water District	San Gabriel Valley Municipal Water District
	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)
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	772	0	0	12,307	0	4,443	1,459	0	30,794	0
1973	284	0	102,005	6,841	158,286	3,824	0	0	295,850	0
1974	15,464	0	100,350	9,830	156,797	4,903	220	0	175,320	6,462
1975	98,850	0	107,885	12,716	169,534	6,370	0	0	135,211	53,149
1976	384,493	0	135,013	17,800	213,179	8,152	0	0	138,757	68,638
1977	196,371	0	0	23,272	0	1,946	1,679	0	231,532	83,875
1978	576,388	0	173,620	20,816	263,425	2,717	0	0	37,337	71,554
1979	1,061,405	0	227,075	28,433	338,481	2,334	90,262	0	226	3,656
1980	1,408,003	45,850	210,521	33,364	328,817	17,888	77,367	0	294,064	96,733
1981	1,247,411	55,423	243,064	43,610	383,838	20,957	81,668	0	461,984	256,336
1982	1,524,927	53,209	295,498	55,964	470,931	25,511	724,685	0	671,696	284,368
1983	4,536,480	468,402	1,267,552	278,649	2,035,791	112,970	3,026,420	23,056	3,300,992	1,131,017
1984	6,341,051	764,922	1,865,227	436,150	3,015,666	166,285	4,411,348	317,742	5,622,685	1,855,298
1985	6,712,210	995,645	2,068,341	520,698	3,371,520	184,936	4,855,510	550,408	7,419,498	2,053,703
1986	7,723,671	1,186,680	2,482,797	587,296	4,067,032	221,744	5,711,462	697,621	9,254,900	2,490,368
1987	8,241,160	1,331,071	2,741,076	611,471	4,586,040	243,371	6,252,302	798,363	9,959,722	2,711,925
1988	8,592,239	1,363,415	2,878,528	607,542	4,905,894	255,203	6,515,879	872,048	10,178,176	2,810,216
1989	9,479,403	1,497,102	3,161,437	633,142	5,476,682	280,377	7,122,853	987,995	11,066,111	3,085,622
1990	9,973,492	1,545,838	3,298,617	628,307	5,654,772	288,708	7,382,620	1,049,842	11,285,711	3,155,145
1991	10,488,060	1,604,569	3,328,990	646,684	5,718,219	293,119	7,470,318	1,177,830	11,441,042	3,191,123
1992	10,160,755	1,575,044	3,132,625	620,501	5,391,729	273,395	7,048,405	1,203,941	10,653,727	2,964,514
1993	11,124,112	1,654,925	3,228,021	651,842	5,567,166	287,442	7,282,539	1,377,599	11,373,328	3,157,186
1994	11,047,101	1,610,901	3,014,653	620,492	5,209,787	273,517	6,819,551	1,418,243	11,089,154	3,070,842
1995	11,990,543	1,719,147	3,121,100	654,669	5,404,830	283,949	7,079,566	1,584,827	11,536,929	3,186,996
1996	12,191,378	1,708,773	3,022,154	645,911	5,244,327	275,613	6,873,918	1,622,770	11,149,360	3,079,111
1997	12,815,236	1,736,979	3,041,836	662,310	5,289,499	277,093	6,937,785	1,717,197	11,194,989	3,090,872
1998	13,124,804	1,747,659	2,972,529	659,254	5,179,851	271,777	6,798,557	1,769,118	11,001,587	3,036,637
1999	14,518,748	1,885,663	3,150,398	711,583	5,501,440	288,379	7,225,541	1,968,088	11,677,804	3,222,381
2000	14,218,344	1,813,083	2,957,340	680,190	5,175,346	271,441	6,801,882	1,938,866	10,938,996	3,017,653
2001	14,657,246	1,932,146	3,047,264	706,480	5,321,344	278,393	7,004,163	2,045,074	11,309,655	3,124,357
2002	14,598,336	1,945,415	3,011,417	703,657	5,247,617	275,858	6,902,405	2,081,945	11,109,468	3,073,367
2003	15,098,188	2,086,843	3,118,437	730,692	5,411,410	283,891	7,123,494	2,199,152	11,507,712	3,187,949
2004	14,745,776	2,137,040	3,051,815	720,526	5,284,850	275,935	6,967,068	2,192,009	11,200,071	3,094,426
2005	15,372,637	2,245,365	3,156,154	750,735	5,454,324	284,901	7,185,612	2,303,166	11,636,541	3,219,442
2006	15,240,601	2,263,204	3,113,821	746,112	5,370,211	281,119	7,085,069	2,262,032	11,538,581	3,196,670
2007	15,625,854	2,387,550	3,207,523	774,123	5,520,640	286,907	7,294,029	2,297,920	11,743,558	3,257,807
2008	15,682,904	2,439,396	3,218,491	778,568	5,517,414	286,610	7,279,921	2,284,943	11,802,982	3,278,607
2009	16,809,792	2,679,809	3,431,241	835,858	5,870,510	304,408	7,756,881	2,426,850	12,693,095	3,530,440
2010	16,690,786	2,721,383	3,405,091	835,213	5,814,353	300,934	7,693,578	2,388,145	12,573,932	3,488,252
2011	17,628,727	2,951,098	3,576,532	883,219	6,095,218	316,424	8,059,792	2,499,606	13,267,865	3,685,516
2012	17,807,599	3,064,871	3,610,490	897,561	6,141,209	318,253	8,132,039	2,502,611	13,422,686	3,733,273
2013	18,937,884	3,360,481	3,826,095	957,415	6,495,462	335,481	8,595,368	2,638,098	14,346,828	3,995,321
2014	19,372,810	3,510,839	3,917,356	982,048	6,625,206	341,693	8,773,432	2,674,777	14,695,119	4,097,381
2015	19,927,474	3,725,595	4,030,051	1,016,756	6,803,024	350,021	9,021,400	2,727,632	15,126,826	4,222,906
2016	19,654,155	3,685,663	3,947,538	1,002,206	6,651,331	343,782	8,814,366	2,667,008	14,785,757	4,132,665
2017	20,493,855	3,974,098	4,112,190	1,050,477	6,915,954	357,052	9,177,657	2,757,593	15,455,073	4,308,977
2018	20,432,779	4,003,939	4,082,575	1,049,277	6,853,555	352,995	9,125,758	2,726,261	15,344,403	4,283,255
2019	20,945,608	4,191,078	4,199,625	1,080,980	7,024,483	360,413	9,322,037	2,771,175	15,726,745	4,395,179
2020	21,471,971	4,382,374	4,299,662	1,113,306	7,178,900	368,072	9,539,873	2,817,545	16,157,571	4,520,856
2021	20,822,069	4,283,503	4,141,861	1,067,681	6,903,101	355,571	9,185,728	2,709,862	15,568,834	4,361,147
2022	21,575,818	4,507,791	4,270,438	1,095,954	7,104,798	365,391	9,447,870	2,784,703	16,139,246	4,526,075
2023	21,275,534	4,516,840	4,203,119	1,073,924	6,980,511	359,001	9,313,518	2,724,000	15,861,663	4,437,488
2024	21,369,880	4,615,613	4,219,204	1,068,620	6,982,872	359,277	9,304,356	2,714,184	15,934,837	4,463,013
2025	21,402,154	4,682,321	4,216,814	1,063,371	6,966,912	358,494	9,276,990	2,696,507	15,909,784	4,460,978
2026	21,791,572	4,838,545	4,264,557	1,070,753	7,033,752	362,143	9,378,335	2,723,946	16,197,798	4,546,750
2027	21,552,384	4,869,675	4,220,983	1,059,814	6,961,882	358,168	9,282,509	2,694,048	16,004,260	4,492,423
2028	21,557,824	4,934,811	4,231,410	1,062,431	6,979,081	358,257	9,305,441	2,694,727	16,065,452	4,509,600
2029	21,564,547	5,020,441	4,215,225	1,058,368	6,952,385	358,369	9,269,847	2,695,567	16,002,941	4,492,054
2030	21,242,100	5,005,511	4,152,440	1,042,603	6,848,828	353,013	9,131,770	2,655,263	15,726,084	4,414,338
2031	21,654,447	5,212,810	4,244,709	1,065,771	7,001,012	359,865	9,334,681	2,706,805	16,152,787	4,534,115
2032	20,997,379	5,131,329	4,119,264	1,034,274	6,794,110	348,944	9,058,814	2,624,672	15,595,620	4,377,717
2033	21,142,649	5,225,004	4,125,542	1,035,851	6,804,466	351,359	9,072,623	2,642,830	15,623,507	4,385,546
2034	21,515,815	5,421,105	4,210,914	1,057,286	6,945,277	357,561	9,260,369	2,689,477	16,002,696	4,491,984
2035	21,298,499	5,428,559	4,154,934	1,043,231	6,852,943	353,950	9,137,258	2,662,313	15,754,050	4,422,189
TOTAL	861,750,808	159,746,345	186,683,034	44,636,785	314,987,824	16,310,869	416,207,847	110,758,000	686,601,509	191,977,443

TABLE B-18: VARIABLE OMP&R COMPONENT OF TRANSPORTATION CHARGE FOR EACH CONTRACTOR[a]

(in dollars)

Calendar Year	SOUTHERN CALIFORNIA AREA (continued)				FEATHER RIVER AREA				FUTURE CONTRACTOR	GRAND TOTAL
	San Gorgonio Pass Water Agency	The Metropolitan Water District of Southern California	Ventura County Flood Control District	Total	City of Yuba City	County of Butte	Plumas County FC & WCD	Total	South Bay	
	(31)	(32)	(33)	(34)	(35)	(36)	(37)	(38)	(39)	(40)
1962	0	0	0	0	0	0	0	0	0	36,970
1963	0	0	0	0	0	0	0	0	0	57,711
1964	0	0	0	0	0	0	0	0	0	74,134
1965	0	0	0	0	0	0	0	0	0	142,609
1966	0	0	0	0	0	0	0	0	0	192,605
1967	0	0	0	0	0	0	0	0	0	236,998
1968	0	0	0	0	0	0	0	0	0	1,114,363
1969	0	0	0	0	0	0	0	0	0	769,237
1970	0	0	0	0	0	0	0	0	0	1,099,389
1971	0	0	0	0	0	0	0	0	0	1,506,378
1972	0	835,170	0	884,945	0	0	0	0	0	3,240,643
1973	0	1,063,238	0	1,630,328	0	0	0	0	0	3,136,830
1974	0	1,846,262	0	2,315,608	0	0	0	0	0	3,886,631
1975	0	3,859,458	0	4,443,173	0	0	0	0	0	6,020,300
1976	0	5,463,799	0	6,429,831	0	0	0	0	0	8,461,705
1977	0	−383,749	0	154,926	0	0	0	0	0	1,544,729
1978	0	3,875,051	0	5,020,908	0	0	0	0	0	7,769,290
1979	0	3,923,250	0	5,675,122	0	0	0	0	0	10,199,561
1980	0	8,278,983	9,110	10,800,700	0	0	0	0	0	13,568,222
1981	0	10,223,505	16,142	13,033,938	0	0	0	0	0	16,483,243
1982	0	10,860,290	21,564	14,988,643	0	0	0	0	0	18,662,937
1983	0	51,255,688	169,759	67,606,776	0	0	0	0	0	82,954,881
1984	0	80,581,267	317,248	105,694,889	0	0	0	0	0	125,836,950
1985	0	86,752,000	424,404	115,908,873	0	0	0	0	0	139,473,854
1986	0	106,799,426	673,210	141,896,207	0	0	0	0	0	169,078,544
1987	0	105,179,804	898,032	143,554,337	0	0	0	0	0	173,291,795
1988	0	103,411,870	1,192,954	143,583,964	0	0	0	0	0	173,515,912
1989	0	120,382,184	1,555,837	164,728,745	0	0	0	0	0	198,172,373
1990	0	127,683,328	1,976,139	173,922,519	0	0	0	0	0	206,447,747
1991	0	130,426,300	1,991,421	177,777,675	0	0	0	0	0	211,698,964
1992	0	124,259,634	1,886,428	169,170,698	0	0	0	0	0	199,873,746
1993	0	131,064,186	1,933,482	178,701,828	0	0	0	0	0	212,310,960
1994	0	127,353,005	1,830,068	173,357,314	0	0	0	0	0	205,788,237
1995	0	133,676,397	1,896,854	182,135,807	0	0	0	0	0	217,036,502
1996	0	130,386,463	1,850,517	178,050,295	0	0	0	0	0	212,701,320
1997	0	130,912,856	1,851,834	179,528,486	0	0	0	0	0	212,467,843
1998	0	129,647,048	1,825,296	178,034,117	0	0	0	0	0	211,985,613
1999	0	137,999,348	1,936,120	190,085,493	0	0	0	0	0	226,996,958
2000	0	130,373,745	1,828,795	180,015,681	0	0	0	0	0	213,972,297
2001	0	137,972,928	1,883,915	189,282,965	0	0	0	0	0	224,395,257
2002	0	138,170,766	1,858,388	188,978,639	0	0	0	0	0	221,487,097
2003	0	146,698,578	1,929,139	199,375,485	0	0	0	0	0	234,697,902
2004	0	147,767,676	1,902,159	199,339,351	0	0	0	0	0	235,059,886
2005	0	155,253,285	1,941,199	208,803,361	0	0	0	0	0	242,922,596
2006	0	157,336,707	1,934,013	210,368,140	0	0	0	0	0	244,934,566
2007	0	165,453,568	1,998,380	219,847,859	0	0	0	0	0	255,514,701
2008	0	169,842,560	2,005,781	224,418,177	0	0	0	0	0	258,707,241
2009	0	187,050,525	2,161,896	245,551,305	0	0	0	0	0	283,643,696
2010	0	189,602,474	2,163,078	247,677,219	0	0	0	0	0	284,427,835
2011	0	203,816,307	2,287,945	265,068,249	0	0	0	0	0	303,606,503
2012	0	209,840,474	2,318,748	271,789,814	0	0	0	0	0	310,030,429
2013	0	228,285,315	2,467,756	294,241,504	0	0	0	0	0	335,913,234
2014	0	237,081,752	2,538,186	304,610,599	0	0	0	0	0	344,935,518
2015	0	246,762,860	2,630,427	316,344,972	0	0	0	0	0	359,017,573
2016	0	240,933,168	2,558,747	309,176,386	0	0	0	0	0	349,229,491
2017	0	254,400,616	2,704,350	325,707,892	0	0	0	0	0	369,502,900
2018	0	252,926,698	2,677,369	323,858,864	0	0	0	0	0	365,315,564
2019	0	260,827,660	2,748,374	333,593,357	0	0	0	0	0	376,007,659
2020	0	269,098,169	2,820,128	343,768,427	0	0	0	0	0	387,579,697
2021	0	259,838,222	2,729,025	331,966,604	0	0	0	0	0	373,901,786
2022	0	270,129,269	2,808,982	344,756,335	0	0	0	0	0	388,708,565
2023	0	265,987,259	2,754,867	339,487,724	0	0	0	0	0	380,897,006
2024	0	268,531,220	2,768,118	342,331,194	0	0	0	0	0	385,659,368
2025	0	269,202,109	2,780,785	343,017,219	0	0	0	0	0	385,625,188
2026	0	274,630,471	2,822,804	349,661,426	0	0	0	0	0	393,202,431
2027	0	271,207,226	2,788,266	345,491,638	0	0	0	0	0	388,376,685
2028	0	271,438,030	2,786,944	345,924,008	0	0	0	0	0	387,658,350
2029	0	270,818,707	2,783,223	345,231,674	0	0	0	0	0	388,043,590
2030	0	265,866,485	2,733,635	339,172,070	0	0	0	0	0	380,938,813
2031	0	272,809,764	2,799,325	347,876,091	0	0	0	0	0	390,631,380
2032	0	263,617,172	2,708,358	336,407,653	0	0	0	0	0	377,588,060
2033	0	264,320,714	2,718,677	337,448,768	0	0	0	0	0	379,171,328
2034	0	270,413,243	2,775,892	345,141,619	0	0	0	0	0	388,637,447
2035	0	266,190,672	2,735,758	340,034,356	0	0	0	0	0	382,287,790
TOTAL	0	10,162,112,455	113,109,851	13,264,882,770	0	0	0	0	0	15,250,066,113

TABLE B-19: TOTAL TRANSPORTATION CHARGE FOR EACH CONTRACTOR[a]

(in dollars)

Calendar Year	NORTH BAY AREA			SOUTH BAY AREA				CENTRAL COASTAL AREA		
	Napa County FC & WCD	Solano County FC & WCD	Total	Alameda County FC & WCD, Zone 7	Alameda County Water District	Santa Clara Valley Water District	Total	San Luis Obispo County FC & WCD	Santa Barbara County FC & WCD	Total
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1962	0	0	0	11,750	43,787	0	55,537	0	0	0
1963	0	0	0	150,498	186,687	447,120	784,305	0	0	0
1964	0	0	0	169,803	263,289	620,082	1,053,174	8,340	20,723	29,063
1965	0	0	0	244,481	364,252	1,155,069	1,763,802	14,057	34,240	48,297
1966	18,975	0	18,975	270,481	374,540	1,409,244	2,054,265	23,285	56,001	79,286
1967	42,705	0	42,705	345,574	452,773	1,679,350	2,477,697	41,655	99,063	140,718
1968	129,681	0	129,681	389,948	552,316	1,979,159	2,921,423	67,254	159,017	226,271
1969	255,965	0	255,965	444,669	487,535	2,076,869	3,009,073	121,973	286,895	408,868
1970	279,126	0	279,126	458,293	478,921	2,196,242	3,133,456	134,913	317,199	452,112
1971	229,377	0	229,377	419,187	498,167	2,163,475	3,080,829	136,036	319,905	455,941
1972	227,000	0	227,000	507,161	624,304	2,314,018	3,445,483	142,215	334,443	476,658
1973	223,192	27,666	250,858	471,667	495,165	2,332,096	3,298,928	139,211	327,482	466,693
1974	242,694	29,117	271,811	494,949	510,237	2,499,747	3,504,933	140,498	330,544	471,042
1975	239,986	32,087	272,073	543,246	550,983	2,403,273	3,497,502	156,882	368,834	525,716
1976	274,321	36,237	310,558	633,689	680,241	2,494,914	3,808,844	265,065	621,603	886,668
1977	298,335	40,132	338,467	596,578	658,370	2,468,522	3,723,470	281,744	661,011	942,755
1978	280,528	43,626	324,154	656,184	642,415	2,790,795	4,089,394	293,389	688,364	981,753
1979	294,888	47,070	341,958	712,399	677,495	2,802,128	4,192,022	286,644	672,737	959,381
1980	326,210	58,742	384,952	760,846	794,049	2,735,889	4,290,784	320,635	752,226	1,072,861
1981	381,546	103,085	484,631	813,211	852,863	2,894,435	4,560,509	337,028	790,675	1,127,703
1982	429,502	150,141	579,643	853,729	898,133	2,987,852	4,739,714	357,048	842,690	1,199,738
1983	655,932	339,127	995,059	1,355,248	1,487,681	4,685,853	7,528,782	407,482	975,447	1,382,929
1984	1,301,222	1,004,495	2,305,717	1,496,377	1,674,128	5,109,021	8,279,526	446,489	1,091,626	1,538,115
1985	1,510,360	1,203,065	2,713,425	1,609,025	1,832,776	5,383,263	8,825,064	580,301	1,440,054	2,020,355
1986	1,549,018	1,230,233	2,779,251	1,664,539	1,928,465	5,478,048	9,071,052	1,092,870	2,850,148	3,943,018
1987	1,563,374	1,244,244	2,807,618	1,702,651	1,998,292	5,516,310	9,217,253	1,743,063	4,679,529	6,422,592
1988	1,583,658	1,289,512	2,873,170	1,697,397	2,009,867	5,421,676	9,128,940	2,228,282	6,005,479	8,233,761
1989	1,594,044	1,328,713	2,922,757	1,750,915	2,107,592	5,543,144	9,401,651	2,278,603	6,144,202	8,422,805
1990	1,616,246	1,384,921	3,001,167	1,706,429	2,068,312	5,402,826	9,177,567	2,296,528	6,194,904	8,491,432
1991	1,634,429	1,375,852	3,010,281	1,779,249	2,168,129	5,574,298	9,521,676	2,296,443	6,195,190	8,491,633
1992	1,660,850	1,380,537	3,041,387	1,782,665	2,170,658	5,503,366	9,456,689	2,301,070	6,206,197	8,507,267
1993	1,686,413	1,383,403	3,069,816	1,874,728	2,296,042	5,724,391	9,895,161	2,301,264	6,206,655	8,507,919
1994	1,729,688	1,396,754	3,126,442	1,933,314	2,341,258	5,810,072	10,084,644	2,301,614	6,207,469	8,509,083
1995	1,749,687	1,395,834	3,145,521	1,973,989	2,338,537	5,811,400	10,123,926	2,302,077	6,208,548	8,510,625
1996	1,724,296	1,379,616	3,103,912	2,074,013	2,410,176	5,962,367	10,446,556	2,303,656	6,212,238	8,515,894
1997	1,746,796	1,378,325	3,125,121	2,067,725	2,350,791	5,801,539	10,220,055	2,304,335	6,213,836	8,518,171
1998	1,783,288	1,382,834	3,166,122	2,070,493	2,395,442	5,893,218	10,359,153	2,304,824	6,214,971	8,519,795
1999	1,808,165	1,381,960	3,190,125	2,086,096	2,461,952	5,988,609	10,536,657	2,304,897	6,215,147	8,520,044
2000	1,844,453	1,386,672	3,231,125	2,004,783	2,401,625	5,866,695	10,273,103	2,304,601	6,214,452	8,519,053
2001	1,851,287	1,397,838	3,249,125	2,052,202	2,434,864	5,973,342	10,460,408	2,304,465	6,214,138	8,518,603
2002	1,851,095	1,396,030	3,247,125	2,005,280	2,349,863	5,791,062	10,146,205	2,303,744	6,212,456	8,516,200
2003	1,859,985	1,402,140	3,262,125	2,078,437	2,414,697	5,962,473	10,455,607	2,304,117	6,213,329	8,517,446
2004	1,866,249	1,404,876	3,271,125	2,116,802	2,437,949	6,042,029	10,596,780	2,304,029	6,213,121	8,517,150
2005	1,867,361	1,403,764	3,271,125	2,085,286	2,372,647	5,905,236	10,363,169	2,303,464	6,211,800	8,515,264
2006	1,883,799	1,423,326	3,307,125	2,127,610	2,396,947	5,994,553	10,519,110	2,303,233	6,211,264	8,514,497
2007	1,902,035	1,437,207	3,339,242	2,211,312	2,465,066	6,191,843	10,868,221	2,312,952	6,234,048	8,547,000
2008	1,915,486	1,440,756	3,356,242	2,207,530	2,434,665	6,126,612	10,768,807	2,312,814	6,233,727	8,546,541
2009	1,936,907	1,449,335	3,386,242	2,322,633	2,545,330	6,394,620	11,262,583	2,312,662	6,233,367	8,546,029
2010	1,946,167	1,452,075	3,398,242	2,332,979	2,530,085	6,402,696	11,265,760	2,312,299	6,232,524	8,544,823
2011	2,027,772	1,519,470	3,547,242	2,403,441	2,582,002	6,515,452	11,500,895	2,312,352	6,232,649	8,545,001
2012	2,037,316	1,525,926	3,563,242	2,421,847	2,579,684	6,543,215	11,544,746	2,313,677	6,235,761	8,549,438
2013	2,056,253	1,536,989	3,593,242	2,434,158	2,584,690	6,413,805	11,432,653	2,314,141	6,236,841	8,550,982
2014	2,071,091	1,544,151	3,615,242	2,404,487	2,508,480	6,246,019	11,158,986	2,305,278	6,214,901	8,520,179
2015	2,087,632	1,554,610	3,642,242	2,477,132	2,539,345	6,122,793	11,139,270	2,299,868	6,202,105	8,501,973
2016	2,056,427	1,563,840	3,620,267	2,386,340	2,413,833	5,721,216	10,521,389	2,288,384	6,175,074	8,463,458
2017	2,048,841	1,573,697	3,622,538	2,499,085	2,506,229	5,924,690	10,930,004	2,270,835	6,133,930	8,404,765
2018	1,963,377	1,572,304	3,535,681	2,400,681	2,386,929	5,656,436	10,444,046	2,256,150	6,099,450	8,355,600
2019	1,928,264	1,577,440	3,505,704	2,421,588	2,385,504	5,630,595	10,437,687	2,252,618	6,091,073	8,343,691
2020	1,968,607	1,591,980	3,560,587	2,486,419	2,427,749	5,754,210	10,668,378	2,250,695	6,086,499	8,337,194
2021	1,973,988	1,622,065	3,596,053	2,445,867	2,362,537	5,649,546	10,457,950	2,249,275	6,083,098	8,332,373
2022	1,965,899	1,614,660	3,580,559	2,480,850	2,375,007	5,646,914	10,502,771	2,245,823	6,074,917	8,320,740
2023	1,956,976	1,584,831	3,541,807	2,415,784	2,288,219	5,488,720	10,192,723	2,244,922	6,072,763	8,317,685
2024	1,977,813	1,617,562	3,595,375	2,530,738	2,370,963	5,728,167	10,629,868	2,245,004	6,072,904	8,317,908
2025	1,965,149	1,614,486	3,579,635	2,526,495	2,346,976	5,659,028	10,532,499	2,244,354	6,071,345	8,315,699
2026	2,017,546	1,648,910	3,666,456	2,601,920	2,391,504	5,810,776	10,804,200	2,138,433	5,823,853	7,962,286
2027	2,004,606	1,639,116	3,643,722	2,570,726	2,362,653	5,738,693	10,672,072	2,120,835	5,782,124	7,902,959
2028	2,002,128	1,635,623	3,637,751	2,534,071	2,329,129	5,657,327	10,520,527	2,114,295	5,766,688	7,880,983
2029	2,001,525	1,634,220	3,635,745	2,571,218	2,363,017	5,737,090	10,671,325	2,113,083	5,763,737	7,876,820
2030	1,982,502	1,617,785	3,600,287	2,531,802	2,326,980	5,650,791	10,509,573	2,111,184	5,759,174	7,870,358
2031	1,952,703	1,580,928	3,533,631	2,573,665	2,365,202	5,741,651	10,680,518	2,108,754	5,753,330	7,862,084
2032	1,901,411	1,528,428	3,429,839	2,521,933	2,317,958	5,628,985	10,468,876	2,097,323	5,721,313	7,818,636
2033	1,755,795	1,341,483	3,097,278	2,539,493	2,333,987	5,667,068	10,540,548	2,075,516	5,655,398	7,730,914
2034	1,359,413	908,343	2,267,756	2,596,336	2,385,887	5,790,616	10,772,839	2,038,561	5,544,003	7,582,564
2035	1,185,725	730,115	1,915,840	2,556,915	2,349,886	5,704,837	10,611,638	1,906,029	5,198,602	7,104,631
TOTAL	100,045,080	75,520,309	175,565,389	126,451,041	134,094,708	349,539,481	610,085,230	115,357,439	310,221,050	425,578,489

a) Unadjusted for prior overpayments or underpayments of charges.

(in dollars)

Calendar Year	SAN JOAQUIN VALLEY AREA									
	Devil's Den Water District	Dudley Ridge Water District	Empire West Side Irrigation District	Hacienda Water District	Kern County Water Agency		County of Kings	Oak Flat Water District	Tulare Lake Basin Water Storage District	Total
					Municipal and Industrial	Agricultural				
	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
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	65,058	0	0	0	0	65,058
1966	0	0	0	0	121,757	0	0	0	0	121,757
1967	0	0	0	0	236,532	0	0	0	0	236,532
1968	72,133	176,842	10,165	5,353	399,067	1,492,476	12,858	10,832	192,914	2,372,640
1969	119,889	171,889	11,633	24,325	475,581	2,305,754	11,469	9,777	302,829	3,433,146
1970	142,822	193,316	18,345	36,400	523,141	2,812,645	11,596	12,269	234,579	3,985,113
1971	147,370	188,902	19,311	27,624	554,358	3,692,263	16,518	13,523	396,251	5,056,120
1972	172,901	210,611	20,194	29,494	579,310	4,783,834	13,976	19,104	981,757	6,811,181
1973	161,004	192,411	16,272	26,985	586,729	4,727,743	14,226	10,761	353,888	6,090,019
1974	170,810	267,510	16,235	29,910	645,048	5,010,360	14,311	11,734	522,733	6,688,651
1975	190,735	331,154	17,159	35,355	661,331	6,089,703	15,295	13,365	639,041	7,993,138
1976	211,327	290,352	17,734	36,889	719,954	6,437,136	15,672	14,961	488,663	8,232,688
1977	211,691	251,853	14,789	37,077	741,519	6,552,276	17,058	12,771	436,016	8,275,050
1978	241,276	344,515	13,889	40,331	846,620	8,048,749	17,663	17,004	432,756	10,002,803
1979	285,761	378,758	18,030	62,316	856,168	9,321,074	19,291	24,990	897,376	11,863,764
1980	265,583	382,376	23,878	55,225	884,916	9,709,391	19,402	20,847	661,170	12,022,788
1981	277,674	391,270	25,207	58,500	934,971	10,682,386	20,615	20,129	695,666	13,106,418
1982	285,907	405,343	21,498	60,488	951,769	11,348,959	21,154	20,244	718,601	13,833,963
1983	451,910	781,731	46,119	115,274	1,761,476	20,147,379	45,364	48,155	1,409,591	24,806,999
1984	498,293	922,268	53,201	135,382	1,967,917	24,003,290	55,829	55,697	1,663,205	29,355,082
1985	531,285	1,041,083	58,423	154,477	2,161,788	26,848,168	65,714	63,919	1,880,089	32,804,946
1986	557,920	1,167,607	63,650	172,928	2,509,782	30,096,601	76,902	71,075	2,113,583	36,830,048
1987	569,608	1,254,794	66,217	185,607	2,775,210	32,420,264	85,569	76,264	2,273,153	39,706,686
1988	566,321	1,253,365	63,625	185,360	2,877,653	32,907,622	82,430	74,234	2,270,814	40,281,424
1989	586,042	1,385,232	68,411	206,783	3,199,201	35,631,703	88,880	85,181	2,512,152	43,763,585
1990	565,990	1,347,233	64,024	201,072	3,197,104	35,190,786	83,068	78,913	2,532,711	43,260,901
1991	575,416	1,388,038	66,143	207,085	3,274,192	35,995,566	85,902	84,203	2,610,485	44,287,030
1992	550,982	1,261,655	59,568	188,467	3,033,375	33,548,725	77,141	72,369	2,369,457	41,161,739
1993	574,232	1,358,119	64,581	202,676	3,220,549	35,483,747	83,813	81,008	2,553,299	43,622,024
1994	568,629	1,302,656	61,699	194,506	3,097,710	34,382,299	79,976	75,584	2,447,606	42,210,665
1995	589,832	1,401,796	66,851	209,112	3,281,096	36,296,329	86,819	84,894	2,636,543	44,653,272
1996	589,148	1,384,317	65,940	206,536	3,234,100	35,920,377	85,594	83,259	2,603,191	44,172,462
1997	573,386	1,314,599	62,315	196,266	3,139,303	34,736,046	80,780	76,051	2,470,278	42,649,024
1998	584,799	1,354,154	64,372	202,093	3,186,475	35,403,039	83,510	79,964	2,545,657	43,504,063
1999	608,287	1,462,329	69,990	218,029	3,403,599	37,580,928	90,991	89,660	2,751,818	46,275,631
2000	585,646	1,351,613	64,238	201,719	3,190,484	35,413,461	83,346	79,267	2,540,815	43,510,589
2001	593,059	1,388,712	66,164	207,183	3,276,384	36,148,929	85,909	82,625	2,611,517	44,460,482
2002	569,421	1,289,155	60,993	192,517	3,127,662	34,320,349	79,033	72,947	2,421,790	42,133,867
2003	592,961	1,393,860	66,433	207,942	3,320,312	36,281,233	86,262	83,035	2,621,334	44,653,372
2004	596,676	1,410,680	67,308	210,419	3,333,116	36,449,556	87,433	85,337	2,653,384	44,893,909
2005	580,534	1,341,235	63,699	200,191	3,267,684	35,357,726	82,635	77,866	2,521,040	43,492,610
2006	583,773	1,354,963	64,413	202,211	3,285,945	35,534,260	83,595	79,568	2,547,205	43,735,933
2007	596,682	1,397,266	66,597	208,443	3,386,903	36,454,558	86,411	83,148	2,627,537	44,907,545
2008	585,718	1,339,802	63,611	199,978	3,303,904	35,431,456	82,421	77,346	2,518,026	43,602,262
2009	617,592	1,466,615	70,201	218,661	3,571,829	37,975,499	91,220	88,622	2,759,702	46,859,941
2010	605,671	1,408,395	67,175	210,084	3,479,680	36,885,015	87,201	83,021	2,648,749	45,474,991
2011	619,433	1,457,113	69,706	217,259	3,614,255	37,984,727	90,577	86,724	2,741,595	46,881,389
2012	618,257	1,439,223	68,772	214,622	3,601,851	37,706,249	89,333	84,727	2,707,438	46,530,472
2013	647,495	1,553,352	74,704	231,438	3,852,912	40,016,656	97,226	94,760	2,924,941	49,493,484
2014	635,810	1,486,423	71,227	221,577	3,773,474	38,932,229	92,614	87,489	2,797,391	48,098,234
2015	656,110	1,561,032	75,103	232,569	3,866,160	40,386,780	97,777	94,588	2,939,585	49,909,704
2016	631,591	1,468,824	70,311	218,984	3,638,654	38,505,669	91,455	86,310	2,763,855	47,475,653
2017	662,813	1,593,382	76,784	237,335	3,788,063	40,984,273	100,063	97,883	3,001,236	50,541,832
2018	642,572	1,505,137	72,199	224,335	3,541,398	39,359,262	85,379	89,044	2,833,059	48,352,385
2019	650,591	1,533,373	73,666	228,492	3,564,266	39,964,399	86,821	91,863	2,886,870	49,080,341
2020	660,171	1,573,679	75,759	234,432	3,634,552	40,774,693	89,358	95,117	2,963,687	50,101,448
2021	644,741	1,509,014	72,400	224,906	3,473,035	39,407,598	84,746	89,937	2,840,450	48,346,827
2022	659,343	1,568,674	75,500	233,695	3,604,972	40,548,937	88,941	95,601	2,954,153	49,829,816
2023	637,682	1,475,699	70,670	219,998	3,434,697	38,783,763	82,485	86,922	2,776,958	47,568,874
2024	653,450	1,538,695	73,942	229,278	3,548,441	39,894,436	86,817	93,363	2,897,020	49,015,442
2025	647,094	1,512,024	72,557	225,349	3,508,643	39,387,295	84,954	90,927	2,846,192	48,375,035
2026	653,062	1,533,109	73,653	228,457	3,568,295	39,823,856	86,376	92,887	2,886,378	48,946,073
2027	640,669	1,510,098	72,485	225,063	3,505,539	39,240,698	84,805	91,265	2,843,049	48,213,671
2028	630,843	1,465,184	70,150	218,448	3,427,189	38,448,234	81,681	86,950	2,757,456	47,186,135
2029	640,291	1,505,828	72,263	224,434	3,494,633	39,161,854	84,466	91,266	2,834,913	48,109,948
2030	631,453	1,471,772	70,492	219,419	3,417,175	38,466,017	82,081	88,430	2,770,011	47,216,850
2031	639,996	1,500,677	71,991	223,677	3,485,984	39,095,219	83,971	90,883	2,825,097	48,017,495
2032	626,014	1,449,699	69,351	216,167	3,353,828	37,995,590	80,236	86,723	2,728,064	46,605,672
2033	630,637	1,468,484	70,326	218,933	3,380,631	38,357,689	81,189	88,381	2,763,868	47,060,138
2034	645,510	1,531,156	73,583	228,168	3,501,788	39,559,106	85,343	94,145	2,883,307	48,602,106
2035	635,432	1,486,517	71,143	221,621	3,401,907	38,705,132	81,931	89,911	2,798,240	47,491,834
TOTAL	35,047,756	78,398,542	3,859,037	11,625,929	185,630,604	2,027,350,021	4,695,477	4,671,619	147,033,784	2,498,312,769

CHARGE FOR EACH CONTRACTOR[a]

(in dollars)

Calendar Year	SOUTHERN CALIFORNIA AREA									
	Antelope Valley East Kern Water Agency	Castaic Lake Water Agency	Coachella Valley Water District	Crestline Lake Arrowhead Water Agency	Desert Water Agency	Littlerock Creek Irrigation District	Mojave Water Agency	Palmdale Water District	San Bernardino Valley Municipal Water District	San Gabriel Valley Municipal Water District
	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)
1962	0	0	0	0	0	0	0	0	0	0
1963	33,998	0	0	0	0	0	0	0	52,743	0
1964	63,696	20,292	14,462	4,373	37,472	1,154	28,527	8,293	82,956	35,300
1965	120,416	38,690	25,323	7,248	41,139	2,110	50,802	15,435	136,182	35,653
1966	219,403	73,384	45,336	12,635	74,144	3,813	91,649	28,126	235,531	62,284
1967	425,332	151,347	87,612	23,866	143,866	7,419	178,239	55,029	440,723	117,561
1968	746,914	317,234	154,832	42,084	254,727	13,059	315,065	96,876	793,404	211,942
1969	1,076,992	478,859	229,090	62,246	377,189	19,013	465,801	140,424	1,226,801	327,358
1970	1,402,106	610,634	321,020	91,349	528,807	25,696	643,509	188,242	1,811,930	476,423
1971	1,732,634	766,602	439,732	130,534	724,589	32,372	869,957	235,142	2,582,918	670,969
1972	2,045,173	948,004	566,602	182,222	933,825	42,787	1,119,412	277,813	3,423,253	874,108
1973	2,134,321	987,885	698,761	184,746	1,141,846	43,858	1,179,643	290,290	3,988,105	952,180
1974	2,196,755	1,040,724	713,136	193,895	1,166,786	45,574	1,208,765	294,943	4,008,404	993,361
1975	2,370,565	1,098,796	752,626	206,162	1,232,231	48,795	1,272,097	306,803	4,158,733	1,090,592
1976	2,720,369	1,082,054	798,730	215,158	1,307,170	51,714	1,313,174	315,715	4,294,977	1,143,240
1977	2,658,928	1,157,518	694,889	226,130	1,145,394	47,570	1,384,210	331,235	4,545,767	1,205,354
1978	3,043,976	1,229,355	889,634	234,460	1,443,669	48,526	1,414,618	332,360	4,534,729	1,233,158
1979	3,506,984	1,195,898	932,896	236,073	1,501,911	48,027	1,491,114	330,300	4,374,256	1,138,048
1980	4,234,117	1,397,898	992,590	260,633	1,617,995	69,900	1,635,377	378,580	5,008,575	1,324,261
1981	3,999,755	1,435,950	1,022,711	275,726	1,669,014	71,935	1,623,131	370,119	5,297,350	1,506,762
1982	4,263,776	1,448,461	1,071,318	287,515	1,749,805	76,244	2,257,453	367,539	5,519,651	1,537,063
1983	8,213,455	2,257,482	2,273,808	582,073	3,694,709	179,368	5,006,914	507,356	9,425,608	2,709,909
1984	10,221,731	2,520,567	2,898,422	736,035	4,718,999	235,381	6,469,661	821,936	11,678,761	3,433,825
1985	11,047,825	2,856,294	3,122,211	838,368	5,108,962	254,703	6,929,806	1,059,574	13,791,564	3,696,625
1986	12,764,022	2,958,405	3,548,563	896,230	5,824,082	293,305	7,835,527	1,220,099	15,471,260	4,111,464
1987	13,425,173	3,241,869	3,790,938	897,040	6,316,846	315,309	8,384,827	1,323,619	15,760,603	4,253,411
1988	13,800,619	3,258,097	3,971,606	947,399	6,708,003	327,122	8,645,226	1,397,177	16,943,785	4,539,361
1989	14,698,895	3,275,572	4,227,210	940,258	7,233,741	352,396	9,250,898	1,513,830	17,249,657	4,700,982
1990	15,196,447	3,378,036	4,360,782	931,480	7,405,880	360,769	9,509,665	1,576,027	17,399,081	4,756,633
1991	15,708,801	3,485,976	4,397,300	958,465	7,479,467	365,149	9,594,996	1,703,776	17,707,453	4,822,061
1992	15,401,760	3,547,899	4,208,216	936,157	7,164,987	345,651	9,183,835	1,731,589	16,992,971	4,611,766
1993	16,362,801	3,499,446	4,317,527	986,322	7,363,385	359,692	9,414,080	1,905,117	18,047,147	4,869,043
1994	16,284,060	3,482,458	4,079,210	928,468	6,964,843	345,708	8,942,611	1,945,393	17,291,974	4,689,357
1995	17,230,513	3,599,103	4,184,290	960,324	7,157,628	356,217	9,204,026	2,112,481	17,698,491	4,797,699
1996	17,429,166	3,565,667	4,102,955	973,879	7,026,185	347,831	8,996,678	2,150,072	17,707,764	4,766,953
1997	18,062,391	3,611,199	4,096,182	956,244	7,027,711	349,475	9,064,215	2,245,696	17,148,520	4,661,343
1998	18,369,173	3,624,630	4,055,396	988,998	6,965,121	344,103	8,922,919	2,297,226	17,591,560	4,730,918
1999	19,763,043	3,710,750	4,221,586	1,026,265	7,267,438	360,742	9,351,608	2,496,389	18,000,067	4,864,723
2000	19,460,366	3,737,414	4,025,063	992,867	6,935,632	343,735	8,923,183	2,466,697	17,225,698	4,652,241
2001	19,891,460	3,799,953	4,092,182	992,083	7,044,000	350,565	9,123,780	2,571,992	17,115,273	4,664,801
2002	19,835,282	3,795,704	4,098,142	1,040,452	7,039,253	348,068	9,021,768	2,609,160	17,824,793	4,791,242
2003	20,331,806	3,915,178	4,187,492	1,046,187	7,173,891	356,056	9,242,260	2,726,025	17,844,480	4,831,868
2004	19,976,746	4,082,119	4,108,870	1,022,318	7,027,530	348,041	9,083,791	2,718,450	17,293,331	4,690,491
2005	20,604,258	4,058,837	4,222,023	1,062,966	7,211,547	357,035	9,303,016	2,829,786	17,915,378	4,851,826
2006	20,469,049	4,098,069	4,187,040	1,068,349	7,139,563	353,192	9,200,284	2,788,198	17,995,239	4,863,368
2007	20,940,359	4,222,956	4,292,659	1,090,867	7,309,634	360,223	9,452,141	2,833,270	18,112,287	4,915,391
2008	20,989,436	4,502,754	4,302,642	1,096,610	7,304,788	359,788	9,432,702	2,819,274	18,194,815	4,939,781
2009	22,106,343	4,523,151	4,510,683	1,148,626	7,650,113	377,460	9,908,626	2,960,126	18,991,262	5,173,165
2010	21,983,389	4,652,020	4,484,285	1,148,788	7,593,551	373,906	9,842,951	2,920,873	18,886,485	5,133,373
2011	22,923,976	4,837,395	4,664,761	1,206,405	7,889,321	389,473	10,212,215	3,032,817	19,751,119	5,364,468
2012	23,103,366	4,990,118	4,695,785	1,216,960	7,930,467	391,312	10,284,892	3,035,893	19,838,645	5,399,165
2013	24,202,059	5,250,469	4,906,777	1,269,455	8,263,493	408,617	10,751,902	3,171,867	20,579,284	5,622,979
2014	24,600,651	5,366,849	4,984,116	1,291,353	8,384,519	413,573	10,899,335	3,199,469	20,926,488	5,722,385
2015	25,089,180	5,622,500	5,082,697	1,320,472	8,539,064	420,804	11,122,360	3,244,077	21,256,679	5,823,711
2016	24,659,406	5,473,479	4,984,925	1,318,689	8,362,214	411,887	10,848,081	3,163,476	21,139,222	5,765,315
2017	25,298,030	5,756,380	5,095,902	1,339,966	8,538,309	421,656	11,128,717	3,227,897	21,323,169	5,832,367
2018	24,976,995	5,586,299	5,018,127	1,333,331	8,396,490	412,981	10,962,583	3,162,413	21,086,728	5,760,416
2019	25,181,946	5,629,928	5,051,003	1,328,257	8,428,590	414,831	11,017,796	3,166,631	20,740,329	5,700,968
2020	25,405,192	5,691,700	5,064,205	1,333,243	8,439,784	416,185	11,067,476	3,168,006	20,617,250	5,685,310
2021	24,490,281	5,478,680	4,822,626	1,280,773	8,025,836	398,078	10,509,018	3,021,508	19,831,949	5,446,923
2022	25,059,401	5,539,510	4,866,250	1,264,017	8,087,413	404,570	10,644,864	3,072,137	19,491,269	5,410,358
2023	24,707,453	5,512,314	4,785,292	1,242,193	7,940,636	397,149	10,474,501	3,004,232	19,162,379	5,302,546
2024	24,781,768	5,651,031	4,795,882	1,236,579	7,933,939	397,069	10,451,681	2,991,804	19,214,401	5,320,595
2025	24,791,559	5,702,894	4,773,889	1,219,870	7,885,647	395,874	10,397,615	2,971,152	18,970,024	5,270,072
2026	25,168,992	5,822,818	4,816,377	1,230,107	7,943,823	399,293	10,479,171	2,997,010	19,277,754	5,354,131
2027	24,819,850	5,806,714	4,728,142	1,196,887	7,798,291	393,820	10,314,297	2,956,212	18,654,339	5,201,781
2028	24,816,214	5,845,316	4,726,869	1,189,258	7,796,190	393,737	10,328,569	2,955,657	18,526,448	5,180,131
2029	24,814,161	5,895,760	4,741,904	1,225,854	7,821,008	393,694	10,287,576	2,955,372	19,184,746	5,302,231
2030	24,476,497	5,839,734	4,665,146	1,196,733	7,694,390	388,074	10,141,556	2,913,135	18,669,738	5,176,638
2031	24,838,670	6,034,539	4,723,639	1,189,923	7,790,858	393,947	10,320,383	2,957,402	18,562,588	5,188,072
2032	24,087,828	5,992,739	4,591,648	1,167,019	7,573,170	381,538	10,009,079	2,864,178	18,157,734	5,055,249
2033	24,072,063	5,956,695	4,589,149	1,183,472	7,569,063	381,571	9,968,245	2,864,434	18,449,704	5,105,160
2034	24,317,452	6,142,126	4,638,562	1,174,001	7,650,559	386,495	10,128,209	2,901,469	18,279,862	5,099,711
2035	23,641,064	6,107,007	4,594,791	1,182,957	7,578,402	382,145	9,987,823	2,868,860	18,440,001	5,106,657
TOTAL	1,133,888,633	258,274,184	243,227,047	61,208,947	408,210,544	20,108,929	528,522,481	138,481,580	1,019,954,144	278,656,576

TABLE B-19: TOTAL TRANSPORTATION CHARGE FOR EACH CONTRACTOR[a]

(in dollars)

Calendar Year	SOUTHERN CALIFORNIA AREA (continued)				FEATHER RIVER AREA				FUTURE CONTRACTOR	GRAND TOTAL
	San Gorgonio Pass Water Agency	The Metropolitan Water District of Southern California	Ventura County Flood Control District	Total	City of Yuba City	County of Butte	Plumas County FC & WCD	Total	South Bay	
	(31)	(32)	(33)	(34)	(35)	(36)	(37)	(38)	(39)	(40)
1962	0	0	0	0	0	0	0	0	0	55,537
1963	0	707,289	0	794,030	0	0	0	0	58,676	1,637,011
1964	21,929	1,290,223	9,491	1,618,168	0	0	0	0	97,110	2,797,515
1965	22,056	2,227,948	18,039	2,741,041	0	0	403	403	167,588	4,786,189
1966	38,469	3,982,618	34,015	4,901,407	0	0	562	562	193,845	7,370,097
1967	72,506	7,861,739	69,528	9,634,767	0	0	560	560	251,541	12,784,520
1968	130,776	15,625,469	145,571	18,847,953	0	0	562	562	327,292	24,825,822
1969	202,229	23,661,493	219,905	28,487,400	0	0	3,178	3,178	397,684	35,995,314
1970	295,122	31,312,007	279,744	37,986,589	0	0	15,058	15,058	436,440	46,287,894
1971	416,513	40,846,920	349,656	49,798,538	0	0	15,935	15,935	426,187	59,062,927
1972	542,798	53,812,081	429,380	65,197,458	0	0	17,301	17,301	451,879	76,626,960
1973	591,384	58,148,090	443,197	70,784,306	0	0	17,263	17,263	426,399	81,334,466
1974	613,171	62,533,646	463,571	75,472,731	0	0	17,406	17,406	449,435	86,876,009
1975	644,517	67,576,223	487,469	81,245,609	0	0	18,333	18,333	458,979	94,011,350
1976	667,396	69,358,544	485,477	83,753,718	0	0	17,406	17,406	481,639	97,491,521
1977	696,018	67,468,535	516,045	82,077,593	0	0	18,162	18,162	474,424	95,849,921
1978	721,577	75,046,229	541,723	90,714,014	0	0	17,310	17,310	479,605	106,609,033
1979	704,151	73,118,868	531,192	89,109,718	0	0	20,430	20,430	500,689	106,987,962
1980	761,505	85,393,965	615,485	103,690,881	0	0	17,474	17,474	530,493	122,010,233
1981	776,615	88,575,448	632,793	107,257,309	0	0	17,474	17,474	546,735	127,100,779
1982	778,109	89,862,817	645,718	109,865,469	0	0	17,474	17,474	565,555	130,801,556
1983	980,905	152,342,178	972,028	189,145,793	0	0	17,474	17,474	598,186	224,475,222
1984	978,806	179,570,749	1,114,117	225,398,990	0	0	17,474	17,474	602,366	267,497,270
1985	1,020,605	190,039,317	1,257,425	241,023,279	0	0	17,474	17,474	604,708	288,009,251
1986	1,005,087	207,849,255	1,482,252	265,259,551	0	0	17,474	17,474	607,635	318,508,029
1987	952,709	210,454,160	1,753,563	270,870,067	0	0	17,474	17,474	607,867	329,649,557
1988	1,075,750	209,365,253	2,043,169	273,022,567	0	0	17,474	17,474	606,867	334,164,203
1989	1,001,223	223,248,771	2,368,354	290,061,787	0	0	17,474	17,474	605,544	355,195,603
1990	992,161	229,035,073	2,806,508	297,708,542	0	0	17,474	17,474	603,436	362,260,519
1991	1,011,518	236,537,665	2,837,820	306,610,447	0	0	17,474	17,474	603,287	372,541,828
1992	1,021,912	233,820,853	2,763,646	301,731,242	0	0	17,474	17,474	605,332	364,521,130
1993	1,064,339	235,794,565	2,768,660	306,752,124	0	0	17,474	17,474	605,650	372,470,168
1994	1,003,379	232,902,921	2,674,180	301,534,562	0	0	17,474	17,474	606,930	366,089,800
1995	998,227	238,000,947	2,743,864	309,043,810	0	0	17,474	17,474	605,999	376,100,627
1996	1,048,810	235,597,754	2,689,898	306,403,612	0	0	17,474	17,474	608,659	373,268,569
1997	971,807	234,787,584	2,697,375	305,679,742	0	0	17,474	17,474	608,244	370,817,831
1998	1,052,988	236,798,242	2,671,605	308,412,879	0	0	17,474	17,474	608,700	374,588,186
1999	1,018,915	240,040,225	2,765,393	314,887,144	0	0	17,474	17,474	608,505	384,035,580
2000	1,013,950	236,645,063	2,690,530	309,112,439	0	0	17,474	17,474	608,437	375,272,220
2001	952,301	242,330,486	2,726,712	315,655,588	0	0	17,474	17,474	608,178	382,969,858
2002	1,068,570	242,968,322	2,695,653	317,136,409	0	0	17,474	17,474	607,293	381,804,573
2003	1,020,124	250,215,889	2,759,030	325,650,286	0	0	17,474	17,474	607,316	393,163,626
2004	988,814	255,644,190	2,770,135	329,754,826	0	0	17,474	17,474	607,390	397,658,654
2005	1,012,599	257,157,212	2,766,166	333,352,649	0	0	17,474	17,474	606,496	399,618,787
2006	1,035,141	262,626,849	2,765,836	338,590,177	0	0	17,474	17,474	606,432	405,290,748
2007	1,028,037	268,936,246	2,834,832	346,328,902	0	0	17,474	17,474	624,117	414,632,501
2008	1,030,518	282,428,496	2,916,493	360,318,097	0	0	17,474	17,474	623,345	427,232,768
2009	1,018,453	291,478,897	3,000,040	372,846,945	0	0	17,474	17,474	623,375	443,542,589
2010	1,020,084	296,968,104	3,029,627	378,037,436	0	0	17,474	17,474	623,068	447,361,794
2011	1,042,173	309,337,817	3,140,092	393,792,032	0	0	17,474	17,474	623,095	464,907,128
2012	1,033,606	317,163,414	3,183,660	402,267,283	0	0	17,474	17,474	622,860	473,095,515
2013	1,008,906	333,461,633	3,321,187	422,218,628	0	0	17,474	17,474	577,230	495,883,693
2014	1,007,520	342,196,558	3,377,318	432,370,134	0	0	17,474	17,474	539,587	504,319,836
2015	992,291	351,261,547	3,479,913	443,255,295	0	0	17,071	17,071	484,458	516,950,013
2016	1,014,842	343,329,179	3,365,042	433,835,757	0	0	16,911	16,911	457,948	504,391,383
2017	945,332	353,487,575	3,499,036	445,894,336	0	0	16,914	16,914	417,427	519,827,816
2018	918,048	344,219,020	3,387,781	435,221,212	0	0	16,911	16,911	340,186	506,266,021
2019	809,685	344,351,830	3,391,402	435,213,196	0	0	14,296	14,296	275,984	506,870,899
2020	721,622	344,194,989	3,405,059	435,210,021	0	0	2,415	2,415	255,213	508,135,256
2021	675,609	329,721,680	3,260,843	416,963,804	0	0	1,592	1,592	250,881	487,949,480
2022	547,369	328,080,498	3,275,041	415,742,697	0	0	212	212	228,356	488,205,151
2023	535,996	321,612,898	3,210,968	407,888,557	0	0	212	212	227,076	477,736,934
2024	531,533	325,307,799	3,235,504	411,849,585	0	0	211	211	227,251	483,635,640
2025	500,520	323,846,645	3,242,869	409,968,630	0	0	208	208	225,207	480,996,913
2026	500,085	328,141,549	3,271,991	415,403,101	0	0	207	207	225,112	487,007,435
2027	437,794	321,097,147	3,216,812	406,622,086	0	0	204	204	221,473	477,276,187
2028	412,611	319,727,494	3,205,072	405,103,566	0	0	203	203	220,067	474,549,232
2029	504,264	319,936,746	3,187,331	406,250,647	0	0	201	201	219,125	476,763,811
2030	473,088	312,746,349	3,118,767	397,499,845	0	0	200	200	217,684	466,914,797
2031	402,687	317,551,252	3,173,150	403,127,110	0	0	200	200	217,203	473,438,241
2032	419,004	310,095,287	3,087,779	393,482,252	0	0	200	200	215,794	462,021,269
2033	447,913	306,610,863	3,050,737	390,249,069	0	0	200	200	215,424	458,893,571
2034	375,275	310,579,951	3,102,484	394,776,156	0	0	200	200	215,445	464,217,066
2035	426,012	305,931,285	3,046,382	389,293,386	0	0	200	200	214,617	456,632,146
TOTAL	53,768,358	15,695,986,423	157,519,130	19,997,806,976	0	0	880,427	880,427	32,700,260	23,740,929,540

TABLE B-20: CALCULATION OF DELTA WATER RATES

[values in millions of dollars ($) or millions of acre-feet (AF)[a] discounted to 1980 at 4.584 percent per annum][h]

Procedure	Capital Cost Component		Minimum Operation Maintenance, Power and Replacement Component[b]		Total Delta Water Rate[c]	
In accordance with amendment to Articles 22(e) and 22(g)[d] (for all contractors except Solano County Flood Control and Water Conservation District and the City of Yuba City)						
Commencing in 1981:						
Total costs of "initial conservation facilities" to be reimbursed, and project water entitlements during the project repayment period	$1,618.82[e]	94.12 AF	$588.80[f]	94.12 AF	$2,207.62	94.12 AF
less, project power revenues to be realized during the project repayment period	544.79		110.84		655.63	
less, Delta Water Charges paid, and project water entitlements, prior to 1981 [g]	131.31	17.62 AF	38.55	17.62 AF	169.86	17.62 AF
Subtotal	$ 942.72	76.50 AF	$439.41	76.50 AF	$1,382.13	76.50 AF
Rate applicable 1981 through 1983	$12.32 per acre-foot		$5.74 per acre-foot		$18.06 per acre-foot	
Commencing in 1984:						
Additional costs to be reimbursed during the project repayment period for ground water storage facilities	$ 219.44		$ 64.76		$ 284.20	
less, Delta Water Charges paid, and project water entitlements during the period 1981-1983	87.96	7.14 AF	41.00	7.14 AF	128.96	7.14 AF
Cumulative Subtotal	$1,074.20	69.36 AF	$463.17	69.36 AF	$1,537.37	69.36 AF
Rate applicable 1984 through 1985	$15.49 per acre-foot		$6.68 per acre-foot		$22.17 per acre-foot	
Commencing in 1986:						
Additional costs to be reimbursed during the project repayment period for Los Vaqueros Reservoir facilities	$ 452.71		$156.70		$ 609.41	
less, Delta Water Charges paid, and project water entitlements during the period 1984-1985	78.54	5.07 AF	33.86	5.07 AF	112.40	5.07 AF
Cumulative Subtotal	$1,448.37	64.29 AF	$586.01	64.29 AF	$2,034.38	64.29 AF
Rate applicable 1986 through 1988	$22.53 per acre-foot		$9.12 per acre-foot		$31.65 per acre-foot	
Commencing in 1989:						
Additional costs to be reimbursed during the project repayment period for Cottonwood Creek Project	$ 464.85		$ 19.02		$ 483.87	
less, Delta Water Charges paid, and project water entitlements during the period 1986-1988	177.84	7.89 AF	71.95	7.89 AF	249.79	7.89 AF
Cumulative Subtotal	$1,735.38	56.39 AF	$533.07	56.39 AF	$2,268.45	56.39 AF
Rate applicable 1989	$30.77 per acre-foot		$9.45 per acre-foot		$40.22 per acre-foot	
Commencing in 1990:						
Additional costs to be reimbursed during the project repayment period for Glenn Reservoir Complex	$ 221.72		$ 89.38		$ 311.10	
less, Delta Water Charges paid, and project water entitlements during 1989	82.38	2.68 AF	25.30	2.68 AF	107.68	2.68 AF
Cumulative Subtotal	$1,874.72	53.72 AF	$597.15	53.72 AF	$2,471.87	53.72 AF
Rate applicable 1990 through 2035	$34.90 per acre-foot		$11.12 per acre-foot		$46.02 per acre-foot	
Calculation Under Original Provisions of Article 22(e) and 22(g)[d] (for Solano County Flood Control and Water Conservation District)						
Commencing in 1981:						
Total costs of "initial" and "additional" project conservation facilities to be reimbursed and project water entitlements during the project repayment period.	$2,977.53[e]	94.12 AF	$918.66[f]	94.12 AF	$ 3,896.19	94.12 AF
less, project power revenues to be realized during the project repayment period.	544.79		110.84		655.63	
less, Delta Water Charges paid, and project water entitlements, prior to 1981.[g]	131.31	17.62 AF	38.55	17.62 AF	169.86	17.62 AF
TOTAL	$2,301.43	76.50 AF	$769.27	76.50 AF	$ 3,070.70	76.50 AF
Rate applicable 1981 through 2035	$30.09 per acre-foot		$10.06 per acre-foot		$40.15 per acre-foot	
Calculation Under the Original Provisions of Articles 1(r), 22(e) and 22(g)[d] (for the City of Yuba City)						
Commencing in 1981:						
Total costs of "initial" and "additional" project conservation facilities to be reimbursed and project water entitlements during the project repayment period.	$2,991.86[e]	96.94 AF	$954.94[f]	96.94 AF	$3,946.80	96.94 AF
less, project power revenues to be realized during the project repayment period.	553.26		114.10		667.36	
less, Delta Water Charges paid, and project water entitlements, prior to 1981.[g]	130.35	17.47 AF	38.30	17.47 AF	168.65	17.47 AF
TOTAL	$2,308.25	79.47 AF	$802.54	79.47 AF	$3,110.79	79.47 AF
Rate applicable 1981 through 2035	$29.04 per acre-foot		$10.10 per acre-foot		$39.14 per acre-foot	

a) Metric conversion is acre-feet 1.2335 equals cubic dekametres.
b) Considering that all operating costs of project conservation facilities will not vary with annual amounts of project water delivered, and therefore are properly classified as "minimum" OMP&R costs.
c) Metric conversion is dollars per acre-foot times .8107 equals dollars per cubic dekametre.
d) Additional conservation facilities shown in 1984 and after are assumed needed to meet project water requirements through year 2000. Costs of additional facilities required after 2000 to meet the full State Water Project yield have not been identified and are not included.
e) Including net credits of $4,850,000 for settlements as to the magnitude of project capital costs incurred prior to December 31, 1960, and net credits of $6,323,643 for settlement as to the magnitude of project capital costs incurred during the 1961 through 1976 period.
f) Includes conservation power costs and credits at San Luis.
g) Applying all Delta Water Charges paid prior to 1970 to reimburse capital costs (the Charge is not divided into components until 1970).
h) Except the values for the City of Yuba City, which are discounted at 4.378%.

TABLE B-21: TOTAL DELTA WATER

(in dollars)

Calendar Year	NORTH BAY AREA			SOUTH BAY AREA				CENTRAL COASTAL AREA		
	Napa County FC & WCD	Solano County FC & WCD	Total	Alameda County FC & WCD, Zone 7	Alameda County Water District	Santa Clara Valley Water District	Total	San Luis Obispo County FC & WCD	Santa Barbara County FC & WCD	Total
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1967	0	0	0	14,000	50,050	177,100	241,150	0	0	0
1968	0	0	0	19,156	29,701	193,245	242,102	0	0	0
1969	0	0	0	30,324	44,096	215,483	289,903	0	0	0
1970	0	0	0	80,908	107,730	585,200	773,838	0	0	0
1971	0	0	0	57,320	123,080	637,120	817,520	0	0	0
1972	0	0	0	99,668	143,877	707,328	950,873	0	0	0
1973	0	0	0	120,880	167,099	782,167	1,070,146	0	0	0
1974	0	0	0	137,684	182,339	818,664	1,138,687	0	0	0
1975	0	0	0	146,204	187,324	804,123	1,137,651	0	0	0
1976	0	0	0	168,489	208,652	862,036	1,239,177	0	0	0
1977	0	0	0	172,931	208,645	827,062	1,208,638	0	0	0
1978	0	0	0	206,378	243,231	926,594	1,376,203	0	0	0
1979	0	0	0	237,771	273,208	1,005,955	1,516,934	0	0	0
1980	154,953	18,325	173,278	272,717	307,426	1,090,867	1,671,010	12,396	14,875	27,271
1981	248,435	26,092	274,527	415,564	469,768	1,589,984	2,475,316	18,068	41,556	59,624
1982	271,020	32,114	303,134	433,632	491,450	1,589,984	2,515,066	36,136	83,113	119,249
1983	293,605	38,135	331,740	451,700	513,131	1,589,984	2,554,815	54,204	124,669	178,873
1984	387,897	485,721	873,618	576,305	656,101	1,950,570	3,182,976	99,745	230,522	330,267
1985	415,604	561,991	977,595	598,470	682,699	1,950,570	3,231,739	166,242	383,464	549,706
1986	632,901	662,347	1,295,248	886,062	1,015,806	2,784,765	4,686,633	316,451	731,001	1,047,452
1987	672,458	802,844	1,475,302	917,707	1,053,781	2,784,765	4,756,253	395,563	911,378	1,306,941
1988	712,014	1,083,840	1,795,854	949,352	1,091,755	2,784,765	4,825,872	490,498	1,132,893	1,623,391
1989	955,349	1,384,907	2,340,256	1,246,981	1,436,040	3,620,268	6,303,289	804,504	1,854,382	2,658,886
1990	1,150,421	1,685,973	2,836,394	1,472,539	1,698,021	4,233,549	7,404,109	1,150,421	2,655,172	3,805,593
1991	1,150,421	1,685,973	2,836,394	1,564,572	1,767,047	4,325,583	7,657,202	1,150,421	2,655,172	3,805,593
1992	1,150,421	1,685,973	2,836,394	1,656,606	1,836,072	4,417,616	7,910,294	1,150,421	2,655,172	3,805,593
1993	1,150,421	1,685,973	2,836,394	1,748,640	1,905,097	4,509,650	8,163,387	1,150,421	2,655,172	3,805,593
1994	1,150,421	1,685,973	2,836,394	1,840,674	1,932,707	4,601,684	8,375,065	1,150,421	2,655,172	3,805,593
1995	1,150,421	1,685,973	2,836,394	1,932,707	1,932,707	4,601,684	8,467,098	1,150,421	2,655,172	3,805,593
1996	1,150,421	1,685,973	2,836,394	2,024,741	1,932,707	4,601,684	8,559,132	1,150,421	2,655,172	3,805,593
1997	1,150,421	1,685,973	2,836,394	2,116,775	1,932,707	4,601,684	8,651,166	1,150,421	2,655,172	3,805,593
1998	1,150,421	1,685,973	2,836,394	2,116,775	1,932,707	4,601,684	8,651,166	1,150,421	2,655,172	3,805,593
1999	1,150,421	1,685,973	2,836,394	2,116,775	1,932,707	4,601,684	8,651,166	1,150,421	2,655,172	3,805,593
2000	1,150,421	1,685,973	2,836,394	2,116,775	1,932,707	4,601,684	8,651,166	1,150,421	2,655,172	3,805,593
2001	1,150,421	1,685,973	2,836,394	2,116,775	1,932,707	4,601,684	8,651,166	1,150,421	2,655,172	3,805,593
2002	1,150,421	1,685,973	2,836,394	2,116,775	1,932,707	4,601,684	8,651,166	1,150,421	2,655,172	3,805,593
2003	1,150,421	1,685,973	2,836,394	2,116,775	1,932,707	4,601,684	8,651,166	1,150,421	2,655,172	3,805,593
2004	1,150,421	1,685,973	2,836,394	2,116,775	1,932,707	4,601,684	8,651,166	1,150,421	2,655,172	3,805,593
2005	1,150,421	1,685,973	2,836,394	2,116,775	1,932,707	4,601,684	8,651,166	1,150,421	2,655,172	3,805,593
2006	1,150,421	1,685,973	2,836,394	2,116,775	1,932,707	4,601,684	8,651,166	1,150,421	2,655,172	3,805,593
2007	1,150,421	1,685,973	2,836,394	2,116,775	1,932,707	4,601,684	8,651,166	1,150,421	2,655,172	3,805,593
2008	1,150,421	1,685,973	2,836,394	2,116,775	1,932,707	4,601,684	8,651,166	1,150,421	2,655,172	3,805,593
2009	1,150,421	1,685,973	2,836,394	2,116,775	1,932,707	4,601,684	8,651,166	1,150,421	2,655,172	3,805,593
2010	1,150,421	1,685,973	2,836,394	2,116,775	1,932,707	4,601,684	8,651,166	1,150,421	2,655,172	3,805,593
2011	1,150,421	1,685,973	2,836,394	2,116,775	1,932,707	4,601,684	8,651,166	1,150,421	2,655,172	3,805,593
2012	1,150,421	1,685,973	2,836,394	2,116,775	1,932,707	4,601,684	8,651,166	1,150,421	2,655,172	3,805,593
2013	1,150,421	1,685,973	2,836,394	2,116,775	1,932,707	4,601,684	8,651,166	1,150,421	2,655,172	3,805,593
2014	1,150,421	1,685,973	2,836,394	2,116,775	1,932,707	4,601,684	8,651,166	1,150,421	2,655,172	3,805,593
2015	1,150,421	1,685,973	2,836,394	2,116,775	1,932,707	4,601,684	8,651,166	1,150,421	2,655,172	3,805,593
2016	1,150,421	1,685,973	2,836,394	2,116,775	1,932,707	4,601,684	8,651,166	1,150,421	2,655,172	3,805,593
2017	1,150,421	1,685,973	2,836,394	2,116,775	1,932,707	4,601,684	8,651,166	1,150,421	2,655,172	3,805,593
2018	1,150,421	1,685,973	2,836,394	2,116,775	1,932,707	4,601,684	8,651,166	1,150,421	2,655,172	3,805,593
2019	1,150,421	1,685,973	2,836,394	2,116,775	1,932,707	4,601,684	8,651,166	1,150,421	2,655,172	3,805,593
2020	1,150,421	1,685,973	2,836,394	2,116,775	1,932,707	4,601,684	8,651,166	1,150,421	2,655,172	3,805,593
2021	1,150,421	1,685,973	2,836,394	2,116,775	1,932,707	4,601,684	8,651,166	1,150,421	2,655,172	3,805,593
2022	1,150,421	1,685,973	2,836,394	2,116,775	1,932,707	4,601,684	8,651,166	1,150,421	2,655,172	3,805,593
2023	1,150,421	1,685,973	2,836,394	2,116,775	1,932,707	4,601,684	8,651,166	1,150,421	2,655,172	3,805,593
2024	1,150,421	1,685,973	2,836,394	2,116,775	1,932,707	4,601,684	8,651,166	1,150,421	2,655,172	3,805,593
2025	1,150,421	1,685,973	2,836,394	2,116,775	1,932,707	4,601,684	8,651,166	1,150,421	2,655,172	3,805,593
2026	1,150,421	1,685,973	2,836,394	2,116,775	1,932,707	4,601,684	8,651,166	1,150,421	2,655,172	3,805,593
2027	1,150,421	1,685,973	2,836,394	2,116,775	1,932,707	4,601,684	8,651,166	1,150,421	2,655,172	3,805,593
2028	1,150,421	1,685,973	2,836,394	2,116,775	1,932,707	4,601,684	8,651,166	1,150,421	2,655,172	3,805,593
2029	1,150,421	1,685,973	2,836,394	2,116,775	1,932,707	4,601,684	8,651,166	1,150,421	2,655,172	3,805,593
2030	1,150,421	1,685,973	2,836,394	2,116,775	1,932,707	4,601,684	8,651,166	1,150,421	2,655,172	3,805,593
2031	1,150,421	1,685,973	2,836,394	2,116,775	1,932,707	4,601,684	8,651,166	1,150,421	2,655,172	3,805,593
2032	1,150,421	1,685,973	2,836,394	2,116,775	1,932,707	4,601,684	8,651,166	1,150,421	2,655,172	3,805,593
2033	1,150,421	1,685,973	2,836,394	2,116,775	1,932,707	4,601,684	8,651,166	1,150,421	2,655,172	3,805,593
2034	1,150,421	1,685,973	2,836,394	2,116,775	1,932,707	4,601,684	8,651,166	1,150,421	2,655,172	3,805,593
2035	1,150,421	1,685,973	2,836,394	2,116,775	1,932,707	4,601,684	8,651,166	1,150,421	2,655,172	3,805,593
TOTAL	57,663,602	82,651,074	140,314,676	103,034,907	98,066,920	241,035,725	442,137,552	55,313,173	127,645,765	182,958,938

CHARGE FOR EACH CONTRACTOR

(in dollars)

Calendar Year	SAN JOAQUIN VALLEY AREA									
	Devil's Den Water District	Dudley Ridge Water District	Empire West Side Irrigation District	Hacienda Water District	Kern County Water Agency		County of Kings	Oak Flat Water District	Tulare Lake Basin Water Storage District	Total
					Municipal and Industrial	Agricultural				
	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
1967	0	0	0	0	0	0	0	0	0	0
1968	13,060	40,695	10,469	4,511	0	165,522	3,177	8,073	94,097	339,604
1969	17,804	61,267	3,281	3,744	0	337,686	4,200	8,805	98,734	535,521
1970	37,905	104,405	19,950	16,625	0	964,915	8,645	17,290	211,470	1,381,205
1971	48,508	129,596	21,720	16,652	0	1,377,772	9,412	20,272	247,608	1,871,540
1972	61,891	160,756	24,113	20,898	0	2,175,835	11,253	43,131	884,159	3,382,036
1973	77,328	195,541	26,664	25,776	386,638	2,373,167	13,333	27,553	347,531	3,473,531
1974	90,239	224,202	27,909	30,700	446,545	2,781,595	13,954	29,770	414,438	4,059,352
1975	97,774	329,688	27,413	32,896	481,560	3,041,048	14,620	33,702	794,695	4,853,396
1976	114,612	414,245	29,388	39,712	549,549	3,931,785	15,673	35,966	837,439	5,968,369
1977	119,360	312,532	28,195	39,473	569,545	4,071,218	15,977	40,289	586,737	5,783,326
1978	133,724	342,208	31,588	48,436	674,939	4,950,959	20,006	41,065	618,080	6,861,005
1979	145,178	395,523	34,294	56,013	772,757	5,901,986	22,863	45,725	715,600	8,089,939
1980	157,432	555,341	37,189	64,460	881,371	6,984,026	27,272	70,658	869,021	9,646,770
1981	229,464	701,038	54,204	101,181	1,351,487	11,140,730	41,556	77,692	1,271,987	14,969,339
1982	229,464	740,788	54,204	106,601	1,438,213	12,027,869	45,170	81,306	1,342,453	16,066,068
1983	229,464	775,117	54,204	112,022	1,508,678	13,037,870	50,590	83,113	1,412,918	17,263,976
1984	281,503	999,667	66,497	144,076	1,963,869	17,111,815	68,713	106,395	1,819,793	22,562,328
1985	281,503	1,046,215	66,497	152,942	2,081,346	18,200,145	75,363	108,611	1,906,238	23,918,860
1986	401,892	1,560,102	94,935	227,844	3,113,874	27,524,874	117,087	161,390	2,848,056	36,050,054
1987	401,892	1,626,556	94,935	237,338	3,294,251	29,094,469	126,580	164,554	2,971,471	38,012,046
1988	401,892	1,693,011	94,935	246,831	3,446,147	30,559,636	126,580	170,883	3,094,887	39,834,802
1989	510,860	2,236,521	120,676	329,847	4,553,493	40,189,001	160,901	225,261	4,090,903	52,417,463
1990	584,414	2,655,172	138,051	391,143	5,503,614	47,572,207	184,067	262,296	5,061,852	62,352,816
1991	584,414	2,655,172	138,051	391,143	5,503,614	47,572,207	184,067	262,296	5,061,852	62,352,816
1992	584,414	2,655,172	138,051	391,143	5,503,614	47,572,207	184,067	262,296	5,061,852	62,352,816
1993	584,414	2,655,172	138,051	391,143	5,503,614	47,572,207	184,067	262,296	5,061,852	62,352,816
1994	584,414	2,655,172	138,051	391,143	5,503,614	47,572,207	184,067	262,296	5,061,852	62,352,816
1995	584,414	2,655,172	138,051	391,143	5,503,614	47,572,207	184,067	262,296	5,061,852	62,352,816
1996	584,414	2,655,172	138,051	391,143	5,503,614	47,572,207	184,067	262,296	5,061,852	62,352,816
1997	584,414	2,655,172	138,051	391,143	5,503,614	47,572,207	184,067	262,296	5,061,852	62,352,816
1998	584,414	2,655,172	138,051	391,143	5,503,614	47,572,207	184,067	262,296	5,061,852	62,352,816
1999	584,414	2,655,172	138,051	391,143	5,503,614	47,572,207	184,067	262,296	5,061,852	62,352,816
2000	584,414	2,655,172	138,051	391,143	5,503,614	47,572,207	184,067	262,296	5,061,852	62,352,816
2001	584,414	2,655,172	138,051	391,143	5,503,614	47,572,207	184,067	262,296	5,061,852	62,352,816
2002	584,414	2,655,172	138,051	391,143	5,503,614	47,572,207	184,067	262,296	5,061,852	62,352,816
2003	584,414	2,655,172	138,051	391,143	5,503,614	47,572,207	184,067	262,296	5,061,852	62,352,816
2004	584,414	2,655,172	138,051	391,143	5,503,614	47,572,207	184,067	262,296	5,061,852	62,352,816
2005	584,414	2,655,172	138,051	391,143	5,503,614	47,572,207	184,067	262,296	5,061,852	62,352,816
2006	584,414	2,655,172	138,051	391,143	5,503,614	47,572,207	184,067	262,296	5,061,852	62,352,816
2007	584,414	2,655,172	138,051	391,143	5,503,614	47,572,207	184,067	262,296	5,061,852	62,352,816
2008	584,414	2,655,172	138,051	391,143	5,503,614	47,572,207	184,067	262,296	5,061,852	62,352,816
2009	584,414	2,655,172	138,051	391,143	5,503,614	47,572,207	184,067	262,296	5,061,852	62,352,816
2010	584,414	2,655,172	138,051	391,143	5,503,614	47,572,207	184,067	262,296	5,061,852	62,352,816
2011	584,414	2,655,172	138,051	391,143	5,503,614	47,572,207	184,067	262,296	5,061,852	62,352,816
2012	584,414	2,655,172	138,051	391,143	5,503,614	47,572,207	184,067	262,296	5,061,852	62,352,816
2013	584,414	2,655,172	138,051	391,143	5,503,614	47,572,207	184,067	262,296	5,061,852	62,352,816
2014	584,414	2,655,172	138,051	391,143	5,503,614	47,572,207	184,067	262,296	5,061,852	62,352,816
2015	584,414	2,655,172	138,051	391,143	5,503,614	47,572,207	184,067	262,296	5,061,852	62,352,816
2016	584,414	2,655,172	138,051	391,143	5,503,614	47,572,207	184,067	262,296	5,061,852	62,352,816
2017	584,414	2,655,172	138,051	391,143	5,503,614	47,572,207	184,067	262,296	5,061,852	62,352,816
2018	584,414	2,655,172	138,051	391,143	5,503,614	47,572,207	184,067	262,296	5,061,852	62,352,816
2019	584,414	2,655,172	138,051	391,143	5,503,614	47,572,207	184,067	262,296	5,061,852	62,352,816
2020	584,414	2,655,172	138,051	391,143	5,503,614	47,572,207	184,067	262,296	5,061,852	62,352,816
2021	584,414	2,655,172	138,051	391,143	5,503,614	47,572,207	184,067	262,296	5,061,852	62,352,816
2022	584,414	2,655,172	138,051	391,143	5,503,614	47,572,207	184,067	262,296	5,061,852	62,352,816
2023	584,414	2,655,172	138,051	391,143	5,503,614	47,572,207	184,067	262,296	5,061,852	62,352,816
2024	584,414	2,655,172	138,051	391,143	5,503,614	47,572,207	184,067	262,296	5,061,852	62,352,816
2025	584,414	2,655,172	138,051	391,143	5,503,614	47,572,207	184,067	262,296	5,061,852	62,352,816
2026	584,414	2,655,172	138,051	391,143	5,503,614	47,572,207	184,067	262,296	5,061,852	62,352,816
2027	584,414	2,655,172	138,051	391,143	5,503,614	47,572,207	184,067	262,296	5,061,852	62,352,816
2028	584,414	2,655,172	138,051	391,143	5,503,614	47,572,207	184,067	262,296	5,061,852	62,352,816
2029	584,414	2,655,172	138,051	391,143	5,503,614	47,572,207	184,067	262,296	5,061,852	62,352,816
2030	584,414	2,655,172	138,051	391,143	5,503,614	47,572,207	184,067	262,296	5,061,852	62,352,816
2031	584,414	2,655,172	138,051	391,143	5,503,614	47,572,207	184,067	262,296	5,061,852	62,352,816
2032	584,414	2,655,172	138,051	391,143	5,503,614	47,572,207	184,067	262,296	5,061,852	62,352,816
2033	584,414	2,655,172	138,051	391,143	5,503,614	47,572,207	184,067	262,296	5,061,852	62,352,816
2034	584,414	2,655,172	138,051	391,143	5,503,614	47,572,207	184,067	262,296	5,061,852	62,352,816
2035	584,414	2,655,172	138,051	391,143	5,503,614	47,572,207	184,067	262,296	5,061,852	62,352,816
TOTAL	30,965,793	136,782,926	7,373,606	20,051,156	280,680,506	2,426,265,445	9,460,007	13,667,120	260,323,507	3,185,570,066

TABLE B-21: TOTAL DELTA WATER

(in dollars)

Calendar Year	SOUTHERN CALIFORNIA AREA									
	Antelope Valley East Kern Water Agency	Castaic Lake Water Agency	Coachella Valley Water District	Crestline Lake Arrowhead Water Agency	Desert Water Agency	Littlerock Creek Irrigation District	Mojave Water Agency	Palmdale Water District	San Bernardino Valley Municipal Water District	San Gabriel Valley Municipal Water District
	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)
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	160,756	12,860	41,797	4,662	64,303	1,367	67,518	13,021	369,739	85,202
1973	222,207	29,835	51,552	7,279	79,994	2,577	95,104	26,131	54,908	14,338
1974	279,090	53,027	59,539	10,791	93,030	3,721	121,869	39,631	465,150	114,427
1975	319,822	68,533	63,964	13,250	100,515	4,752	140,722	50,989	479,733	119,705
1976	431,018	93,061	74,449	17,045	117,550	6,269	174,366	67,591	538,772	137,142
1977	469,922	107,142	79,144	19,079	122,180	6,861	189,848	77,255	540,410	139,097
1978	600,180	141,095	97,313	24,428	147,413	9,687	236,913	98,345	631,768	165,313
1979	720,173	174,899	115,033	29,836	171,470	11,889	284,640	117,285	714,457	189,760
1980	857,818	219,413	134,920	35,949	210,736	14,256	337,177	138,590	811,952	215,694
1981	1,355,100	363,167	218,713	57,637	343,292	22,946	534,813	211,396	1,237,658	330,644
1982	1,468,929	399,303	240,774	62,877	379,428	24,934	576,369	222,598	1,291,862	345,099
1983	1,584,564	444,473	262,835	68,116	415,564	27,102	619,732	233,800	1,346,066	359,553
1984	2,083,563	596,254	349,507	89,992	554,139	35,687	813,476	300,565	1,728,914	458,827
1985	2,225,423	645,018	376,571	96,420	598,470	38,346	864,457	314,308	1,806,493	483,209
1986	3,376,528	977,832	576,257	146,833	917,707	58,227	1,310,106	468,347	2,689,830	734,165
1987	3,575,892	1,041,123	614,895	156,010	996,819	62,024	1,382,889	487,967	2,816,410	778,469
1988	3,778,420	1,117,071	653,534	165,187	1,075,932	65,505	1,455,673	507,587	2,942,991	822,772
1989	5,056,308	1,504,423	879,846	221,641	1,468,220	88,093	1,950,922	670,152	3,901,845	1,102,171
1990	6,078,824	1,808,462	1,062,989	266,898	1,753,242	105,839	2,337,655	796,091	4,670,709	1,325,285
1991	6,368,730	1,909,699	1,062,989	266,898	1,753,242	105,839	2,337,655	796,091	4,721,328	1,325,285
1992	6,368,730	1,909,699	1,062,989	266,898	1,753,242	105,839	2,337,655	796,091	4,721,328	1,325,285
1993	6,368,730	1,909,699	1,062,989	266,898	1,753,242	105,839	2,337,655	796,091	4,721,328	1,325,285
1994	6,368,730	1,909,699	1,062,989	266,898	1,753,242	105,839	2,337,655	796,091	4,721,328	1,325,285
1995	6,368,730	1,909,699	1,062,989	266,898	1,753,242	105,839	2,337,655	796,091	4,721,328	1,325,285
1996	6,368,730	1,909,699	1,062,989	266,898	1,753,242	105,839	2,337,655	796,091	4,721,328	1,325,285
1997	6,368,730	1,909,699	1,062,989	266,898	1,753,242	105,839	2,337,655	796,091	4,721,328	1,325,285
1998	6,368,730	1,909,699	1,062,989	266,898	1,753,242	105,839	2,337,655	796,091	4,721,328	1,325,285
1999	6,368,730	1,909,699	1,062,989	266,898	1,753,242	105,839	2,337,655	796,091	4,721,328	1,325,285
2000	6,368,730	1,909,699	1,062,989	266,898	1,753,242	105,839	2,337,655	796,091	4,721,328	1,325,285
2001	6,368,730	1,909,699	1,062,989	266,898	1,753,242	105,839	2,337,655	796,091	4,721,328	1,325,285
2002	6,368,730	1,909,699	1,062,989	266,898	1,753,242	105,839	2,337,655	796,091	4,721,328	1,325,285
2003	6,368,730	1,909,699	1,062,989	266,898	1,753,242	105,839	2,337,655	796,091	4,721,328	1,325,285
2004	6,368,730	1,909,699	1,062,989	266,898	1,753,242	105,839	2,337,655	796,091	4,721,328	1,325,285
2005	6,368,730	1,909,699	1,062,989	266,898	1,753,242	105,839	2,337,655	796,091	4,721,328	1,325,285
2006	6,368,730	1,909,699	1,062,989	266,898	1,753,242	105,839	2,337,655	796,091	4,721,328	1,325,285
2007	6,368,730	1,909,699	1,062,989	266,898	1,753,242	105,839	2,337,655	796,091	4,721,328	1,325,285
2008	6,368,730	1,909,699	1,062,989	266,898	1,753,242	105,839	2,337,655	796,091	4,721,328	1,325,285
2009	6,368,730	1,909,699	1,062,989	266,898	1,753,242	105,839	2,337,655	796,091	4,721,328	1,325,285
2010	6,368,730	1,909,699	1,062,989	266,898	1,753,242	105,839	2,337,655	796,091	4,721,328	1,325,285
2011	6,368,730	1,909,699	1,062,989	266,898	1,753,242	105,839	2,337,655	796,091	4,721,328	1,325,285
2012	6,368,730	1,909,699	1,062,989	266,898	1,753,242	105,839	2,337,655	796,091	4,721,328	1,325,285
2013	6,368,730	1,909,699	1,062,989	266,898	1,753,242	105,839	2,337,655	796,091	4,721,328	1,325,285
2014	6,368,730	1,909,699	1,062,989	266,898	1,753,242	105,839	2,337,655	796,091	4,721,328	1,325,285
2015	6,368,730	1,909,699	1,062,989	266,898	1,753,242	105,839	2,337,655	796,091	4,721,328	1,325,285
2016	6,368,730	1,909,699	1,062,989	266,898	1,753,242	105,839	2,337,655	796,091	4,721,328	1,325,285
2017	6,368,730	1,909,699	1,062,989	266,898	1,753,242	105,839	2,337,655	796,091	4,721,328	1,325,285
2018	6,368,730	1,909,699	1,062,989	266,898	1,753,242	105,839	2,337,655	796,091	4,721,328	1,325,285
2019	6,368,730	1,909,699	1,062,989	266,898	1,753,242	105,839	2,337,655	796,091	4,721,328	1,325,285
2020	6,368,730	1,909,699	1,062,989	266,898	1,753,242	105,839	2,337,655	796,091	4,721,328	1,325,285
2021	6,368,730	1,909,699	1,062,989	266,898	1,753,242	105,839	2,337,655	796,091	4,721,328	1,325,285
2022	6,368,730	1,909,699	1,062,989	266,898	1,753,242	105,839	2,337,655	796,091	4,721,328	1,325,285
2023	6,368,730	1,909,699	1,062,989	266,898	1,753,242	105,839	2,337,655	796,091	4,721,328	1,325,285
2024	6,368,730	1,909,699	1,062,989	266,898	1,753,242	105,839	2,337,655	796,091	4,721,328	1,325,285
2025	6,368,730	1,909,699	1,062,989	266,898	1,753,242	105,839	2,337,655	796,091	4,721,328	1,325,285
2026	6,368,730	1,909,699	1,062,989	266,898	1,753,242	105,839	2,337,655	796,091	4,721,328	1,325,285
2027	6,368,730	1,909,699	1,062,989	266,898	1,753,242	105,839	2,337,655	796,091	4,721,328	1,325,285
2028	6,368,730	1,909,699	1,062,989	266,898	1,753,242	105,839	2,337,655	796,091	4,721,328	1,325,285
2029	6,368,730	1,909,699	1,062,989	266,898	1,753,242	105,839	2,337,655	796,091	4,721,328	1,325,285
2030	6,368,730	1,909,699	1,062,989	266,898	1,753,242	105,839	2,337,655	796,091	4,721,328	1,325,285
2031	6,368,730	1,909,699	1,062,989	266,898	1,753,242	105,839	2,337,655	796,091	4,721,328	1,325,285
2032	6,368,730	1,909,699	1,062,989	266,898	1,753,242	105,839	2,337,655	796,091	4,721,328	1,325,285
2033	6,368,730	1,909,699	1,062,989	266,898	1,753,242	105,839	2,337,655	796,091	4,721,328	1,325,285
2034	6,368,730	1,909,699	1,062,989	266,898	1,753,242	105,839	2,337,655	796,091	4,721,328	1,325,285
2035	6,368,730	1,909,699	1,062,989	266,898	1,753,242	105,839	2,337,655	796,091	4,721,328	1,325,285
TOTAL	321,237,387	95,733,446	53,788,137	13,504,340	88,505,894	5,352,837	118,688,724	40,665,744	241,499,427	67,558,697

CHARGE FOR EACH CONTRACTOR

(in dollars)

Calendar Year	SOUTHERN CALIFORNIA AREA (continued)				FEATHER RIVER AREA				FUTURE CONTRACTOR	GRAND TOTAL
	San Gorgonio Pass Water Agency	The Metropolitan Water District of Southern California	Ventura County Flood Control District	Total	City of Yuba City	County of Butte	Plumas County FC & WCD	Total	South Bay	
	(31)	(32)	(33)	(34)	(35)	(36)	(37)	(38)	(39)	(40)
1967	0	0	0	0	0	0	0	0	0	241,150
1968	0	0	0	0	0	1,050	875	1,925	0	583,631
1969	0	0	0	0	0	1,225	929	2,154	0	827,578
1970	0	0	0	0	0	3,848	1,995	5,843	0	2,160,886
1971	0	0	0	0	0	4,546	3,186	7,732	0	2,696,792
1972	0	2,043,211	0	2,864,436	0	4,929	3,778	8,707	0	7,206,052
1973	0	2,317,893	0	2,901,818	0	7,059	4,444	11,503	0	7,456,998
1974	0	4,231,933	0	5,472,208	0	8,336	4,931	13,267	0	10,683,514
1975	0	5,073,286	0	6,435,271	0	9,416	5,117	14,533	0	12,440,851
1976	0	6,422,167	0	8,079,430	0	7,004	5,780	12,784	0	15,299,760
1977	0	7,104,278	0	8,855,216	0	16,917	5,827	22,744	0	15,869,924
1978	0	9,016,389	0	11,168,844	0	12,635	6,844	19,479	0	19,425,531
1979	0	10,935,192	0	13,464,634	0	16,575	7,773	24,348	0	23,095,855
1980	84,294	13,102,796	12,396	16,175,991	0	19,834	8,801	28,635	0	27,722,955
1981	140,930	20,910,099	36,136	25,762,531	164,402	21,682	13,370	199,454	0	43,740,791
1982	158,998	22,722,320	54,204	27,947,695	180,059	21,682	13,912	215,653	0	47,166,865
1983	177,066	24,536,347	72,272	30,147,490	197,674	21,682	14,454	233,810	0	50,710,704
1984	239,388	32,324,042	110,828	39,685,182	215,288	26,599	18,397	260,284	0	66,894,655
1985	261,554	34,549,464	132,993	42,392,726	232,903	26,599	19,062	278,564	0	71,349,190
1986	408,221	52,508,650	253,160	64,425,863	258,346	37,974	28,164	324,484	0	107,829,734
1987	443,031	55,688,979	316,451	68,360,959	285,746	37,974	29,113	352,833	0	114,264,334
1988	477,840	58,872,472	411,386	72,346,370	313,147	37,974	30,379	381,500	0	120,807,789
1989	651,648	78,881,625	643,603	97,020,497	344,461	48,270	40,225	432,956	0	161,173,347
1990	796,091	92,562,869	920,337	114,485,291	375,776	55,220	47,858	478,854	0	191,363,057
1991	796,091	92,562,869	920,337	114,927,053	375,776	1,265,463	49,698	1,690,937	0	193,269,995
1992	796,091	92,562,869	920,337	114,927,053	375,776	1,265,463	51,539	1,692,778	0	193,524,928
1993	796,091	92,562,869	920,337	114,927,053	375,776	1,265,463	53,380	1,694,619	0	193,779,862
1994	796,091	92,562,869	920,337	114,927,053	375,776	1,265,463	55,220	1,696,459	0	193,993,380
1995	796,091	92,562,869	920,337	114,927,053	375,776	1,265,463	57,521	1,698,760	0	194,087,714
1996	796,091	92,562,869	920,337	114,927,053	375,776	1,265,463	59,822	1,701,061	0	194,182,049
1997	796,091	92,562,869	920,337	114,927,053	375,776	1,265,463	62,123	1,703,362	0	194,276,384
1998	796,091	92,562,869	920,337	114,927,053	375,776	1,265,463	64,424	1,705,663	0	194,278,685
1999	796,091	92,562,869	920,337	114,927,053	375,776	1,265,463	66,724	1,707,963	0	194,280,985
2000	796,091	92,562,869	920,337	114,927,053	375,776	1,265,463	69,485	1,710,724	0	194,283,746
2001	796,091	92,562,869	920,337	114,927,053	375,776	1,265,463	72,246	1,713,485	0	194,286,507
2002	796,091	92,562,869	920,337	114,927,053	375,776	1,265,463	75,007	1,716,246	0	194,289,268
2003	796,091	92,562,869	920,337	114,927,053	375,776	1,265,463	77,768	1,719,007	0	194,292,029
2004	796,091	92,562,869	920,337	114,927,053	375,776	1,265,463	80,529	1,721,768	0	194,294,790
2005	796,091	92,562,869	920,337	114,927,053	375,776	1,265,463	83,290	1,724,529	0	194,297,551
2006	796,091	92,562,869	920,337	114,927,053	375,776	1,265,463	86,512	1,727,751	0	194,300,773
2007	796,091	92,562,869	920,337	114,927,053	375,776	1,265,463	89,733	1,730,972	0	194,303,994
2008	796,091	92,562,869	920,337	114,927,053	375,776	1,265,463	92,954	1,734,193	0	194,307,215
2009	796,091	92,562,869	920,337	114,927,053	375,776	1,265,463	96,175	1,737,414	0	194,310,436
2010	796,091	92,562,869	920,337	114,927,053	375,776	1,265,463	99,396	1,740,635	0	194,313,657
2011	796,091	92,562,869	920,337	114,927,053	375,776	1,265,463	103,078	1,744,317	0	194,317,339
2012	796,091	92,562,869	920,337	114,927,053	375,776	1,265,463	106,759	1,747,998	0	194,321,020
2013	796,091	92,562,869	920,337	114,927,053	375,776	1,265,463	110,901	1,752,140	0	194,325,162
2014	796,091	92,562,869	920,337	114,927,053	375,776	1,265,463	115,042	1,756,281	0	194,329,303
2015	796,091	92,562,869	920,337	114,927,053	375,776	1,265,463	119,644	1,760,883	0	194,333,905
2016	796,091	92,562,869	920,337	114,927,053	375,776	1,265,463	124,245	1,765,484	0	194,338,506
2017	796,091	92,562,869	920,337	114,927,053	375,776	1,265,463	124,245	1,765,484	0	194,338,506
2018	796,091	92,562,869	920,337	114,927,053	375,776	1,265,463	124,245	1,765,484	0	194,338,506
2019	796,091	92,562,869	920,337	114,927,053	375,776	1,265,463	124,245	1,765,484	0	194,338,506
2020	796,091	92,562,869	920,337	114,927,053	375,776	1,265,463	124,245	1,765,484	0	194,338,506
2021	796,091	92,562,869	920,337	114,927,053	375,776	1,265,463	124,245	1,765,484	0	194,338,506
2022	796,091	92,562,869	920,337	114,927,053	375,776	1,265,463	124,245	1,765,484	0	194,338,506
2023	796,091	92,562,869	920,337	114,927,053	375,776	1,265,463	124,245	1,765,484	0	194,338,506
2024	796,091	92,562,869	920,337	114,927,053	375,776	1,265,463	124,245	1,765,484	0	194,338,506
2025	796,091	92,562,869	920,337	114,927,053	375,776	1,265,463	124,245	1,765,484	0	194,338,506
2026	796,091	92,562,869	920,337	114,927,053	375,776	1,265,463	124,245	1,765,484	0	194,338,506
2027	796,091	92,562,869	920,337	114,927,053	375,776	1,265,463	124,245	1,765,484	0	194,338,506
2028	796,091	92,562,869	920,337	114,927,053	375,776	1,265,463	124,245	1,765,484	0	194,338,506
2029	796,091	92,562,869	920,337	114,927,053	375,776	1,265,463	124,245	1,765,484	0	194,338,506
2030	796,091	92,562,869	920,337	114,927,053	375,776	1,265,463	124,245	1,765,484	0	194,338,506
2031	796,091	92,562,869	920,337	114,927,053	375,776	1,265,463	124,245	1,765,484	0	194,338,506
2032	796,091	92,562,869	920,337	114,927,053	375,776	1,265,463	124,245	1,765,484	0	194,338,506
2033	796,091	92,562,869	920,337	114,927,053	375,776	1,265,463	124,245	1,765,484	0	194,338,506
2034	796,091	92,562,869	920,337	114,927,053	375,776	1,265,463	124,245	1,765,484	0	194,338,506
2035	796,091	92,562,869	920,337	114,927,053	375,776	1,265,463	124,245	1,765,484	0	194,338,506
TOTAL	39,663,156	4,699,133,117	44,378,931	5,829,709,837	19,477,722	57,394,865	4,799,084	81,671,671	0	9,862,362,740

TABLE B-22: TOTAL TRANSPORTATION[a] AND

(in dollars)

Calendar Year	NORTH BAY AREA			SOUTH BAY AREA				CENTRAL COASTAL AREA		
	Napa County FC & WCD	Solano County FC & WCD	Total	Alameda County FC & WCD, Zone 7	Alameda County Water District	Santa Clara Valley Water District	Total	San Luis Obispo County FC & WCD	Santa Barbara County FC & WCD	Total
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1962	0	0	0	11,750	43,787	0	55,537	0	0	0
1963	0	0	0	150,498	186,687	447,120	784,305	0	0	0
1964	0	0	0	169,803	263,289	620,082	1,053,174	8,340	20,723	29,063
1965	0	0	0	244,481	364,252	1,155,069	1,763,802	14,057	34,240	48,297
1966	18,975	0	18,975	270,481	374,540	1,409,244	2,054,265	23,285	56,001	79,286
1967	42,705	0	42,705	359,574	502,823	1,856,450	2,718,847	41,655	99,063	140,718
1968	129,681	0	129,681	409,104	582,017	2,172,404	3,163,525	67,254	159,017	226,271
1969	255,965	0	255,965	474,993	531,631	2,292,352	3,298,976	121,973	286,895	408,868
1970	279,126	0	279,126	539,201	586,651	2,781,442	3,907,294	134,913	317,199	452,112
1971	229,377	0	229,377	476,507	621,247	2,800,595	3,898,349	136,036	319,905	455,941
1972	227,000	0	227,000	606,829	768,181	3,021,346	4,396,356	142,215	334,443	476,658
1973	223,192	27,666	250,858	592,547	662,264	3,114,263	4,369,074	139,211	327,482	466,693
1974	242,694	29,117	271,811	632,633	692,576	3,318,411	4,643,620	140,498	330,544	471,042
1975	239,986	32,087	272,073	689,450	738,307	3,207,396	4,635,153	156,882	368,834	525,716
1976	274,321	36,237	310,558	802,178	888,893	3,356,950	5,048,021	265,065	621,603	886,668
1977	298,335	40,132	338,467	769,509	867,015	3,295,584	4,932,108	281,744	661,011	942,755
1978	280,528	43,626	324,154	862,562	885,646	3,717,389	5,465,597	293,389	688,364	981,753
1979	294,888	47,070	341,958	950,170	950,703	3,808,083	5,708,956	286,644	672,737	959,381
1980	481,163	77,067	558,230	1,033,563	1,101,475	3,826,756	5,961,794	333,031	767,101	1,100,132
1981	629,981	129,177	759,158	1,228,775	1,322,631	4,484,419	7,035,825	355,096	832,231	1,187,327
1982	700,522	182,255	882,777	1,287,361	1,389,583	4,577,836	7,254,780	393,184	925,803	1,318,987
1983	949,537	377,262	1,326,799	1,806,948	2,000,812	6,275,837	10,083,597	461,686	1,100,116	1,561,802
1984	1,689,119	1,490,216	3,179,335	2,072,682	2,330,229	7,059,591	11,462,502	546,234	1,322,148	1,868,382
1985	1,925,964	1,765,056	3,691,020	2,207,495	2,515,475	7,333,833	12,056,803	746,543	1,823,518	2,570,061
1986	2,181,919	1,892,580	4,074,499	2,550,601	2,944,271	8,262,813	13,757,685	1,409,321	3,581,149	4,990,470
1987	2,235,832	2,047,088	4,282,920	2,620,358	3,052,073	8,301,075	13,973,506	2,138,626	5,590,907	7,729,533
1988	2,295,672	2,373,352	4,669,024	2,646,749	3,101,622	8,206,441	13,954,812	2,718,780	7,138,372	9,857,152
1989	2,549,393	2,713,620	5,263,013	2,997,896	3,543,632	9,163,412	15,704,940	3,083,107	7,998,584	11,081,691
1990	2,766,667	3,070,894	5,837,561	3,178,968	3,766,333	9,636,375	16,581,676	3,446,949	8,850,076	12,297,025
1991	2,784,850	3,061,825	5,846,675	3,343,821	3,935,176	9,899,881	17,178,878	3,446,864	8,850,362	12,297,226
1992	2,811,271	3,066,510	5,877,781	3,439,271	4,006,730	9,920,982	17,366,983	3,451,491	8,861,369	12,312,860
1993	2,836,834	3,069,376	5,906,210	3,623,368	4,201,139	10,234,041	18,058,548	3,451,685	8,861,827	12,313,512
1994	2,880,109	3,082,727	5,962,836	3,773,988	4,273,965	10,411,756	18,459,709	3,452,035	8,862,641	12,314,676
1995	2,900,108	3,081,807	5,981,915	3,906,696	4,271,244	10,413,084	18,591,024	3,452,498	8,863,720	12,316,218
1996	2,874,717	3,065,589	5,940,306	4,098,754	4,342,883	10,564,051	19,005,688	3,454,077	8,867,410	12,321,487
1997	2,897,217	3,064,298	5,961,515	4,184,500	4,283,498	10,403,223	18,871,221	3,454,756	8,869,008	12,323,764
1998	2,933,709	3,068,807	6,002,516	4,187,268	4,328,149	10,494,902	19,010,319	3,455,245	8,870,143	12,325,388
1999	2,958,586	3,067,933	6,026,519	4,202,871	4,394,659	10,590,293	19,187,823	3,455,318	8,870,319	12,325,637
2000	2,994,874	3,072,645	6,067,519	4,121,558	4,334,332	10,468,379	18,924,269	3,455,022	8,869,624	12,324,646
2001	3,001,708	3,083,811	6,085,519	4,168,977	4,367,571	10,575,026	19,111,574	3,454,886	8,869,310	12,324,196
2002	3,001,516	3,082,003	6,083,519	4,122,055	4,282,570	10,392,746	18,797,371	3,454,165	8,867,628	12,321,793
2003	3,010,406	3,088,113	6,098,519	4,195,212	4,347,404	10,564,157	19,106,773	3,454,538	8,868,501	12,323,039
2004	3,016,670	3,090,849	6,107,519	4,233,577	4,370,656	10,643,713	19,247,946	3,454,450	8,868,293	12,322,743
2005	3,017,782	3,089,737	6,107,519	4,202,061	4,305,354	10,506,920	19,014,335	3,453,885	8,866,972	12,320,857
2006	3,034,220	3,109,299	6,143,519	4,244,385	4,329,654	10,596,237	19,170,276	3,453,654	8,866,436	12,320,090
2007	3,052,456	3,123,180	6,175,636	4,328,087	4,397,773	10,793,527	19,519,387	3,463,373	8,889,220	12,352,593
2008	3,065,907	3,126,729	6,192,636	4,324,305	4,367,372	10,728,296	19,419,973	3,463,235	8,888,899	12,352,134
2009	3,087,328	3,135,308	6,222,636	4,439,408	4,478,037	10,996,304	19,913,749	3,463,083	8,888,539	12,351,622
2010	3,096,588	3,138,048	6,234,636	4,449,754	4,462,792	11,004,380	19,916,926	3,462,720	8,887,696	12,350,416
2011	3,178,193	3,205,443	6,383,636	4,520,216	4,514,709	11,117,136	20,152,061	3,462,773	8,887,821	12,350,594
2012	3,187,737	3,211,899	6,399,636	4,538,622	4,512,391	11,144,899	20,195,912	3,464,098	8,890,933	12,355,031
2013	3,206,674	3,222,962	6,429,636	4,550,933	4,517,397	11,015,489	20,083,819	3,464,562	8,892,013	12,356,575
2014	3,221,512	3,230,124	6,451,636	4,521,262	4,441,187	10,847,703	19,810,152	3,455,699	8,870,073	12,325,772
2015	3,238,053	3,240,583	6,478,636	4,593,907	4,472,052	10,724,477	19,790,436	3,450,289	8,857,277	12,307,566
2016	3,206,848	3,249,813	6,456,661	4,503,115	4,346,540	10,322,900	19,172,555	3,438,805	8,830,246	12,269,051
2017	3,199,262	3,259,670	6,458,932	4,615,860	4,438,936	10,526,374	19,581,170	3,421,256	8,789,102	12,210,358
2018	3,113,798	3,258,277	6,372,075	4,517,456	4,319,636	10,258,120	19,095,212	3,406,571	8,754,622	12,161,193
2019	3,078,685	3,263,413	6,342,098	4,538,363	4,318,211	10,232,279	19,088,853	3,403,039	8,746,245	12,149,284
2020	3,119,028	3,277,953	6,396,981	4,603,194	4,360,456	10,355,894	19,319,544	3,401,116	8,741,671	12,142,787
2021	3,124,409	3,308,038	6,432,447	4,562,642	4,295,244	10,251,230	19,109,116	3,399,696	8,738,270	12,137,966
2022	3,116,320	3,300,633	6,416,953	4,597,625	4,307,714	10,248,598	19,153,937	3,396,244	8,730,089	12,126,333
2023	3,107,397	3,270,804	6,378,201	4,532,559	4,220,926	10,090,404	18,843,889	3,395,343	8,727,935	12,123,278
2024	3,128,234	3,303,535	6,431,769	4,647,513	4,303,670	10,329,851	19,281,034	3,395,425	8,728,076	12,123,501
2025	3,115,570	3,300,459	6,416,029	4,643,270	4,279,683	10,260,712	19,183,665	3,394,775	8,726,517	12,121,292
2026	3,167,967	3,334,883	6,502,850	4,718,695	4,324,211	10,412,460	19,455,366	3,288,854	8,479,025	11,767,879
2027	3,155,027	3,325,089	6,480,116	4,687,501	4,295,360	10,340,377	19,323,238	3,271,256	8,437,296	11,708,552
2028	3,152,549	3,321,596	6,474,145	4,650,846	4,261,836	10,259,011	19,171,693	3,264,716	8,421,860	11,686,576
2029	3,151,946	3,320,193	6,472,139	4,687,993	4,295,724	10,338,774	19,322,491	3,263,504	8,418,909	11,682,413
2030	3,132,923	3,303,758	6,436,681	4,648,577	4,259,687	10,252,475	19,160,739	3,261,605	8,414,346	11,675,951
2031	3,103,124	3,266,901	6,370,025	4,690,440	4,297,909	10,343,335	19,331,684	3,259,175	8,408,502	11,667,677
2032	3,051,832	3,214,401	6,266,233	4,638,708	4,250,665	10,230,669	19,120,042	3,247,744	8,376,485	11,624,229
2033	2,906,216	3,027,456	5,933,672	4,656,268	4,266,694	10,268,752	19,191,714	3,225,937	8,310,570	11,536,507
2034	2,509,834	2,594,316	5,104,150	4,713,111	4,318,594	10,392,300	19,424,005	3,188,982	8,199,175	11,388,157
2035	2,336,146	2,416,088	4,752,234	4,673,690	4,282,593	10,306,521	19,262,804	3,056,450	7,853,774	10,910,224
TOTAL	157,708,682	158,171,383	315,880,065	229,485,948	232,161,628	590,575,206	1,052,222,782	170,670,612	437,866,815	608,537,427

a) Unadjusted for prior overpayments or underpayments of charges. See Table B-19 for total Transportation Charge for each contractor.

b) See Table B-21 for total Delta Water Charge for each contractor.

DELTA WATER[b] CHARGE FOR EACH CONTRACTOR

(in dollars)

Calendar Year	SAN JOAQUIN VALLEY AREA									
	Devil's Den Water District	Dudley Ridge Water District	Empire West Side Irrigation District	Hacienda Water District	Kern County Water Agency		County of Kings	Oak Flat Water District	Tulare Lake Basin Water Storage District	Total
					Municipal and Industrial	Agricultural				
	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
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	65,058	0	0	0	0	65,058
1966	0	0	0	0	121,757	0	0	0	0	121,757
1967	0	0	0	0	236,532	0	0	0	0	236,532
1968	85,193	217,537	20,634	9,864	399,067	1,657,998	16,035	18,905	287,011	2,712,244
1969	137,693	233,156	14,914	28,069	475,581	2,643,440	15,669	18,582	401,563	3,968,667
1970	180,727	297,721	38,295	53,025	523,141	3,777,560	20,241	29,559	446,049	5,366,318
1971	195,878	318,498	41,031	44,276	554,358	5,070,035	25,930	33,795	643,859	6,927,660
1972	234,792	371,367	44,307	50,392	579,310	6,959,669	25,229	62,235	1,865,916	10,193,217
1973	238,332	387,952	42,936	52,761	973,367	7,100,910	27,559	38,314	701,419	9,563,550
1974	261,049	491,712	44,144	60,610	1,091,593	7,791,955	28,265	41,504	937,171	10,748,003
1975	288,509	660,842	44,572	68,251	1,142,891	9,130,751	29,915	47,067	1,433,736	12,846,534
1976	325,939	704,597	47,122	76,601	1,269,503	10,368,921	31,345	50,927	1,326,102	14,201,057
1977	331,051	564,385	42,984	76,550	1,311,064	10,623,494	33,035	53,060	1,022,753	14,058,376
1978	375,000	686,723	45,477	88,767	1,521,559	12,999,708	37,669	58,069	1,050,836	16,863,808
1979	430,939	774,281	52,324	118,329	1,628,925	15,223,060	42,154	70,715	1,612,976	19,953,703
1980	423,015	937,717	61,067	119,685	1,766,287	16,693,417	46,674	91,505	1,530,191	21,669,558
1981	507,138	1,092,308	79,411	159,681	2,286,458	21,823,116	62,171	97,821	1,967,653	28,075,757
1982	515,371	1,146,131	75,702	167,089	2,389,982	23,376,828	66,324	101,550	2,061,054	29,900,031
1983	681,374	1,556,848	100,323	227,296	3,270,154	33,185,249	95,954	131,268	2,822,509	42,070,975
1984	779,796	1,921,935	119,698	279,458	3,931,786	41,115,105	124,542	162,092	3,482,998	51,917,410
1985	812,788	2,087,298	124,920	307,419	4,243,134	45,048,313	141,077	172,530	3,786,327	56,723,806
1986	959,812	2,727,709	158,585	400,772	5,623,656	57,621,475	193,989	232,465	4,961,639	72,880,102
1987	971,500	2,881,350	161,152	422,945	6,069,461	61,514,733	212,149	240,818	5,244,624	77,718,732
1988	968,213	2,946,376	158,560	432,191	6,323,800	63,467,258	209,010	245,117	5,365,701	80,116,226
1989	1,096,902	3,621,753	189,087	536,630	7,752,694	75,820,704	249,781	310,442	6,603,055	96,181,048
1990	1,150,404	4,002,405	202,075	592,215	8,700,718	82,762,993	267,135	341,209	7,594,563	105,613,717
1991	1,159,830	4,043,210	204,194	598,228	8,777,806	83,567,773	269,969	346,499	7,672,337	106,639,846
1992	1,135,396	3,916,827	197,619	579,610	8,536,989	81,120,932	261,208	334,665	7,431,309	103,514,555
1993	1,158,646	4,013,291	202,632	593,819	8,724,163	83,055,954	267,880	343,304	7,615,151	105,974,840
1994	1,153,043	3,957,828	199,750	585,649	8,601,324	81,954,506	264,043	337,880	7,509,458	104,563,481
1995	1,174,246	4,056,968	204,902	600,255	8,784,710	83,868,536	270,886	347,190	7,698,395	107,006,088
1996	1,173,562	4,039,489	203,991	597,679	8,737,714	83,492,584	269,661	345,555	7,665,043	106,525,278
1997	1,157,800	3,969,771	200,366	587,409	8,642,917	82,308,253	264,847	338,347	7,532,130	105,001,840
1998	1,169,213	4,009,326	202,423	593,236	8,690,089	82,975,246	267,577	342,260	7,607,509	105,856,879
1999	1,192,701	4,117,501	208,041	609,172	8,907,213	85,153,135	275,058	351,956	7,813,670	108,628,447
2000	1,170,060	4,006,785	202,289	592,862	8,694,098	82,985,668	267,413	341,563	7,602,667	105,863,405
2001	1,177,473	4,043,884	204,215	598,326	8,779,998	83,721,136	269,976	344,921	7,673,369	106,813,298
2002	1,153,835	3,944,327	199,044	583,660	8,631,276	81,892,556	263,100	335,243	7,483,642	104,486,683
2003	1,177,375	4,049,032	204,484	599,085	8,823,926	83,853,440	270,329	345,331	7,683,186	107,006,188
2004	1,181,090	4,065,852	205,359	601,562	8,836,730	84,021,763	271,500	347,633	7,715,236	107,246,725
2005	1,164,948	3,996,407	201,750	591,334	8,771,298	82,929,933	266,702	340,162	7,582,892	105,845,426
2006	1,168,187	4,010,135	202,464	593,354	8,789,559	83,106,467	267,662	341,864	7,609,057	106,088,749
2007	1,181,096	4,052,438	204,648	599,586	8,890,517	84,026,765	270,478	345,444	7,689,389	107,260,361
2008	1,170,132	3,994,974	201,662	591,121	8,807,518	83,003,663	266,488	339,642	7,579,878	105,955,078
2009	1,202,006	4,121,787	208,252	609,804	9,075,443	85,547,706	275,287	350,918	7,821,554	109,212,757
2010	1,190,085	4,063,567	205,226	601,227	8,983,294	84,457,222	271,268	345,317	7,710,601	107,827,807
2011	1,203,847	4,112,285	207,757	608,402	9,117,869	85,556,934	274,644	349,020	7,803,447	109,234,205
2012	1,202,671	4,094,395	206,823	605,765	9,105,465	85,278,456	273,400	347,023	7,769,290	108,883,288
2013	1,231,909	4,208,524	212,755	622,581	9,356,526	87,588,863	281,293	357,056	7,986,793	111,846,300
2014	1,220,224	4,141,595	209,278	612,720	9,277,088	86,504,436	276,681	349,785	7,859,243	110,451,050
2015	1,240,524	4,216,204	213,154	623,712	9,369,774	87,958,987	281,844	356,884	8,001,437	112,262,520
2016	1,216,005	4,123,996	208,362	610,127	9,142,268	86,077,876	275,522	348,606	7,825,707	109,828,469
2017	1,247,227	4,248,554	214,835	628,478	9,291,677	88,556,480	284,130	360,179	8,063,088	112,894,648
2018	1,226,986	4,160,309	210,250	615,478	9,045,012	86,931,469	269,446	351,340	7,894,911	110,705,201
2019	1,235,005	4,188,545	211,717	619,635	9,067,880	87,536,606	270,888	354,159	7,948,722	111,433,157
2020	1,244,585	4,228,851	213,810	625,575	9,138,166	88,346,900	273,425	357,413	8,025,539	112,454,264
2021	1,229,155	4,164,186	210,451	616,049	8,976,649	86,979,805	268,813	352,233	7,902,302	110,699,643
2022	1,243,757	4,223,846	213,551	624,838	9,108,586	88,121,144	273,008	357,897	8,016,005	112,182,632
2023	1,222,096	4,130,871	208,721	611,141	8,938,311	86,355,970	266,552	349,218	7,838,810	109,921,690
2024	1,237,864	4,193,867	211,993	620,421	9,052,055	87,466,643	270,884	355,659	7,958,872	111,368,258
2025	1,231,508	4,167,196	210,608	616,492	9,012,257	86,959,502	269,021	353,223	7,908,044	110,727,851
2026	1,237,476	4,188,281	211,704	619,600	9,071,909	87,396,063	270,443	355,183	7,948,230	111,298,889
2027	1,225,083	4,165,270	210,536	616,206	9,009,153	86,812,905	268,872	353,561	7,904,901	110,566,487
2028	1,215,257	4,120,356	208,201	609,591	8,930,803	86,020,441	265,748	349,246	7,819,308	109,538,951
2029	1,224,705	4,161,000	210,314	615,577	8,998,247	86,734,061	268,533	353,562	7,896,765	110,462,764
2030	1,215,867	4,126,944	208,543	610,562	8,920,789	86,038,224	266,148	350,726	7,831,863	109,569,666
2031	1,224,410	4,155,849	210,042	614,820	8,989,598	86,667,426	268,038	353,179	7,886,949	110,370,311
2032	1,210,428	4,104,871	207,402	607,310	8,857,442	85,567,797	264,303	349,019	7,789,916	108,958,488
2033	1,215,051	4,123,656	208,377	610,076	8,884,245	85,929,896	265,256	350,677	7,825,720	109,412,954
2034	1,229,924	4,186,328	211,634	619,311	9,005,402	87,131,313	269,410	356,441	7,945,159	110,954,922
2035	1,219,846	4,141,689	209,194	612,764	8,905,521	86,277,339	265,998	352,207	7,860,092	109,844,650
TOTAL	66,013,549	215,181,468	11,232,643	31,677,085	466,311,110	4,453,615,466	14,155,484	18,338,739	407,357,291	5,683,882,835

TABLE B-22: TOTAL TRANSPORTATION[a] AND

(in dollars)

Calendar Year	SOUTHERN CALIFORNIA AREA									
	Antelope Valley East Kern Water Agency	Castaic Lake Water Agency	Coachella Valley Water District	Crestline Lake Arrowhead Water Agency	Desert Water Agency	Littlerock Creek Irrigation District	Mojave Water Agency	Palmdale Water District	San Bernardino Valley Municipal Water District	San Gabriel Valley Municipal Water District
	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)
1962	0	0	0	0	0	0	0	0	0	0
1963	33,998	0	0	0	0	0	0	0	52,743	0
1964	63,696	20,292	14,462	4,373	37,472	1,154	28,527	8,293	82,956	35,300
1965	120,416	38,690	25,323	7,248	41,139	2,110	50,802	15,435	136,182	35,653
1966	219,403	73,384	45,336	12,635	74,144	3,813	91,649	28,126	235,531	62,284
1967	425,332	151,347	87,612	23,866	143,866	7,419	178,239	55,029	440,723	117,561
1968	746,914	317,234	154,832	42,084	254,727	13,059	315,065	96,876	793,404	211,942
1969	1,076,992	478,859	229,090	62,246	377,189	19,013	465,801	140,424	1,226,801	327,358
1970	1,402,106	610,634	321,020	91,349	528,807	25,696	643,509	188,242	1,811,930	476,423
1971	1,732,634	766,602	439,732	130,534	724,589	32,372	869,957	235,142	2,582,918	670,969
1972	2,205,929	960,864	608,399	186,884	998,128	44,154	1,186,930	290,834	3,792,992	959,310
1973	2,356,528	1,017,720	750,313	192,025	1,221,840	46,435	1,274,747	316,421	4,043,013	966,518
1974	2,475,845	1,093,751	772,675	204,686	1,259,816	49,295	1,330,634	334,574	4,473,554	1,107,788
1975	2,690,387	1,167,329	816,590	219,412	1,332,746	53,547	1,412,819	357,792	4,638,466	1,210,297
1976	3,151,387	1,175,115	873,179	232,203	1,424,720	57,983	1,487,540	383,306	4,833,749	1,280,382
1977	3,128,850	1,264,660	774,033	245,209	1,267,574	54,431	1,574,058	408,490	5,086,177	1,344,451
1978	3,644,156	1,370,450	986,947	258,888	1,591,082	58,213	1,651,531	430,705	5,166,497	1,398,471
1979	4,227,157	1,370,797	1,047,929	265,909	1,673,381	59,916	1,775,754	447,585	5,088,713	1,327,808
1980	5,091,935	1,617,311	1,127,510	296,582	1,828,731	84,156	1,972,554	517,170	5,820,527	1,539,955
1981	5,354,855	1,799,117	1,241,424	333,363	2,012,306	94,881	2,157,944	581,515	6,535,008	1,837,406
1982	5,732,705	1,847,764	1,312,092	350,392	2,129,233	101,178	2,833,822	590,137	6,811,513	1,882,162
1983	9,798,019	2,701,955	2,536,643	650,189	4,110,273	206,470	5,626,646	741,156	10,771,674	3,069,462
1984	12,305,294	3,116,821	3,247,929	826,027	5,273,138	271,068	7,283,137	1,122,501	13,407,675	3,892,652
1985	13,273,248	3,501,312	3,498,782	934,788	5,707,432	293,049	7,794,263	1,373,882	15,598,057	4,179,834
1986	16,140,550	3,936,237	4,124,820	1,043,063	6,741,789	351,532	9,145,633	1,688,446	18,161,090	4,845,629
1987	17,001,065	4,282,992	4,405,833	1,053,050	7,313,665	377,333	9,767,716	1,811,586	18,577,013	5,031,880
1988	17,579,039	4,375,168	4,625,140	1,112,586	7,783,935	392,627	10,100,899	1,904,764	19,886,776	5,362,133
1989	19,755,203	4,779,995	5,107,056	1,161,899	8,701,961	440,489	11,201,820	2,183,982	21,151,502	5,803,153
1990	21,275,271	5,186,498	5,423,771	1,198,378	9,159,122	466,608	11,847,320	2,372,118	22,069,790	6,081,918
1991	22,077,531	5,395,675	5,460,289	1,225,363	9,232,709	470,988	11,932,651	2,499,867	22,428,781	6,147,346
1992	21,770,490	5,457,598	5,271,205	1,203,055	8,918,229	451,490	11,521,490	2,527,680	21,714,299	5,937,051
1993	22,731,531	5,409,145	5,380,516	1,253,220	9,116,627	465,531	11,751,735	2,701,208	22,768,475	6,194,328
1994	22,652,790	5,392,157	5,142,199	1,195,366	8,718,085	451,547	11,280,266	2,741,484	22,013,302	6,014,642
1995	23,599,243	5,508,802	5,247,279	1,227,222	8,910,870	462,056	11,541,681	2,908,572	22,419,819	6,122,984
1996	23,797,896	5,475,366	5,165,944	1,240,777	8,779,427	453,670	11,334,333	2,946,163	22,429,092	6,092,238
1997	24,431,121	5,520,898	5,159,171	1,223,142	8,780,953	455,314	11,401,870	3,041,787	21,869,848	5,986,628
1998	24,737,903	5,534,329	5,118,385	1,255,896	8,718,363	449,942	11,260,574	3,093,317	22,312,888	6,056,203
1999	26,131,773	5,620,449	5,284,575	1,293,163	9,020,680	466,581	11,689,263	3,292,480	22,721,395	6,190,008
2000	25,829,096	5,647,113	5,088,052	1,259,765	8,688,874	449,574	11,260,838	3,262,788	21,947,026	5,977,526
2001	26,260,190	5,709,652	5,155,171	1,258,981	8,797,242	456,404	11,461,435	3,368,083	21,836,601	5,990,086
2002	26,204,012	5,705,403	5,161,131	1,307,350	8,792,495	453,907	11,359,423	3,405,251	22,546,121	6,116,527
2003	26,700,536	5,824,877	5,250,481	1,313,085	8,927,133	461,895	11,579,915	3,522,116	22,565,808	6,157,153
2004	26,345,476	5,991,818	5,171,859	1,289,216	8,780,772	453,880	11,421,446	3,514,541	22,014,659	6,015,776
2005	26,972,988	5,968,536	5,285,012	1,329,864	8,964,789	462,874	11,640,671	3,625,877	22,636,706	6,177,111
2006	26,837,779	6,007,768	5,250,029	1,335,247	8,892,805	459,031	11,537,939	3,584,289	22,716,567	6,188,653
2007	27,309,089	6,132,655	5,355,648	1,357,765	9,062,876	466,062	11,789,796	3,629,361	22,833,615	6,240,676
2008	27,358,166	6,412,453	5,365,631	1,363,508	9,058,030	465,627	11,770,357	3,615,365	22,916,143	6,265,066
2009	28,475,073	6,432,850	5,573,672	1,415,524	9,403,355	483,299	12,246,281	3,756,217	23,712,590	6,498,450
2010	28,352,119	6,561,719	5,547,274	1,415,686	9,346,793	479,745	12,180,606	3,716,964	23,607,813	6,458,658
2011	29,292,706	6,747,094	5,727,750	1,473,303	9,642,563	495,312	12,549,870	3,828,908	24,472,447	6,689,753
2012	29,472,096	6,899,817	5,758,774	1,483,858	9,683,709	497,151	12,622,547	3,831,984	24,559,973	6,724,450
2013	30,570,789	7,160,168	5,969,766	1,536,353	10,016,735	514,456	13,089,557	3,967,958	25,300,612	6,948,264
2014	30,969,381	7,276,548	6,047,105	1,558,251	10,137,761	519,412	13,236,990	3,995,560	25,647,816	7,047,670
2015	31,457,910	7,532,199	6,145,686	1,587,370	10,292,306	526,643	13,460,015	4,040,168	25,978,007	7,148,996
2016	31,028,136	7,383,178	6,047,914	1,585,587	10,115,456	517,726	13,185,736	3,959,567	25,860,550	7,090,600
2017	31,666,760	7,666,079	6,158,891	1,606,864	10,291,551	527,495	13,466,372	4,023,988	26,044,497	7,157,652
2018	31,345,725	7,495,998	6,081,116	1,600,229	10,149,732	518,820	13,300,238	3,958,504	25,808,056	7,085,701
2019	31,550,676	7,539,627	6,113,992	1,595,155	10,181,832	520,670	13,355,451	3,962,722	25,461,657	7,026,253
2020	31,773,922	7,601,399	6,127,194	1,600,141	10,193,026	522,024	13,405,131	3,964,097	25,338,578	7,010,595
2021	30,859,011	7,388,379	5,885,615	1,547,671	9,779,078	503,917	12,846,673	3,817,599	24,553,277	6,772,208
2022	31,428,131	7,449,209	5,929,239	1,530,915	9,840,655	510,409	12,982,519	3,868,228	24,212,597	6,735,643
2023	31,076,183	7,422,013	5,848,281	1,509,091	9,693,878	502,988	12,812,156	3,800,323	23,883,707	6,627,831
2024	31,150,498	7,560,730	5,858,871	1,503,477	9,687,181	502,908	12,789,336	3,787,895	23,935,729	6,645,880
2025	31,160,289	7,612,593	5,836,878	1,486,768	9,638,889	501,713	12,735,270	3,767,243	23,691,352	6,595,357
2026	31,537,722	7,732,517	5,879,366	1,497,005	9,697,065	505,132	12,816,826	3,793,101	23,999,082	6,679,416
2027	31,188,580	7,716,413	5,791,131	1,463,785	9,551,533	499,659	12,651,952	3,752,303	23,375,667	6,527,066
2028	31,184,944	7,755,015	5,789,858	1,456,156	9,549,432	499,576	12,666,224	3,751,748	23,247,776	6,505,416
2029	31,182,891	7,805,459	5,804,893	1,492,752	9,574,250	499,533	12,625,231	3,751,463	23,906,074	6,627,516
2030	30,845,227	7,749,433	5,728,135	1,463,631	9,447,632	493,913	12,479,211	3,709,226	23,391,066	6,501,923
2031	31,207,400	7,944,238	5,786,628	1,456,821	9,544,100	499,786	12,658,038	3,753,493	23,283,916	6,513,357
2032	30,456,558	7,902,438	5,654,637	1,433,917	9,326,412	487,377	12,346,734	3,660,269	22,879,062	6,380,534
2033	30,440,793	7,866,394	5,652,138	1,450,370	9,322,305	487,410	12,305,900	3,660,525	23,171,032	6,430,445
2034	30,686,182	8,051,825	5,701,551	1,440,899	9,403,801	492,334	12,465,864	3,697,560	23,001,190	6,424,996
2035	30,009,794	8,016,706	5,657,780	1,449,855	9,331,644	487,984	12,325,478	3,664,951	23,161,329	6,431,942
TOTAL	1,455,126,020	354,007,630	297,015,184	74,713,287	496,716,438	25,461,766	647,211,205	179,147,324	1,261,453,571	346,215,273

DELTA WATER[b] CHARGE FOR EACH CONTRACTOR

(in dollars)

Calendar Year	SOUTHERN CALIFORNIA AREA (continued)				FEATHER RIVER AREA				FUTURE CONTRACTOR	GRAND TOTAL
	San Gorgonio Pass Water Agency	The Metropolitan Water District of Southern California	Ventura County Flood Control District	Total	City of Yuba City	County of Butte	Plumas County FC & WCD	Total	South Bay	
	(31)	(32)	(33)	(34)	(35)	(36)	(37)	(38)	(39)	(40)
1962	0	0	0	0	0	0	0	0	0	55,537
1963	0	707,289	0	794,030	0	0	0	0	58,676	1,637,011
1964	21,929	1,290,223	9,491	1,618,168	0	0	0	0	97,110	2,797,515
1965	22,056	2,227,948	18,039	2,741,041	0	0	403	403	167,588	4,786,189
1966	38,469	3,982,618	34,015	4,901,407	0	0	562	562	193,845	7,370,097
1967	72,506	7,861,739	69,528	9,634,767	0	0	560	560	251,541	13,025,670
1968	130,776	15,625,469	145,571	18,847,953	0	1,050	1,437	2,487	327,292	25,409,453
1969	202,229	23,661,493	219,905	28,487,400	0	1,225	4,107	5,332	397,684	36,822,892
1970	295,122	31,312,007	279,744	37,986,589	0	3,848	17,053	20,901	436,440	48,448,780
1971	416,513	40,846,920	349,656	49,798,538	0	4,546	19,121	23,667	426,187	61,759,719
1972	542,798	55,855,292	429,380	68,061,894	0	4,929	21,079	26,008	451,879	83,833,012
1973	591,384	60,465,983	443,197	73,686,124	0	7,059	21,707	28,766	426,399	88,791,464
1974	613,171	66,765,579	463,571	80,944,939	0	8,336	22,337	30,673	449,435	97,559,523
1975	644,517	72,649,509	487,469	87,680,880	0	9,416	23,450	32,866	458,979	106,452,201
1976	667,396	75,780,711	485,477	91,833,148	0	7,004	23,186	30,190	481,639	112,791,281
1977	696,018	74,572,813	516,045	90,932,809	0	16,917	23,989	40,906	474,424	111,719,845
1978	721,577	84,062,618	541,723	101,882,858	0	12,635	24,154	36,789	479,605	126,034,564
1979	704,151	84,054,060	531,192	102,574,352	0	16,575	28,203	44,778	500,689	130,083,817
1980	845,799	98,496,761	627,881	119,866,872	0	19,834	26,275	46,109	530,493	149,733,188
1981	917,545	109,485,547	668,929	133,019,840	164,402	21,682	30,844	216,928	546,735	170,841,570
1982	937,107	112,585,137	699,922	137,813,164	180,059	21,682	31,386	233,127	565,555	177,968,421
1983	1,157,971	176,878,525	1,044,300	219,293,283	197,674	21,682	31,928	251,284	598,186	275,185,926
1984	1,218,194	211,894,791	1,224,945	265,084,172	215,288	26,599	35,871	277,758	602,366	334,391,925
1985	1,282,159	224,588,781	1,390,418	283,416,005	232,903	26,599	36,536	296,038	604,708	359,358,441
1986	1,413,308	260,357,905	1,735,412	329,685,414	258,346	37,974	45,638	341,958	607,635	426,337,763
1987	1,395,740	266,143,139	2,070,014	339,231,026	285,746	37,974	46,587	370,307	607,867	443,913,891
1988	1,553,590	268,237,725	2,454,555	345,368,937	313,147	37,974	47,853	398,974	606,867	454,971,992
1989	1,652,871	302,130,396	3,011,957	387,082,284	344,461	48,270	57,699	450,430	605,544	516,368,950
1990	1,788,252	321,597,942	3,726,845	412,193,833	375,776	55,220	65,332	496,328	603,436	553,623,576
1991	1,807,609	329,100,534	3,758,157	421,537,500	375,776	1,265,463	67,172	1,708,411	603,287	565,811,823
1992	1,818,003	326,383,722	3,683,983	416,658,295	375,776	1,265,463	69,013	1,710,252	605,332	558,046,058
1993	1,860,430	328,357,434	3,688,997	421,679,177	375,776	1,265,463	70,854	1,712,093	605,650	566,250,030
1994	1,799,470	325,465,790	3,594,517	416,461,615	375,776	1,265,463	72,694	1,713,933	606,930	560,083,180
1995	1,794,318	330,563,816	3,664,201	423,970,863	375,776	1,265,463	74,995	1,716,234	605,999	570,188,341
1996	1,844,901	328,160,623	3,610,235	421,330,665	375,776	1,265,463	77,296	1,718,535	608,659	567,450,618
1997	1,767,898	327,350,453	3,617,712	420,606,795	375,776	1,265,463	79,597	1,720,836	608,244	565,094,215
1998	1,849,079	329,361,111	3,591,942	423,339,932	375,776	1,265,463	81,898	1,723,137	608,700	568,866,871
1999	1,815,006	332,603,094	3,685,730	429,814,197	375,776	1,265,463	84,198	1,725,437	608,505	578,316,565
2000	1,810,041	329,207,932	3,610,867	424,039,492	375,776	1,265,463	86,959	1,728,198	608,437	569,555,966
2001	1,748,392	334,893,355	3,647,049	430,582,641	375,776	1,265,463	89,720	1,730,959	608,178	577,256,365
2002	1,864,661	335,531,191	3,615,990	432,063,462	375,776	1,265,463	92,481	1,733,720	607,293	576,093,841
2003	1,816,215	342,778,758	3,679,367	440,577,339	375,776	1,265,463	95,242	1,736,481	607,316	587,455,655
2004	1,784,905	348,207,059	3,690,472	444,681,879	375,776	1,265,463	98,003	1,739,242	607,390	591,953,444
2005	1,808,690	349,720,081	3,686,503	448,279,702	375,776	1,265,463	100,764	1,742,003	606,496	593,916,338
2006	1,831,232	355,189,718	3,686,173	453,517,230	375,776	1,265,463	103,986	1,745,225	606,432	599,591,521
2007	1,824,128	361,499,115	3,755,169	461,255,955	375,776	1,265,463	107,207	1,748,446	624,117	608,936,495
2008	1,826,609	374,991,365	3,836,830	475,245,150	375,776	1,265,463	110,428	1,751,667	623,345	621,539,983
2009	1,814,544	384,041,766	3,920,377	487,773,998	375,776	1,265,463	113,649	1,754,888	623,375	637,853,025
2010	1,816,175	389,530,973	3,949,964	492,964,489	375,776	1,265,463	116,870	1,758,109	623,068	641,675,451
2011	1,838,264	401,900,686	4,060,429	508,719,085	375,776	1,265,463	120,552	1,761,791	623,095	659,224,467
2012	1,829,697	409,726,283	4,103,997	517,194,336	375,776	1,265,463	124,233	1,765,472	622,860	667,416,535
2013	1,804,997	426,024,502	4,241,524	537,145,681	375,776	1,265,463	128,375	1,769,614	577,230	690,208,855
2014	1,803,611	434,759,427	4,297,655	547,297,187	375,776	1,265,463	132,516	1,773,755	539,587	698,649,139
2015	1,788,382	443,824,416	4,400,250	558,182,348	375,776	1,265,463	136,715	1,777,954	484,458	711,283,918
2016	1,810,933	435,892,048	4,285,379	548,762,810	375,776	1,265,463	141,156	1,782,395	457,948	698,729,889
2017	1,741,423	446,050,444	4,419,373	560,821,389	375,776	1,265,463	141,159	1,782,398	417,427	714,166,322
2018	1,714,139	436,781,889	4,308,118	550,148,265	375,776	1,265,463	141,156	1,782,395	340,186	700,604,527
2019	1,605,776	436,914,699	4,311,739	550,140,249	375,776	1,265,463	138,541	1,779,780	275,984	701,209,405
2020	1,517,713	436,757,858	4,325,396	550,137,074	375,776	1,265,463	126,660	1,767,899	255,213	702,473,762
2021	1,471,700	422,284,549	4,181,180	531,890,857	375,776	1,265,463	125,837	1,767,076	250,881	682,287,986
2022	1,343,460	420,643,367	4,195,378	530,669,750	375,776	1,265,463	124,457	1,765,696	228,356	682,543,657
2023	1,332,087	414,175,767	4,131,305	522,815,610	375,776	1,265,463	124,457	1,765,696	227,076	672,075,440
2024	1,327,624	417,870,668	4,155,841	526,776,638	375,776	1,265,463	124,456	1,765,695	227,251	677,974,146
2025	1,296,611	416,409,514	4,163,206	524,895,683	375,776	1,265,463	124,453	1,765,692	225,207	675,335,419
2026	1,296,176	420,704,418	4,192,328	530,330,154	375,776	1,265,463	124,452	1,765,691	225,112	681,345,941
2027	1,233,885	413,660,016	4,137,149	521,549,139	375,776	1,265,463	124,449	1,765,688	221,473	671,614,693
2028	1,208,702	412,290,363	4,125,409	520,030,619	375,776	1,265,463	124,448	1,765,687	220,067	668,887,738
2029	1,300,355	412,499,615	4,107,668	521,177,700	375,776	1,265,463	124,446	1,765,685	219,125	671,102,317
2030	1,269,179	405,309,218	4,039,104	512,426,898	375,776	1,265,463	124,445	1,765,684	217,684	661,253,303
2031	1,198,778	410,114,121	4,093,487	518,054,163	375,776	1,265,463	124,445	1,765,684	217,203	667,776,747
2032	1,215,095	402,658,156	4,008,116	508,409,305	375,776	1,265,463	124,445	1,765,684	215,794	656,359,775
2033	1,244,004	399,173,732	3,971,074	505,176,122	375,776	1,265,463	124,445	1,765,684	215,424	653,232,077
2034	1,171,366	403,142,820	4,022,821	509,703,209	375,776	1,265,463	124,445	1,765,684	215,445	658,555,572
2035	1,222,103	398,494,154	3,966,719	504,220,439	375,776	1,265,463	124,445	1,765,684	214,617	650,970,652
TOTAL	93,431,514	201,898,061		19,477,722		5,679,511			32,700,260	
	20,395,119,540		25,827,516,813		57,394,865		82,552,098			33,603,292,280

21—80574

TABLE B-23: EQUIVALENT UNIT CHARGE FOR WATER SUPPLY FOR EACH CONTRACTOR[a]

(in dollars per acre-foot)[b]

Project Service Area and Water Supply Contractor	Transportation Charge				Delta Water Charge	Total Equivalent Unit Charge
	Capital Cost Component	Minimum OMP&R Component	Variable OMP&R Component	Total		
	(1)	(2)	(3)	(4)	(5)	(6)
FEATHER RIVER AREA						
City of Yuba City	0	0	0	0	39.14	39.14
County of Butte	0	0	0	0	45.27	45.27
Plumas County Flood Control and Water Conservation District	19.18	0.36	0	19.54	44.56	64.10
Feather River Area	1.02	0.02	0	1.04	119.57	120.61
NORTH BAY AREA						
Napa County Flood Control and Water Conservation District	70.69	21.31	27.01	119.01	60.74	179.75
Solano County Flood Control and Water Conservation District	40.34	8.78	8.36	57.48	58.75	116.23
North Bay Area	52.87	13.95	16.06	82.88	59.58	142.46
SOUTH BAY AREA						
Alameda County Flood Control and Water Conservation District, Zone 7	16.00	15.14	29.43	60.57	40.36	100.93
Alameda County Water District	13.54	10.69	26.26	50.49	30.16	80.65
Santa Clara Valley Water District	17.68	9.37	20.91	47.96	25.94	73.90
South Bay Area	16.56	10.54	23.34	50.44	29.04	79.48
SAN JOAQUIN VALLEY AREA						
County of Kings	3.82	1.99	11.84	17.65	31.88	49.53
Devil's Den Water District	8.30	8.54	14.75	31.58	24.94	56.52
Dudley Ridge Water District	4.54	2.33	10.35	17.22	27.76	44.98
Empire Westside Irrigation District	3.03	1.74	8.67	13.44	24.26	37.70
Hacienda Water District	4.82	2.47	10.83	18.12	28.94	47.06
Kern County Water Agency	8.15	4.85	16.16	29.16	32.82	61.98
Oak Flat Water District	1.63	1.11	6.50	9.24	25.79	35.03
Tulare Lake Basin Water Storage District	4.40	2.28	10.25	16.93	27.81	44.74
San Joaquin Valley Area	7.52	4.47	15.15	27.14	31.88	59.02
CENTRAL COASTAL AREA						
San Luis Obispo County Flood Control and Water Conservation District (c	-	-	-	-	-	-
Santa Barbara County Flood Control and Water Conservation District (c	-	-	-	-	-	-
Central Coastal Area	-	-	-	-	-	-
SOUTHERN CALIFORNIA AREA						
Antelope Valley-East Kern Water Agency	41.34	18.26	112.45	172.05	48.88	220.93
Castaic Lake Water Agency	90.06	43.82	102.89	236.77	81.55	318.32
Coachella Valley Water District	41.41	23.05	128.31	192.77	39.13	231.90
Crestline-Lake Arrowhead Water Agency	57.52	30.78	136.26	224.56	45.73	270.29
Desert Water Agency	40.91	22.77	130.24	193.92	38.39	232.31
Littlerock Creek Irrigation District	29.08	15.28	114.63	158.99	39.45	198.44
Mojave Water Agency	42.94	24.19	148.94	216.07	45.53	261.60
Palmdale Water District	44.28	23.48	137.94	205.70	64.01	269.71
San Bernardino Valley Municipal Water District	63.30	32.32	113.75	209.37	44.77	254.14
San Gabriel Valley Municipal Water District	56.90	29.60	111.13	197.63	43.31	240.94
San Gorgonio Pass Water Agency (c	-	-	-	-	-	-
The Metropolitan Water District of Southern California	64.41	32.12	94.00	190.53	52.46	242.99
Ventura County Flood Control District	55.28	27.39	113.48	196.15	48.20	244.35
Southern California Area (d	61.68	30.82	99.33	191.83	51.43	243.26
ALL AREAS (d	34.56	17.61	56.08	108.25	41.97	150.22

a) Hypothetical charges which, if assessed on all entitlement water delivered to date, all surplus water delivered prior to May 1, 1973 and all entitlement water now estimated to be delivered during the remainder of the project repayment period (Table B5-B), would provide a sum at the end of the period financially equivalent to all Transportation Charge and Delta Water Charge payments required under a water supply contract, considering interest at the project interest rate; 4.584 percent per annum.

b) Metric conversion is dollars per acre-foot times .8107 giving dollars per cubic dekametres.

c) Projections of future Project water deliveries are currently under study by the agency.

d) Area totals do not reflect San Luis Obispo County Flood Control and Water Conservation District, Santa Barbara County Flood Control and Water Conservation District and San Gorgonio Pass Water Agency.

TABLE B-24: EQUIVALENT UNIT TRANSPORTATION COSTS OF WATER DELIVERED FROM OR THRU EACH AQUEDUCT REACH[a]

(in dollars per acre-foot)[b]

Aqueduct Reach	Unit Costs of Reach[c]				Cumulative Unit Costs from the Delta			
	Capital Costs	Minimum OMP&R	Variable OMP&R	Total	Capital Costs	Minimum OMP&R	Variable OMP&R	Total
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
NORTH BAY AQUEDUCT								
1	27.26	7.03	7.24	41.53	27.26	7.03	7.24	41.53
2	12.55	1.54	.00	14.09	39.81	8.57	7.24	55.62
3	33.09	13.04	21.36	67.49	72.90	21.61	28.60	123.11
SOUTH BAY AQUEDUCT								
1	5.72	6.94	16.89	29.55	7.12	8.31	25.54	40.97
2	.55	.86	.00	1.41	7.67	9.17	25.54	42.38
4	1.85	1.40	.00	3.25	9.52	10.57	25.54	45.63
5	4.06	1.00	.00	5.06	13.58	11.57	25.54	50.69
6	.23	.07	.00	.30	13.81	11.64	25.54	50.99
7	1.83	.14	.00	1.97	15.64	11.78	25.54	52.96
8	2.75	.16	.00	2.91	18.39	11.94	25.54	55.87
9	5.36	.91	.00	6.27	23.75	12.85	25.54	62.14
CALIFORNIA AQUEDUCT								
1	1.40	1.37	8.65	11.42	1.40	1.37	8.65	11.42
2A	1.05	.27	.00	1.32	2.45	1.64	8.65	12.74
2B	.52	.13	.00	.65	2.97	1.77	8.65	13.39
3	.42	.10	.00	.52	3.39	1.87	8.65	13.91
4	.82	.77	4.03	5.62	4.21	2.64	12.68	19.53
5	.76	.13	.00	.89	4.97	2.77	12.68	20.42
6	.22	.05	.00	.27	5.19	2.82	12.68	20.69
7	.57	.10	.00	.67	5.76	2.92	12.68	21.36
8C	.02	.03	.00	.05	5.78	2.95	12.68	21.41
8D	.35	.14	.00	.49	6.13	3.09	12.68	21.90
9	.26	.12	.00	.38	6.39	3.21	12.68	22.28
10A	.30	.14	.00	.44	6.69	3.35	12.68	22.72
11B	.44	.11	.00	.55	7.13	3.46	12.68	23.27
12D	.42	.09	.00	.51	7.55	3.55	12.68	23.78
12E	.28	.15	.00	.43	7.83	3.70	12.68	24.21
13B	.62	.20	.00	.82	8.45	3.90	12.68	25.03
14A	2.25	1.49	7.53	11.27	10.70	5.39	20.21	36.30
14B	.36	.16	.00	.52	11.06	5.55	20.21	36.82
14C	.32	.14	.00	.46	11.38	5.69	20.21	37.28
15A	1.64	1.52	7.90	11.06	13.02	7.21	28.11	48.34
16A	2.71	2.51	18.48	23.70	15.73	9.72	46.59	72.04
17E	9.78	8.10	67.74	85.62	25.51	17.82	114.33	157.66
17F	2.61	.05	.00	2.66	28.12	17.87	114.33	160.32
18A	2.11	.18	-2.73	-.44	30.23	18.05	111.60	159.88
19	1.84	.56	.00	2.40	32.07	18.61	111.60	162.28
19C	32.78	1.22	.00	34.00	64.85	19.83	111.60	196.28
20A	1.39	.49	.00	1.88	33.46	19.10	111.60	164.16
20B	1.98	.42	.00	2.40	35.44	19.52	111.60	166.56
21	.96	.36	.00	1.32	36.40	19.88	111.60	167.88
22A	.64	.25	.00	.89	37.04	20.13	111.60	168.77
22B	7.66	5.49	18.54	31.69	44.70	25.62	130.14	200.46
23	.42	.16	.00	.58	45.12	25.78	130.14	201.04
24	5.05	2.08	.00	7.13	50.17	27.86	130.14	208.17
25	2.69	.11	.00	2.80	52.86	27.97	130.14	210.97
26A	3.65	2.29	-23.53	-17.59	56.51	30.26	106.61	193.38
28G	6.49	.79	.00	7.28	63.00	31.05	106.61	200.66
28H	6.28	.40	.00	6.68	69.28	31.45	106.61	207.34
28J	15.89	9.10	.00	24.99	85.17	40.55	106.61	232.33
WEST BRANCH								
29A	2.93	3.18	9.57	15.68	31.05	21.05	123.90	176.00
29F	2.11	.77	.00	2.88	33.16	21.82	123.90	178.88
29G	6.43	1.22	-12.97	-5.32	39.59	23.04	110.93	173.56
29H	4.18	1.81	.00	5.99	43.77	24.85	110.93	179.55
29J	7.75	.89	-23.75	-15.11	51.52	25.74	87.18	164.44
30	12.49	4.34	.00	16.83	64.01	30.08	87.18	181.27
COASTAL BRANCH								
31A	6.68	10.00	6.09	22.77	12.81	13.09	18.77	44.67
33A	6.09	6.09	6.09	18.27	18.90	19.18	24.86	62.94
34	6.09	6.09	6.09	18.27	24.99	25.27	30.95	81.21
35	6.09	6.09	6.09	18.27	31.08	31.36	37.04	99.48

a) Representative of transportation unit costs only; does not include a unit cost for conservation. The Delta Water Rate should be added to these values in order to approximate total unit costs at canalside. Includes surplus water prior to May 1, 1973.

b) Metric conversion is dollars per acre-foot times .8107 equals dollars per cubic dekametre.

c) Hypothetical charges which, if assessed on all entitlement water delivered to date, all surplus water delivered prior to May 1, 1973, and all entitlement water now estimated to be delivered during the remainder of the project repayment period (Table B-5B), would provide a sum at the end of theperiod financially equivalent to all Transportation Charges required under the water supply contract, considering interest at the project interest rate; 4.584 percent per annum.

TABLE B-25: ANNUAL SURPLUS WATER DELIVERIES

(in acre-feet)[a]

Area/Agency	Calendar Year						
	1973[b]	1974	1975	1976	1977	1978	1979
SOUTH BAY AREA							
Alameda County Flood Control and Water Conservation District, Zone 7	0	0	0	3,636	0	0	0
Alameda County Water District	0	0	0	4,147	0	0	0
Santa Clara Valley Water District	2,499	2,934	18,470	24,705	0	0	15,998
Total	2,499	2,934	18,470	32,488	0	0	15,998
SAN JOAQUIN VALLEY AREA							
Devil's Den Water District	4,104	4,128	7,495	5,727	0	0	0
Dudley Ridge Water District	13,192	33,391	40,555	30,922	0	7,586	38,545
Empire West Side Irrigation District	2,814	1,539	3,448	3,457	0	0	0
Hacienda Water District	5,600	1,972	3,759	3,720	0	0	1,000
Kern County Water Agency	163,774	299,433	410,820	442,150	0	8,623[c]	524,247
Oak Flat Water District	1,013	3,471	3,576	3,840	0	6[c]	698
Tulare Lake Basin Water Storage District	63,988	68,989	132,206	57,806	0	0	66,342
Total	254,485	412,923	601,859	547,622	0	16,215	630,832
SOUTHERN CALIFORNIA AREA							
Littlerock Creek Irrigation District	80	67	356	0	0	0	0
Total	80	67	356	0	0	0	0
GRAND TOTAL	257,064	415,924	620,685	580,110	0	16,215	646,830

a) Metric conversion is acre-feet times 1.2335 equals cubic dekametres.
b) May through December only.
c) Delivered from Delta during periods when deliveries did not adversely affect project operational efficiency or the quality of Delta outflows.

TABLE B-26: POWER COSTS FOR PUMPING SURPLUS WATER

(in dollars)

Area/Pumping Plant	Calendar Year													
	1973[a]		1974		1975		1976		1977		1978		1979 [b]	
	Capacity	Energy	Capacity	Energy	Capacity	Energy	Capacity	Energy	Capacity	Energy	Capacity	Energy	Capacity	Energy
SOUTH BAY AQUEDUCT														
Reach 1														
South Bay and Del Valle Pumping Plants	5,290	6,302	21,773	7,561	32,288	47,597	41,897	83,722	0	0	0	0	0	0
CALIFORNIA AQUEDUCT														
Reach 1														
Delta Pumping Plant	0	231,691	0	374,506	298,709	617,396	60,502	597,636	0	0	9,595	15,039	0	0
Reach 4														
Dos Amigos Pumping Plant	37,033	102,725	81,328	181,827	126,806	264,000	63,788	225,126	0	0	4,210	6,592	0	0
Reach 14A														
Buena Vista Pumping Plant	25,622	53,375	69,381	95,596	99,676	99,745	85,415	103,213	0	0	0	0	0	0
Reach 15A														
Wheeler Ridge Pumping Plant	29,816	12,819	62,301	22,550	30,049	313	8,579	4,885	0	0	0	0	0	0
Reach 16A														
Wind Gap Pumping Plant	0	1,697	0	5,599	0	661	0	5,385	0	0	0	0	0	0
Reach 17E														
A. D. Edmonston (Tehachapi Pumping Plant)	0	526	0	450	0	2,391	0	0	0	0	0	0	0	0
Reach 31A														
Las Perillas & Badger Hill Pumping Plants	15,588	24,245	31,511	33,406	32,231	49,501	30,449	45,101	0	0	0	0	0	0
TOTAL	113,349	433,380	266,294	721,495	619,759	1,081,604	290,630	1,065,068	0	0	13,805	21,631	0	0
COMBINED TOTAL	546,729		987,789		1,701,363		1,355,698		0		35,436		0	0

a) May through December only.
b) Amounts not available at time of publication.

TABLE B-27: POWER, REPLACEMENT, AND ADMINISTRATIVE CHARGE FOR SURPLUS WATER DELIVERIES

(in dollars)

Area/Agency	Calendar Year						
	1973	1974	1975	1976	1977	1978[a]	1979[b]
SOUTH BAY AREA							
Alameda County FC&WCD, Zone 7							
Capacity	0	0	0	5,873	0	0	-
Energy	0	0	0	13,116	0	0	-
Replacement	0	0	0	252	0	0	-
Administrative	0	0	0	1,640	0	0	-
Total	0	0	0	20,881	0	0	-
Alameda County Water District							
Capacity	0	0	0	6,126	0	0	-
Energy	0	0	0	14,959	0	0	-
Replacement	0	0	0	286	0	0	-
Administrative	0	0	0	1,758	0	0	-
Total	0	0	0	23,129	0	0	-
Santa Clara Valley Water District							
Capacity	5,290	21,773	42,153	32,954	0	5,847	-
Energy	8,554	10,203	65,969	89,116	0	0	-
Replacement	-	-	1,216	1,703	0	0	-
Administrative	1,916	3,451	5,023	7,675	0	0	-
Total	15,760	35,427	114,361	131,448	0	5,847	-
SAN JOAQUIN VALLEY AREA							
Devil's Den Water District							
Capacity	2,722	3,308	7,972	4,473	0	0	-
Energy	8,712	9,105	17,011	13,047	0	0	-
Replacement	-	0	259	288	0	0	-
Administrative	1,573	1,187	2,038	1,779	0	0	-
Total	13,007	13,600	27,280	19,587	0	0	-
Dudley Ridge Water District							
Capacity	2,603	6,394	23,216	6,629	0	13,407	-
Energy	17,235	44,892	58,225	44,658	0	10,120	-
Replacement	-	-	1,052	1,273	0	248	-
Admnistrative	5,056	10,006	11,029	10,804	0	3,793	-
Total	24,894	61,292	93,522	63,364	0	27,568	-
Empire West Side Irrigation District							
Capacity	342	324	2,333	685	0	0	-
Energy	3,676	2,069	4,950	4,993	0	0	-
Replacement	-	-	89	143	0	0	-
Administrative	1,078	460	938	1,074	0	0	-
Total	5,096	2,853	8,310	6,895	0	0	-
Hacienda Water District							
Capacity	244	654	2,665	1,588	0	882	-
Energy	7,316	2,652	5,397	5,373	0	0	-
Replacement	-	-	97	153	0	0	-
Administrative	2,146	953	1,022	2,197	0	0	-
Total	9,706	4,259	9,181	9,311	0	882	-
Kern County Water Agency							
Capacity	90,152	216,862	441,640	220,439	0	129,672	-
Energy	302,474	555,925	732,538	792,366	0	11,507	-
Replacement	-	-	15,889	24,127	0	281	-
Administrative	62,767	95,360	111,724	162,001	0	4,312	-
Total	455,393	868,147	1,301,791	1,198,933	0	145,772	-
Oak Flat Water District							
Capacity	0	0	1,644	424	0	2	-
Energy	913	3,125	3,557	3,956	0	4	-
Replacement	-	-	58	119	0	0	-
Administrative	728	998	972	1,216	0	3	-
Total	1,641	4,123	6,231	5,715	0	9	-
Tulare Lake Basin Water Storage District							
Capacity	11,808	16,713	97,316	11,425	0	13,541	-
Energy	83,596	92,750	189,808	83,484	0	0	-
Replacement	-	-	3,428	2,378	0	0	-
Administrative	24,523	40,687	35,954	19,750	0	0	-
Total	119,927	150,150	326,506	117,037	0	13,541	-
SOUTHERN CALIFORNIA AREA							
Littlerock Creek Irrigation District							
Capacity	188	266	820	14	0	0	-
Energy	904	774	4,149	0	0	0	-
Replacement	-	-	138	0	0	0	-
Administrative	63	47	97	6	0	0	-
Total	1,155	1,087	5,204	20	0	0	-
TOTAL, ALL CONTRACTORS							
Capacity	113,349	266,294	619,759	290,630	0	163,351	-
Energy	433,380	721,495	1,081,604	1,065,068	0	21,631	-
Replacement	-	-	22,226	30,722	0	529	-
Administrative	99,850	153,149	168,797	209,900	0	8,108	-
Total	646,579	1,140,938	1,892,386	1,596,320	0	193,619	-

a) Includes charges to cover costs of unused power (based on contractor requests and commitments to pay incurred costs) which had been ordered to pump surplus water.

b) Final allocation of 1979 project power costs and surplus water charges will appear in Bulletin 132-81.

TABLE B-28: PROJECTED ANNUAL SURPLUS WATER DELIVERIES

(in acre-feet)[a]

Area/Agency	Calendar Year					
	1980[b]	1981[c]	1982[d]	1983[d]	1984[d]	1985[d]
SOUTH BAY AREA						
Alameda County WD	0	16,000	14,800	10,179	8,266	5,154
Santa Clara Valley WD	8,851	12,000	12,000	12,000	11,034	6,505
Total	8,851	28,000	26,800	22,179	19,300	11,659
SAN JOAQUIN VALLEY AREA						
Devil's Den WD	6,590	7,300	7,300	6,810	5,725	3,430
Dudley Ridge WD	42,460	43,075	39,442	23,003	20,330	12,746
Empire West Side ID	0	1,500	2,886	1,608	1,352	810
Hacienda WD	0	16,400	5,676	3,324	2,930	1,863
Kern County WA	500,275	579,529	552,304	407,591	368,283	234,957
Oak Flat WD	1,207	3,900	3,700	2,386	1,905	1,147
Tulare Lake Basin WSD	36,517	172,700	71,477	41,934	37,010	23,223
Total	587,049	824,404	682,785	486,656	437,535	278,176
SOUTHERN CALIFORNIA AREA						
Antelope Valley-East Kern WA	0	18,860	13,250	0	0	0
Littlerock Creek ID	0	57	165	165	165	165
Total	0	18,917	13,415	165	165	165
GRAND TOTAL	595,900	871,321	723,000	509,000	457,000	290,000

a) Metric conversion is acre-feet times 1.2335 equals cubic dekametres.
b) Scheduled amounts as of June 1, 1980.
c) Contractors' September 1979 estimate.
d) Allocated amount based on Contractors' September 1979 estimates and the estimated water supply.

TABLE B-29: PROJECTED POWER COSTS FOR PUMPING SURPLUS WATER[a]

(in dollars)

Area/Pumping Plant	Calendar Year					
	1980	1981	1982	1983[b]	1984[b]	1985[b]
SOUTH BAY AQUEDUCT						
Reach 1						
South Bay & Del Valle Pumping Plants	129,199	117,095	106,876	-	-	-
CALIFORNIA AQUEDUCT						
Reach 1						
Delta Pumping Plant	1,883,737	1,504,157	1,423,251	-	-	-
Reach 4						
Dos Amigos Pumping Plant	762,816	581,799	541,499	-	-	-
Reach 14A						
Buena Vista Pumping Plant	232,861	203,910	157,189	-	-	-
Reach 15A						
Wheeler Ridge Pumping Plant	49,069	59,966	28,331	-	-	-
Reach 16A						
Wind Gap Pumping Plant	41,880	88,480	33,803	-	-	-
Reach 17E						
A. D. Edmonston (Tehachapi) Pumping Plant	1,781	264,127	91,224	-	-	-
Reach 31A						
Las Perillas & Badger Hill Pumping Plants	31,291	29,784	41,320	-	-	-
TOTAL	3,132,634	2,849,318	2,423,493	-	-	-

a) Estimated costs for capacity and energy which would be incurred in delivering the annual amounts of surplus water shown in Table B-28.

b) Values for the years 1983, 1984, and 1985 are not available, as the cost of power which will be used during those years are not known.

TABLE B-30: PROJECTED UNIT POWER RATES FOR PUMPING SURPLUS WATER[a]

(in dollars per acre-foot)[b]

Area/Pumping Plant	Calendar Year					
	1980	1981	1982	1983[c]	1984[c]	1985[c]
SOUTH BAY AQUEDUCT						
Reach 1						
South Bay & Del Valle Pumping Plants						
Unit Rate	4.514	4.182	3.988	-	-	-
Cumulative Rate	6.160	5.908	5.698	-	-	-
CALIFORNIA AQUEDUCT						
Reach 1						
Delta Pumping Plant						
Unit Rate	1.646	1.726	1.710	-	-	-
Cumulative Rate	1.646	1.726	1.710	-	-	-
Reach 4						
Dos Amigos Pumping Plant						
Unit Rate	0.686	0.693	0.675	-	-	-
Cumulative Rate	2.332	2.419	2.385	-	-	-
Reach 14A						
Buena Vista Pumping Plant						
Unit Rate	1.677	1.428	1.274	-	-	-
Cumulative Rate	4.009	3.847	3.659	-	-	-
Reach 15A						
Wheeler Ridge Pumping Plant						
Unit Rate	1.228	1.655	1.076	-	-	-
Cumulative Rate	5.237	5.502	4.735	-	-	-
Reach 16A						
Wind Gap Pumping Plant						
Unit Rate	3.590	3.683	1.825	-	-	-
Cumulative Rate	8.827	9.185	6.560	-	-	-
Reach 17E						
A. D. Edmonston Tehachapi Pumping Plant						
Unit Rate	10.794	13.883	6.798	-	-	-
Cumulative Rate	19.621	23.068	13.358	-	-	-
Reach 31A						
Las Perillas & Badger Hill Pumping Plants						
Unit Rate	1.275	1.370	1.268	-	-	-
Cumulative Rate	3.607	3.789	3.653	-	-	-

a) Rates are based on estimated costs of capacity and energy required to make the deliveries shown in Table B-28. Actual rates for a specific contractor may vary considerably from these mean rates due to the effect of surplus water power commitments and variations in delivery patterns. Does not include the effect of the costs of any of the firm capacity ordered for pumping surplus, shown in Table B-31 herein, which might not be used during the year.

b) Metric conversion is dollars per acre-foot times 0.8107 equals dollars per cubic dekametre.

c) Values for years 1983, 1984 and 1985 are not available, as the cost of the power which will be used during those years are not known.

TABLE B-31: COMMITMENT FOR THE COST OF POWER FOR PUMPING SURPLUS WATER[a]

(in dollars)

Contractor	Year of Obligation					
	1980	1981	1982	1983[c]	1984[d]	1985[d]
Antelope Valley-East Kern Water Agency						
Surplus Water Requested (acre-feet)	0	18,860	13,250	0	-	-
Obligation Incurred (dollars)	0	0	568,100	0	-	-
Devil's Den Water District						
Surplus Water Requested (acre-feet)	6,590	7,300	6,810	2,455	-	-
Obligation Incurred (dollars)	0	0	15,400	5,900	-	-
Dudley Ridge Water District						
Surplus Water Requested (acre-feet)	42,460	43,075	39,442	4,940	-	-
Obligation Incurred (dollars)	27,100	48,000	107,400	27,800	-	-
Empire Westside Irrigation District						
Surplus Water Requested (acre-feet)	0	1,500	2,886	700	-	-
Obligation Incurred (dollars)	0	0	7,600	1,900	-	-
Hacienda Water District						
Surplus Water Requested (acre-feet)	0	16,400	5,676	100	-	-
Obligation Incurred (dollars)	3,600	6,700	15,100	4,100	-	-
Kern County Water Agency						
Surplus Water Requested (acre-feet)	500,275	579,529	552,304	76,620	-	-
Obligation Incurred (dollars)	655,500	802,500	2,433,700	238,300	-	-
Santa Clara Valley Water District						
Surplus Water Requested (acre-feet)	8,851	12,000	12,000	4,000	-	-
Obligation Incurred (dollars)	22,800	65,000	81,300	53,500	-	-
Tulare Lake Basin Water Storage District						
Surplus Water Requested (acre-feet)	36,517	172,700	71,477	19,400	-	-
Obligation Incurred (dollars)	141,200	98,000	384,700	93,600	-	-
Totals						
Surplus Water Requested (acre-feet)	594,693	851,364	703,845	108,215	-	-
Obligation Incurred (dollars)	850,200	1,020,200	3,613,300	425,100	-	-

a) Metric conversion is acre-feet times 1.2335 equals cubic dekametres.
b) Power not ordered to pump this amount as the request was not made in time to allow the State to place an order resulting in a rate advantage.
c) Commitments made for deliveries during first three months of year only as existing power contracts not applicable beyond that time.
d) Values for years 1984 and 1985 not available, as the cost of the power which will be used during these years is not known.

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SUBJECT MATTER	BULLETIN 132-80 TABLE NO.	TABLE TITLE	CORRESPONDING TABLE NOS. IN PREVIOUS BULLETINS 132 1979	1978	1977	1976	1975	1974	1973	1972	1971	1970
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* This table not included in Bulletin.

PROJECT
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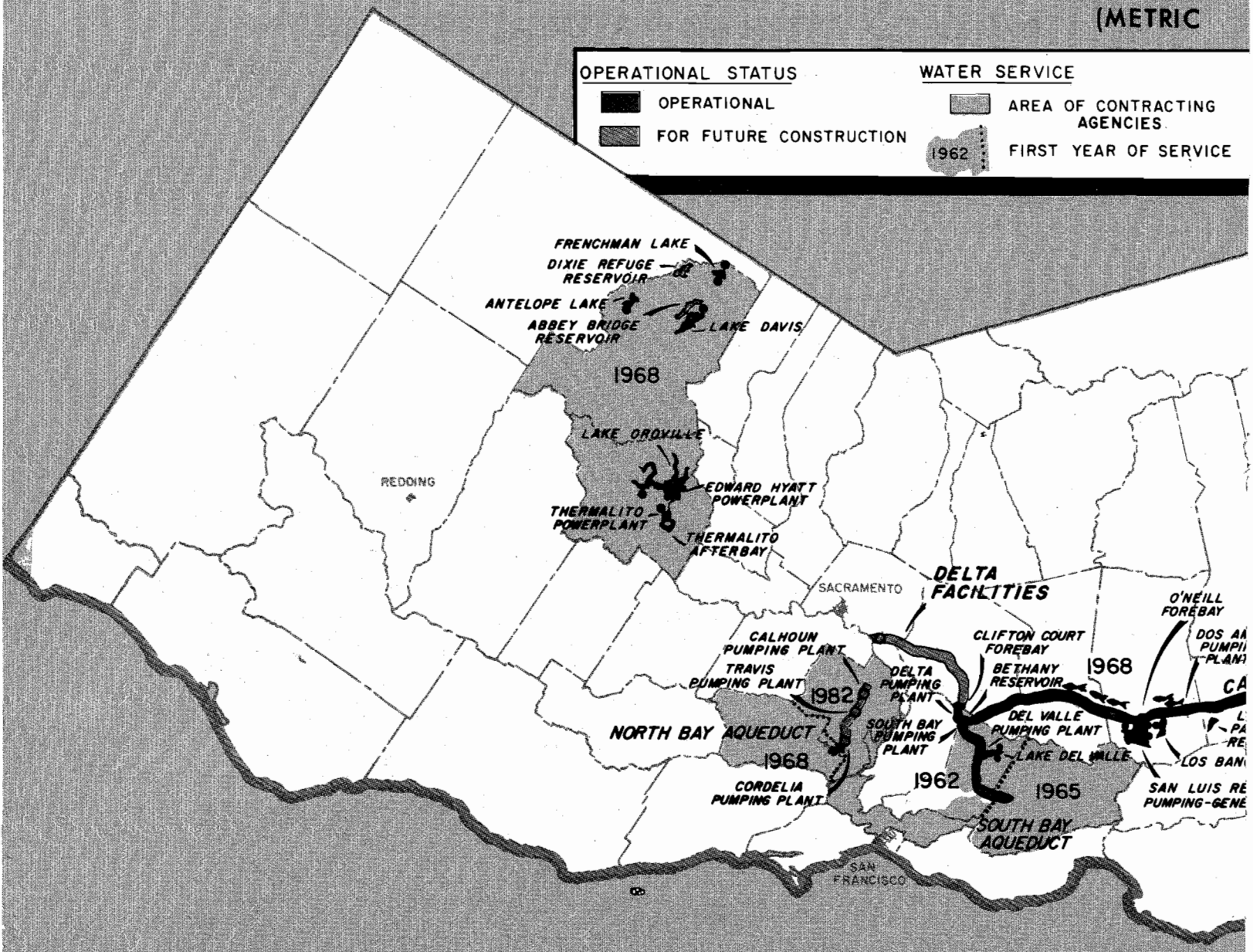


25 DAMS AND RESERVORS

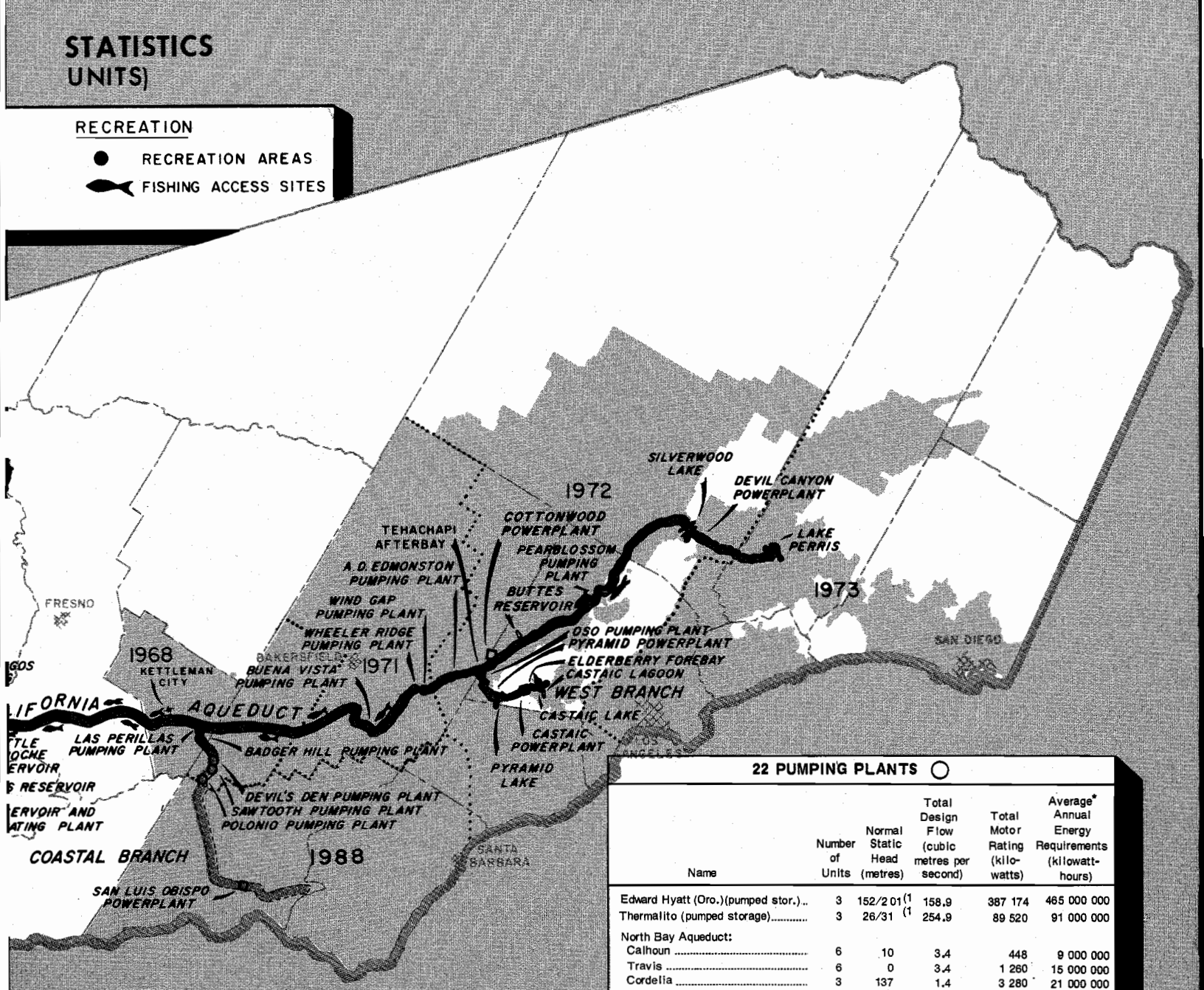
	Reservoirs			Dams			
	Capacity millions) of cubic metres)	Surface Area (hectares)	Shore-line (kilo-metres)	Crest Eleva-tion(1 (metres)	Struc-tural Height (metres)	Crest Length (metres)	Volume (cubic (metres)
Frenchman Lake	68.43	639	33.8	1 709	42	219	410 600
Antelope Lake	27.84	377	24.1	1 532	37	402	290 500
Lake Davis	104.07	1 629	51.5	1 763	40	244	193 400
Lake Oroville	4 363.60	6 396	268.8	281	235	2 109	61 164 000
Thermalito Diversion Pool	16.44	131	16.1	71	44	396	117 700
Fish Barrier Pool	0.72	21	1.6	55	28	183	8 000
Thermalito Forebay	14.52	255	16.1	70	28	4 846	1 406 800
Thermalito Afterbay	70.36	1 741	41.8	43	12	12 802	3 838 000
Clifton Court Forebay	35.34	853	12.9	4	9	11 125	1 865 500
Bethany	5.93	65	9.7	76	37	1 201	1 070 400
Lake Del Valle	95.11	429	25.7	236	72	268	3 172 900
San Luis	2 514.82	5 140	104.6	169	117	5 669	59 363 500
O'Neill Forebay	69.60	1 093	19.3	71	27	4 374	2 293 700
Los Banos	42.63	252	19.3	117	51	418	1 605 600
Little Panoche	16.33	143	16.1	206	46	439	925 100
Buttes	26.89	235	9.7	850	58	680	2 393 000
Silverwood Lake	92.48	395	20.9	1 030	76	680	5 810 600
Lake Perris	162.15	938	16.1	488	39	3 536	15 291 000
Quail Lake	6.19	90	4.8	NA	12	–	–
Pyramid Lake	211.17	525	33.8	794	122	332	5 244 800
Elderberry Forebay	34.82	186	11.3	472	61	607	4 587 300
Castaic Lake	399.29	904	46.7	468	130	1 494	35 169 300
Castaic Lagoon	6.98	79	4.8	NA	8	–	–
Totals	8 385.71	22 516	809.5			52 024	206 221 700

1) Above sea level.

AQUEDUCTS

Name	Length (kilometres)				
	Total	Canal	Pipeline	Tunnel	Channel and Reservoir
North Bay Aqueduct	42.6	23.0	19.6	0	0
South Bay Aqueduct	69.1	13.5	53.0	2.6	0
Peripheral Canal	68.0	68.0	0	0	0
Subtotal	179.7	104.5	72.6	2.6	0
California Aqueduct (main line):					
Delta to O'Neill Forebay	110.1	107.8	0	0	2.3
O'Neill Forebay to Kettleman City	170.1	166.6	0	0	3.5
Kettleman City to A.D. Edmonston Pumping Plant	194.6	194.6	0	0	0
A. D. Edmonston Pumping Plant thru Tehachapi Afterbay	17.0	0.3	4.0	12.7	0
Tehachapi Afterbay thru Lake Perris	222.7	150.3	61.6	6.1	4.7
Subtotal, main line	714.5	619.6	65.6	18.8	10.5
California Aqueduct (branches)					
West Branch	51.3	14.6	10.3	11.6	14.8
Coastal Branch	154.8	23.8	131.0	0	0
Subtotal, branches	206.1	38.4	141.3	11.6	14.8
Totals(1	1 100.3	762.5	279.5	33.0	25.3

STATISTICS
UNITS)



8 POWERPLANTS

Name	Number of Units	Normal Static Head (metres)	Total Design Flow (cubic metres per second)	Power Generator Output (kilowatts)	Average* Annual Energy Output (kilowatt-hours)
Edward Hyatt (Oro.)	6	125/206 (1	412.0	678 750	2 475 000 000
Thermalito	4	26/30 (1	478.6	119 600	383 000 000
San Luis					
Total	8	30/100 (1	371.6	424 000	
State Share			194.6	222 100	165 000 000
Cottonwood	1	43	46.4	15 000	113 000 000
Devil Canyon	2	432	34.0	119 700	877 000 000
Pyramid	2	226	87.8	157 000	854 000 000
Castaic					
Total	7	324	521.0	1 250 000	
State Share (2			87.6	214 000	1 396 000 000
San Luis Obispo	1	223	3.1	5 900	24 000 000
Total, State Share					6 287 000 000

1) Minimum and maximum static heads.
2) The City of Los Angeles Department of Water and Power constructed and operates a 1 250 000-kilowatt Castaic Powerplant and will supply the Project with electrical power and energy equivalent to the generation from a 213 984-kilowatt powerplant the State originally planned to construct.

* Under full development

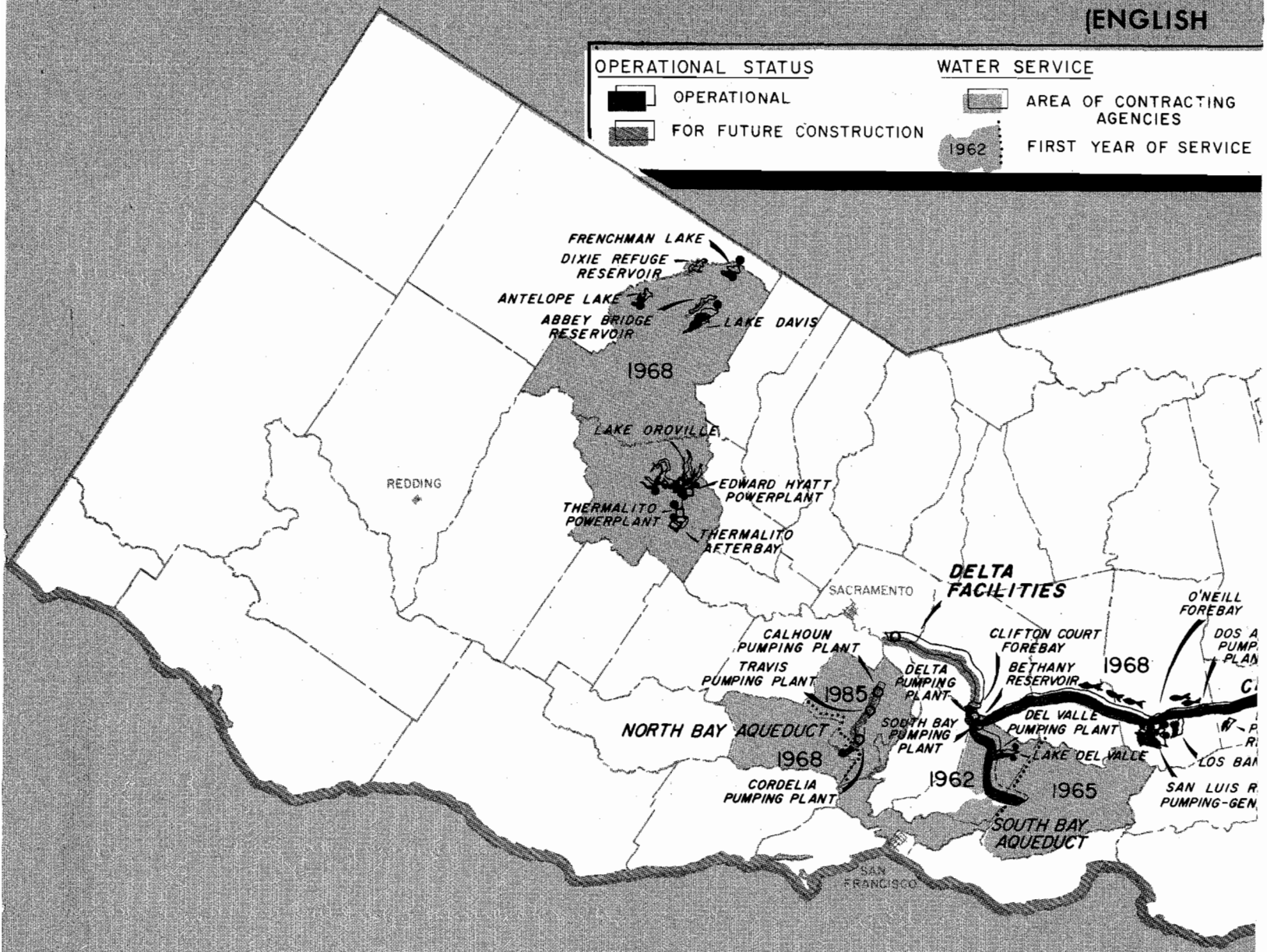
22 PUMPING PLANTS

Name	Number of Units	Normal Static Head (metres)	Total Design Flow (cubic metres per second)	Total Motor Rating (kilowatts)	Average* Annual Energy Requirements (kilowatt-hours)
Edward Hyatt (Oro.)(pumped stor.)	3	152/201 (1	158.9	387 174	465 000 000
Thermalito (pumped storage)	3	26/31 (1	254.9	89 520	91 000 000
North Bay Aqueduct:					
Calhoun	6	10	3.4	448	9 000 000
Travis	6	0	3.4	1 260	15 000 000
Cordelia	3	137	1.4	3 280	21 000 000
South Bay Aqueduct:					
South Bay	9	166	9.3	20 702	160 000 000
Del Valle	4	0/12 (2	3.4	746	2 000 000
California Aqueduct (main line):					
Delta	11	74	291.8	248 418	1 374 000 000
San Luis					
Total	8	30/100 (2	311.5	375 984	
State Share			163.2	196 944	304 000 000
Dos Amigos					
Total	6	34	373.8	179 040	— —
State Share			201.1	96 980	585 000 000
Buena Vista	10 (3	62	143.0	101 456	748 000 000
Wheeler Ridge	9 (3	71	130.2	104 440	726 000 000
Wind Gap	9 (3	158	124.9	229 268	1 683 000 000
A. D. Edmonston (Tehachapi)	14 (3	587	116.0	775 840	6 061 000 000
Pearblossom	6	165	39.1	84 447	633 000 000
California Aqueduct (branches):					
Oso	8	70	88.6	69 975	435 000 000
Las Perillas	6	17	12.7	3 021	18 000 000
Badger Hill	6	46	12.7	7 833	38 000 000
Devil's Den	4	125	3.6	5 968	36 000 000
Sawtooth	4	101	3.6	4 849	28 000 000
Polonio	4	247	3.6	11 936	76 000 000
Peripheral Canal					
Total	9 (3	3	617.3	26 483	
State Share			308.7	13 242	53 000 000
Total State Share					13 561 000 000

1) Minimum and maximum total pumping heads.
2) Minimum and maximum static heads.
3) Includes one spare unit.

* Under full development.

PROJECT (ENGLISH



25 DAMS AND RESERVOIRS

Name of Reservoir	Reservoirs: Capacity (Acre-feet)	Reservoirs: Surface Area (acres)	Reservoirs: Shore-line (miles)	Dams: Crest Elevation (1 (feet)	Dams: Structural Height (feet)	Dams: Crest Length (feet)	Dams: Volume (cubic yards)
Frenchman Lake	55,477	1,580	21	5,607	139	720	537,000
Antelope Lake	22,566	931	15	5,025	120	1,320	380,000
Lake Davis	84,371	4,026	32	5,785	132	800	253,000
Lake Oroville	3,537,577	15,805	167	922	770	6,920	80,000,000
Thermalito Diversion Pool	13,328	323	10	233	143	1,300	154,000
Fish Barrier Pool	580	52	1	181	91	600	10,500
Thermalito Forebay	11,768	630	10	231	91	15,900	1,840,000
Thermalito Afterbay	57,041	4,302	26	142	39	42,000	5,020,000
Clifton Court Forebay	28,653	2,109	8	14	30	36,500	2,440,000
Bethany	4,804	161	6	250	121	3,940	1,400,000
Lake Del Valle	77,106	1,060	16	773	235	880	4,150,000
San Luis	2,038,771	12,700	65	554	385	18,600	77,645,000
O'Neill Forebay	56,426	2,700	12	233	88	14,350	3,000,000
Los Banos	34,562	623	12	384	167	1,370	2,100,000
Little Panoche	13,236	354	10	676	152	1,440	1,210,000
Buttes	21,800	580	6	2,790	190	2,230	3,130,000
Silverwood Lake	74,970	976	13	3,378	249	2,230	7,600,000
Lake Perris	131,452	2,318	10	1,600	128	11,600	20,000,000
Quail Lake	5,020	223	3	NA	40	–	–
Pyramid Lake	171,196	1,297	21	2,606	400	1,090	6,860,000
Elderberry Forebay	28,231	460	7	1,550	200	1,990	6,000,000
Castaic Lake	323,702	2,235	29	1,535	425	4,900	46,000,000
Castaic Lagoon	5,662	196	3	NA	25	–	–
Totals	6,798,299	55,641	503			170,680	269,729,500

1) Above sea level.

AQUEDUCTS

Name	Length (miles): Total	Canal	Pipeline	Tunnel	Channel and Reservoir
North Bay Aqueduct	26.5	14.3	12.2	0	0
South Bay Aqueduct	42.9	8.4	32.9	1.6	0
Peripheral Canal	42.0	42.0	1.0	0	0
Subtotal	114.4	22.7	45.1	1.6	0
California Aqueduct (main line):					
Delta to O'Neill Forebay	68.4	67.0	0	0	1.4
O'Neill Forebay to Kettleman City	105.7	103.5	0	0	2.2
Kettleman City to A. D. Edmonston Pumping Plant	120.9	120.9	0	0	0
A. D. Edmonston Pumping Plant thru Tehachapi Afterbay	10.6	0.2	2.5	7.9	0
Tehachapi Afterbay thru Lake Perris	138.4	93.4	38.3	3.8	2.9
Subtotal, main line	444.0	385.0	40.8	11.7	6.5
California Aqueduct (branches):					
West Branch	31.9	9.1	6.4	7.2	9.2
Coastal Branch	96.2	14.8	81.4	0	0
Subtotal, branches	128.1	23.9	87.8	7.2	9.2
Totals(1	683.5	473.6	173.7	20.5	15.7

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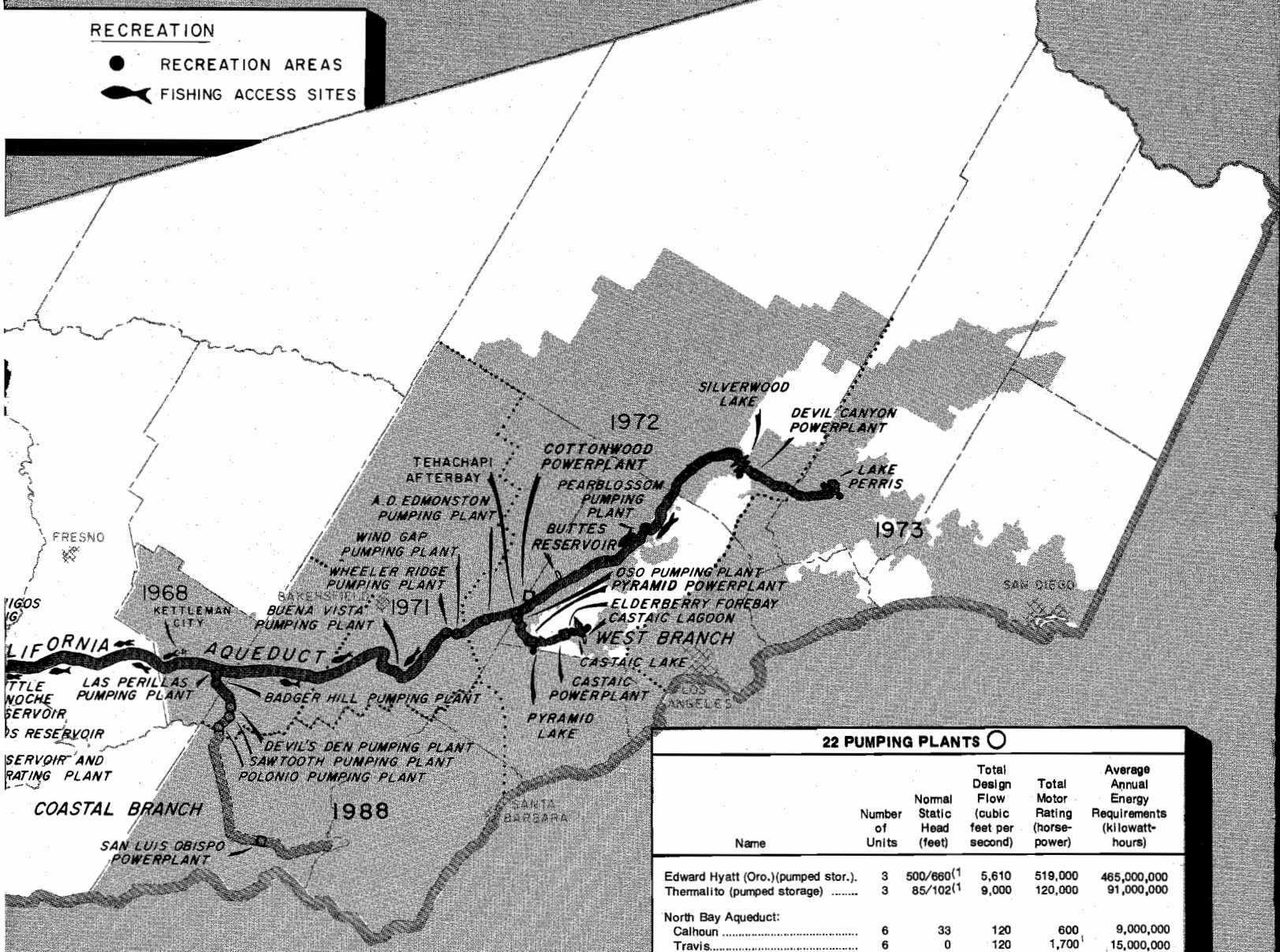

8 POWERPLANTS □

Name	Number of Units	Normal Static Head (feet)	Total Design Flow (cubic feet per second)	Power Generator Rating (kilowatts)	Average* Annual Energy Output (kilowatt-hours)
Edward Hyatt (Oroville).	6	410/676(1	14,550	678,750	2,475,000,000
Thermalito	4	85/100(1	16,900	119,600	383,000,000
San Luis					
Total	8	99/327(1	13,120	424,000	
State Share			6,872	222,100	165,000,000
Cottonwood	1	140	1,637	15,000	113,000,000
Devil Canyon	2	1,418	1,200	119,700	877,000,000
Pyramid	2	740	3,100	157,000	854,000,000
Castaic					
Total	7	1,063	18,400	1,250,000	
State Share(2			3,092	214,000	1,396,000,000
San Luis Obispo	1	730	111	5,900	24,000,000
Total, State Share					6,287,000,000

1) Minimum and maximum static heads.
2) The City of Los Angeles Department of Water and Power constructed and operates a 1,250,000-kilowatt Castaic Powerplant and will supply the Project with electrical power and energy equivalent to the generation from a 213,984-kilowatt powerplant the State originally planned to construct.
* Under full development

22 PUMPING PLANTS ○

Name	Number of Units	Normal Static Head (feet)	Total Design Flow (cubic feet per second)	Total Motor Rating (horse-power)	Average Annual Energy Requirements (kilowatt-hours)
Edward Hyatt (Oro.)(pumped stor.).	3	500/660(1	5,610	519,000	465,000,000
Thermalito (pumped storage)	3	85/102(1	9,000	120,000	91,000,000
North Bay Aqueduct:					
Calhoun	6	33	120	600	9,000,000
Travis	6	0	120	1,700	15,000,000
Cordelia	3	448	48	4,400	21,000,000
South Bay Aqueduct:					
South Bay	9	545	330	27,750	160,000,000
Del Valle	4	0/38(2	120	1,000	2,000,000
California Aqueduct (main line):					
Delta	11	244	10,303	333,000	1,374,000,000
San Luis					
Total	8	99/327(2	11,000	504,000	
State Share			5,762	264,000	304,000,000
Dos Amigos					
Total	6	113	13,200	240,000	
State Share			7,100	130,000	585,000,000
Buena Vista	10(3	205	5,049	136,000	748,000,000
Wheeler Ridge	9(3	233	4,598	140,000	726,000,000
Wind Gap	9(3	518	4,410	308,000	1,683,000,000
A. D. Edmonston (Tehachapi)	14(3	1,926	4,095	1,040,000	6,061,000,000
Pearblossom	6	540	1,380	113,200	633,000,000
California Aqueduct (branches):					
Oso	8	231	3,128	93,800	435,000,000
Las Perillas	6	55	450	4,050	18,000,000
Badger Hill	6	151	450	10,500	38,000,000
Devil's Den	4	409	126	8,000	36,000,000
Sawtooth	4	331	126	6,500	28,000,000
Polonio	4	810	126	16,000	76,000,000
Peripheral Canal					
Total	9(3	10	21,800	35,500	
State Share			10,900	17,750	53,000,000
Total, State Share					13,561,000,000

1) Minimum and maximum total pumping heads.
2) Minimum and maximum static heads.
3) Includes one spare unit.

80574—950 3-80 2,500

CONVERSION FACTORS

Quantity	To Convert from Metric Unit	To Customary Unit	Multiply Metric Unit By	To Convert to Metric Unit Multiply Customary Unit By
Length	millimetres (mm)	inches (in)	0.03937	25.4
	centimetres (cm) for snow depth	inches (in)	0.3937	2.54
	metres (m)	feet (ft)	3.2808	0.3048
	kilometres (km)	miles (mi)	0.62139	1.6093
Area	square millimetres (mm^2)	square inches (in^2)	0.00155	645.16
	square metres (m^2)	square feet (ft^2)	10.764	0.092903
	hectares (ha)	acres (ac)	2.4710	0.40469
	square kilometres (km^2)	square miles (mi^2)	0.3861	2.590
Volume	litres (L)	gallons (gal)	0.26417	3.7854
	megalitres	million gallons (10^6 gal)	0.26417	3.7854
	cubic metres (m^3)	cubic feet (ft^3)	35.315	0.028317
	cubic metres (m^3)	cubic yards (yd^3)	1.308	0.76455
	cubic dekametres (dam^3)	acre-feet (ac-ft)	0.8107	1.2335
Flow	cubic metres per second (m^3/s)	cubic feet per second (ft^3/s)	35.315	0.028317
	litres per minute (L/min)	gallons per minute (gal/min)	0.26417	3.7854
	litres per day (L/day)	gallons per day (gal/day)	0.26417	3.7854
	megalitres per day (ML/day)	million gallons per day (mgd)	0.26417	3.7854
	cubic dekametres per day (dam^3/day)	acre-feet per day (ac-ft/day)	0.8107	1.2335
Mass	kilograms (kg)	pounds (lb)	2.2046	0.45359
	megagrams (Mg)	tons (short, 2,000 lb)	1.1023	0.90718
Velocity	metres per second (m/s)	feet per second (ft/s)	3.2808	0.3048
Power	kilowatts (kW)	horsepower (hp)	1.3405	0.746
Pressure	kilopascals (kPa)	pounds per square inch (psi)	0.14505	6.8948
	kilopascals (kPa)	feet head of water	0.33456	2.989
Specific Capacity	litres per minute per metre drawdown	gallons per minute per foot drawdown	0.08052	12.419
Concentration	milligrams per litre (mg/L)	parts per million (ppm)	1.0	1.0
Electrical Conductivity	microsiemens per centimetre (uS/cm)	micromhos per centimetre	1.0	1.0
Temperature	degrees Celsius (°C)	degrees Fahrenheit (°F)	(1.8 × °C)+32	(°F−32)/1.8

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