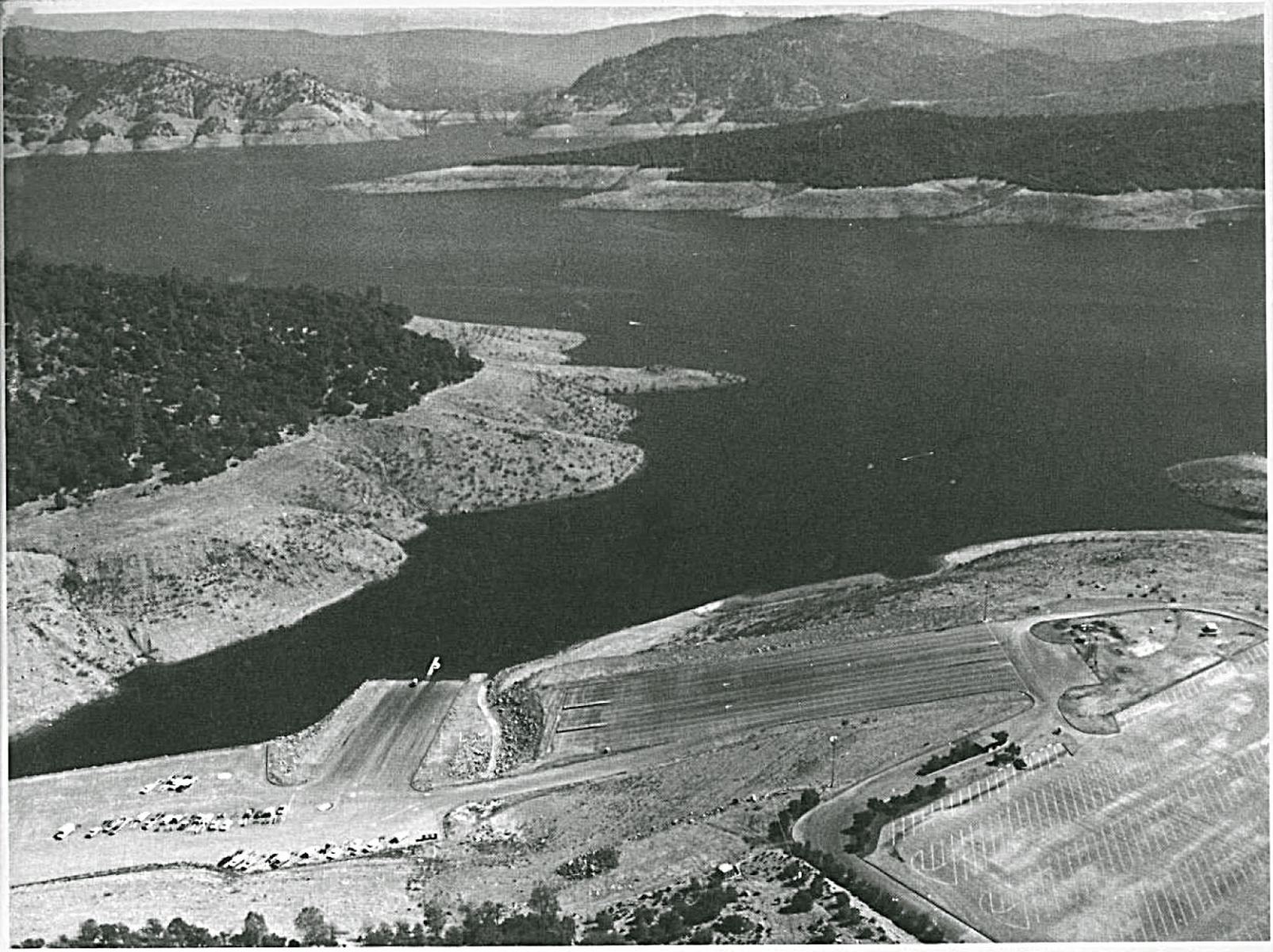

State of California
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Water Resources

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The California State Water Project — 1976 Activities and Future Management Plans

Bulletin No. 132-77

ON THE COVER
Water storage in Lake Oroville dropped to record lows, with no relief in sight, as the drought continued through 1976. The 4 320-cubic-hectometre (3.5-million-acre-foot) reservoir was down to only 2 150 cubic hectometres (1.7 million acre-feet) when this photo was taken in October. By comparison, at the end of October 1975, storage was 3 464 cubic hectometres (2.8 million acre-feet).

Department of
Water Resources

Bulletin No. 132-77

The California State Water Project — 1976 Activities and Future Management Plans

November 1977

Huey D. Johnson
Secretary for Resources

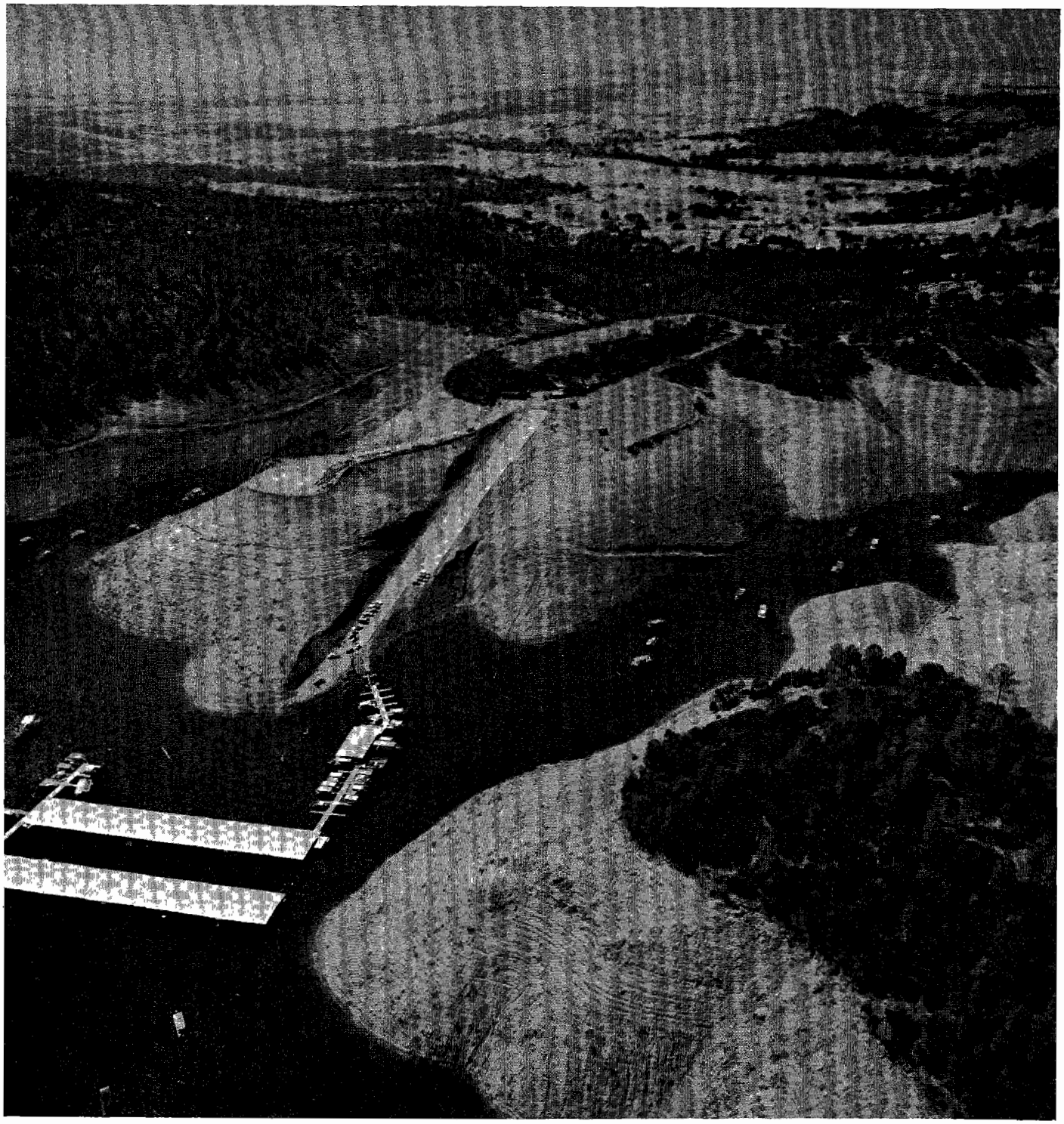
The Resources Agency

Edmund G. Brown Jr.
Governor

State of California

Ronald B. Robi
Director

Department of Water Resourc s



Loafer Creek Campground and Marina area at Lake Oroville. Record low water levels and difficult access seriously affected Lake recreation.

FOREWORD

The 1975-76 and 1976-77 water years (a water year begins October 1 and extends through September 30) were the first years of critical water shortage since operation of the State Water Project began in 1962. The shortage of new water supplies, which are far below the quantities normally expected during the winter and early spring seasons, has had far-reaching effects. The management of available State Water Project supplies on a day-to-day basis is critical during these times, for we must make most efficient use of available water supplies including the maintenance of water quality in the Delta as required by law. Although we don't know what next year may bring, we must prepare for another season of minimum precipitation. A public awareness program has been a part of the Department's responsibilities during the current drought, and we have done everything possible to inform the public of the critical situation at hand. The drought program has kept our water contractors and the people of California current with evaluations of what can be expected from the State Water Project during 1976 and within the foreseeable future.

The year 1976 was important in that the Department staff released its preliminary results of its Delta Alternatives Study in October. Even though the drought was requiring considerable time of our staff, we nevertheless were able to continue our planning efforts and produce the first ever comprehensive report on the remaining development of the SWP. Although final decisions on this study were made in 1977, the previous year was an important milestone for the SWP.

This year's bulletin does not include a chapter on project financing. In our Delta Alternatives Review, we are proposing a number of possible combinations of future surface and groundwater storage projects, and water resources management efforts including water reclamation and conservation. After the legislature completes action on this program, we will be able to present a meaningful financial analysis of this program in Bulletin 132-78.

Water conservation is a continuing concern to us in 1976. In keeping with the Department's management policies, we intensified our efforts to encourage people to conserve water during times when water supplies are critical.

The Department pioneered in the concept of water exchange in 1976. We developed a water exchange with two project water contractors in which The Metropolitan Water District of Southern California increased its water supply from the Colorado River by 12 951 750 cubic metres (10,500 acre-feet) and released a like amount to be delivered to Dudly Ridge Water District in the San Joaquin Valley. Due to the fact that the State Water Project made some surplus water deliveries in 1976, greater use of exchange did not occur until 1977. The 1976 exchange helped San Joaquin Valley residents during a difficult time and demonstrated that exchanges can be made during critical water shortages.

The publication of Appendix E to Bulletin 132-76, "Water Operations in the Sacramento-San Joaquin Delta", has been delayed. This report will be the first in an annual series devoted to the complex water operations in the Delta.

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

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CHAPTER I

CONTINUING HISTORY OF THE PROJECT

In the history of the State Water Project, 1976 will undoubtedly be remembered as the first year of the drought. It was a critical year in terms of water supply available to the Federal Central Valley Project and the State Water Project and the first drought year since the projects have been in operation. This chapter highlights the actions occurring during 1976, both drought related and non-drought related.

The format of this year's bulletin has been revised. Chapter I now includes 1976 project construction activity which had previously occupied a chapter by itself. Chapter II has also been enlarged to include material previously presented in separate chapters. In Chapter II, water and power management, project operations, and future costs of the Project are discussed. A financial analysis is omitted this year, primarily because additional conservation facilities are to be defined as part of the Delta Alternatives Program, which has yet to be adopted by the Legislature. We expect to resume the financial analysis in next year's bulletin.

ACTIONS CONCERNING PROJECT WATER SUPPLY AND FACILITIES

Delta Alternatives Review

The Delta Alternatives Review Program was established in 1975 to reconsider the need and timing for a Delta transfer facility for the State Water Project and the Federal Central Valley Project (see Bulletin 132-76, page 1). As the program continued during 1976, it was expanded to include the entire future water supply for the State Water Project. As a result the program developed into a far-reaching water management program.

Results of the first phase of the review program were presented to the public at a November, 1975, public hearing and in a pamphlet, "Alternative Courses of Action to Provide Delta Protection and Adequate Water Supplies for California". A March, 1976 report, "Phase II - Alternative Courses of Action", presented the results of the examination and initial screening of the wide array of potential alternatives.

The Phase II report also presented management and functional objectives, to guide the course of the study. Proper management of the economy and environment of the Delta is, of primary importance. Agricultural, industrial, and urban water supplies, fish, wildlife, recreational, and aesthetic resources must be maintained in compliance with all applicable state and federal water quality standards. The chosen project must provide dependable water supplies and meet reasonable water needs in the State Water Project (SWP) and the federal Central Valley Project (CVP) service areas. The financial integrity of the SWP, the CVP, and of their contracting entities must be protected. The economies of service areas within or adjacent to California must be maintained.

Functional objectives of an acceptable plan must consider the beneficial use of water and water conservation, adequate quality and quantity of water supply for the Delta, control of salinity in the Delta, compliance with all water quality standards, preservation of the recreational and aesthetic resources of the

Delta, and a sufficient water supply for water-deficient areas of California. Finally, flood control, navigation, and vehicular transportation must be maintained.

In the Phase II report, the Department concluded that no single action would protect and enhance the Delta and meet the increasing export requirements. Actions and facilities to the north and south of the Delta, as well as improvements in the Delta, would be required. The report identified a need to combine alternative components to develop complete plans to satisfy needs of the SWP. Water conservation, conjunctive use of ground water supplies, and wastewater reclamation facilities would be included as components of the plans.

The Phase II report also contained the following conclusions, which were presented in a series of public hearings designed to receive input from the public.

"1. Water requirements in SWP and CVP service areas for the year 2000 (as being revised by the Department's Water Action Plan) are realistic goals for planning courses of action at this time.

2. Several basic actions are required to ensure protection and enhancement of the Delta and meet the increasing export requirements. No single action will provide this. Existing physical facilities and operating criteria in the Delta are not sufficient. In addition to improvements in the Delta, actions and facilities to the north of the Delta or to the south in the service areas deriving part of their water from the Delta are also required.

3. As a joint operator in the Delta, the Federal Government, through the U. S. Bureau of Reclamation, must be an active participant in planning and implementing the final selected course of action."

After reviewing public reaction to the Phase II report -- obtained through the public workshops, and the results of the evaluation of alternative components and plans, the DWR staff prepared a preliminary draft of a Delta Alternatives Program, which set forth a number of possible actions for meeting the objectives of the review. This proposal was released as a draft Phase II report, which was given limited distribution, and in a status report, "Delta Alternatives Study Status, October 1976", which was distributed widely to interested parties and to the general public. The October, 1976, proposal explained that the program would meet needs for Delta protection by:

- Continuous monitoring of Delta environmental conditions.

- Completing and implementing a Four-Agency Fisheries Agreement with Department of Water Resources, United States Bureau of Reclamation, Department of Fish and Game and the United States Fish and Wildlife Service as active participants. The agreement would specify needs and means of protecting fish and wildlife in the Delta.

- Completing a long-term Central Valley Project (CVP) - State Water Project (SWP) Operating Agreement to further define responsibility of the two projects in meeting Delta needs and including an understanding on limits for future Delta diversions.

- Continuous review of Delta environmental protection standards.

- Federal participation in Delta protection through congressional legislation to provide for the CVP and the SWP to operate within the same rules for protecting the Delta and to authorize federal participation in Delta water facilities and Suisun Marsh protection.

- Constructing facilities for water quality improvement in the Southern Delta.

- Constructing facilities for improving water quality in Suisun Marsh and to improve Suisun Marsh water management practices. The facilities would be designed to eliminate adverse environmental conditions in the Delta associated with the present method of conveying SWP and CVP water across the Delta for export by the two projects.

The proposal also included municipal and industrial water conservation and waste water reclamation project proposals in export service areas, surface and ground water storage facilities and conveyance systems south of the Delta, water storage facilities north of the Delta, and construction of one of three remaining Delta transfer alternatives -- the New Hope Cross Channel with an enlarged Clifton Court Forebay, or the New Hope Cross Channel with a new South Delta Intake Channel, or the Peripheral Canal. Highlights of this early proposal are included here from the Department's report "Delta Alternative Study Status - October 1976".

Significant actions and facilities in the proposal include:

ACTIONS NORTH OF THE DELTA

- Cottonwood Creek Project
- Marysville Project
- Sacramento Valley Ground Water Storage
- Glenn Reservoir

ACTIONS SOUTH OF THE DELTA

- Southern California Ground Water Storage
- San Joaquin Valley Ground Water Storage
- Los Vaqueros with Pumps
- Water Conservation
- Waste Water Reclamation
- Mid-Valley Canal

DELTA TRANSFER FACILITIES

- New Hope Cross Channel - Enlarged Clifton Court Forebay Plan
- New Hope Cross Channel - South Delta Intake Channel Plan
- Peripheral Canal Plan

RELATED ACTIONS IN THE DELTA

- Move Contra Costa Canal Intake
- Delta Levees
- Delta Water Agency Contracts
- Fish Screens on In-Delta Diversions

Figures a and b show the locations of possible ground water storage and surface water storage sites under consideration in the program. Figure c shows the general flow of water through the Sacramento-San Joaquin Delta to the export pumps under present conditions and as the conditions would be under each of the transfer alternatives under consideration. Figure c also shows the location and alignment of the facilities for each alternative.

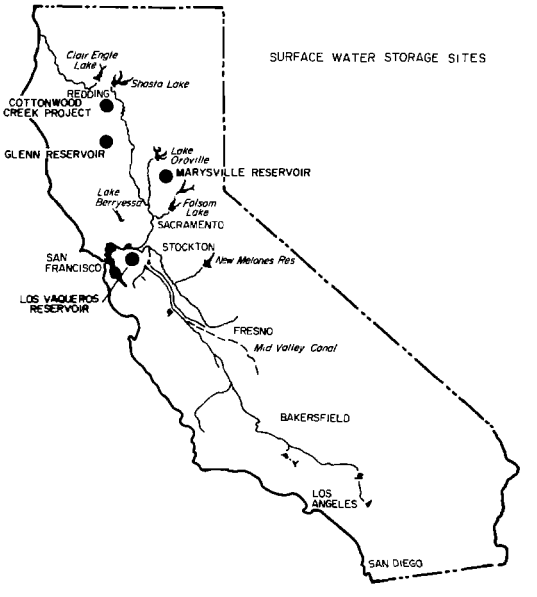


Figure a

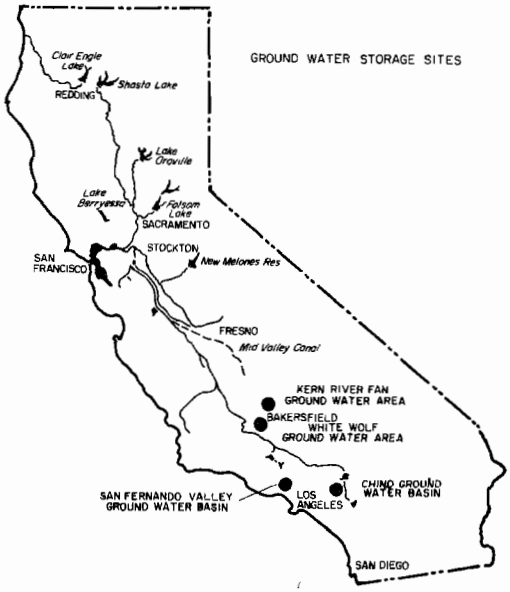


Figure b

During October and November 1976, the DWR staff held a series of public workshops in Stockton, (October 25), Bakersfield (October 26 and November 29), Sacramento (October 27), Los Angeles (October 28), Oakland (October 29), Antioch (November 3), and Chico (November 23) to obtain public comment on the draft program. Separate meetings were also held with concerned individuals and organizations to obtain their direct response.

Following review and consideration of the comments received during the various workshops and meetings and after further work in 1977, the Department modified the October 1976 proposal and recommended a course of action in the spring of 1977 including the selection of the Peripheral Canal as the recommended Delta transfer facility. Final conclusion of the Delta Alternatives Review Program will be reported in Bulletin 132-78.

SWP Operations During a Dry Year

The 1975-76 water year was the third driest year of record in California. (A water year begins October 1 and extends through September 30.) Although 1975-76 was technically classified as a "dry" year (see section on SWRCB Delta Hearing), it was actually a "critical" year in terms of water supply available to the State Water Project and the Central Valley Project. This section describes some of the problems encountered by the Department during its first dry year operation. One of the most important factors affecting Project operation is the water quality criteria that must be met in the Delta. A summary of the present criteria is presented at the end of the section.

During the 1975-76 water year, areas in Southern California received about average rainfall; however, Northern and Central California, which provides the water supply for the State Water Project and the Central Valley Project, suffered under extreme drought conditions.* Figure d shows the precipitation as a percent of normal for the 1975-76 water year, and Figure e shows accumulative natural runoff to Shasta and Oroville reservoirs for the 1975-76 water year and runoff which occurred in the basins in selected dry years.

Careful water resources management efforts kept 1976 from becoming a critical year. Without major transfer systems and storage facilities, it would have been impossible to meet urban and agriculture water demands during the year. Although the State Water Project was not able to meet all water demands during the dry year, the Department, by adjusting its project operations, met all contractual water supply commitments. The SWP delivered more than 2 400 000 000 cubic metres (nearly 2 million acre-feet) of entitlement and surplus water in 1976, its largest amount to date.

State Water Project operation in 1976 was a major learning experience for the Department. During dry years, people use more water than had been tradition-

* The Department published "The California Drought - 1976" in May, 1976, and updated reports in February and August, 1977.

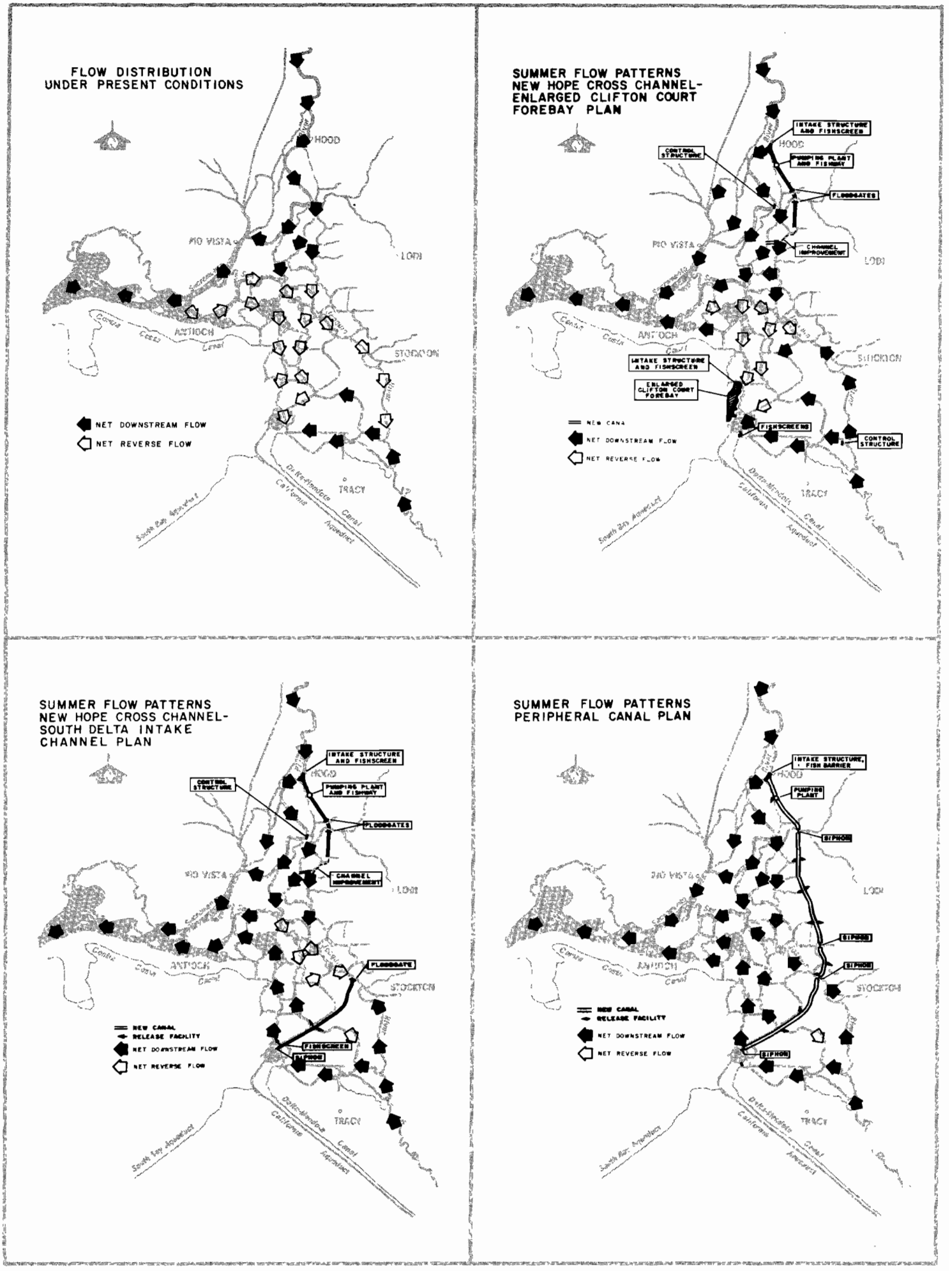

FLOW DISTRIBUTION
UNDER PRESENT CONDITIONS
HOOD
RIO VISTA
LODI
ANTIOCH
STOCKTON
TRACY
NET DOWNSTREAM FLOW
NET REVERSE FLOW
SUMMER FLOW PATTERNS
NEW HOPE CROSS CHANNEL-
ENLARGED CLIFTON COURT
FOREBAY PLAN
INTAKE STRUCTURE AND FISHSCREEN
CONTROL STRUCTURE
PUMPING PLANT AND FISHWAY
FLOODGATES
CHANNEL IMPROVEMENT
ENLARGED CLIFTON COURT FOREBAY
FISHSCREENS
NEW CANAL
NET DOWNSTREAM FLOW
NET REVERSE FLOW
SUMMER FLOW PATTERNS
NEW HOPE CROSS CHANNEL-
SOUTH DELTA INTAKE
CHANNEL PLAN
INTAKE STRUCTURE AND FISHSCREEN
CONTROL STRUCTURE
PUMPING PLANT AND FISHWAY
FLOODGATES
CHANNEL IMPROVEMENT
FLOODGATE
FISHSCREEN
SIPHON
NEW CANAL
RELEASE FACILITY
NET DOWNSTREAM FLOW
NET REVERSE FLOW
SUMMER FLOW PATTERNS
PERIPHERAL CANAL PLAN
INTAKE STRUCTURE, FISH BARRIER
PUMPING PLANT
SIPHON
NEW CANAL
RELEASE FACILITY
NET DOWNSTREAM FLOW
NET REVERSE FLOW

Figure c

WATER YEAR PRECIPITATION IN PERCENT OF NORMAL
OCTOBER 1, 1975 — SEPTEMBER 30, 1976

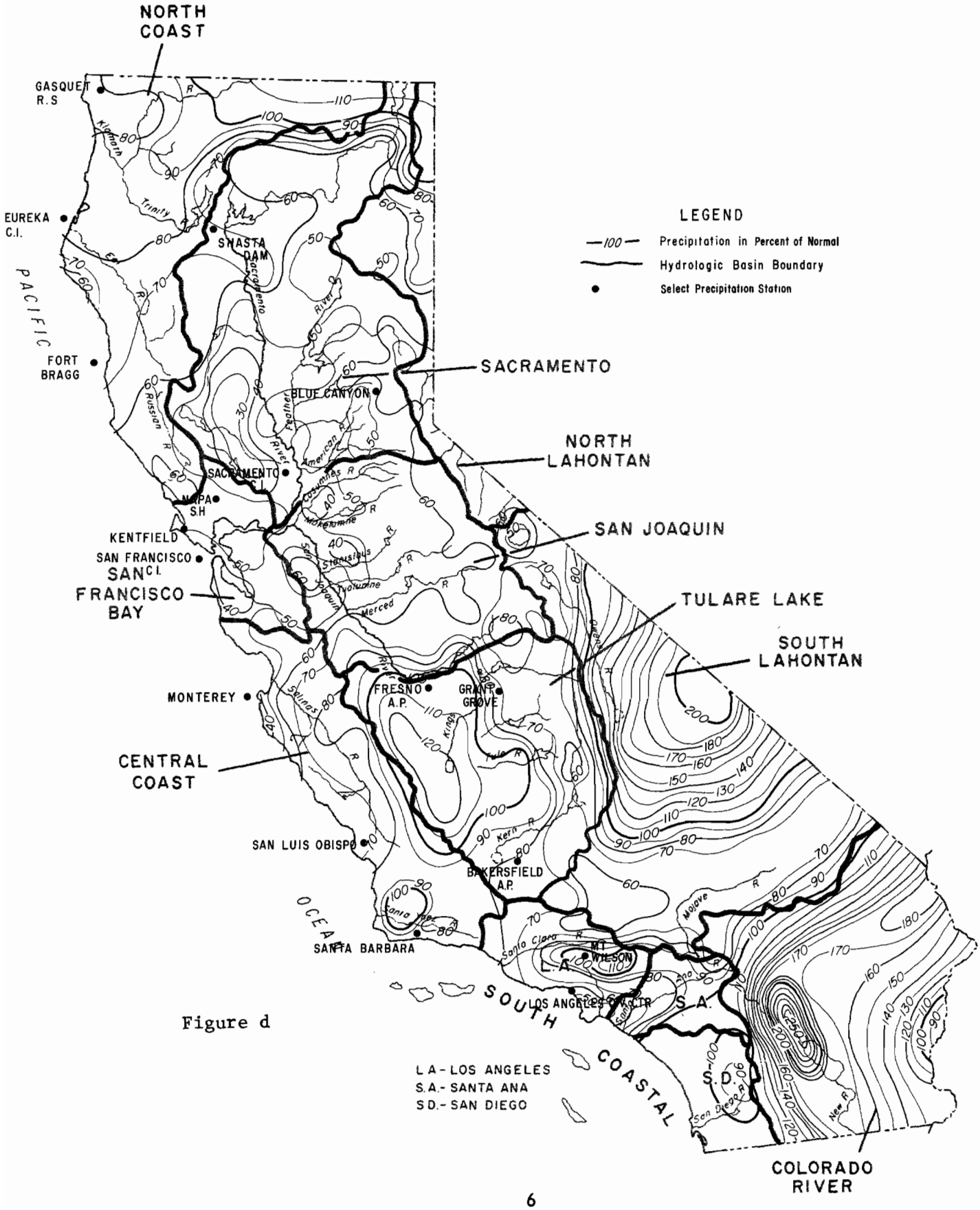
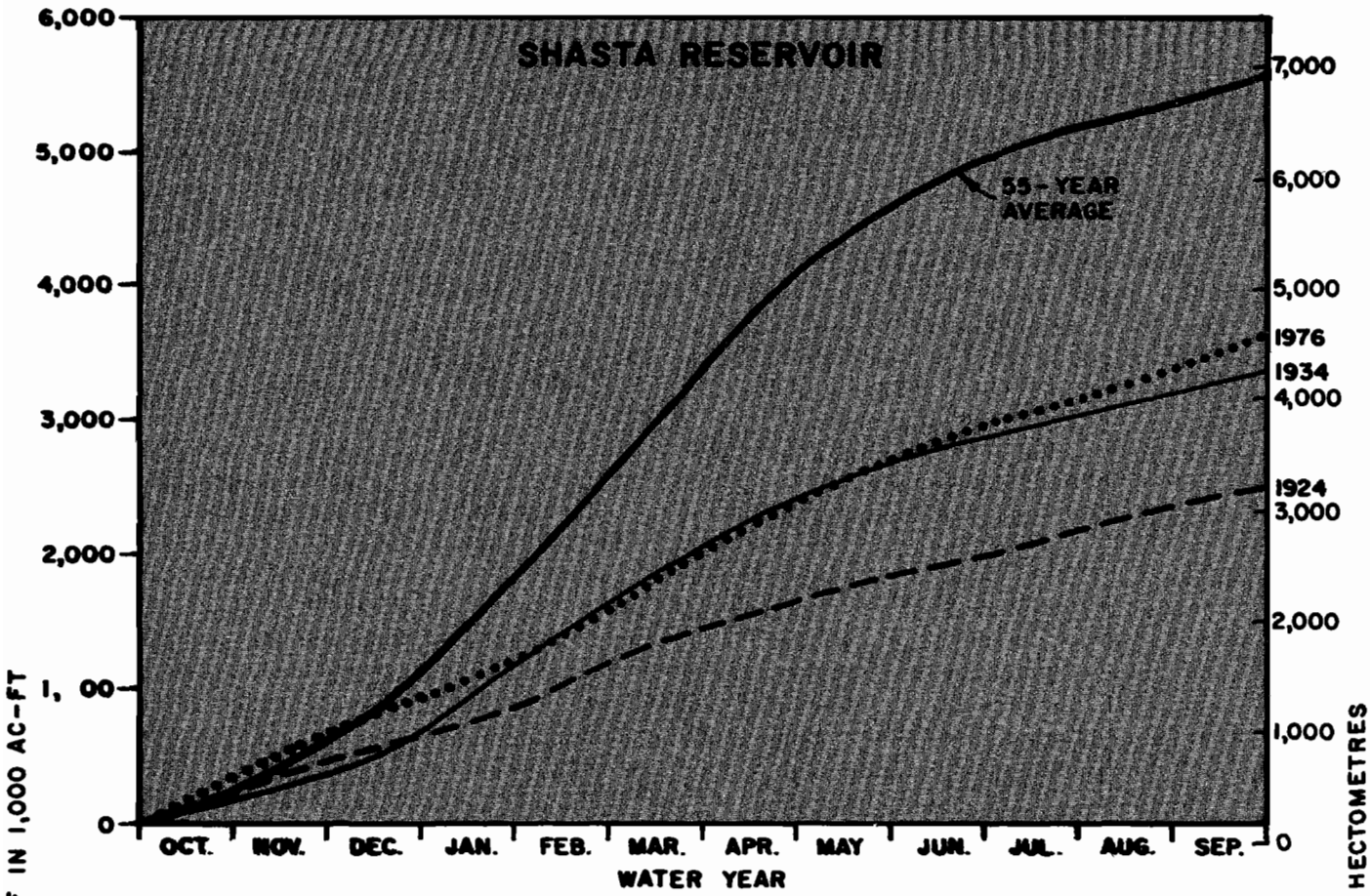


Figure d

ACCUMULATIVE NATURAL RUNOFF TO SELECTED RESERVOIRS DURING DRY YEARS



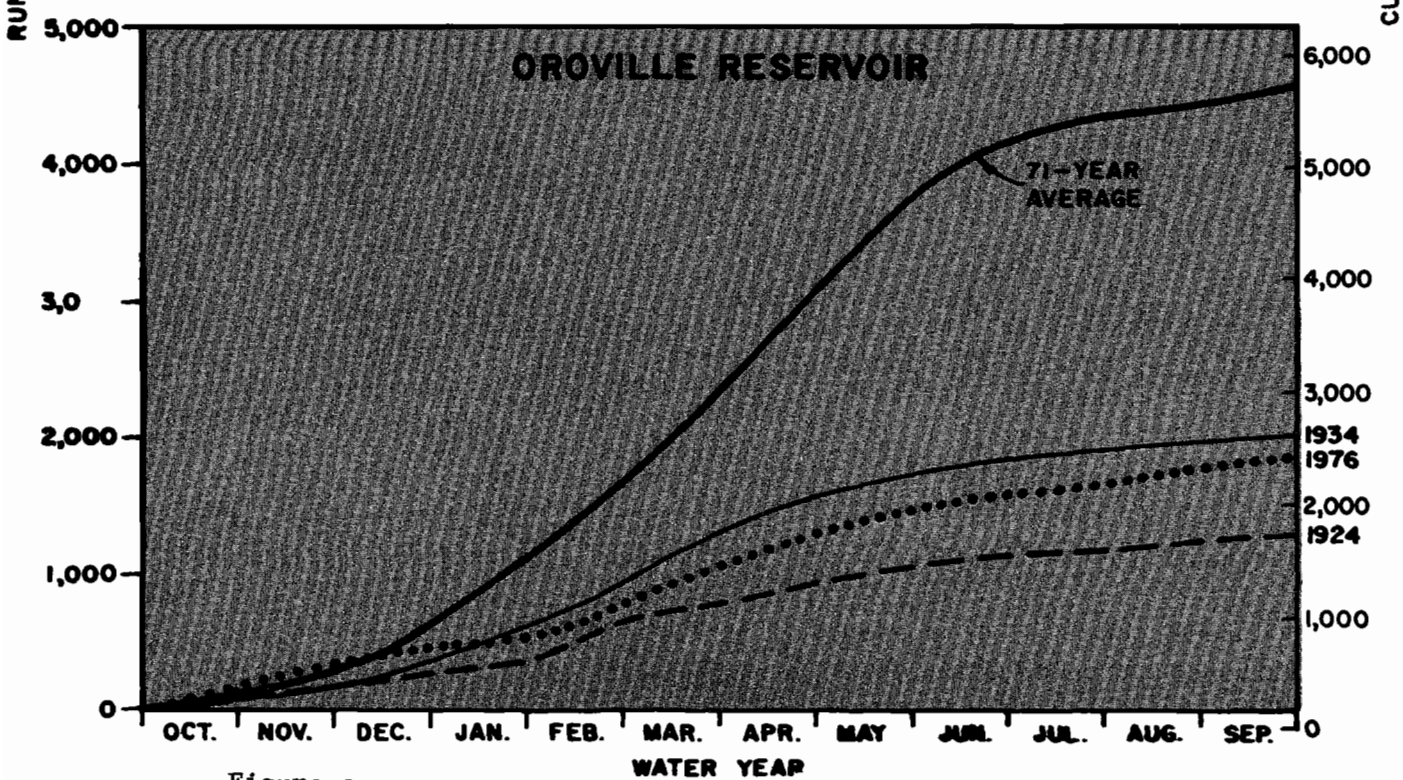


Figure e

ally estimated during years of normal water supply. Reasons for increased use include lack of soil moisture, lack of natural, groundwater replenishment, and need for frost protection.

The Department took the following protective actions in 1976 to safeguard water contract commitments:

- 142 197 500 cubic metres (115,265 acre-feet) of tentatively scheduled surplus water deliveries were suspended during October through December.

- More water was delivered from reservoir storage than initially planned.

- A temporary rock barrier was constructed in Sutter Slough to divert the Delta inflow to the Central Delta.

- An exchange of water was implemented between Dudley Ridge Water District and The Metropolitan Water District of Southern California, which had alternative sources of water and could release a portion of its State Water Project supply.

Several major problems were encountered in operations in the Delta:

- The State Water Project (SWP) and the Central Valley Project (CVP) have been operated annually under terms of a series of interim letter agreements since January 9, 1968. However, the CVP did not fully meet the State Water Resources Control Board water quality standards during 1976. During periods when the SWP was maintaining water quality standards different from the CVP, the SWP provided 185 000 000 cubic metres (150,000 acre-feet) of additional water for Delta outflow. If the CVP had been in agreement with the SWP on water quality standards the CVP would have provided 113 000 000 cubic metres (91,400 acre-feet) of the additional water needed for Delta outflow. The CVP restated its position that it is not bound by State water quality objectives and State Water Resources Control Board rulings. The CVP considers itself obligated only to provide sufficient outflow to meet the requirements of the November 19, 1965 agreement, which is not adequate to meet Delta needs. This lack of CVP commitment to Delta Water quality points out the serious problems the SWP will face in future dry years unless the CVP is required by federal legislation, or agrees to provide its share of outflow to meet water quality standards over the long term.

  The Department and the State Water Resources Control Board have been urging that the CVP be required to meet the same water quality standards imposed upon the SWP and are working to reach accord on the Four Agency Fish and Wildlife Agreement.

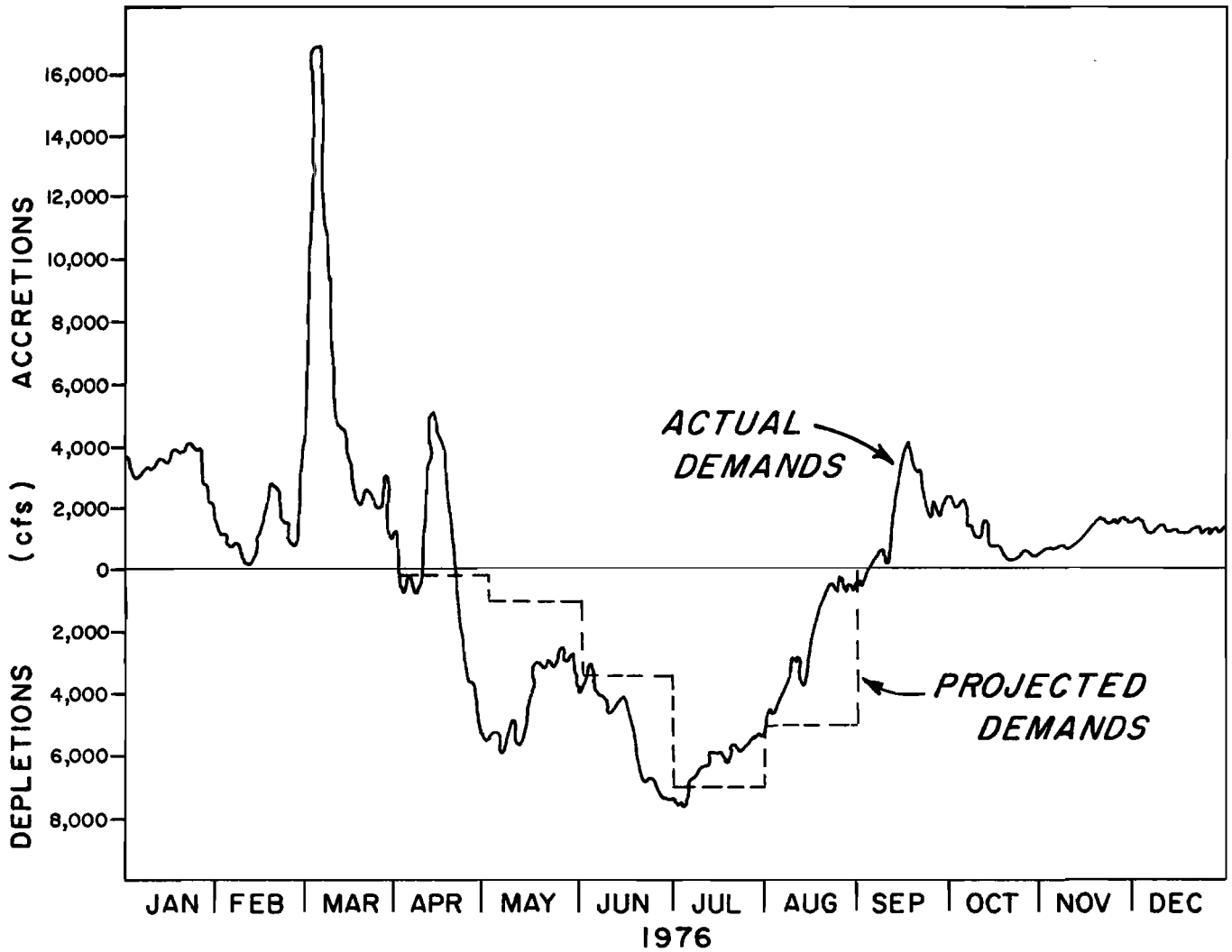
- On March 28, 1976, the Department curtailed exports from the Delta and increased storage releases from Oroville Reservoir to achieve the Basin Plan criteria for striped bass spawning. The increased inflow to the Delta was not completely effective in flushing the Delta system, and Delta water quality did not return to the Basin Plan standards until April 12, 1976.

- At the request of the Department of Fish and Game, the Department curtailed exports from the Delta to that necessary to meet South Bay and North San Joaquin Division demands from May 27 through June 30, 1976, which is a critical period for striped bass spawning in the Delta. Near the end of June a leak developed in the California Aqueduct, necessitating repairs to the North San Joaquin Division near Gustine in Stanislaus County and extended the curtailment of Delta exports until August 15. Water deliveries during this period were met by releases from San Luis Reservoir and during the last five weeks of the curtailment, by SWP water pumped through the Tracy Pumping Plant through cooperative Bureau efforts.

- The Sacramento River in-basins use was substantially greater than projected during the early summer months of April through June. More stored water than anticipated had to be released from the federal and state reservoirs, further reducing the already small carryover supplies. This problem was relieved during the later summer months of July through September when cooler than normal weather reduced the Sacramento River in-basin use allowing some water to be pumped at the Delta Pumping Plant for storage in San Luis Reservoirs.

The 1976 in-basin use, actual and projected, is shown on the following chart.

SACRAMENTO RIVER BASIN ACCRETIONS AND DEPLETIONS



An accretion occurs when the water flowing past the Sacramento measuring point is greater than the total water released at Keswick Dam, Nimbus Dam and Oroville Dam. A depletion occurs when the water flowing past Sacramento is less than the total water released from the three dams.

During 1976, the Department operated in the Delta under requirements of Water Rights Decision 1275 (as amended by 1291) and under the State Water Resources Control Board Basin Plan requirements. The Delta is operated in accordance with Department policy stated by Director W. R. Gianelli, in a

letter to the chairman of the Senate Committee on Water Resources in October, 1969. The letter is stated in part as follows:

> "It is the Department's unequivocal position that the State will operate the proposed Peripheral Canal in accordance with:
>
> 1. Conditions which finally may be included in any permits issued by the State Water Resources Control Board in furtherance of water rights for the State Water Project.
>
> 2. Water quality criteria as may be established by the State Water Resources Control Board and
>
> 3. Agreements which may be entered into between our Department, the Bureau of Reclamation and the Delta Water Users."

State requirements for Delta operation base the classification of water years on Shasta inflow alone. It was estimated that the Department was prevented from saving in storage approximately 123 000 000 cubic metres (100,000 acre-feet) of water from late May through mid-August by operating as a "dry" year instead of a "critical" year.

Another unexpected occurrance of 1976 was that the dry conditions created a very high potential for botulism in the migratory duck population in the Butte Basin and Sutter National Wildlife Refuge. To provide control by cooling existing water, up to 4 cubic metres per second (150 cfs) of water scheduled for release to the Feather River below Oroville was diverted via Pacific Gas and Electric Company's Western Canal to augment flows in Butte Creek and Sutter Bypass. This action was the result of a recommendation of the Department's Sutter Maintenance Yard and a cooperative agreement between the Department, Department of Fish and Game, U. S. Fish and Wildlife Service, and PG&E.

Summary of Delta Water Quality Standards

The 1975-76 water year was "dry" and water quality in the Delta was a major point of concern in 1976. The following is a summary of the six main Delta water quality standards to which reference is made in this bulletin. The Basin Plans 2 and 5 currently provide the basic water quality criteria under which the State Water Project operates in the Delta. Basin Plans 2 and 5 have been accepted by U. S. Environmental Protection Agency.

1. The November 19, 1965, criteria was agreed to as a basis for negotiations by representatives of the Department of Water Resources, the United States Bureau of Reclamation, the Sacramento River Delta Water Association, and the San Joaquin Water Rights Committee. The "criteria" have subsequently been superseded by the Water Quality Standards (Basin Plans) and Water Rights Decisions, which provide greater protection for municipal, industrial, agricultural, and fish and wildlife uses in the Delta.

2. Water Rights Decision 1275 (May 1, 1967) and Decision 1291 (November 30, 1967) issued by the State Water Rights Board (now called the State Water Resources Control Board) granted rights to the Department of Water Resources to appropriate water from the Feather River at Oroville and from the Sacramento-San Joaquin Delta for the operation of the State Water Project. In these decisions the Board reserved jurisdiction over salinity control, fish and wildlife resources, and coordination of permits for the State Water Project and the Central Valley Project. These two decisions are explained further in Bulletin 132-68, pages 62 through 64.

3. Water Rights Decision 1379 (July 28, 1971) modified Decision 1275. Because several water contractors sought a writ of mandate against the Board, a preliminary injunction was issued by the court January 9, 1972, preventing the Board from implementing

any part of Decision 1379. (See Bulletin 132-72, page 17.)

4. Basin Plan 2 (April, 1975) is a water quality control plan report prepared by San Francisco Bay Region 2 of the Regional Water Quality Control Board. The purpose of the Basin Plan is:

   - To meet the requirements of the United States Environmental Protection Agency in the allocation of federal grants for construction of wastewater treatment facilities

   - To fulfill the requirements of the Porter-Cologne Act for water quality control plans.

   - To provide a basis for establishing priorities in the disbursement of grants for upgrading wastewater treatment facilities.

   - To delineate water quality objectives to be achieved and maintained, and provide the basis for the establishment or revision of waste discharge permits by Regional Boards.

5. Basin Plan 5 (May, 1974) is a water quality control plan report prepared by the Central Valley Region 5 of the Regional Water Quality Control Board and has the same purpose as Basin Plan 2 above.

6. The Four Agency Fish and Wildlife Agreement is being negotiated between the Department of Water Resources, U. S. Bureau of Reclamation, Department of Fish and Game, and the U.S. Fish and Wildlife Service. The goals of the Agreement are: (1) to restore and maintain adult populations of fish and wildlife in the estuary on the average at the historical level, and (2) to realize the projects' potential for increasing these resources above historical levels consistent with other purposes of the projects. The Agreement will include water quality standards necessary for the benefit of fish and wildlife within the Delta, and will be presented to the Water Resources Control Board as testimony during Phase II of the Delta Hearings.

Rock Barrier at Sutter Slough

To help meet water quality criteria in the Delta as well as conserve the water resources of the State during a drought year, the Department proposed the closing of Sutter Slough with a rock barrier. This was expected to provide greater cross Delta water transfer through the Delta Cross Channel and Georgianna Slough.

In August 1976, the Department conducted a public meeting in Courtland to explain our proposal and receive public comment. Shortly thereafter, an agreement was signed with the North Delta Water Agency to assure that water quantity and quality to meet their needs would be available after the barrier was installed. The agreement set up safeguards for water users in the area, which comprises hundreds of thousands of acres in the Delta from Sherman Island northeastward to Sacramento along the Sacramento River.

Under the agreement, the Department would monitor and maintain water quality and quantity in the agency's area. The Department would store standby pumps for use if they were needed and would pay the cost of any additional pumping required, with guarantees to breach the barrier immediately if emergency pumping capability could not be provided.

In September, the Department constructed the proposed rock barrier in Sutter Slough to increase flows in the Sacramento River and other channels east of Sutter Slough. The barrier enabled the Department to keep water, which otherwise would have traveled down Sutter Slough and escaped into the ocean, in the Sacramento River and the northern Delta waterways. The closure helped meet water quality criteria in the Delta and conserve the dwindling water resources of the State Water Project.

Temporary rock barrier on Sutter Slough

Measurements made during the closure period show the increased Delta transfer efficiency through the Delta Cross Channel and Georgianna Slough to be about 74 010 000 cubic metres (60,000 acre-feet). This extra water was made available for export to San Luis Reservoir before the barrier was breached on October 20, 1976. Although the Department had indicated in July that surplus water deliveries would be curtailed during the last three months of 1976, the barrier enabled reinstatement of about 24 610 000 cubic metres (20,000 acre-feet) of surplus water deliveries during the fall months.

State Water Resources Control Board Delta Hearings

On November 15, 1976, the State Water Resources Control Board began Phase I of the Delta Hearings to provide revisions as necessary to Decision 1379. (For background see page 17, Bulletin 132-72.)
At the hearings, the Department outlined the problems caused by the current method of classifying available water supplies to be used for maintenance of Delta water quality, and suggesting modifications to these methods in years of short water supplies and critical water needs. The Department explained that present water quality standards and State Water Project operations are governed by the "Shasta criteria", which require that natural inflow into Shasta Reservoir be used to determine the type of water year (critical, dry, below normal, above normal, or wet). However, studies have shown that inflows to Shasta are often quite different from inflows to the Delta.

The Department therefore proposed that water years be categorized on the basis of natural inflow measurements at the following four stations instead of the Shasta station:

1. The Sacramento River at Bend Bridge.
2. The Yuba River at Smartsville.
3. The Feather River at Oroville.
4. The American River at Folsom Reservoir.

Measurements of flow at these four stations would more accurately account for Delta inflows and would provide a more accurate basis for determining the type of water year. The Department also presented testimony to the Board on the salinity standards at Rock Slough. A sliding scale of water quality to match the entire spectrum of types of water years observed in nature would be more reflective of the natural flows to the Delta than is the present system of categorizing water years as critical, dry, below normal, above normal, or wet. The Department's proposal to use a sliding water-quality scale would result in meeting the salinity requirement at Rock Slough 65 percent of the time; during some years the requirement would be met more than 65 percent of the time and in other years less than 65 percent of the time.

Changes in water quality standards in the Delta will be the subject of Phase II of the Delta Hearings and the final Board decision on Delta water quality standards is expected in 1978.

MWD - Dudley Ridge Water Exchange

In mid-1976 the Department proposed a water exchange between Dudley Ridge Water District and The Metropolitan Water District of Southern California (MWD). Under the exchange agreement MWD increased diversion of its Colorado River Water supply by 12 951 750 cubic metres (10,500 acre-feet) and released a like amount of its SWP supply to Dudley Ridge. Dudley Ridge paid the full costs involved in the exchange, including additional costs incurred by MWD for the additional Colorado River diversion as compared with project deliveries.

Additional details concerning this water exchange are included in the Power Contracts Management and Water Contracts Management sections of Chapter II.

This exchange demonstrates that a water management policy that includes water exchanges on a statewide basis can be beneficial to all through the use of all available resources during times of local shortages.

Water Supply for 1977

Near the end of 1976 it became apparent that the drought would greatly affect water deliveries from the SWP in 1977. In late 1976, the Department undertook studies to prepare for a low water year and three possible water supply conditions were considered:

1. The 1977 water year would be the same as 1976 (approximately equal to the 1934 water year);

2. 1977 would be a "lower quartile" year - one in which the water supply would be equaled or exceeded in three out of four years; and

3. 1977 would be a median water supply year. One in which the water supply would be equaled or exceeded in two of four years.

Results of the studies indicated:

- If 1977 were similar to 1976, no surplus water would have been available. Furthermore, under this condition it would be necessary to reduce entitlement deliveries if the Bureau of Reclamation does not meet its share of Delta outflow.

- If 1977 were a lower quartile water supply year, the Department could have delivered all of the requested entitlement water but no surplus water. In this situation the Department assumed that the State Water Resources Control Board would relax certain water-quality requirements in the Delta, and that the Bureau of Reclamation would provide its share of Delta outflow plus some additional releases during the striped bass spawning period.

- If 1977 were a median year, the requested entitlement water plus about 616.75 cubic hectometres (500,000 acre-feet) of surplus water could have been delivered.

In each of these cases the Department planned to have enough water in storage on October 1, 1977, to make full entitlement water deliveries in 1978 if the 1977-1978 water year is equal to that of 1934.

Groundwater Storage Programs

The Department continued an active program studying the possible use of groundwater storage basins to supplement surface water reservoirs in providing future project water supplies. The potential for using groundwater basins for water storage has been recognized for many years. Interest was intensified in the early 1970's, when the Department became increasingly aware of adverse reactions to the development of new surface reservoirs as a means of augmenting water supplies.

In the initial phase of the Department's current groundwater storage program, a number of groundwater basins which have potential for SWP water storage were identified for further study. In 1975, a review of the San Fernando Basin in Southern California was started. Progress on the initial phase of the study was discussed in Bulletin 132-76, page 2. During 1976, the San Fernando Basin study continued with investigations of:

- Physical characteristics and capabilities of the basin, including the storage capacity.
- Use of existing conveyance, spreading, and extraction facilities.
- Financial, legal, institutional, and environmental impacts involved in the use of the basin.

Throughout 1976, the Southern District held meetings with local agencies overlying the basin in an attempt to arrive at acceptable solutions to the issues and concerns of all involved. It is anticipated that the San Fernando Basin can be the initial phase of a groundwater storage program in the near future. Several issues must still be resolved and implementation of the project has been further complicated by the drought and resultant reduction in the availability of water.

Other areas identified for study include the White Wolf Basin and Kern River Fan in the South San Joaquin Valley and the Chino, Raymond, Bunker Hill-San Timateo, and Las Posas Basins in Southern California. Each of these areas meet the general criteria for a groundwater storage program and will undergo further evaluation. These criteria are:

- Facilities for importing, delivering, and spreading the water are readily available.
- Adequate storage capacity exists in the basins. White Wolf Basin contains sufficient storage space fo 1 850 cubic hectometres (1.5 million acre-feet), and the Kern River Fan area could store 3 700 cubic hectometres (3 million acre-feet).
- Hydraulic continuity exists between the points of spreading and recapture, and relatively shallow wells would be required at the potential recapture sites.
- No major water quality problem was found in either basin.

Water Conservation

The Department of Water Resources adopted a water management policy in May, 1975, which states, in part: "To maximize beneficial use, optimum application techniques and processes for water conservation shall be implemented and waste shall be avoided".

In keeping with this policy, the Department implemented a water conservation program at the State Water Project operation and maintenance centers. The

program included deactivation and draining of reflecting pools and fountains, installation of water conserving shower heads, adjustment of restroom facilities for minimum water use, and investigation of water-conserving methods for irrigating landscaped areas. The program will continue to identify and implement additional water saving methods.

The Department also became active on a statewide basis in promoting water conservation, not only during drought years but also throughout future years, wet or dry. Assembly Resolution No. 165 requested all agencies of the State to review their programs and activities to determine where water conservation practices could be adopted and to adopt such practices at the earliest practicable time. The Department was requested to confer and advise on water conservation practices with other agencies of the State and to make recommendations.

Other legislative action on water conservation included AB 3793 (sponsored by the Department) and AB 1395. AB 3793 authorizes any supplier of municipal water in California to undertake a conservation program to reduce water use and to require, as a condition of new service, that reasonable water-saving devices and water-reclamation devices be installed to reduce water use. The bill also provides for short-term loans to meet current drought problems (see Davis-Grunsky Act Program, Chapter II). AB 1395 requires installation of low-flush toilets in houses, hotels, motels, and apartment houses constructed after January 1, 1978.

A part of the Department's general fund programs includes educational efforts to encourage water conservation. Bulletin No. 198, Water Conservation in California, was published in May, 1976. This bulletin was not published as a reaction to the current drought, but was actually started before it was known that 1976 would be a dry year. It was initiated as one of the first steps in implementing the new water management policy. The bulletin describes current water use practices, describes possible methods of urban and agricultural water conservation, and assesses the impact of potential urban and agricultural water savings. It also sets forth recommendations for followup action outside of the Department, and spells out actions that the Department will take in water conservation.

The Department also sponsored two water conservation conferences during 1976. The first, a two-day "Urban Water Conservation Conference", was held in Los Angeles during January, and the second, "Agricultural Water Conservation Conference", was held in Sacramento during June. The second conference was cosponsored by the University of California Cooperative Extension Service. Each conference was attended by more than 300 people, and each covered many aspects of water use and conservation.

The Department planned to conduct a large-scale test of water-saving devices during 1977 in the San Diego area, involving distribution of sets of water-saving devices to some 300,000 households to reduce toilet and shower flows.

Other educational activities that the Department was involved in are: production of public service announcements on water conservation for television; production of water education films that include water conservation for lower grade school levels, high school students, and adults; assistance to the State Department of Education in developing an instructional program for kindergarten through grade twelve; and research in water-saving gardening and home landscaping techniques.

Establishment of Drought Operations Center

In July 1976 the Department, in cooperation with the Office of Emergency Services and members of the Governor's staff, established a Drought Operations Center. The Center's function was to

collect and coordinate information from various agencies on urban, agricultural, and water-related recreational problems and to mesh needs with available resources to ease impacts of the drought.

On December 31, 1976, the Governor outlined a series of drought actions to be taken by the Department during 1977. These actions, implemented through the Drought Operations Center, included the overseeing of State agency water conservation efforts, issuing regular drought condition reports, and providing information about relief programs to farmers, communities, and members of the press and public. The Governor also called for larger water exchanges in 1977 by the Metropolitan Water District of Southern California.

In late 1976, the Drought Operations Center prepared a report on the drought and suggested various means of coping with its effects during 1977. This report, titled "The California Drought - An Update", was subsequently published on February 15, 1977.

The Drought Operations Center is a service and a benefit to interests statewide. Costs of operating the Center are funded as a part of the Department's programs under the General Fund.

Weather Forecating - "Project Hydrospect"

In 1972, the Department, together with federal and other public agencies, initiated a cooperative program known as Project Hydrospect. The object of the program is to determine the reliability of long-range weather forecating. The Department is participating in the program in an effort to be abreast of all aspects of water management.

The objective of "Project Hydrospect" is to determine both the effectiveness of long-range weather forecasts and their usefulness in making water-management decisions. Reliable long-range weather forecasts could result in tremendous benefits to water users in SWP service areas as well as the State as a whole. More accurate projections of probable available water supplies could be used in future decisions regarding augmenting yield to the State Water Project, reservoir operations, flood operations, power generation, and agriculture management through crop pattern alterations and planting and harvesting cycles, to name a few.

The Department intends to use results of these studies as a part of its data development efforts. However, the reliability of long-range weather forecasting is a controversial subject. The dependability of long-range forecasts must be substantiated before they can be effectively used for water supply planning or for consideration when planning SWP operation.

The costs of the program are shared by the State Water Project, U. S. Bureau of Reclamation, the State's General Fund, and several individual water agencies and irrigation districts in the San Joaquin Valley.

Safety of Department Dams

Since about mid-1975 the Department has been revising and strengthening the safety of dams program. A special consulting board was formed to conduct independent reviews of Perris and Pyramid Dams. The special board members were Mr. Wendell E. Johnson and Dr. Jack W. Hilf, consulting engineers, and Dr. Douglas D. Campbell, a consulting geologist. The board was given complete access to all available material and reports on the dams and were free to question Department staff. The Board had several meetings with the Director and staff, conducted on-site inspections, and published the final report in April, 1976.

The Board concluded that Perris and Pyramid Dams are safe. However, the Board recommended that at Perris Dam there should be a resolution of the adequacy

of the embankment freeboard under seismic conditions and a resolution of the possible effect on the embankment of erosion of the spillway channel during the probable maximum flood conditions. Subsequently, the Department conducted wave action studies and concluded that there is ample embankment under seismic conditions. The spillway channel conditions were investigated and a contract to realign and strenghten the spillway channel is scheduled to be awarded in 1977.

At Pyramid Dam there should be a resolution of the possible effect of erosion on the lined spillway chute and on the embankment during probable maximum flood conditions and a resolution of the effect of possible cavitation erosion on the tunnel lining under emergency drawdown conditions when the 1.98 metre (78-inch) butterfly valve is in operation. Studies of these conditions were started during 1976 and continued into 1977.

The consulting board also started an independent review of Castaic Dam during 1976. The investigation followed the same procedure that was used at Perris and Pyramid. Initial data on the dams was submitted to the board in June, 1976, with additional data submitted as requested in November and December.

The Department is planning to conduct an independent review of all of the State Water Project dams in its stronger dam safety program.

Near the end of 1976 the Department submitted recommendations to the California Water Commission to amend the California Administrative Code to include more comprehensive review procedures for Department owned dams. The amendments would expand the activities of the consulting Board which is authorized by Water Code Section 6056. The expanded Board activities include:

1. To make and report its findings with respect to the adequacy of design prior to approval of an application to construct or enlarge a department-owned dam. Advertising for bids to perform the proposed work shall not proceed until the Director accepts findings of the Board that the design is safe and the Department's application is approved.

2. To make and report its findings with respect to safety after completion of construction or enlargement of a department-owned dam and upon the issuance, modification or renewal of the certificate of approval.

3. To review the performance of the dam at three to five year intervals to assure its continued safety and shall report its findings to the Director.

As another important item, the Department, through the Secretary of Resources Agency, has proposed a cooperative safety program with the U. S. Bureau of Reclamation and Corps of Engineers. The program would include a safety review of federal dams in substantially the same manner as the Department reviews other California dams.

Oroville Earthquake Studies

The earthquake in the Oroville area, August 1, 1975, prompted a thorough investigation of the Oroville facilities with regards to earthquake safety. Investigations following the earthquake are documented in Bulletin 203, published in April, 1977. Safety of Dams engineers inspected nearly all of the major dams within 64 kilometres (40 miles) of the epicenter. Investigations revealed that the performance of all dams was satisfactory during the earthquake and have performed satisfactorily since the earthquake.

In addition to the investigation results reported in Bulletin 203 there are ongoing studies being conducted. The major items under investigation include the following:

Design

- Reevaluation of earth motion for Oroville-Thermalito facilities.
- Dynamic reanalysis of the structures.

Seismological

- Reappraisal of seismic activity in Oroville area.
- Calibration blasts to assist in determination of accurate epicenter.
- Installation of permanent sensitive seismograph system at Oroville Dam.
- Modification of seismic instrumentation embedded in Oroville Dam.

Geological

- Determine extent of fault.
- Verify nature, age of last movement and extent of faults west of dam.
- Mapping and trenching.
- Investigate surface cracking.
- Study groundwater condition in epicentral area.

Geodetic Surveys

- Precise surveys of Oroville area.

These studies are estimated to be complete in July, 1978.

Using the design earthquake recommended by the Special Consulting Board for the Oroville earthquake, studies were undertaken during 1976 to evaluate the performance of Oroville Dam, Thermalito Forebay and Afterbay Dams, Thermalito Diversion Dam and Oroville Spillway Gate Structure. This design earthquake is several times stronger than the Oroville earthquake -- Richter Magnitude 6.5 within 2 kilometres of the dam vs. Richter Magnitude 5.7 at 12 kilometres from the dam.

Preliminary results of the following components of the studies were discussed in November with the Special Consulting Board:

1. Cyclic stresses and strengths of foundation sands of Thermalito Forebay and Afterbay Dams.

2. Estimate of shear modulus and damping of gravels in the shell zones of Oroville Dam.

3. Cyclic strength of gravels in the shell zones of Oroville Dam.

4. Analysis of stresses in Oroville Dam Spillway Gate Structure and Thermalito Diversion Dam.

The project Geology Section continued its investigation by detailed geologic mapping (primarily in the Oroville and Bangor quadrangles), additional trenching to determine extent of cracking, surveillance of additional surface cracking, and collecting well water data. The section also drilled test holes along the perimeter of Thermalito Forebay and Afterbay to determine the extent and nature of low density material indicated by previous exploration.

First-order releveling surveys are done periodically in the Oroville area to determine possible ground movements due to fault activity. Two such surveys were conducted during 1976. There have been only minor changes observed when compared to the pre-earthquake surveys.

Seismic monitoring has indicated that small aftershocks (of the August earthquake) diminished from approximately 4 per day in January, 1976, to 1 per day in December.

Transfer of Water Entitlements

In last year's bulletin (page 2), it was reported that a task force had been established to review the Project's water

management program, particularly with regard to the transfer of entitlements among contractors.

During 1976, the task force gave a progress report to the California Water Commission at its January meeting in Sacramento. Also, at the task force's recommendation, the Director notified the County of San Luis Obispo, by letter to the County Engineer dated April 19, 1976, that the Department could not approve a proposed resale arrangement between the San Luis Obispo County Flood Control and Water Conservation District and the Lost Hills Water District. The proposal would have required immediate increases of San Luis Obispo's annual entitlement for the purpose of the sale to the member unit of the Kern County Water Agency. The basic reason for the Department's action was that:

> "Such an arrangement would fundamentally weaken the State's ability to plan and manage project water service so as to meet the needs of all 31 contractors within the framework of contracts and within the resources available to the Project."

Release of the task force's report, originally scheduled for July 1, 1976, was deferred until after the release of the Department's study of the Delta Alternatives -- to assure that the recommendations of the two inter-related project reviews are consistent.

Financing of Distribution Works

In addition to paying their allocated share of project costs, most contractors must finance the construction of local distribution facilities needed for project water deliveries. It is currently estimated that the 31 long-term contractors will spend a total of $2.87 billion for such facilities. Expenditures to date are estimated to total $1.52 billion.

Under a 1968 enactment, the Legislature made available $8 million to assist designated agencies in financing works needed to distribute project water. Between 1968 and 1976 the Department disbursed seven construction loans accounting for $7.5 million of the total $8 million. An additional loan application is currently under consideration. In 1973 the Lost Hills Water District applied for a construction loan of $500,000. The District subsequently requested and was given several extensions of time in which to complete and submit all information required by the Department concerning the proposed loan. In November 1976 the District submitted all the required information, and at years end the information was being reviewed by the Department for recommendation to the Director concerning the loan. Status of the program as of December 31, 1976, is summarized in the following table.

Applicants (All Member Units of Kern County Water Agency)	Construction Loan Disbursements	Construction Loan Application Under Consideration
Berrenda Mesa Water District	$1,600,000	
Cawelo Water District	1,800,000	
Lost Hills Water District		$500,000
Rosedale-Rio Bravo Water Storage District	550,000	
Semitropolic Water Storage District:		
Buttonwillow Improvement District	2,450,000	
Pond Oso Improvement District	1,100,000	
TOTAL	$7,500,000	$500,000

Extension of the California Aqueduct

By the end of 1976 the Department had almost completed a draft report on the feasibility of constructing an extension of the California Aqueduct into upper Coachella Valley. The study was requested by five project contractors who serve 29 local water agencies within their boundaries. Costs of the Department's efforts in the study were reimbursed through agreement with the five contractors that could benefit by the extension (Coachella Valley County Water District, Desert Water Agency, San Gorgonio Pass Water Agency, Mojave Water Agency, and San Bernardino Valley Municipal Water District).

The report centers on two possible routes for the desert extension. One route would run from Hesperia, through Lucerne and Yucca Valley to the Whitewater River terminus. The second route, called the "pass route", would carry water south of the San Bernardino Mountains through San Gorgonio Pass and ending at the Whitewater River.

The report presented information on costs, timing, staging, and the effect on State Water Project water deliveries, repayment, power requirements, legal implications, environmental effects, and financing of the project. However, the report does not commit the Department to any course of action. Through water exchanges and the development of other sources of supply, the needs of five water contractors are presently being met and the immediate development of the extension is not needed. The report indicates that the earliest operational date would be 1981 and, depending on the extension of current water exchange agreements, could be as late as 1990. The draft report will be under review in 1977 by all affected agencies, with comments scheduled to be received by the Department by the end of 1977.

Contract Provisions of Surplus Water Program

When the State Water Project was formulated, the Department recognized that in the early years of operation, the project facilities would conserve and be able to transport water that would be surplus to that required to satisfy amounts under Table A of the water service contracts. Article 21 of the water supply contract between the State and Metropolitan Water District provided that in "...any year the supply of project water, after appropriate allowance for holdover storage, exceeds the total of annual entitlements of all contractors for that year, the State shall offer to sell and deliver such surplus water for periods expiring not later than the end of such year". This provision also carried out a principle of the Governor's Contracting Principles (January 20, 1960) which stated in part, "...contracts may be executed for interim or nondependable water supply subject to reduction or termination by the State at any time".

In 1963 during the negotiations of contracts with the agricultural contractors, special provisions for surplus water service for agricultural use and ground water replenishment were added to the water contracts. These provisions were added to give a prior right to surplus water if used for those purposes and also to limit the price for such water to essentially the pumping costs required for delivery to the purchasing agency. The reason for this amendment was to reduce the overall cost of water to agricultural contractors during the early years of entitlement buildup.

The financial feasibility of each agricultural water contract was studied on the basis of assumed quantities of surplus water that would be needed to reduce the average price of water to within the contractor's ability to pay.

The results of these studies are shown in the Department's Bulletin 119 series. The assumed amounts of available water shown in these reports were very conservative. No surplus was assumed for any years after 1981 and for some prior years were assumed to be zero because of reservoir filling, pump staging, or other operational reasons. Maximum surpluses were assumed in or around 1978, and for most contractors these were considerable less than 50 percent of their maximum annual entitlements. These surplus water amounts were only those needed to make repayment for the contracted amounts of entitlement water financially feasible for the respective agencies. They were not estimates of the actual amounts of surplus that might be available from the project.

The actual deliveries have proven to be much greater than the Bulletin 119 estimates. The following table shows the maximum annual surplus amount assumed in the Bulletin 119 series for each agricultural water contractor and the year or years during which it was assumed to be delivered. For comparison purposes the table also shows the maximum annual surplus amounts actually delivered to date (and the years of such delivery) and the amounts of surplus requested for 1977.

All of the Department's planning has been to stage facilities in time to meet entitlement demands only, not to assure the availability of surplus water. In 1969, the Department estimated that surplus water would be available during an assumed critically dry period extending from 1969

COMPARISON OF SURPLUS WATER DELIVERIES
(in acre-feet unless otherwise noted)[a]

Water Contractor	Maximum Annual Entitlement	Surplus Water Amount and Year of Delivery Assumed in Bulletin 119 Series: Assumed Surplus Water Amount per Bulletin 119[b]	Assumed Year(s) of Delivery	Actual Maximum Surplus Water Delivered and (Year Delivered)	Requested Surplus For 1977[c]
	(1)	(2)	(3)	(4)	(5)
Kern County Water Agency	1,153,400	352,900	1978	442,150 (1976)	919,144
Devil's Den Water District	12,700	6,000	1973	7,495 (1975)	7,300
Dudley Ridge Water District	57,700	25,400	1975	40,555 (1975)	54,405
Empire West Side Irrigation District	3,000	1,900	1968, '73, '74, '75, '76, '78, '79, '80	3,457 (1976)	3,000
Hacienda Water District	8,500	4,000	1975	7,078 (1970)	4,200
Oak Flat Water District	5,700	2,500	1969, '70, '74	4,412 (1971)	3,700
Tulare Lake Basin Water Storage District	110,000	54,000	1975	142,542 (1972)	228,300
TOTALS	1,351,000	446,700		647,689	1,220,049

a) Metric conversion is acre-feet times 1233.5 equals cubic metres.
b) Department of Water Resources Bulletin 119 Series reports on the feasibility of various water agencies contracting with the State for water supply.
c) Requested on September 1, 1976.

through 1975. However, estimates of available surplus water after 1975 through 1990 were based on lower quartile water years. (Lower quartile years are drier than normal but are not considered critically dry.) All more recent estimates of surplus availability have been based on lower quartile years. Since 1971, the Bulletin 132 series has included (in Table 1) estimated amounts of surplus water deliveries for each year through 1985 based on either contractors' estimates or availability assuming lower quartile water years, whichever is lower.

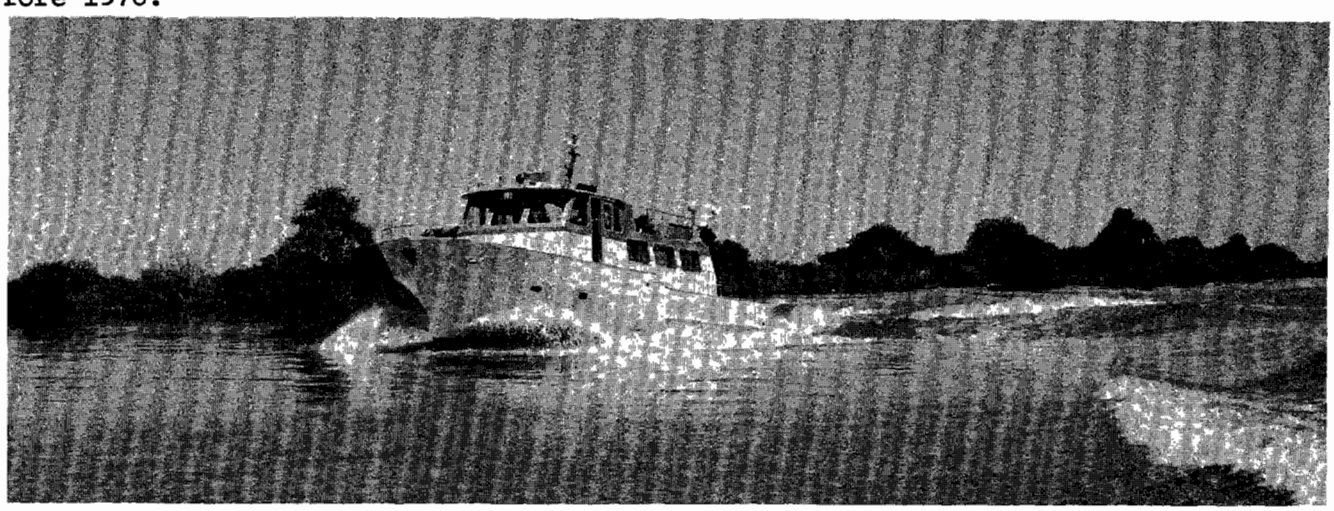
In a statement to the Assembly Committee on Water in 1972, Director Gianelli advised the Committee that the State Water Project would have no difficulty satisfying estimated annual entitlements through 1978. However, he stated that the total surplus water requests of the contractors during the 1973 through 1977 period could not be met if a dry or critical year should occur.

Some agricultural contractors have developed programs which anticipate much greater deliveries of surplus water than contemplated by the Department. As noted above, the Department has not given the agricultural contractors reason to expect surplus water to be available in any dry or critical years, or in any critically dry period <u>except</u> during the first few years of project operation before 1976.

To clarify the definition of surplus water, the agricultural contractors signed a 1974 surplus water amendment that completely revised Article 21 and the special agricultural water provisions of the contracts. The original definition of surplus water included all water that "after appropriate allowance for hold-over storage, exceeds the total of annual entitlements for that year." The new definition of surplus water includes only water that can be furnished contractors without interfering with (1) annual entitlements, (2) needs for Project construction, (3) operational requirements for recreation and fish and wildlife uses, (4) needs for Project power generation, (5) exchanges of water and variations in reservoir storage necessary for operational flexibility, and (6) losses in connection with (1) through (5) above. Although the Department's operations studies have always included assumptions that these uses would take precedence over surplus water, the new amendment forestalls any arguments that might otherwise have occurred in water short years.

MV San Carlos

The Department's floating laboratory, the "MV San Carlos", was placed into operation in March 1976. Its prime purpose is to monitor water quality in the Sacramento-San Joaquin Delta.



Water quality work boat "M.V. San Carlos"

The crew on board the San Carlos will regularly conduct a variety of complex, detailed water analyses of Delta waters in accordance with the State Water Resources Control Board's Water Rights Decision 1379. In that decision, the State Board ordered monitoring of water quality to protect the Delta and the counties bordering it. The Department is voluntarily complying with portions of the Decision pertaining to monitoring and reporting water conditions in the Delta.

In accordance with Department policy, and with other water quality monitoring responsibilities of the Department, the San Carlos regularly conducts a broad range of tests and analyses. The custom-designed interior greatly expands the on-board testing capability, increasing the validity of the test data.

The San Carlos is a 17-metre (56-foot) craft named after a Spanish sailing vessel that sailed into San Francisco Bay in 1775 and 1776 to survey and sound the bay. It is powered by two V12 Detroit diesel engines, each rated at 254 Kw (340 horsepower), with a top speed in excess of 30 kilometres per hour (17 knots). The contract cost of the boat, including elaborate instrumentation for testing, was approximately $320,000. To help defray the cost of operating the San Carlos, the Department plans to make the boat available on a contract basis to other State agencies and the Federal Government for their use in monitoring projects.

Wheeling of Central Valley Project Water

Cross Valley Canal. The first contracts for wheeling federal water through portions of the California Aqueduct for delivery to Kern County Water Agency's Cross Valley Canal were executed in 1975 between the State, the U. S. Bureau of Reclamation, and the following five San Joaquin Valley districts:

Pixley Irrigation District
Lower Tule River Irrigation District
Ducor Irrigation District
Tulare County
Fresno County

Wheeling contracts with the following four districts were executed during 1976:

Hills Valley Irrigation District
Kern-Tulare Water District
Rag Gulch Water District
Tri-Valley Water District

The basic provisions of these contracts were stated in Bulletin 132-76, page 4.

There was 108 918 000 cubic metres (88,300 acre-feet) of water wheeled under these contracts during 1976. Amounts of water wheeled for each agency is shown in Chapter II of this bulletin, in the water contracts management section.

Bulletin 132-76 stated that the contracts, letter agreements, and exchange of letters between the U. S. Bureau of Reclamation and the Department of Water Resources provide that the Department, in wheeling Cross Valley water from the Delta, will comply with all state and federal water quality standards applicable to the Department. Compliance with such standards requires the cooperation and participation of the Bureau of Reclamation in releasing into the Delta its share of the water required. Thus, during any period when the Bureau is not releasing its share of the Delta outflow, the Department is not obligated to wheel Cross Valley water.

In June, 1976, however, the Bureau of Reclamation informed the Department that it did not agree with the above interpretation of the contracts. The Bureau took the position that the State should wheel Cross Valley water at times when the Bureau is out of compliance with quality standards. Further communications ensued between the Department and the Bureau during the remainder of the year, but the difference in contract interpretation was not resolved.

When the last agency contract (Kern-Tulare Water District) was executed, a separate letter agreement was executed between the Department and the District. The letter agreement was to ensure that the District recognized that the obligation of the Department to wheel Bureau water to the Cross Valley Canal for their District is limited to periods when the Bureau provides its share of Delta outflow. The other federal Cross Valley contractors are in a similar position with respect to having Cross Valley water wheeled through state facilities.

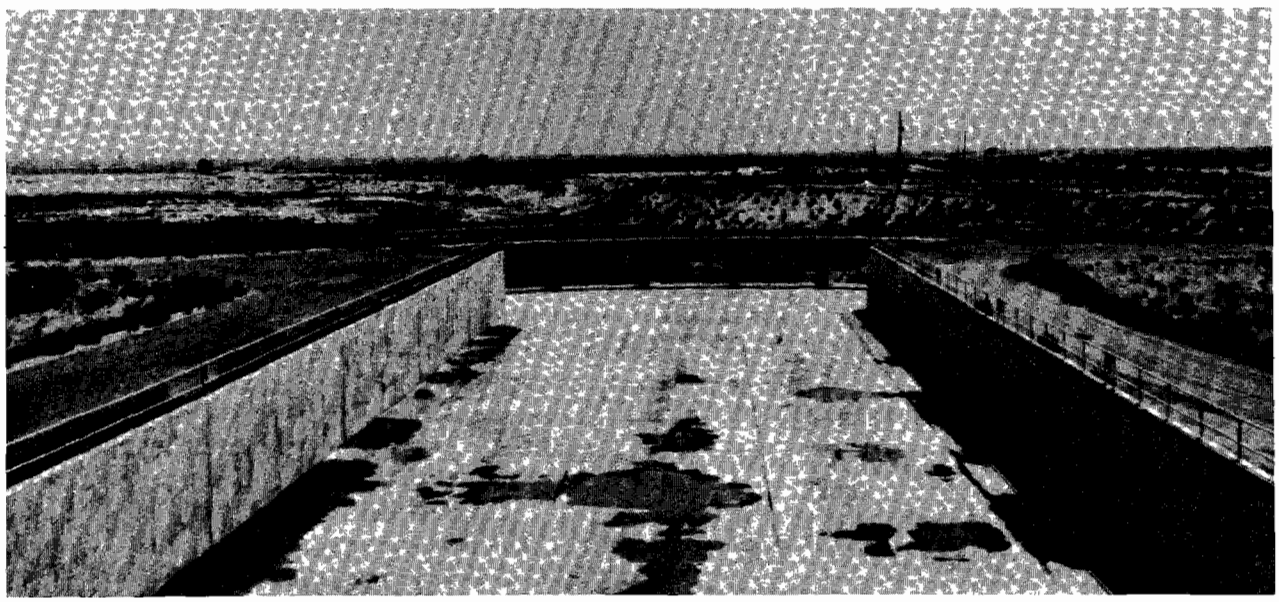
San Felipe Project. The Department of Water Resources and the Santa Clara Valley Water District have reached general agreement on the issues concerning wheeling USBR water supply through Project facilities to the San Felipe Division of the Central Valley Project. (See page 5, Bulletin 132-76). A wheeling contract to wheel water through the California Aqueduct must be conditioned on the Bureau's furnishing its share of water to meet state and federal water quality standards in the Delta. Negotiations between the Department and the Bureau of Reclamation continued sporadically during 1976.

The final Environmental Impact Statement (EIS) for the San Felipe Project stated that water could be transported from the Delta to O'Neill Forebay through the federal Delta-Mendota Canal without enlargement of the canal. This would eliminate need to wheel water through the California Aqueduct. However, construction of the project was delayed by a suit filed by the Environmental Defense Fund and the Sierra Club, which challenged the adequacy of the final EIS in regards to the ability of the Delta-Mendota Canal to accommodate the San Felipe water without enlargement.

Kern River Intertie

In November 1976, the U. S. Corps of Engineers completed construction on the Kern River Intertie Project.

The intertie with the California Aqueduct is located near Bakersfield, wher the Kern River meets the aqueduct. This intertie will be used to divert snowmelt floodwaters from the Kern River into the aqueduct. On the average about 18 500 000 cubic metres (15,000 acre-feet) is expected to be diverted annually.



Intake at the Kern River Intertie. Intertie diverts Kern River flood waters from Buena Vista Lake (upper left) into the California Aqueduct.

It is anticipated that operation of the intertie will be similar to that which occurred in 1969, when about 111 015 000 cubic metres (90,000 acre-feet) of Kern River flood flow was conserved by the California Aqueduct and conveyed for delivery to project contractors. (See "Water Operations", page 49, Bulletin 132-70.

Additional Storage in SWP Reservoirs Without Surplus Water Deliveries in 1976

Early in 1976, the Department suggested that the surplus water users should consider foregoing some or all of their surplus requests in 1976 to provide more carryover to 1977 in case that year would also be dry. A total of about 715 430 000 cubic metres (580,000 acre-feet) of surplus water was delivered to SWP contractors in 1976. If this surplus water had not been delivered, about 605 648 500 cubic metres (491,000 acre-feet) more water could have been stored in San Luis and an additional 109 781 500 metres (89,000 acre-feet) of water stored in Castaic Lake. Surplus water delivered in 1976 came partly from releases of water previously stored in San Luis Reservoir and partly from water diverted from the Delta. This water originated from uncontrolled storm water inflowing to the Delta through its tributaries.

Surplus water deliveries did not affect operation of Lake Oroville in 1976. The reservoir was primarily operated for power generation, for maintaining Delta water quality, and to supply water for 1976 entitlement deliveries to water contractors.

Peripheral Canal - Effects if it had been operational during 1975-76 Water Year

It is estimated that if a Delta transfer facility, with its ability to more efficiently control and distribute available water, had been operational in 1976 it would have had the capability to save about 310 cubic hectometres (250,000 acre-feet) of water during the 1975-76 water year. This water could have been conserved in project reservoirs rather than being used as carriage water and escaping to the Pacific Ocean.

The water would be saved by the ability of the transfer facility to divert water from the main channel of the Sacramento River and more efficiently transport the water through the Delta to the export pumps while maintaining water quality at critical Delta locations. This more efficient method of transportation would require smaller volumes of water to be released from project reservoirs than under existing conditions.

Existing channel capacities in some of the Delta channels limit the amount of water than can be transferred from the Sacramento River through the central Delta to the main SWP and CVP export pumps in the southern Delta. This limitation causes a portion of the water to continue down the Sacramento River into the western Delta (where it picks up ocean derived salt) and then back upstream in the San Joaquin River Channel (reverse flow), where it blends with the cross-Delta flows on the way to the pumps. Under summertime conditions, when upstream reservoirs are releasing water to be pumped for export and to satisfy the water requirements in the Delta, this hydraulic situation requires continual monitoring. The rates of Delta inflow, outflow, and export must be carefully balanced to protect users in the Delta, to avoid exceeding water quality criteria standards in the Delta, and to protect water quality at the diversion facilities for the Contra Costa Canal, the Delta Mendota Canal, and in the California Aqueduct. Any Delta water transfer facility that would eliminate the reverse flow and salt pickup in the western Delta would conserve the extra outflow now required.

A summary of the 1975-76 Water Year shows:

- For the four-month period October 1975 through January 1976, there

would have been no opportunity to save water with a Delta transfer facility in operation. The water quality requirements at Antioch were met on 117 of the 120 required days during this four-month period. A Delta transfer facility would not have materially helped in this critical water quality situation.

- During February and March it might have been possible to reduce Delta outflow by about 370 cubic hectometres (300,000 acre-feet) and still meet applicable water quality criteria. Water contractors were receiving their full requested deliveries at that time. (Reductions in surplus water deliveries were not made in April .) Therefore, a reduction in outflow could have allowed the water to be stored in project reservoirs for use at a later time.

The storage capability for conserving water in the SWP during this period was only about 86 cubic hectometres (70,000 acre-feet) -- 25 cubic hectometres (20,000 acre-feet) in San Luis Reservoir and 61 cubic hectometres (50,000 acre-feet) in Oroville. The remaining 284 hectometres (230,000 acre-feet) of the potential saving would have had to be stored in CVP reservoirs. However, it is likely that some of the water stored in Oroville would have been released to meet water quality criteria during the spring of 1976. The SWP and CVP did not meet the water quality requirements during the five-week striped bass spawning period, nor did they meet the criteria at Antioch for three weeks later in the spring. Even with the added operational flexibility of a Delta transfer facility these criteria would have had to be met first before any water savings for the year could be claimed. Taking this into account, it is estimated that the net saving would have been about 310 cubic hectometres (250,000 acre-feet).

ACTIONS CONCERNING PROJECT POWER

Long-Range Power Program

During 1976, the Department continued its efforts to assure adequate future sources of power for the Project, with particular emphasis on project needs commencing after March 31, 1983 when purchase terms of existing contracts terminate. (Chapter II contains a more detailed description of these activities. However, they are highlighted here for general interest.)

The objective of the Department's long-term energy program is the acquisition of adequate energy supplies for continued operating the Project beyond March 31, 1983. Specific program actions include:

- Use of recovery generation from aqueduct power recovery plants.
- Retain Hyatt-Thermalito generation for Project use.
- Purchase supplemental capacity and energy.
- Select and develop additional resources for energy requirements.
- Sell project capacity and energy which is in excess of requirements (usually short term in nature and sale is not permitted under existing supply arrangements).

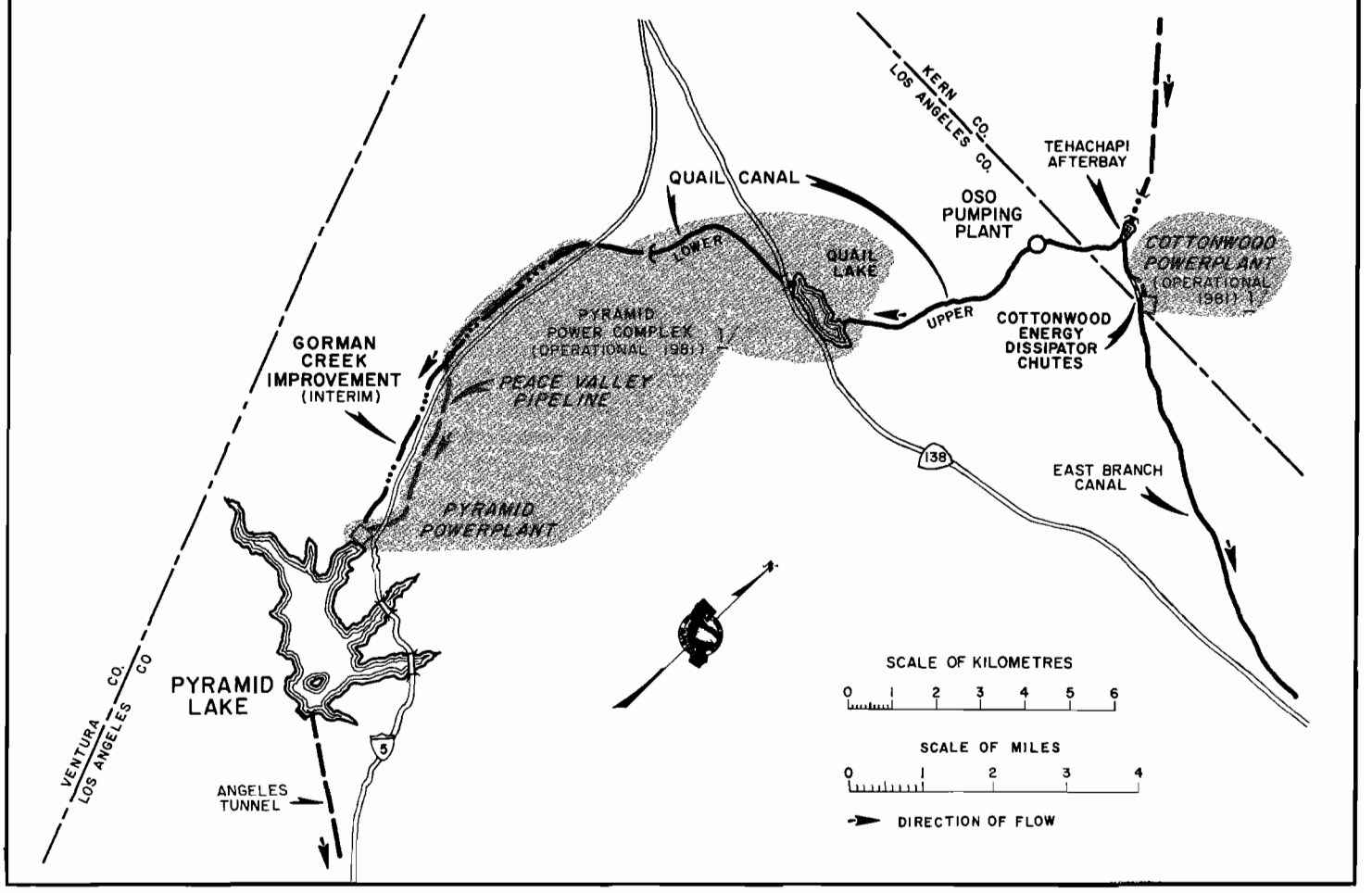
In accordance with the long-range program, the Department is exploring a wide range of alternative sources of power. Among the alternatives being studied are:

- Thermal plants both within and outside of California (nuclear, coal, geothermal).
- Additional hydroelectric power plants.
- Wind and solar energy developments.

Future Southern California Recovery Plants

The locations of the proposed Pyramid and Cottonwood Powerplants are shown in Figure 1.

Figure 1: FUTURE SOUTHERN CALIFORNIA RECOVERY PLANTS



1/ Operational dates being reviewed and subject to revision.

Pyramid Powerplant. Prior to 1976 the Department was proceeding with plans to construct a full size 157-megawatt Pyramid Powerplant, and a twin barrel Peace Valley Pipeline on the West Branch of the California Aqueduct (see page 2, Bulletin 132-74). Bulletin 132-76 assumed this full sized facility would be operational in 1981. However, at a public hearing on the West Branch Completion EIR in March 1976, The Metropolitan Water District of Southern California (MWD) indicated that their future demands for water through the West Branch are expected to be less then previously estimated.

Subsequent to the hearing, the Department conducted a new study of the West Branch Completion Project, based upon alternative future water delivery schedules submitted by MWD. The main objective of the study was to define new West Branch facilities that could be constructed in stages and that would allow for maximum flexibility in meeting future water demands. This study, released in September 1976, recommended (subsequently approved by the Director) that minimum first-stage facilities should be constructed for operation by 1982, and that a decision regarding second-stage facilities should be deferred.

The first-stage facilities would be adequate to meet water demands until 1994, and would consist of (1) increasing the regulatory water storage in Quail Lake and Lower Quail Canal, (2) construction of the Peace Valley Pipeline, consisting of one 3.65-metre (12-foot) diameter pipe, and (3) construction of Pyramid Powerplant, with two 37.5-MW generating turbines and other pertinent facilities. These facilities would be designed and constructed such that plant capacity could be readily increased by construction of second-stage facilities. The second-stage facilities would consist of a parallel pipeline and additional generating units at the powerplant. A decision regarding these facilities will be deferred until projected water demands through the West Branch become better defined.

Cottonwood Powerplant. Thie powerplant will be located near the head of the East Branch of the California Aqueduct. Water is presently being conveyed through the Cottonwood Energy Dissipator Chutes. The original analysis (conducted in 1967) of a powerplant at this location indicated a marginal economic justification; therefore, the energy dissipator chutes were constructed.

A reanalysis in 1973 which included (1) increased values of electric generation and (2) accelerated buildup of projected deliveries to MWD from the East Branch indicated that the plant was now economically feasible. (See page 3, Bulletin 132-74.)

The powerplant will be constructed adjacent to the energy dissipator chutes and will consist of one 3.35-metre (11-foot) diameter penstock and one 15-megawatt generating unit. For purposes of this Bulletin, the plant is assumed to be operational in 1981.

Federal Power Commission License Application

There was some activity in 1976 concerning the Department's application for a Federal Power Commission (FPC) license for the power recovery plants along the California Aqueduct (Cottonwood, Pyramid, Devil Canyon, Castaic, and San Luis Obispo). The application was originally filed in 1965 and amended in 1967 to include the pumped storage facilities at Castaic.

In June 1976, the FPC staff completed the final environmental impact statement as required by the National Environmental Policy Act. A pre-hearing conference was held by the FPC in Washington, D.C. to determine dates for further hearing on the application. December 17, 1976 was the deadline to file proposed conditions to apply to the license. January 14, 1977 was set as a date to file objections to the conditions proposed by other parties, and February 8, 1977 was the date set for a formal hearing.

Two significant actions came out of the June pre-hearing conference:

1. The Department will have an opportunity to see the proposed licensing conditions and to discuss the conditions in advance of the hearing.

2. The administrative law judge has permitted the FPC's staff and the joint applicants' staff to try to resolve any disputes in advance of the formal hearings.

ACTIONS CONCERNING PROJECT RECREATION AND FISH AND WILDLIFE ENHANCEMENT

Recreation use in 1976 on the State Water Project was about 4.2 million visitor days. This is approximately the same usage as was experienced in 1975.

In 1976 an additional 21 kilometres (13 miles) were added to the Southern California bikeway. Figure 2 indicates the status of aqueduct recreation developments at the end of 1976.

Fishing Access Site Program

Under legislation enacted in 1968, the Wildlife Conservation Board has the responsibility for planning and developing a fishing access program on aqueducts of the Project (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:

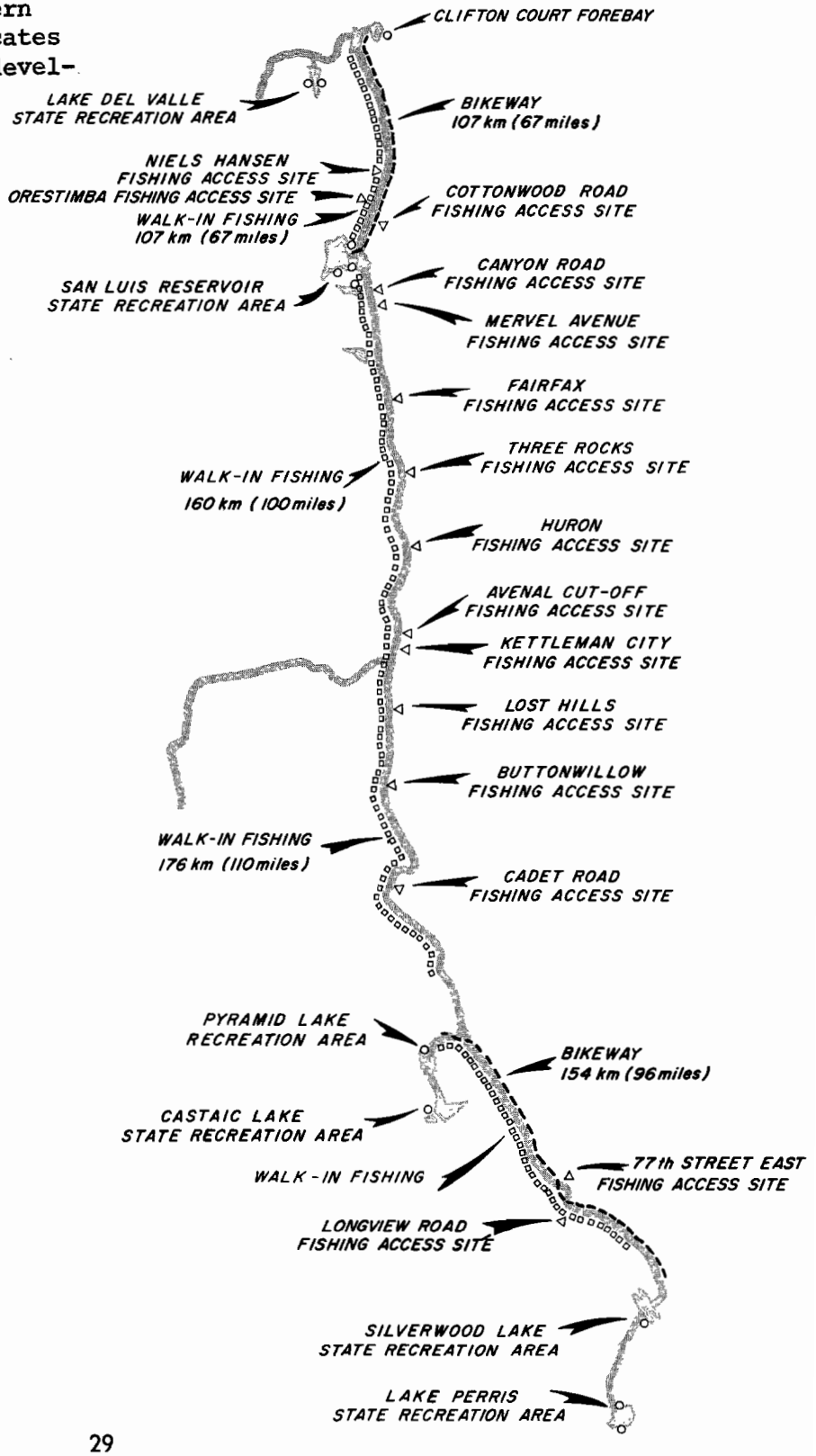
- Permit use of some existing roads.
- Furnish and install necessary safety devices prior to public use.
- Provide necessary access to land upon which to develop the sites.

In addition, the Board requires that:

- A fishery be established prior to development of a site.
- Site operation and maintenance be provided by local government.
- Site facilities should be adequate but not elaborate.

Considerable use has been made of the fishing access sites in the San Joaquin Valley and Southern California where the aqueduct is the largest flowing body of water in these semiarid regions and where substantial fisheries have become established. All project sites are open and free to the public and have been well received.

Figure 2: AQUEDUCT RECREATION DEVELOPMENTS



Beach area Lake Perris.

LITIGATION

The following are summaries of significant litigation which involved the State Water Project in 1976:

Zurn Engineering, Inc., (Pascal and Ludwig) v. State Department of Water Resources, Superior Court, Los Angeles County No. 978331. The contractor for the construction of Grizzly Valley Dam (Lake Davis) contends the Department still owes approximately $1.4 million for work done because of changes in the work, forced acceleration, and added quantities of excavation and fill. Judgment was entered on February 10, 1976 for plaintiff, awarding him a total of $896,000 plus interest. The Department appealed. The District Court of Appeal overturned findings for the contractor and returned the claims to the Department for further processing pursuant to "due process" requirements. This landmark case holds that a determination

such as the Department's in this case is "final and conclusive" unless it is shown to be fraudulent, capricious, arbitrary or so grossly erroneous as to imply bad faith. The Contractor has notified the Department that it will appeal this decision to the United States Supreme Court.

McNamara-Fuller v. State Department of Water Resources, Superior Court, San Francisco No. 595815. This suit, filed in September 1968, arose from the initial construction contract for the Oroville Powerplant. The plaintiffs sought $15 million on theories of breach of contract, changed conditions, breach of warranty, and misrepresentation as to subsurface conditions.

On August 7, 1975, the trial judge filed his final judgment awarding plaintiff $11,732,000 plus interest to the date of settlement. The amount of the judgment plus interest totaled approximately $20,000,000 by May 1977. The Department appealed. After a partial reversal, the case was settled in May 1977, with the State compensating McNamara-Fuller with $16,300,000.

State Department of Water Resources v. Moloney, Sacramento County Superior Court No. 239121, involves the purchase of transformers for 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 $2,000,000.

On September 30, 1975 Central Moloney, Inc. filed a cross-complaint against the Department for $255,886 for repairs made on two of the transformers.

Pretrial discovery is still in progress and a trial date has not been set.

Berrenda Mesa Water District v. Depart- of Water Resources, filed September 10, 1976, Sacramento County Superior Court No. 262976.

The Berrenda Mesa Water District filed suit against the Department of Water Resources and also named as defendants Contra Costa County Water District, Contra Costa County Water Agency, and the North, Central and South Delta Water Agencies. The Berrenda Mesa Water District is a member agency of Kern County Water Agency.

The complaint sought to enjoin releases of water to the Delta above those that allegedly were required for operation of the State Water Project. The complaint alleged that the releases were in violation of:

1. The constitutional prohibition against impairment of the obligation of contract with regard to the contract between the State and Kern County Water Agency and the contract between the Agency and Berrenda Mesa;

2. The contract with the bondholders;

3. The priorities established by Water Code Section 106, which give irrigation the second highest priority to the use of water;

4. Article 10, Section 2 of the California Constitution requiring the reasonable beneficial use of water; and

5. The stay order of the Sacramento Superior Court staying operation of Decision 1379.

The complaint asked for both a preliminary and permanent injunction and for a declaratory judgment determining the issues that it raised.

The Department filed a demurrer which was heard on December 16, 1976 alleging

that (1) the plaintiff lacks standing to enforce the Kern County Water Agency contract with the Department, and (2) the proceeding is an inappropriate forum in which to complain of alleged enforcement by the Department of D-1379.

The trial court sustained the Department's demurrer. The plaintiff filed a motion for reconsideration which was granted.

Tulare Lake Basin Water Storage District v. State of California, et al., filed October 19, 1976, Sacramento County Superior Court No. 263582.

The Tulare Lake Basin Water Storage District and Dudley Ridge Water District, both State Water Project water supply contractors, filed suit against the Department of Water Resources alleging essentially the same causes of action as did the Berrenda Mesa Water District in its suit against the Department, discussed previously.

The complaint asked for a preliminary and permanent injunction, declaratory relief, and damages. The amount of damages is not set forth in the complaint.

The Department's demurrer was heard on February 28, 1977. It alleges that this is not the proper forum in which to challenge the Department's release of water into the Delta.

Salyer Land Company, et al., v. Depart- of Water Resources, Sacramento County Superior Court No. 267012, filed May 9, 1977.

The Salyer Land Company alleges that the Department wrongfully violated the stay order against Decision 1379, wrongfully diverted water allegedly belonging to the claimant into the Sacramento-San Joaquin Delta, and wrongfully refrained from delivering that water to the Tulare Lake Basin Water Storage District pursuant to the agreement between the Department and the District.

The claimant, Salyer Land Company, which is located in the Tulare Lake Basin Water Storage District, is asserting the claim in its own behalf and in behalf of all other similarly situated landowners. The claimant is alleging 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.

State Department of Water Resources v. Garden Highway Mutual Water Company, Sutter County Superior Court No. 21359, filed December 17, 1975.

In this action the Department requested the Court to determine the rights of Defendant Garden Highway Water Company to divert water from the Feather River. The Defendant Company holds lands along and near the Feather between Oroville and the junction of the Feather River and the Sacramento River. The Company has appropriative rights to divert up to 62.7 cubic feet per second from the river and also has some riparian lands.

The Department releases stored water from the Oroville-Thermalito facilities; the water flows down the river to satisfy uses along the river and in the Delta and also for diversion into the California Aqueduct for delivery to state water contractors.

The Company claimed the right to divert more water than the Department believed that the Company was entitled to divert under its rights. The Department has negotiated agreements with almost all of the water users along the Feather River below Oroville but had not been able to reach agreement with Defendant Company.

Bowker v. Morton, U. S. Court of Appeals for the Ninth Circuit 541 F.2d 1347 (1976). This is a class action brought against both the State and Federal

Governments. Among other things, plaintiffs seek an injunction and declaratory judgment requiring application of the federal reclamation laws, including the 160-acre limitation to land within the state service areas of the State Water Project. The State's position is that the federal law has no application to land receiving water solely from the State.

On April 24, 1974, the Court dismissed without prejudice to refile, part of the cause of action relating to the National Environmental Policy Act of 1969, and in October 1974 dismissed plaintiffs' claim for relief insofar as it charged that the San Luis Act requires, as a matter of law, that the state service areas are subject to the 160-acre limitation. These orders were then appealed to the U. S. Court of Appeals for the Ninth Circuit. On August 31, 1976 the Ninth Circuit decided that the plaintiffs lacked the standing necessary to bring the action in the first place. The decision was based on the fact that the Court had no authority to order excess lands subject to 160-acre limitation to be sold, as the plaintiffs had requested, and that in any case the plaintiffs, representing federal contractors, could show no harm to themselves if state contractors received subsidies.

Sierra Club v. Morton, U. S. Court of Appeals for the Ninth Circuit (District Court decision repealed in 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 which stated that the Peripheral Canal would, and that 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. No injunction was issued.

Although the state and all other defendants have filed appeals, the Department has also begun compliance by filing for two permits to divert water through the Delta Pumping Plant. One application is for the installation of four new pumps to be used for pumping with cheaper off-peak energy and not for expanded diversion. The other application is for full-capacity diversion, including use of the four additional pumps. These applications would be dropped if the trial court is reversed, but in the interim the Department will help the Corps prepare an EIS for the latter permit in case the appeal fails. The application for the four pumps would be processed only if the proposal will have no significant effect on the environment and thus not require an EIS.

Appellate briefs were filed in the Ninth Circuit Court of Appeals on June 21, 1976; the Sierra Club's brief was filed September 19, 1976; and the State's and intervenor's reply briefs were filed on November 19. No date for oral argument has been set.

Litigation Concerning State Water Resources Control Board Jurisdiction Over the Central Valley Project

USA v. State of California, United States District Court (Sacramento) CIV S-3014, filed October 1973.

This suit arises 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 state authority to place conditions on federal reclamation projects.

The Department is concerned because the decision could set a precedent that would leave the Department without the Bureau of Reclamation's contribution to maintaining water quality in the Sacramento-San Joaquin Delta.

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 in Sacramento pending the outcome of this case. They are:

a. Kern County Water Agency v. SWRCB and Central Valley East Side Project Association v. SWRCB (to set aside the Delta Water Rights Decision 1379);

b. San Joaquin County Flood Control and Water Conservation District v. SWRCB (to set aside the Lower American River Water Rights Decision 1400);

c. People ex rel. SWRCB v. Morton (the action by the State to compel CVP compliance with SWRCB water rights permits).

On October 9, 1975, Judge MacBridge held that the United States is not required to comply with the terms and conditions in Decision 1422. The judge ruled that the United States can appropriate unappropriated water necessary for use in any federal reclamation project in California and need apply to the State Water Resources Control Board for a determination of the availability of unappropriated water as a matter of courtesy only. The judge further held that the State must grant such applications if unappropriated waters are available and that Section 8 of the Reclamation Act of 1902 does not allow State agencies to impose terms or conditions on such applications.

The State Board then appealed the decision to the Ninth Circuit Court of Appeals, and the Department, along with 15 other western states, filed a friend of the court briefs in support of the Board.

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 River 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.

Brannan-Andrus Levee break cases. Sacramento Superior Court, having various numbers.

On June 21, 1972 a levee along the north bank of the San Joaquin River failed. 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.

The plaintiffs are property owners who were damaged by the flood. They contend that the State is liable for their damages 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.

Plaintiffs' motion for a determination that the State was legally responsible for their damages was denied by the trial court on March 29, 1976. Their petition to the court of appeal for an order compelling the trial court to rule in their favor was rejected on November 18, 1976.

Proceedings Before the Public Utilities Commission Regarding State Water Project Suppliers Contract (Case No. 9886 and Application No. 54946). The Department's contract for the purchase of power from California's major utilities ("Suppliers Contract") was one of the subjects addressed in two PUC proceedings instituted in 1975. The subject arose when the utilities requested relief from the PUC's current fuel cost adjustment procedures as applied to the Suppliers Contract. One of the alternatives suggested was that the rates paid by the Department for power under the contract be increased. The Department appeared in both proceedings to oppose this alternative. The PUC, in its decision in Case No. 9886, did not make any alteration in the Suppliers Contract rates, but rather decided to revise its fuel cost adjustment procedures to take into account the power which is being sold by the Department to the utilities pursuant to two other contracts. This should provide the utilities with the relief they were seeking while not adversely affecting the Department. This decision was followed in the Application 54946 decision rendered in December 1976.

People of the State of California ex rel. State Water Resources Control Board v. Alfred F. Forni, et al., filed March 13, 1974.

The suit was filed in 1974 by the State Water Resources Control Board to enjoin certain vineyard owners in the Napa River Valley from drawing water directly from the Napa River for frost protection during the frost season. The Board contended that the direct diversion constituted an unreasonable method of diversion in violation of Article X, Section 2 of the California Constitution, because such diversion could at times dry up the river and deprive other vineyard owners of water they would need for frost protection. The trial court dismissed the action, ruling that such diversion was not as a matter of law unreasonable.

DWR, because of the important issues involved, filed a friend of the court brief in support of the Board with the Court of Appeal. The Court of Appeal in January 1976 reversed the lower court, ruling that the allegations made by the Board, if true, would constitute a violation of Article X, Section 2 and that therefore the Board was entitled to a trial on the merits. The appellate court decision established interpretations of the law, which requires the reasonable use of water by riparians. These legal conclusions will be applicable to water use throughout the state. In December 1976, upon return to the trial court, the case was settled. The settlement provides for a watermaster to make allocations and regulate diversions of water from the Napa River during the frost season.

Environmental Protection Agency v. California State Water Resources Control Board (96 S.Ct. 2022 [1976]) involves the extent of state authority over federal discharges under the Federal Water

Pollution Control Act (FWPCA). The act provides that it is unlawful for any person to discharge a pollutant without obtaining a permit and complying with permit conditions. It also requires federal installations to comply with federal, state, and local water pollution requirements, the same as any person. Under the act, the Environmental Protection Agency (EPA) is given initial authority to issue the National Pollution Discharge Elimination System's (NPDES) permits. The act also provides that states may establish their own NPDES permit authority, which when approved by EPA, supersedes the federal program. EPA, however, retains certain review and approval authority over the state permit program.

The State Water Project is concerned with the outcome of this litigation since future SWP operations could be affected. The FWPCA provides for complying with basin plan water quality criteria, which contain federally approved state water quality standards. This decision indicates that state standards are significant in some aspects of federal compliance with FWPCA.

In 1973 EPA approved California's NPDES program except for "agencies and instrumentalities of the Federal Government." California, along with the State of Washington, which was similarly limited in its authority, sued on the question of whether federal installations discharging water pollutants in a state with a federally approved state permit program are required to obtain permits from the State or from EPA. The U. S. Supreme Court stated that federal installations can be subjected to state regulations only when the Congress has so provided in clear and unambiguous language.

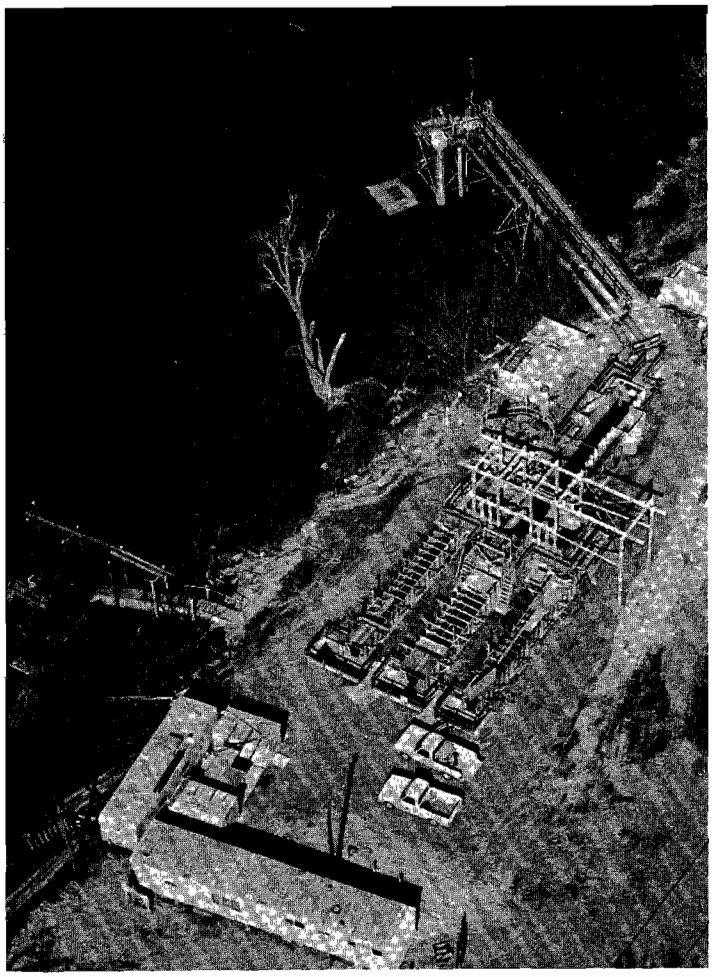
The court found that while federal agencies must comply with applicable state standards under the act (except for instances of presidential exemption), the act does not say anything about federal agencies being required to obtain state NPDES permits.

However, the court did hold the EPA has authority to issue the NPDES permits for federal agencies and instrumentalities and that such permits must require federal compliance with state standards.

The City of Los Angeles v. City of San Fernando. On May 12, 1975, the California Supreme Court decided a landmark case involving rights to ground water (14 Cal.3d 199 (1975)). The Court upheld Los Angeles' claims to (1) native ground water, based on a pueblo right, and (2) ground water derived from imported water. A pueblo right is a right ascribed to Spanish and Mexican law. Of greater significance statewide is the Court's holding that Los Angeles has a right to recapture the foreign waters that it and its customers have imported and placed, directly and indirectly, in an underground basin.

The Court has removed the legal uncertainties surrounding the authority of importing agencies to conjunctively use their water supplies and to plan recharge programs. The importer, under this case, may depend on obtaining a right to the water from the imported supply that percolates into a basin after application to the land. The importer, including the State if it retains ownership of the water, may also provide for a recharge program and be sure of retaining its right to recapture the amount of water that it places in the basin.

The parties are negotiating a judgment which will be submitted to the trial court for approval.



Fish screen test facility near Hood diverting water from the Sacramento River to test possible fish screening methods for use as a part of the future Delta Facilities.

PROJECT CONSTRUCTION IN 1976

Construction in the Mojave and Santa Ana Divisions of the California Aqueduct, and modifications to existing project facilities, comprised the construction program on the State Water Project during 1976. Construction Divisions are delineated on Figure 3.

Plans and Specifications

In 1976, the Department completed plans and specifications for 36 construction and procurement contracts, 30 of which were awarded by the year's end. Design activity for 1976 closely paralleled the 1975 program. The number of plans and specifications prepared in 1976 was slightly more than in 1975, while awards were equal both years. After approximately a six-month hold on the programs for Pyramid Power Complex on the West Branch and Cottonwood Powerplant in the Mojave Division, preparation of plans and specifications was started late in the years.

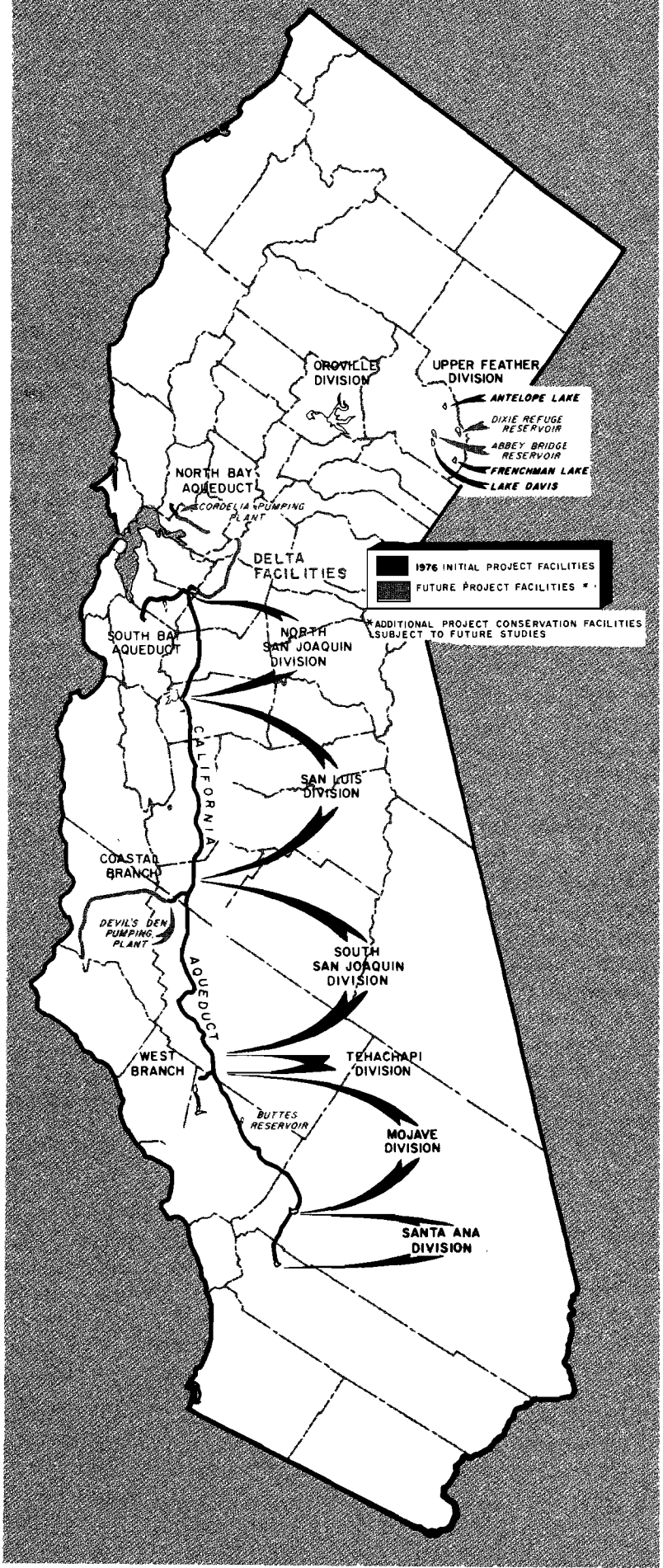
The review of design alternatives was continued as a part of the Department's Study of Alternative Courses of Action for the Delta facilities.

Review activities to analyze seismic performance of project facilities in the Oroville area continued during 1976.

Land Acquisition

The current land acquisition program includes land and right of way required for the initial facilities together with

Figure 3: PROJECT FACILITIES AND CONSTRUCTION DIVISIONS



that required for (1) portions of Phase II of the North Bay Aqueduct (to minimize paying for excessive escalation of land prices at the time construction starts), (2) limited reaches of the Delta facilities (to realize joint savings where canal excavation may be used in constructing a nearby portion of Interstate 5), (3) recreation developments associated with project facilities, and (4) investigation of acquisition of lands needed for alternative fish and wildlife enhancement proposals.

The Department of Fish and Game and the Department of Water Resources are in process of negotiating a settlement on mitigation for the State Water Project south of the Techachapis.

During 1976, approximately $243,200 was expended for land acquisition in excess of credits for sales of surplus property and returns of condemnation deposits. This brings the total net expenditure through 1976 to $110.5 million, which is approximately 87 percent of the $126.9 million estimated total cost of the current program.

Acquisition was completed for 71 parcels [607.94 hectares (1,502.25 acres)]. Nineteen parcels of excess land [47.75 hectares (118 acres)] were sold, bringing the total of such excess lands sold through 1976 to 806 parcels [1,889.88 hectares (4,670 acres)].

Six parcels containing a total of 40.87 hectares (101 acres) were transferred to other agencies. In relocations, a total of 13 land exchanges were consummated.

Three damage claims were investigated and three inverse condemnation suits involving $1.25 million are in progress.

The total number of land parcels required under the current land acquisition program is shown in the tabulation below for each facility or construction division of the Project together with the total number of parcels acquired through 1976.

Current Acquisition Program

Facility or Construction Division	Parcels Acquired in 1976	Total Parcels Acquired	Total Parcels Required
Feather River Facilities:			
Upper Feather Division	0	22	29
Oroville Division	2	949	958
Delta Facilities	7	27	157
North Bay Aqueduct	12	33	75
South Bay Aqueduct	0	203	206
California Aqueduct:			
North San Joaquin Division	1	208	209
San Luis Division	0	22	22
South San Joaquin Division	1	572	577
Tehachapi Division	0	1	1
Mojave Division	2	1,603	1,643
Santa Ana Division	14	676	695
West Branch	32	259	309
Coastal Branch (Phase I)	0	48	48
Coastal Aqueduct	0	0	200
	71	4,623	5,129

Construction Progress

During 1976, construction activities continued on the Mojave and Santa Ana Divisions, California Aqueduct.

Completion of, and modifications to, existing project facilities comprised the remaining construction effort.

Feather River Facilities

At Oroville, contracts for underwater inspection and repair of underwater corrosion of trashracks on the Edward Hyatt Powerplant Intake Structure were completed. A contract to install a fuel vapor recovery system at the Thermalito Subcenter and Oroville O&M Center was also completed.

Contracts for reconstruction of Old Bidwell Bar Bridge and Tollhouse; Miners Ranch Canal, Road Surfacing and Bank Protection; and Oroville Dam Instrument Vault were in progress.

California Aqueduct

General. Among the contracts completed in 1976 were: Tehachapi Division, Mojave Division, and West Branch California Aqueduct, Radial Gates, Hoists, and Stoplogs; Furnish and Install Acoustic Flowmeters along the California Aqueduct; Santa Ana Valley Pipeline, Valve Operators; and Facilities Modifications California Aqueduct, Contracts Nos. 3 and 4.

There were no ongoing contracts at the year's end. However, work on Facility Modification Contracts Nos. 5 and 6 started in March 1977.

North San Joaquin Division. All facilities are operational. Contracts completed during 1976 included: Delta Pumping Plant, Air Conditioning and Miscellaneous Modifications; Delta O&M Center, Installation of Raceway for Flowmeter Cables; California Aqueduct, Emergency Repair, Mile 56 Vicinity; Delta

Pumping Plant, Lights, Power, and Ventilation for Flowmeter Vaults; Delta O&M Center, Vapor Recovery System; and Temporary Closure of Old River.

San Luis Division. This division is complete and operational. A contract to install a fuel vapor recovery system at San Luis O&M Center was completed during the year.

South San Joaquin Division. All facilities are operational. Contracts completed during 1976 were: Turnout Control, Electronic Assemblies; Greater Bakersfield Turnout, Instrument Building and Equipment; Greater Bakersfield Turnout, acoustic Flowmeter; Wind Gap Pumping Plant, Valve Gallery Modifications; and Wind Gap Pumping Plant, Repair of Unit No. 6 Impeller.

Contracts in progress scheduled for completion in 1977 include: South San Joaquin O&M Center, Completion; Buena Vista and Wheeler Ridge Pumping Plants, Valve Gallery Access Platforms; Wind Gap Pumping Plant, Intake Gates; and Check Structures Nos. 22 through 29, Repair and Coating Radial Gates.

Tehachapi Division. The contract for A. D. Edmonston Pumping Plant, Surge Tank Flowmeter Equipment Building was completed.

A contract providing for a pump air supply system for the west wing pumps in A. D. Edmonston Pumping Plant continued.

Mojave Division. Contracts for Drainage Modifications, Munz Ranch Road, and Cedar Springs Dam, Miscellaneous Repair Work, were completed in 1976.

The contract for completion of Pearblossom O&M Center is scheduled for completion in late 1977, and several contracts covering the pumps and motors at Pearblossom Pumping Plant were complete in March 1977.

Santa Ana Division. All facilities in this division are operational. Although operational testing of Unit No. 2 at Devil Canyon Powerplant will continue through March of 1977, all related contracts were completed by the year's end. Other contracts completed in 1976 include: Perris Dam Outlet Works, Release Facility; Perris Dam Seepage Collection Facilities; Perris Dam Seismic Instrumentation Modifications; San Bernardino Tunnel Intake Tower Modifications; and San Bernardino Tunnel Intake Tower, Completion of Modifications.

West Branch. Contracts for Castaic Lake Forest Service Road 6N13, Quail Canal C.M.P. Culbert Crossing, and Pyramid-Burn Weather Station were completed during 1976.

Progress continued on contracts for Southern California O&M Center; Completion, and Castaic Ridge Boating Facility Addition.

CHAPTER II

PROJECT MANAGEMENT, OPERATIONS, AND FUTURE COSTS

PROJECT MANAGEMENT

This is a report on management of the Project's water and power utility during 1976, covering arragnements for (1) securing water rights and pumping power and (2) marketing developed water supplies and project power generation.

Water Rights Management

Delta Water Quality Monitoring and Reporting

Decision 1379 of the State Water Resources Control Board includes an extensive Delta water quality monitoring program and declares the Board's intent to reconsider its standards by July 1, 1978, based on the interim experience and the Interagency Ecological Study Program for the Sacramento-San Joaquin Estuary. While the terms and conditions of Decision 1379 have been stayed by Court Order, the Department voluntarily complies with portions of the Decision pertaining to monitoring and reporting of water conditions.

Water quality information and data on Delta water conditions are stored in the Department's Water Data Information System. Data for 1975 were published and transmitted to the State Water Resources Control Board. The Department is cooperating with the State Water Resources Control Board and other agencies in an analysis of the Department's information system and the Environmental Protection Agency's "Storet" system in an effort to adopt a common Electronic Data Processing system for water quality related data.

The Department continued to implement activities outlined in its established planning network covering the first two phases of a four-phase program (see page 19, Bulletin 132-73) for monitoring Delta water quality as specified in Decision 1379. The first two phases involve expansion of previous monitoring activities and an increase of equipment and personnel. The final two phases involve a series of petitions to the Board seeking clarification or modification of the Decision, to be filed after current legal action is resolved.

During 1976, Phase II included sampling an average of 25 parameters at each of 29 sites throughout the estuary on a biweekly basis. With respect to both the number of parameters and sites sampled, the monitoring program was about 85 percent in compliance with the Decision. Although the Decision states that sampling will be performed weekly, the Department believes that biweekly sampling yields essentially the same results. Biweekly sampling will be one of the items included in the petitions to the Board in the April 1977 hearings.

Work continued on evaluating onshore monitoring sites, and on procedures for handling and reporting development data. The new water quality work boat. M. V. San Carlos, became operational in the spring of 1976, expanding the Department's capability to meet the Decision.

Feather River Entitlement Negotiations

In addition to negotiations with the Garden Highway Mutual Water Company (discussed in Chapter I under Litigation), negotiations continued with two appropriative water users and eight riparian water users along the Feather River. (These totals are subject to change as water users initiate or discontinue diversions from the river.)

During 1976, negotiations were completed with Tudor Mutual Water Company, and an agreement was signed on March 25, 1976.

Delta Water Entitlement Negotiations

Municipal Water Use. Previous bulletins have referred to the administration of completed agreements with municipal water users in the western Delta -- the Contra Costa County Water District and the City of Antioch (see page 20, Bulletin 132-67). Both agencies had below-average supplies during the 1976 water year as defined in the contract. The District had a deficit of 70 days and the City a deficit of 103 days; including the credits accumulated in previous years, the District and the City now have total credits of 167 and 436 days, respectively. These credits for above average offshore water supplies are available to offset below average days in future years.

Industrial Water Use. As discussed in previous bulletins of this series, negotiations with six industrial water users in the western Delta have been delayed pending development of a basis acceptable to the U. S. Bureau of Reclamation. The Department is interested in reaching agreement with the industries to provide them with the replacement water supply (via the Contra Costa Canal) to compensate for any possible loss of offshore water of adequate quality due to joint operation of the State Water Project and the federal Central Valley Project. The U. S. Bureau of Reclamation has been reluctant to agree to any responsibility caused by the operations of the federal project. This has been the major obstruction to negotiations because the industries desire a total solution to the reducedoffshore water supply problem.

In mid 1976, a proposed joint agreement was presented to the six industrial water users, the Contra Costa County Water District, and the U. S. Bureau of Reclamation. A joint meeting of all parties was held in the fall to explain terms of the agreement. An example of the agreement formula for water availability is being prepared, after which it is anticipated that active negotiations will be resumed.

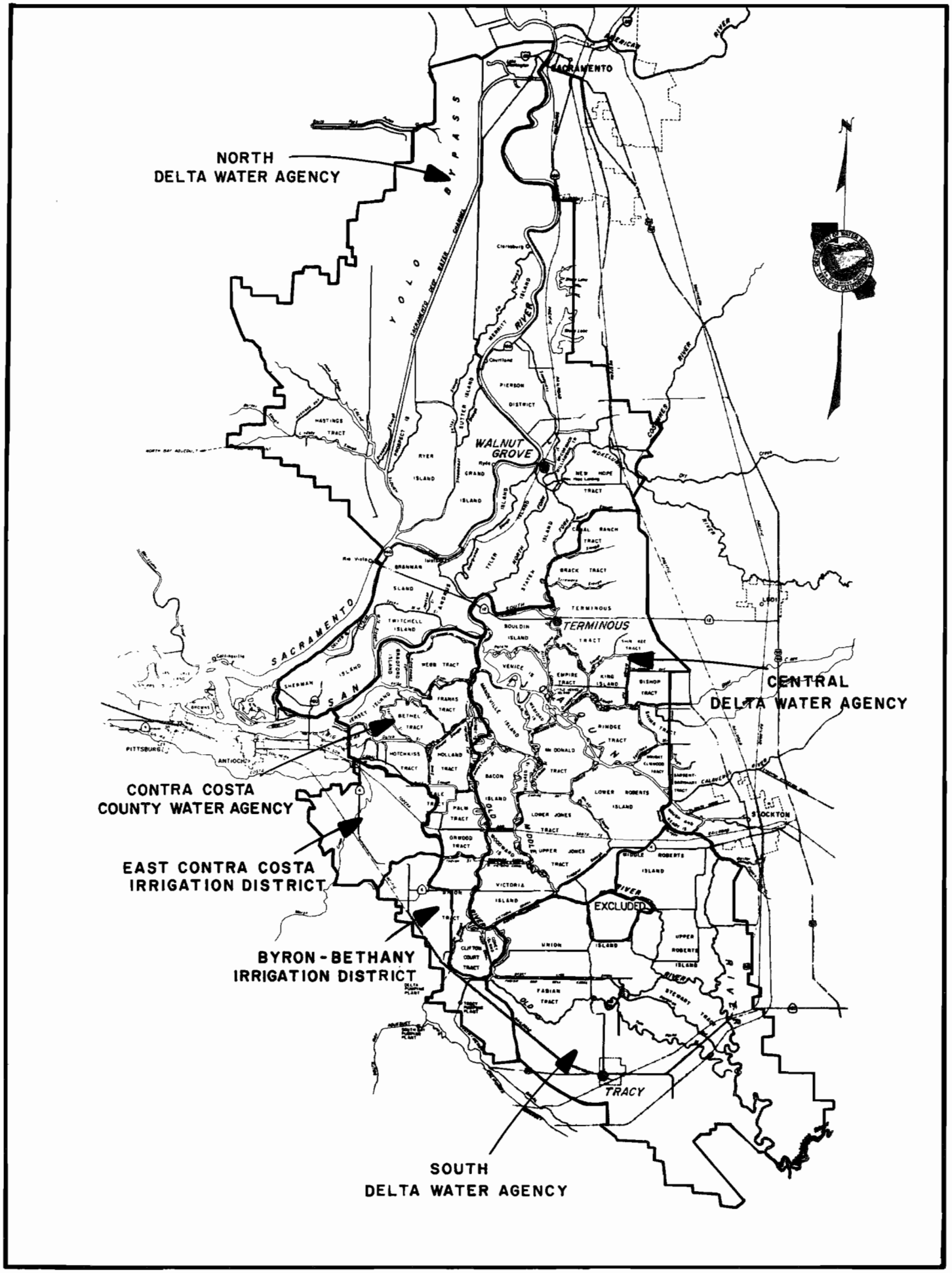
Agricultural Negotiations

Beginning in 1974, six agencies representing agricultural water interests in the Delta assumed the overall interest of the Delta Water Agency, which ceased to exist December 31, 1973. These are the North, Central, and South Delta Water Agencies, Contra Costa County Water Agency, East Contra Costa, and Byron-Bethany Irrigation Districts, shown in Figure 4. Negotiations with the North Delta Water Agency and the South Delta Water Agency continued during 1976.

East Contra Costa Irrigation District. Negotiations with East Contra Costa Irrigation District continued in abeyance at the request of the District's staff, pending more progress in the negotiations with the North, South and Central Delta Water Agencies, to assure contracts with common terms if possible.

North Delta Water Agency. Department representatives met with representatives of the Agency and the U. S. Bureau of Reclamation several times during 1976 to develop a basis for a Delta contract. By late 1976 a joint DWR-USBR proposal was worked up for submittal to the Agency early in 1977.

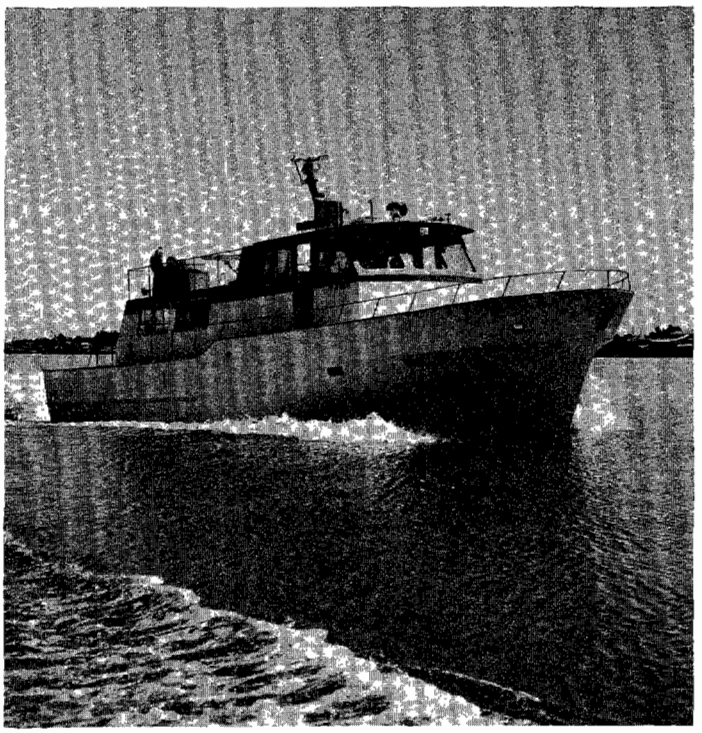
Figur 4: SACRAMENTO-SAN JOAQUIN DELTA AGENCIES



South Delta Water Agency. Representatives of the Department, the U. S. Bureau of Reclamation, and the South Delta Water Agency (SDWA) have met several times during the year. A joint DWR-USBR proposal was developed and submitted to the SDWA on January 7, 1977. The proposal included flow and quality criteria and would be phased for immediate action. Phase I is what can be done now. Phase II is what can be done during the filling of New Melones Reservoir. Phase III is what can be done when New Melones is in full operation. Phase IV is what can be done after a cross-Delta transfer facility is operational.

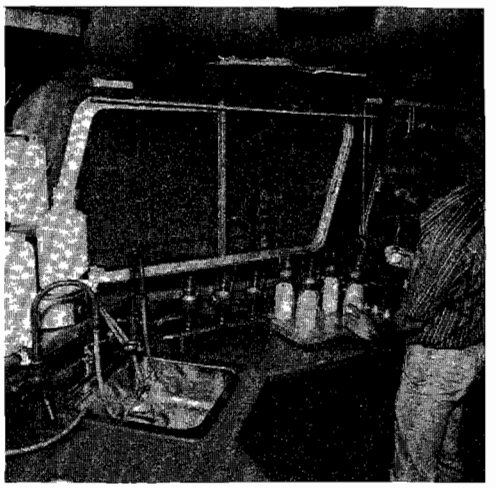
Although SDWA is not located in an area affected by current State Water Project operations, the Department worked with the Agency to help alleviate current problems. The basic problem is reduced water quality caused by low flows in the San Joaquin River. This problem exists in normal years and increases during dry years.

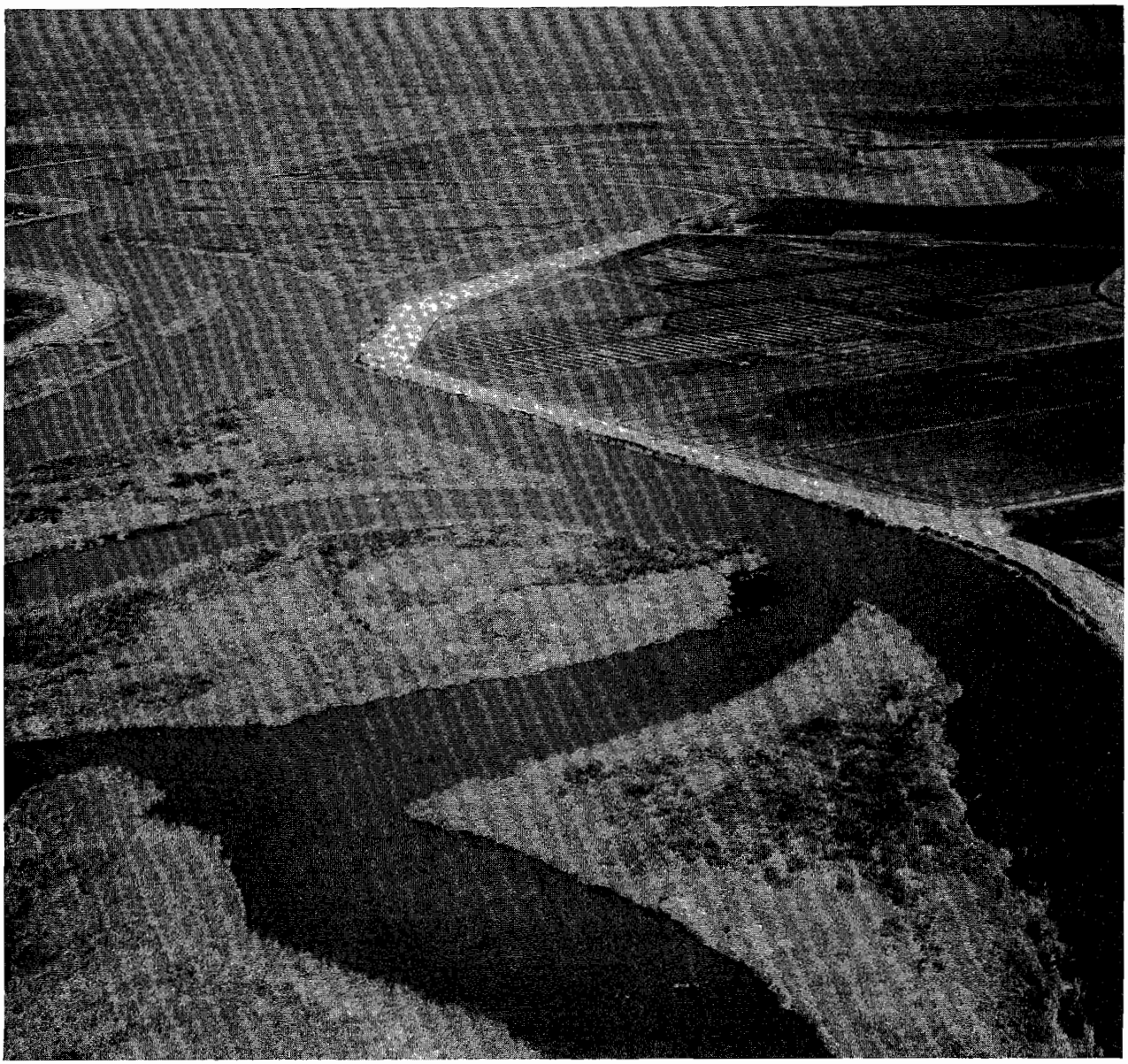
Central Delta Water Agency. Representatives of the U. S. Bureau of Reclamation and the Central Delta Water Agency had no meetings during 1976. Several problems which the Agency felt would require congressional action were still being worked out by the Bureau. By request of the Agency, the Department has not participated in these discussions, which have been limited to items peculiar to the Agency's relationship to the United States.



M.V. San Carlos

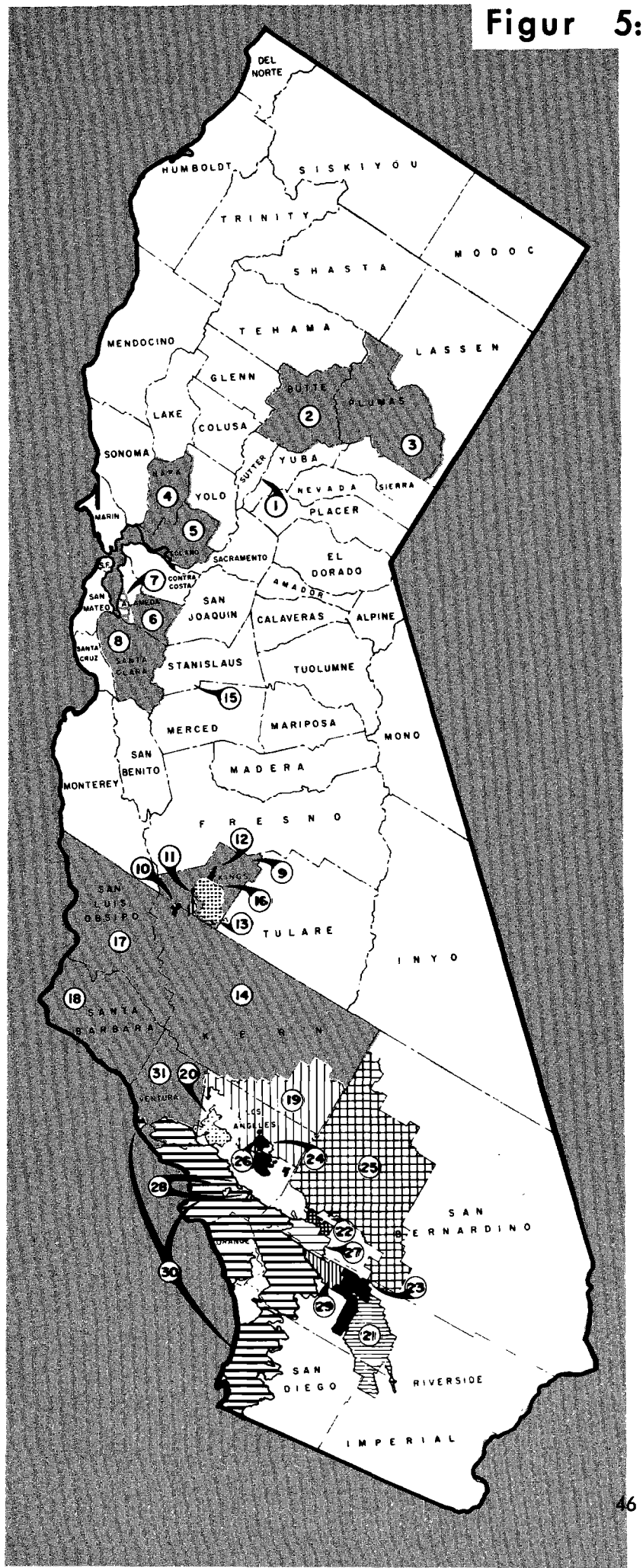
Sampling and testing Delta water quality aboard the Department's M.V. San Carlos.





Aerial view of the meandering water ways of the Sacramento-San Joaquin Delta.

Figur 5: LONG-TERM WATER SUPPLY



Location No.	Contracting Agency	Total Cumulative Deliveries through Dec. 31, 1976 (acre-feet)[a]	Maximum Annual Entitlement (acre-feet)[a]
	UPPER FEATHER AREA		
1	City of Yuba City	0	9,600
2	County of Butte	1,338	27,500
3	Plumas County Flood Control and Water Conservation District	2,753	2,700
	Subtotal	4,091	39,800
	NORTH BAY AREA		
4	Napa County Flood Control and Water Conservation District	36,311	25,000
5	Solano County Flood Control and Water Conservation District	0	42,000
	Subtotal	36,311	67,000
	SOUTH BAY AREA		
6	Alameda County Flood Control and Water Conservation Dist., Zone 7	133,163	46,000
7	Alameda County Water District	219,098	42,000
8	Santa Clara Valley Water District	890,395	100,000
	Subtotal	1,242,656	188,000
	SAN JOAQUIN VALLEY AREA		
9	County of Kings	12,300	4,000
10	Devil's Den Water District	118,458	12,700
11	Dudley Ridge Water District	426,621	57,700
12	Empire West Side Irrigation District	41,019	3,000
13	Hacienda Water Agency	53,839	8,500
14	Kern County Water Agency	4,178,931	1,153,400
15	Oak Flat Water District	53,662	5,700
16	Tulare Lake Basin Water Storage District	977,502	110,000
	Subtotal	5,862,332	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	37,182	138,400
20	Castaic Lake Water Agency	0	41,500
21	Coachella Valley County Water Dist.	26,800	23,100
22	Crestline-Lake Arrowhead Water Agency	3,379	5,800
23	Desert Water Agency	42,000	38,100
24	Littlerock Creek Irrigation Dist.	2,640	2,300
25	Mojave Water Agency	69	50,800
26	Palmdale Water District	0	17,300
27	San Bernardino Valley Municipal Water District	76,444	102,600
28	San Gabriel Valley Municipal Water District	12,133	28,800
29	San Gorgonio Pass Water Agency	0	17,300
30	The Metropolitan Water District of Southern California	1,664,978	2,011,500
31	Ventura County Flood Control Dist.	0	20,000
	Subtotal	1,865,625	2,497,500
	TOTAL STATE WATER PROJECT	9,011,015	4,230,000
	NET TOTALS, STATE WATER PROJECT SERVICE AREAS		
	TOTAL, STATE OF CALIFORNIA		
	PERCENT, STATE WATER PROJECT OF TOTAL		

a) Metric conversion is acre-feet times 1233.5 equals cubic metres.
b) Metric conversion is acres times 0.40469 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 50% of Devil's Den Water District

CONTRACTING AGENCIES

Total Payments through Dec. 31, 1976 (dollars)	Gross Area as of July 1, 1976 (acres)[b]	Assessed Valuation 1976-1977 (dollars)	Estimated Population (July 1, 1976)	Location No.
0	3,000	50,145,000	15,300	1
196,000	1,064,230	549,408,074	121,400	2
				3
152,000	1,644,000[c]	147,000,000[c]	14,000[c]	
348,000	2,711,230	746,553,074	150,700	
				4
2,068,000	508,000	386,151,565	91,400	
				5
125,000	528,400	607,108,742	194,600	
2,193,000	1,036,400	993,260,307	286,000	
				6
6,716,000	272,000	430,130,000	104,000	
8,492,000	61,700	765,653,537	179,000	7
32,091,000	849,000	4,859,000,000	1,185,000	8
47,299,000	1,182,700	6,054,783,537	1,468,000	
2,017,000	893,000[d]	261,072,800[d]	69,300[d]	9
4,153,000	8,500	1,258,700	50	10
367,000	29,900	3,539,600	50	11
482,000	7,500	744,600	50	12
65,159,000	15,300	244,800	50	13
217,000	5,057,200[e]	2,046,294,200[e]	354,700[e]	14
367,000	4,000	275,000	50	15
				16
8,794,000	193,000	14,750,000	50	
81,556,000	6,208,400	2,328,179,700	424,300	
				17
1,333,000	2,131,300	600,860,031	133,600	
				18
3,141,000	1,756,900	1,109,356,728	286,500	
4,474,000	3,888,200	1,710,216,759	420,100	
				19
18,669,000	1,524,900	471,651,504	95,400	
8,104,000	125,000	279,313,244	62,400	20
5,051,000	637,500	359,193,291	69,000	21
1,475,000	55,100	78,858,300	10,400	22
8,312,000	208,900	270,955,509	42,200	23
374,000	43,300	7,278,510	1,600	24
9,282,000	3,160,400	376,839,305	73,500	25
2,433,000	73,800	65,284,782	24,100	26
				27
29,161,000	209,400	801,660,133	304,100	
				28
7,647,000	16,200	540,970,107	145,500	
4,260,000	140,600	72,055,974	28,400	29
				30
493,669,000	3,132,000	45,694,175,017	10,903,100	
3,457,000	1,179,500[f]	1,923,902,935[f]	453,600[f]	31
591,894,000	10,506,600	50,942,138,611	12,213,300	
727,764,000	25,533,530[g]	62,775,131,988[g]	14,962,400[g]	
	24,171,974[h]	61,481,582,600[h]	14,660,750[h]	
	100,314,000	93,717,000,000	21,520,000	
	24.1	65.6	68.1	

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 for overlapping agency areas.
h) Excludes all overlapping areas.

Water Contracts Management

Total cumulative entitlement, surplus and nonproject water deliveries to each of the long-term contractors through December 31, 1976 are shown in Figure 5; total annual deliveries to all project customers are shown by type of water in Columns (8), (9), and (10) of Table 1. Tables 1 and B-5B also show projected entitlement water deliveries. These projections reflect contractor requests except for the 1977 values, which, because of the drought, have been reduced to the quantity of water allocated in March 1977 to each contractor for the year. Projected surplus water deliveries have been omitted from Table 1, because the drought and its carryover effects preclude useful projections of surplus water availability.

Water Deliveries in 1976

Twenty-four of the 31 long-term water supply contracts called for deliveries totaling 1 836 521 145 cubic metres (1,488,870 acre-feet) of entitlement water during 1976. The twenty-four Thirty-one public agencies have contracted for the full minimum project yield, 5 217 705 000 cubic metres (4,230,000 acre-feet), of the State Water Project. Figure 5 shows the names and locations of these 31 agencies, together with other pertinent information. That portion of the minimum project yield each has contracted for is shown in Figure 5 under the heading "Maximum Annual Entitlement". Each agency's contract contains a Table A, which shows quantities of water contracted for annually. These annual entitlements for most agencies are initially small, building up over a period of years to the maximum annual entitlement. Table B-4 of Appendix B shows the annual entitlements of each contractor.

Table B-5B shows actual annual water deliveries made from project facilities to each long-term contractor for each year through 1976. Included in the amounts shown are certain deliveries of nonproject water and all project surplus water delivered prior to May 1, 1973.

TABLE 1: ANNUAL

(in acre-

Calendar Year	Annual Entitlements Under Long-term Water Supply Contracts						
	Feather River Area	North Bay Area[b]	South Bay Area[c]	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	740,250	1,386,869
1976	1,990	0	126,500	555,117	0	824,780	1,508,387
Subtotal, 1962-1976	9,660	0	1,062,638	3,110,419	0	2,791,373	6,974,090
1977	2,420	0	128,600	594,100	0	942,201	1,667,321
1978	2,850	0	130,700	651,600	0	1,060,722	1,845,872
1979	3,280	0	132,700	707,700	0	1,177,873	2,021,553
1980	4,710	19,250	134,800	765,000	2,200	1,304,914	2,230,874
1981	10,390	21,750	137,000	828,500	3,300	1,425,865	2,426,805
1982	12,270	24,400	139,200	889,200	6,600	1,546,806	2,618,476
1983	14,200	27,050	141,400	955,500	9,900	1,688,557	2,816,607
1984	16,130	29,600	143,600	1,017,900	14,900	1,790,398	3,012,528
1985	19,060	32,750	145,800	1,079,100	24,800	1,912,549	3,214,059
9 years, 1977-1985	87,300	154,800	1,360,300	8,024,200	61,700	13,654,665	23,342,965
10 years, 1986-1995	340,420	587,500	1,650,200	13,032,300	688,000	23,869,646	40,168,066
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 1233.5 cubic metres.
b) Does not include nonproject water delivered in the period 1968 through 1979.
c) Does not include nonproject water delivered in the period June 1962 through October 1969.
d) Values for the years 1970 through 1975 include deliveries to short-term contractors (Mustang Water District, 1970-71; Tracy Golf and Country Club, 1974; Green Valley Water District, 1974-75).
e) Includes conveyance of federal CVP water to Cross Valley Canal.

WATER REQUIREMENTS

feet)[a]

Estimated Annual Water Demands								
Deliveries to Contracting Agencies								
Entitlement Water	Surplus Water[d]	Repayment Water and Regulated Delivery of Local Supply[e]	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	23,207	5,812	8	726,505	1971
611,801	423,964	66,638	1,102,403	145,066	53,062	6,489	1,307,020	1972
694,460	296,416	42,511	1,033,387	214,941	53,798	1,083	1,303,209	1973
874,075	417,676	46,224	1,337,975	256,960	1,593	2,118	1,598,646	1974
1,223,990	622,902	63,793	1,910,685	110,149	-94,606	3,377	1,929,605	1975
1,373,002	580,110	115,217	2,068,329	67,686	-680,736	1,604	1,456,883	1976
5,744,928	2,964,042	689,078	9,398,048	1,860,168	-461,244	14,679	10,811,651	15 years, 1962-1976
1,108,367	0	58,450	1,166,817	18,036	-569,882	6,461	621,432	1977
1,825,359	0	155,995	1,981,354	4,360	-6,042	7,416	1,987,088	1978
1,894,110	0	180,367	2,074,477	0	148,343	7,504	2,230,324	1979
2,004,525	0	180,522	2,185,047	0	130,979	7,813	2,323,839	1980
2,152,052	0	180,672	2,332,724	0	52,162	15,888	2,400,774	1981
2,280,325	0	175,117	2,455,442	294	248,880	20,427	2,725,043	1982
2,376,990	0	175,217	2,552,207	0	98,656	20,177	2,671,040	1983
2,459,250	0	175,317	2,634,567	2,264	105,200	23,780	2,765,811	1984
2,540,240	0	151,300	2,691,540	0	132,530	23,900	2,847,970	1985
18,641,218	0	1,432,957	20,074,175	24,954	340,826	133,366	20,573,321	9 years, 1977-1985
33,455,925	-	-	33,455,925	0	1,840,705	243,740	35,540,370	10 years, 1986-1995
38,815,355	-	-	38,815,355	0	1,774,325	245,000	40,834,860	10 years, 1996-2005
41,427,570	-	-	41,427,570	0	1,830,263	245,000	43,502,833	10 years, 2006-2015
42,244,000	-	-	42,244,000	0	1,880,892	245,000	44,369,892	10 years, 2016-2025
42,300,000	-	-	42,380,000	0	1,848,090	245,000	44,393,090	10 years, 2026-2035

contractors, the 1976 entitlement of each, and the amount of entitlement water scheduled and received during 1976 are shown in Table 2. As will be noted, no entitlement water was scheduled or delivered to three contractors, eight others received less than their annual entitlement, and the entitlement amounts of four were increased, because the total amount of project water received during the year (entitlement plus surplus) required the reclassification of some surplus water to entitlement water. Also shown in Table 2 are the quantities of surplus water scheduled for delivery during 1976 and the quantities actually received.

Total 1976 project water service involved deliveries to 33 entities (22 long-term contractors and 11 noncontractors). Monthly deliveries are shown in Table 3 and include:

- 1 693 597 967 cubic metres (1,373,002 acre-feet) of entitlement water to 21 long-term contractors (includes 90 046 cubic metres [73 acre-feet] of 1977 entitlement water delivered to Oak Flat Water District during December 1976 but does not include 7 234 478 cubic metres [5,865 acre-feet] of 1976 entitlement water delivered during January 1977 to three contractors).

- 715 565 685 cubic metres (580,110 acre-feet) of surplus water to 10 long-term contractors.

- 24 922 868 cubic metres (20,205 acre-feet) of local water to three long-term contractors and two noncontractors.

- 8 279 252 cubic metres (6,712 acre-feet) of preconsolidation repayment water to J. G. Boswell Company.

- 108 918 050 cubic metres (88,300 acre-feet) of federal Central Valley Project water to Kern County Water Agency's Cross Valley Canal pursuant to contracts with eight water agencies.

Project facilities were also used to deliver 1 649 447 302 cubic metres (1,337,209 acre-feet) to federal customers from the joint-use San Luis facilities, and 1 124 377 189 cubic metres (911,534 acre-feet) diverted from the Oroville-Thermalito Complex pursuant to water rights diversion agreements.

Entitlement Water Deliveries. Schedules approved December 1, 1975, called for 1976 deliveries of entitlement water in the amounts requested. Six contractors received less than the initially requested and scheduled amounts (see Table 2). The Antelope Valley-East Kern Water Agency was unable to take a portion of its scheduled water because of a system outage, as discussed in the next section of this chapter, while the remaining five contractors took less than scheduled amounts because of less than anticipated demands.

At year's end, the 1976 entitlements of Dudley Ridge Water District, Kern County Water Agency, Oak Flat Water District, and Tulare Lake Basin Water Storage District were increased by a total of 24 074 220 cubic metres (19,517 acre-feet) (see Table 2). The increases were required by Article 21 (g)(3) of the long-term contracts, which provides that a contractor may not receive more surplus water than entitlement water unless he had increased his annual entitlement to 75 percent of his maximum annual entitlement. In addition to the 418 157 cubic metres (339 acre-feet) increase in Oak Flat's 1976 entitlement, pursuant to Article 21 (g)(3), the District's entitlement was further increased by 246,700 cubic metres (200 acre-feet). The latter increase was made under a policy that allowed 1976 entitlements to be increased by that amount for contractors with an especially pressing need for more water and no alternative means of acquiring it.

Four contractors requested that portions of their entitlement water scheduled to be delivered during December 1976 be

TABLE 2: SUMMARY OF 1976 ENTITLEMENT AND SURPLUS WATER SERVICE TO LONG-TERM CONTRACTORS

Long-term Contractor	Entitlement Water (acre-feet)[a]			Surplus Water (acre-feet)[a]	
	1976 Entitlement as of 1/1/76	Scheduled as of 1/1/76	Delivered	Allocated Amount as of May 1, 1976	Delivered
UPPER FEATHER AREA					
Butte County	1,400	900	527		
Plumas County FC&WCD	590	590	382		
SOUTH BAY AREA					
Alameda County FC&WCD, Zone 7	17,200	17,200	17,200[b]	5,017	3,636
Alameda County WD	21,300	21,300	21,300	6,780	4,147
Santa Clara Valley WD	88,000	88,000	88,000	26,780	24,705
SAN JOAQUIN VALLEY AREA					
County of Kings	1,600	1,600	1,600		
Devil's Den WD	11,700	11,700	11,700	8,300	5,727
Dudley Ridge WD	28,300	28,300	30,921[h][g]	37,135	30,922
Empire West Side ID	3,000	3,000	3,000	3,937	3,457
Hacienda WD	3,900	3,900	3,900	5,118	3,720
Kern County Water Agency	432,800	432,800	442,150[g][c]	535,375	442,150
Oak Flat WD	3,500	3,500	4,039[i][d]	4,733	3,840
Tulare Lake Basin WSD	50,800	50,800	57,807[g][e]	66,660	57,806
SOUTHERN CALIFORNIA AREA					
Antelope Valley-East Kern WA	44,000	34,610	27,782		
Castaic Lake WA	9,500	0	0		
Coachella Valley County WD	7,600	7,600	7,600		
Crestline-Lake Arrowhead WA	1,740	932	1,002		
Desert Water Agency	12,000	12,000	12,000		
Littlerock Creek	640	640	589	165	0
Mojave Water Agency	17,800	0	0		
Palmdale Water District	6,900	0	0		
San Bernardino Valley MWD	55,000	40,500	12,273		
San Gabriel Valley MWD	14,000	10,000	6,071		
The Metropolitan WD of So. Calif.	655,600	598,590	628,951[f]		
TOTAL	1,488,870	1,368,462	1,378,794	700,000	580,110

a) Metric conversion is acre-feet times 1233.5 equals cubic metres.
b) 69 acre-feet of this amount delivered in January 1977 pursuant to carryover agreement.
c) 2,900 acre-feet of this amount delivered in January 1977 pursuant to carryover agreement.
d) Does not include 73 acre-feet of 1977 entitlement water delivered during December 1976.
e) 2,896 acre-feet of this amount delivered in January 1977 pursuant to carryover agreement.
f) 10,500 acre-feet of this amount delivered to Dudley Ridge Water District pursuant to executed exchange agreement.
g) Table A quantity increased to this amount at year's end in compliance with Article 21(g)(3) of the long-term water supply contract.
h) Does not include 10,500 acre-feet of "exchange water" obtained from The Metropolitan Water District of Southern California.
i) Table A increased by 200 acre-feet pursuant to policy allowing small increases in scheduled 1976 entitlement deliveries and by 339 acre-feet pursuant to Article 21(g)(3) of the long-term contract.

TABLE 3: WATER

(in acre-

Line No.	Contracting Agency and Type of Service	Month							
		Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.
	FEATHER RIVER SERVICE AREA								
	County of Butte:								
1.	Entitlement Water	0	0	437	27	0	2	6	5
	Last Chance Creek Water District:								
2.	Regulated Delivery of Local Supply	0	0	0	1,563	3,654	2,545	1,575	1,360
	Plumas County Flood Control & Water Cons. District:								
3.	Entitlement Water	12	11	21	31	48	50	73	39
	Thermalito Irrigation District:								
4.	Regulated Delivery of Local Supply	0	0	0	0	1	72	97	41
5.	AREA TOTAL	12	11	458	1,621	3,703	2,669	1,751	1,445
	NORTH BAY SERVICE AREA								
	Napa County Flood Control & Water Cons. District:								
6.	Regulated Delivery of Local Supply	728	673	778	538	488	477	244	351
	SOUTH BAY SERVICE AREA								
	Alameda County Flood Control & Water Cons. Dist.,Zone 7								
7.	Entitlement Water	1,210	1,123	1,305	1,998	1,975	1,657	1,799	1,537
8.	Surplus Water	0	0	0	0	516	349	561	475
9.	Regulated Delivery of Local Supply	90	110	16	0	0	0	0	0
10.	Agency Total	1,300	1,233	1,321	1,998	2,491	2,006	2,360	2,012
	Alameda County Water District:								
11.	Entitlement Water	920	1,332	1,473	1,547	1,626	2,954	2,574	2,121
12.	Surplus Water	0	0	0	0	960	427	1,300	816
13.	Regulated Delivery of Local Supply	1,196	0	0	0	0	0	0	0
14.	Agency Total	2,116	1,332	1,473	1,547	2,586	3,381	3,874	2,937
	Santa Clara Valley Water District:								
15.	Entitlement Water	4,500	4,500	5,000	5,200	8,423	10,377	10,999	10,733
16.	Surplus Water	3,014	4,003	4,409	5,242	2,660	244	0	0
17.	Agency Total	7,514	8,503	9,409	10,442	11,083	10,621	10,999	10,733
18.	AREA TOTAL	10,930	11,068	12,203	13,987	16,160	16,008	17,233	15,682
	SAN JOAQUIN VALLEY SERVICE AREA								
	J. G. Boswell Company:								
19.	Repayment of Preconsolidation Water	404	423	830	810	830	830	863	1,027
20.	Belridge Oil Company	0	0	0	0	0	0	0	0
	County of Kings:								
21.	Entitlement Water	175	175	175	25	0	175	175	175
	Devil's Den Water District:								
22.	Entitlement Water	936	737	1,182	831	331	1,308	1,355	1,802
23.	Surplus Water	1,446	1,246	832	116	0	566	805	336
24.	Agency Total	2,382	1,983	2,014	947	331	1,874	2,160	2,138
	Dudley Ridge Water District:								
25.	Entitlement Water	2,914	1,500	1,973	2,335	3,000	4,200	6,900	4,317
26.	Surplus Water	3,750	2,089	5,350	4,575	2,222	3,222	4,783	3,538
27.	Agency Total	6,664	3,589	7,323	6,910	5,222	7,422	11,683	7,855
	Empire West Side Irrigation District:								
28.	Entitlement Water	150	150	100	300	200	500	500	500
29.	Surplus Water	403	0	424	468	224	469	237	406
30.	Agency Total	553	150	524	768	424	969	737	906
	Hacienda Water District:								
31.	Entitlement Water	100	400	181	400	161	394	700	700
32.	Surplus Water	650	0	0	114	0	0	1,285	618
33.	Agency Total	750	400	181	514	161	394	1,985	1,318
	Kern County Water Agency:								
34.	Entitlement Water	21,123	31,450	45,158	18,971	45,370	63,874	85,039	79,063
35.	Surplus Water	42,463	26,664	34,568	30,800	30,806	64,864	85,553	45,291
36.	Agency Total	63,586	58,114	79,726	49,771	76,176	128,738	170,592	124,354
	Oak Flat Water District:								
37.	Entitlement Water	0	0	500	450	550	625	625	812
38.	Surplus Water	117	221	215	875	802	466	1,002	142
39.	Agency Total	117	221	715	1,325	1,352	1,091	1,627	954
	Tulare Lake Basin Water Storage District:								
40.	Entitlement Water	8,005	2,000	5,000	2,000	6,500	2,500	5,134	4,593
41.	Surplus Water	32,778	1,805	3,542	10,549	5,909	282	1,823	0
42.	Agency Total	40,783	3,805	8,542	12,549	12,409	2,782	6,957	4,593
	United States Bureau of Reclamation:								
43.	Conveyance of Federal CVP Water	2,292	0	0	8,862	13,438	20,744	21,272	15,225
44.	AREA TOTAL	117,706	68,860	100,030	82,481	110,343	165,019	218,051	158,545
	SOUTHERN CALIFORNIA SERVICE AREA								
	Antelope Valley-East Kern Water Agency:								
45.	Entitlement Water	759	190	1,324	2,972	4,481	4,204	5,002	5,072
46.	Castaic Lake Water Agency	0	0	0	0	0	0	0	0
	Coachella Valley County Water District:								
47.	Entitlement Water	633	633	1,266	0	633	633	633	633
	Crestline-Lake Arrowhead Water Agency:								
48.	Entitlement Water	66	64	54	65	74	92	144	124
	Desert Water Agency:								
49.	Entitlement Water	1,320	1,320	2,640	0	1,320	1,320	1,320	1,320
	Littlerock Creek Irrigation District:								
50.	Entitlement Water	0	0	0	0	1	113	226	128
51.	Mojave Water Agency	0	0	0	0	0	0	0	0
52.	Palmdale Water District	0	0	0	0	0	0	0	0
	San Bernardino Valley Municipal Water District:								
53.	Entitlement Water	3,113	588	261	45	3	9	255	2,833
	San Gabriel Valley Municipal Water District:								
54.	Entitlement Water	0	747	1,916	0	0	381	543	596
	The Metropolitan Water Dist. of Southern California:								
55.	Entitlement Water	54,063	41,654	52,408	32,928	44,402	77,728	64,818	63,320
56.	AREA TOTAL	59,954	45,196	59,869	36,010	50,914	84,480	72,941	74,026
	ALL AGENCIES:								
57.	Entitlement Water	99,999	88,574	122,374	70,125	119,098	173,096	188,820	180,423
58.	Surplus Water	84,621	36,028	49,340	52,739	44,099	70,889	97,349	51,622
59.	Total Entitlement and Surplus Water	184,620	124,602	171,714	122,864	163,197	243,985	286,169	232,045
60.	Regulated Delivery of Local Supply	2,014	783	794	2,101	4,143	3,094	1,916	1,752
61.	Repayment of Preconsolidation Water	404	423	830	810	830	830	863	1,027
62.	Conveyance of Federal CVP Water	2,292	0	0	8,862	13,438	20,744	21,272	15,225
63.	TOTAL WATER	189,330	125,808	173,338	134,637	181,608	268,653	310,220	250,049

a) Metric conversion is acre-feet times 1233.5 equals cubic metre.
b) Repayment of preconsolidation water.
c) Delivered in January 1977 pursuant to executed "carryover" agreement.
d) 1977 entitlement water delivered during December 1976.
e) Due to a correction necessitated by a faulty meter in 1975 this amount has been increased 467 acre-feet over that shown in Bulletin 132-76.

DELIVERIES IN 1976

feet)[a]

Month					1976 Contract Entitlement	1976 Entitlement Not Delivered	Net Cumulative Entitlement Not Delivered thru		Net Entitlement Credits as of January 1, 1977		Line No.
Sep.	Oct.	Nov.	Dec.	Total			1975	1976	Deferred Delivery	Future Reductions	
4	0	0	46	527	1,400	873	3,539	4,412	-	-	1.
529	211	0	0	11,437	-	-	-				2.
27	23	21	26	382	590	208	949	1,157	-	-	3.
22	0	0	1	234	-		-				4.
582	234	21	73	12,580	1,990	1,081	4,488	5,569	-	-	5.
494	722	749	880	7,122							6.
1,704	1,200	695	928	17,131	17,200	69[a]	46,670	46,670	41,738	0	7.
248	160	603	724	3,636							8.
0	0	0	0	216							9.
1,952	1,360	1,298	1,652	20,983							10.
2,107	1,685	1,385	1,576	21,300	21,300	0	97,498	97,498	78,232	0	11.
586	58	0	0	4,147							12.
0	0	0	0	1,196							13.
2,693	1,743	1,385	1,576	26,643							14.
10,052	8,277	5,338	4,601	88,000	88,000	0	38,714	38,714	0	0	15.
436	2,000	2,000	697	24,705							16.
10,488	10,277	7,338	5,298	112,705							17.
15,133	13,380	10,021	8,526	160,331	126,500	69	182,882	182,882	119,970	0	18.
76	230	230	159	6,712	-	-	-	-	(85,375)[b]	-	19.
0	0	0	0	0	-	-	-	-	(59,927)[b]	-	20.
175	175	0	175	1,600	1,600	0	0	0	0	0	21.
923	0	149	2,146	11,700	11,700	0	0	0	-	-	22.
5	0	0	375	5,727							23.
928	0	149	2,521	17,427							24.
763	579	309	2,131	30,921	30,921	0	0	0	-	-	25.
0	0	61	1,332	30,922							26.
763	579	370	3,463	61,843							27.
14	360	113	113	3,000	3,000	0	0	0	0	0	28.
0	0	329	497	3,457							29.
14	360	442	610	6,457							30.
700	0	164	0	3,900	3,900	0	0	0	0	0	31.
70	0	177	806	3,720							32.
770	0	341	806	7,620							33.
20,953	7,161	10,537	10,551	439,250	442,150	2,900[a]	0	0	-	-	34.
7,818	0	13,964	59,359	442,150							35.
28,771	7,161	24,501	69,910	881,400							36.
304	21	64	161	4,112	4,039	(73)[d]	0	0	0	2,466	37.
0	0	0	0	3,840							38.
304	21	64	161	7,952							39.
1,298	3,933	4,002	9,946	54,911	57,807	2,896[a]	0	0	0	74,852	40.
0	0	0	1,118	57,806							41.
1,298	3,933	4,002	11,064	112,717							42.
5,564	0	0	903	88,300	-	-	-	-			43.
38,663	12,459	30,099	89,772	1,192,028	555,117	5,796	0	0	0	77,318	44.
2,630	826	41	281	27,782	44,000	16,218	100,600	116,818	4,787	-	45.
0	0	0	0	0	9,500	9,500	18,136	27,636	-	-	46.
633	633	633	637	7,600	7,600	0	5,200	5,200	-	-	47.
94	65	75	85	1,002	1,740	738	1,629	2,367	-	-	48.
1,320	120	0	0	12,000	12,000	0	8,000	8,000	-	-	49.
79	38	4	0	589	640	51	0	51	-	-	50.
0	0	0	0	0	17,800	17,800	47,531	65,331	-	-	51.
0	0	0	0	0	6,900	6,900	14,400	21,300	-	-	52.
2,328	1,710	727	401	12,273	55,000	42,727	88,006	130,733	-	-	53.
284	960	339	305	6,071	14,000	7,929	30,960	38,889	-	-	54.
49,040	49,475	49,115	50,000	628,951	655,600	26,649	483,445[e]	510,094	26,649	-	55.
56,408	53,827	50,934	51,709	696,268	824,780	128,512	797,440	926,419	31,436	-	56.
95,432	77,241	73,711	84,109	1,373,002	1,508,387	135,458	984,810	1,114,870	151,406	77,318	57.
9,163	2,218	17,134	64,908	580,110							58.
104,595	79,459	90,845	149,017	1,953,112							59.
1,045	933	749	881	20,205							60.
76	230	230	159	6,712					145,302		61.
5,564	0	0	903	88,300							62.
111,280	80,622	91,824	150,960	2,068,329	1,508,387	135,458	984,810	1,114,870	296,708	77,318	63.

delivered in January 1977. The purpose of the "carryover" was to obtain a more efficient use of the available project water supply. The carryover of 1976 entitlement water is not considered a precedent for future operations. Approval of the four carryover requests resulted in 7 234 478 cubic metres (5,865 acre-feet) of 1976 entitlement water being delivered in 1977 as follows:

Contractors Obtaining Carryover Approval	Carryover	
	Cubic Metres	Acre-feet
Alameda County F.C.&W.C.D., Zone 7	85 112	69
Dudley Ridge W. D.	0	0
Kern County Water Agency	3 577 150	2,900
Tulare Lake Basin Water Storage District	3 572 216	2,896
TOTAL	7 234 478	5,865

Future Delivery Rights. As noted in the preceding section, Antelope Valley-East Kern Water Agency did not receive a portion of its scheduled entitlement water because of a system outage. The amount has been determined to be 5 904 765 cubic metres (4,787 acre-feet). Pursuant to Article 14(b) of its long-term water supply contract with the State, the Agency may receive later delivery of that amount of water.

The Metropolitan Water District of Southern California (MWD) was initially scheduled to receive all but 70 321 835 cubic metres (57,010 acre-feet) of its 1976 annual entitlement. In mid-year, MWD requested delivery of this unscheduled entitlement water. The request could not be approved, however, because the total amount of water estimated to be available for delivery during 1976 had been scheduled. However, near the end of the year, when additional water became available, a portion of that unscheduled entitlement was scheduled and delivered. Pursuant to Article 12(d) of the District's long-term water supply contract with the State, MWD was informed that any entitlement water that could not be scheduled and delivered during 1976 could be obtained during a later year at times when the State had the capability of making the delivery. The District thus has been credited with 32 871 542 cubic metres (26,649 acre-feet) of future delivery rights (see Table 3).

In January 1976, Alameda County Flood Control and Water Conservation District Zone 7, and Alameda County Water District, had future delivery rights to 55 968 829 cubic metres (45,374 acre-feet) and 101 614 497 cubic metres (82,379 acre-feet) respectively. Pursuant to Article 21(g)(2) of their long-term water contracts with the State, these amounts were reduced by the quantity of surplus water received during 1976. As shown in Table 3, the future delivery rights at the end of 1976 were thus 51 483 823 cubic metres (41,738 acre-feet) for Zone 7, and 96 499 172 cubic metres (78,232 acre-feet) for Alameda County Water District.

Preconsolidation Repayment Water. In 1964 the State entered into two contracts for the purpose of acquiring a water supply for preconsolidation purposes. These contracts have since been assigned to the J. C. Boswell Company and the Belridge Oil Company (see Bulletin 132-76, page 28). As of January 1, 1976, the State's water repayment

obligations were 113 589 315 cubic metres (92,087 acre-feet) under the Boswell contract, and 73 919 955 cubic metres (59,927 acre-feet) under the Belridge contract. In both cases, the repayment water is to be delivered prior to 1985. During 1976 no repayment water was requested by or delivered to Belridge, while Boswell received 8 279 252 cubic metres (6,712 acre-feet), leaving 105 310 063 cubic metres (85,375 acre-feet) yet to be delivered.

Surplus Water Service. During 1976, surplus water deliveries were made to ten long-term contractors. Service was provided to eight contractors under one-year extensions of previously executed surplus water contracts. Similar contracts were executed for the first time with the Alameda County Water District and the Alameda County Flood Control and Water Conservation District, Zone 7 on March 11, 1976, and April 14, 1976, respectively. In line with Department policy, which limits the terms of the surplus water contracts to one calendar year, these contracts provide for surplus water deliveries only for the balance of the year.

Water delivery requests submitted by the long-term contractors in September 1975, for 1976 service, included requests for 975 824 317 cubic metres (790,102 acre-feet) of surplus water. The 1976 monthly delivery schedule issued on December 1, 1975, showed approved surplus water deliveries during the first four months of the year of 291 187 411 cubic metres (236,066 acre-feet), and tentatively approved deliveries of 644 315 025 cubic metres (522,347 acre-feet) during the last eight months of 1976.

In compliance with the surplus water contract scheduling provision, contractors on March 15, 1976, submitted revised surplus water requests covering the last eight months of 1976. The revised requests for this period totaled 817 198 684 cubic metres (662,504 acre-feet), up 172 883 660 cubic metres (140,157 acre-feet) from the September 1 requests for the same period. This increase was caused by the unusually low precipitation up to that time, which resulted in decreased local water supplies for summer irrigation and higher-then-usual applied water requirements due to below-normal soil moisture.

Department studies indicated that the maximum quantity of surplus water that could be delivered during calendar year 1976 was 863 450 000 cubic metres (700,000 acre-feet). Since this amount was far less than the approved deliveres for January 1 through April 30, 1976, plus deliveries requested for May 1 through December 31, the available surplus water had to be allocated among requesting contractors in accordance with Article 21(c)(3) of their long-term water supply contracts (see Table 2). Approved monthly delivery schedules issued on May 7, 1976, reflected total 1976 surplus water deliveries of 863 450 000 cubic metres (700,000 acre-feet), but stipulated that the surplus water scheduled for delivery during October through December, a total of 142 179 378 cubic metres (115,265 acre-feet) might not be available.

At a July 7, 1976, meeting in Fresno, contractors were told that the surplus water scheduled for delivery during October through December could not be delivered. Each contractor was informed of the total amount of surplus water he could obtain during the remainder of the year and was asked to submit revised delivery requests reflecting the reduced total. Following receipt of these requests, revised surplus water monthly delivery schedules were issued. In late September, contractors were notified that, because of improved water supply conditions, slightly more than 24 670 000 cubic metres (20,000 acre-feet) of the reduced surplus deliveries announced in July [142 179 378 cubic metres (115,265 acre-feet)] would be restored. Contractors who wished to obtain additional surplus water were thus able to acquire up to 18 percent of the reduction announced in July.

Total 1976 surplus deliveries after Article 21(g)(3) adjustments, as discussed in the section of this chapter entitled "Entitlement Water Deliveries" were 715 565 685 cubic metres (580,110 acre-feet). Surplus water amounts received by each of the eleven contractors scheduled to receive surplus water during the year are shown in Tables 2 and 3.

Colorado River Water - Project Water Exchange. After the July 1976 reduction in scheduled surplus water, serious crop losses were predicted for the Dudley Ridge Water District unless additional water could be obtained. To alleviate the District's water shortage, the Department suggested and a water exchange was arranged, under which the District was able to acquire 12 951 750 cubic metres (10,500 acre-feet) of MWD entitlement water during the last four months of 1976. To replace its entitlement water delivered to Dudley Ridge, MWD diverted an additional 12 951 750 cubic metres (10,500 acre-feet) of water from the Colorado River.

Letter agreements between the State and Dudley Ridge and the State and MWD established schedules as well as criteria covering the payment, crediting, and adjustment of charges associated with the exchange. A third agreement between the State and Pacific Gas and Electric Company, Southern California Edison Company, and San Diego Gas and Electric Company provided that a portion of the energy the three companies were supplying for operation of the State Water Project would be transferred to MWD's system for its diversion of the additional water from the Colorado River.

Wheeling of Federal Water. The State has entered into a two-party contract with the United States, plus nine three-party contracts between the United States, the State, and nine water agencies located in Kern, Tulare, and Fresno Counties (see Bulletin 132-76, page 29). In compliance with the two-party contract, during 1976, the Bureau of Reclamation provided federaly Central Valley Projectwater plus the power to pump that water for delivery to the three-party contractors. In compliance with the three-party contracts, the State wheeled the water to Kern County Water Agency's Cross Valley Canal for the three-party contractors. Delivery schedules and wheeling charges were established in accordance with the provisions of the three-party contracts.

Pursuant to these contracts, 108 918 050 cubic metres (88,300 acre-feet) of federal Central Valley Project water was wheeled by the State to Kern County Water Agency's Cross Valley Canal turnout for eight of the agencies during 1976. The State charged the eight agencies a total of $448,309 for the wheeling service. The following tabulation shows the agencies that have signed three-party contracts, the annual amount of water each agency has contracted to receive, the amount of water wheeled for each agency during 1976, and the State's charges to each agency for the wheeling service it provided:

Agency	Annual Contractual Amount (acre-feet)2/	Wheeled in 1976 (acre-feet)2/	Charge for 1976 Wheeling (dollars)
County of Fresno	3,000	3,000	15,231.00
County of Tulare	3,000	3,000	15,231.00
Ducor Irrigation District	1,200	1,200	6,093.00
Hills Valley Irrigation District	2,146	2,146	10,895.76
Kern-Tulare Water District	40,000	0	0
Lower Tule River Irrigation District	31,102	33,570 1/	170,438.20
Pixley Irrigation District	31,102	31,102	157,908.12
Rag Gulch Water District	13,300	13,300	67,526.00
Tri-Valley Water District	982	982	4,985.92
TOTAL	125,832	88,300	448,309.00

1/ District was allowed to obtain Hope Water District's allocation for 1976 only.
2/ Metric conversion is acre-feet time 1233.5 equals cubic metres.

Project Water Delivery Plans

During September 1976, SWP contractors submitted their current projections of monthly delivery requirements for project water during the seven-year period 1977 through 1983. The projections were for both entitlement and surplus water.

Entitlement Water. The following tabulation shows the total projected annual entitlement water requirements received in 1976 for the following seven years as well as projections from prior years:

Projections: Submitted in:	For Delivery of Entitlement Water During: 1977	1978	1979	1980	1981	1982	1983
	(acre-feet)[a]						
1976	1,714,245	1,835,343	1,919,070	2,026,880	2,168,335	2,273,925	2,376,990
1975	1,619,531	1,704,780	1,813,362	1,931,607	2,027,770	2,131,960	
1974	1,616,572	1,794,222	1,925,483	2,022,548	2,112,251		
1973[b]	1,692,725	1,776,735	1,864,075				
1972	1,576,936	1,683,016					
1971	1,480,251						
Contract Amounts	1,667,321	1,845,872	2,021,553	2,230,874	2,426,805	2,618,476	2,816,607

a/ Metric conversion is acre-feet times 1233.5 equals cubic metres.
b/ Prior to 1974, six-year requests were submitted.

In December 1976, approved monthly-entitlement water delivery schedules were issued to 23 contractors. The schedules called for 1977 deliveries of 2 048 273 623 cubic metres (1,660,538 acre-feet), which was 66 247 585 cubic metres (53,707 acre-feet) lower than the September 1, 1976 contractor projections. The smaller quantity resulted from the following: (1) Two contractors, Mojave Water Agency and San Bernardino Valley Municipal Water District, reduced their projected needs by 40 086 283 cubic metres (32,498 acre-feet), (2) The quantity of Article 12(d) water to be delivered to The Metropolitan Water District of Southern California during 1977 was 26 161 302 cubic metres (21,209 acre-feet) less at year's end than had been anticipated earlier. (Due to the continuing drought, reductions to these approved amounts, totaling 60 percent of all agriculture deliveries and 10 percent of all M and I deliveries, were imposed in March 1977).

Water supply studies made prior to the issuance of approved entitlement water delivery schedules showed that if water year 1976-77 was a repeat of 1975-76, the third worst water supply year of record, entitlement deliveries would have to be reduced if the United States Bureau of Reclamation did not meet its share of Delta outflow and if Delta water quality standards were not modified by the State Water Resources Control Board.

Surplus Water. In September 1976, twelve long-term contractors requested 1977 surplus water deliveries totaling 1 609 530 008 cubic metres (1,304,848

acre-feet). However, no surplus water deliveries were scheduled on December 1 1976 for the months of January through April of 1977 due to the continuing lack of precipitation. Moreover, contractors were told that no surplus water would be scheduled for delivery during 1977 until or unless the Department determined that surplus water could be delivered in 1977 without adversely affecting future entitlement water deliveries.

Pursuant to Section (d) of amended Article 21 of the long-term water supply contracts, a contractor may have the State order power for specified future surplus water deliveries. In order for the State to do this, the contractor must guarantee payment of the capacity charges associated with the power necessary to pump the requested amount of surplus water. Such commitments are made so that low-cost power will be available for future surplus water pumping. However, contractors making commitments do not thereby obtain preferential rights to future surplus water supplies. On the basis of commitments made by eight contractors, the State has ordered power to pump surplus water during 1978 through 1982. Table B-26 of Appendix B shows, for each of the eight contractors, the annual amount of surplus water deliveries for which power has been ordered and the related repayment obligation each contractor has incurred as a result of the power order.

Wheeling of Federal Water. As noted earlier, the State has entered into contracts under which it conveys federal Central Valley Project water in Project facilities to the Kern County Water Agency Cross Valley Canal turnout. Monthly 1977 delivery schedules issued in December 1976 by the Department to the nine involved water agencies showed (1) conditional approval of January through April deliveries totaling 27 825 293 cubic metres (22,558 acre-feet) and (2), in compliance with contractual scheduling provisions, tentative approval of deliveries for the balance of the year totaling 127 388 479 cubic metres (103,274 acre-feet). The conditional, rather than full, approvals were necessary as it was not known how much of the time the Bureau of Reclamation would be meeting its share of Delta outflow during the year. The Department is not obligated to wheel federal water and, as it had informed the Bureau and agencies, will not wheel federal water during any period when the Bureau is not providing its share of Delta outflow required to meet State and federal water quality standards established under the Federal Water Quality Pollution Control Act.

Contract Amendments

A total of 285 amendments to the long-term water supply contracts had been executed by January 1, 1977. These amendments are summarized by subject and number in Figure 6. During calendar year 1976 only one amendment was executed. The Alameda County Water District contract was amended to incorporate revisions that realign and clarify the surplus water provisions. The same amendment was submitted to all contractors in 1974 and has now been signed by 23 contractors.

Amendments which have been prepared and submitted to contractors for signing but not yet acted on, include the following:

- An amendment to the contract with the City of Yuba City concerning calculation of the Delta Water Charge and the project interest rate.
- An amendment to the contract with Solano County Flood Control and Water Conservation District concerning calculation of the Delta Water Charge.
- 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.

Figure 6: WATER SUPPLY CONTRACT AMENDMENTS AS OF DECEMBER 31, 1976

Contracting Agency	Minimum Project Yield Increased	Delta Water Charge, "Eel" 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	Special Conditions
		1970	1971	1972 till construction		Added	Revised	Moratorium Declared Thru 1969	Moratorium Declared 1970	Moratorium Declared 1971	Deleted		Added	Revised		Increased	Decreased				
FEATHER RIVER AREA																					
City of Yuba City	1	2P	2P	2P	2P		1							1				1		NA	
County of Butte	1	3	3	3	3		1	2		4	5			1						NA	
Plumas County Flood Control and Water Conservation District	1	3	5	6	3		1	2	4	7	8			10						9	
NORTH BAY AREA																					
Napa County Flood Control and Water Conservation District	1	3	4	5	3		1				6			1							1,2
Solano County Flood Control and Water Conservation District	1	2	3P	3P	2		1							1,5		1					
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			1
Alameda County Water District	1	4	5	7	4	1		3		8	9	S	1	11	2					10	1,6
Santa Clara Valley Water District	2	6	8	10	6	2		5	7	11	12	1	1	2,14	3			1,4		13	1,9
SAN JOAQUIN VALLEY AREA																					
County of Kings		2	3	4	2			1		5	6	S	S	8						7	
Devil's Den Water District	1	5	7	8	5			4	6	9	10			1,12				1,3		11	2
Dudley Ridge Water District	1	6	8	9	6			5	7	10	11			1,13				1,2 3,4		12	
Empire West Side Irrigation District	1	4	6	7	4			3	5	8	9	S		1,11				2		10	
Hacienda Water District	1	4	6	7	4			3	5	8	9	S		1,11				2		10	7
Kern County Water Agency	1	4	6	8	4			3	5	9	10			1,12				1,2		11	7
Oak Flat Water District		3	5	6	3			2	4	7	9	S	S	11	1			8		10	
Tulare Lake Basin Water Storage District	2	5	6	7	5			4		8	10	S		2,13				1,3,9 12		11	
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	
Santa Barbara County Flood Control and Water Conservation District	2	3	4	5	3	1	2				6		1	2,7				2			
SOUTHERN CALIFORNIA AREA																					
Antelope Valley-East Kern Water Agency	1	5	6	7	5	1					8		1	10		3	2	1	4	9	2,3 4
Castaic Lake Water Agency	2	4	5	6	4	1	2				7		1	2,10		2		2,3 9		8	
Coachella Valley County Water District	2	3	4	5	3	1	2				6		1	2,8				2		7	
Crestline-Lake Arrowhead Water Agency	2	5	6	7	5	1	2				8		1	2,11	4	3		2,10		9	
Desert Water Agency	2	3	4	5	3	1	2				6		1	2,8				2		7	
Littlerock Creek Irrigation District	2	3	4	5	3	1	2				6		1	2,7				2			
Mojave Water Agency	2	4	5	6	4	1	2				7		1	2			3	2		8	3
Palmdale Water District	2	3	4	5	3	1	2				6		1	2,8				2		7	
San Bernardino Valley Municipal Water District	2	4	5	6	4	1	2				7		1	2				1,2 3,9		8	
San Gabriel Valley Municipal Water District	2	4	5	6	4	1	2				7		1	2		2		2,9	3	8	
San Gorgonio Pass Water Agency	2	4	5	6	4	1	2				7		1	2		2					2,3
The Metropolitan Water District of Southern California	1	9	10	11	9	1					13		1					1,3 8V,15	2,6 7	14	(a
Ventura County Flood Control District	1	2	3	4	2		1				5			1,7						6	

P = Pending
S = Special provisions of basic contract.

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

- Amendments to eight contracts to realign and clarify the surplus water provisions: City of Yuba City, County of Butte, Mojave Water Agency, Napa County Flood Control and Water Conservation District, San Bernardino Valley Municipal Water District, San Gabriel Valley Municipal Water District, San Gorgonio Pass Water Agency, and the Metropolitan Water District of Southern California.

Deferred Delivery Amendment. As has been reported in previous bulletins of this series, the Department has worked with contractors to develop a contract amendment that would provide contractors the right to either later delivery of, or a monetary credit for, entitlement water paid for but not taken for any reason. No negotiations on this amendment were conducted during 1975 and 1976. Further, none are contemplated pending release of a Department Task Force report concerning the State Water Project water management program (see Chapter I, Transfer of Water Entitlements).

Negotiation of Water Charge Settlements

A task force consisting of representatives of the State Water Contractors Audit Committee, The Metropolitan Water District of Southern California, and the Department's Water Service Contract Cost Negotiation Committee continued its discussions and negotiations during 1976.

Protests of Prior Year Charges. Settlement of prior protested planning costs and general capital costs for 1973, 1974, 1975, and the first six months of 1976, are all being negotiated at the same time. These negotiations are expected to be completed in 1977 with the settlement reflected in the 1979 statement of charges.

Several issues concerning contractors' water service charges have not yet been resolved. Therefore, Water Service Contractors Council Memo No. 1084, dated October 26, 1976 was issued to notify contractors that they would have until December 21, 1977 to file notice of contest and to pursue all remedies available to them on statement of charges submitted prior to such date, except for those charges covered by the eight settlement letters and the concurrence letter previously issued.

During 1976, the Department issued new guidelines and implemented a new process within the budget review to minimize the extent of protests on costs incurred after 1976 (see section on 1977-78 Budget Review).

Allocation of Power Costs. Another issue with which the task force has long concerned itself is the allocation of power costs to applicable contractors. No progress was made during 1976 toward resolving the existing differences of opinion concerning the present allocation methods. The item was referred to the newly established Energy Committee of the task force for future consideration.

Project Purpose Cost Allocations. In 1976, the Department reviewed the project purpose cost allocation for the California Aqueduct from the Delta to Dos Amigos Pumping Plant. The cost allocation was revised for the following reasons:

- Recreation use at San Luis Reservoir is significantly lower than that projected in the original cost allocation.

- In the original cost allocation, power generation was a separate project purpose required to compute the surcharge, under Article 30(b) of the Standard Provisions of the Water Supply Contracts, to be assessed against project water applied on "excess lands". Article 30(b) has been deleted from the water supply contracts; therefore, it is no longer necessary to allocate costs to power generation.

- The original cost allocation was based on an interest rate of 4.35%. In the revised cost allocation, the current project interest rate of 4.462% was used.

Assembly Bill No. 1514 (a two-year bill) includes recreation costs based on the revised cost allocation for the aqueduct reaches from the Delta to Dos Amigos Pumping Plant. The revised cost allocation percentages will be used to compute the water contractors' bills after the legislature approves, and the Governor signs, AB 1514. Details of the revised cost allocation for the California Aqueduct, Delta to Dos Amigos Pumping Plant are in Bulletin 132-77, Appendix D (bound separately).

In 1976, the Department continued studying proposed cost allocations for the California Aqueduct, Dos Amigos Pumping Plant to termini. No conclusion has yet been reached and the study is continuing.

1977-78 Budget Review

In September 1976, the Director met with representatives of the water contractors to review proposed State Water Project expenditures for the 1977-78 fiscal year. Subsequently, the Department's 1977-78 budget for the State Water Project was formally presented to the California Water Commission for review and comment. This is done annually for the purpose of reducing the number of cost items that might be contested by the water contractors.

For the first time, this year's budget review by the water contractors replaces the after-the-fact negotiation of protested capital costs, which has taken place in past years. The Department has begun a process by which the water contractors' input and recommendations are considered prior to establishment of the next fiscal year's budget, thereby enabling before-the-fact adjustments to the budget. The new process emphasizes the determination of responsibility for costs of programs that are, 1) necessary for the Project and primarily benefit the Project, 2) necessary for both the Project and nonproject responsibilities of the Department, 3) not necessary for the Project.

Subsequent to the September 1976 meeting, similar adjustments were made to both the 1976-77 and 1977-78 fiscal year budget. The adjustments were in excess of $100,000 for each year. With the implementation of this process, for the fiscal year 1976-77 and all years following, capital cost settlements will no longer be allowed except to correct errors or make adjustments to programs not executed as contemplated at the time of the budget review. These types of adjustments will be considered up to two years following the end of the fiscal year in question.

Power Contracts Management

The following are highlights of the Department's continuing efforts and accomplishments during 1976 with respect to ensuring an adequate energy supply for the State Water Project:

Long Range Energy Program

The Central Valley Project Act and the Burns-Porter Act mandate the Department to operate and maintain the State Water Project. Operating the Project also generates energy, some of which is used for pumping and some sold to electric utilities. The Department's existing energy supply arrangements resulted from contracts signed in 1966 and 1967 and provide for the purchase, exchange, and transmission of energy through March 31, 1983. The objective of the Department's Long Range Energy Program is the acquisition of adequate energy supplies for Project operation after that date.

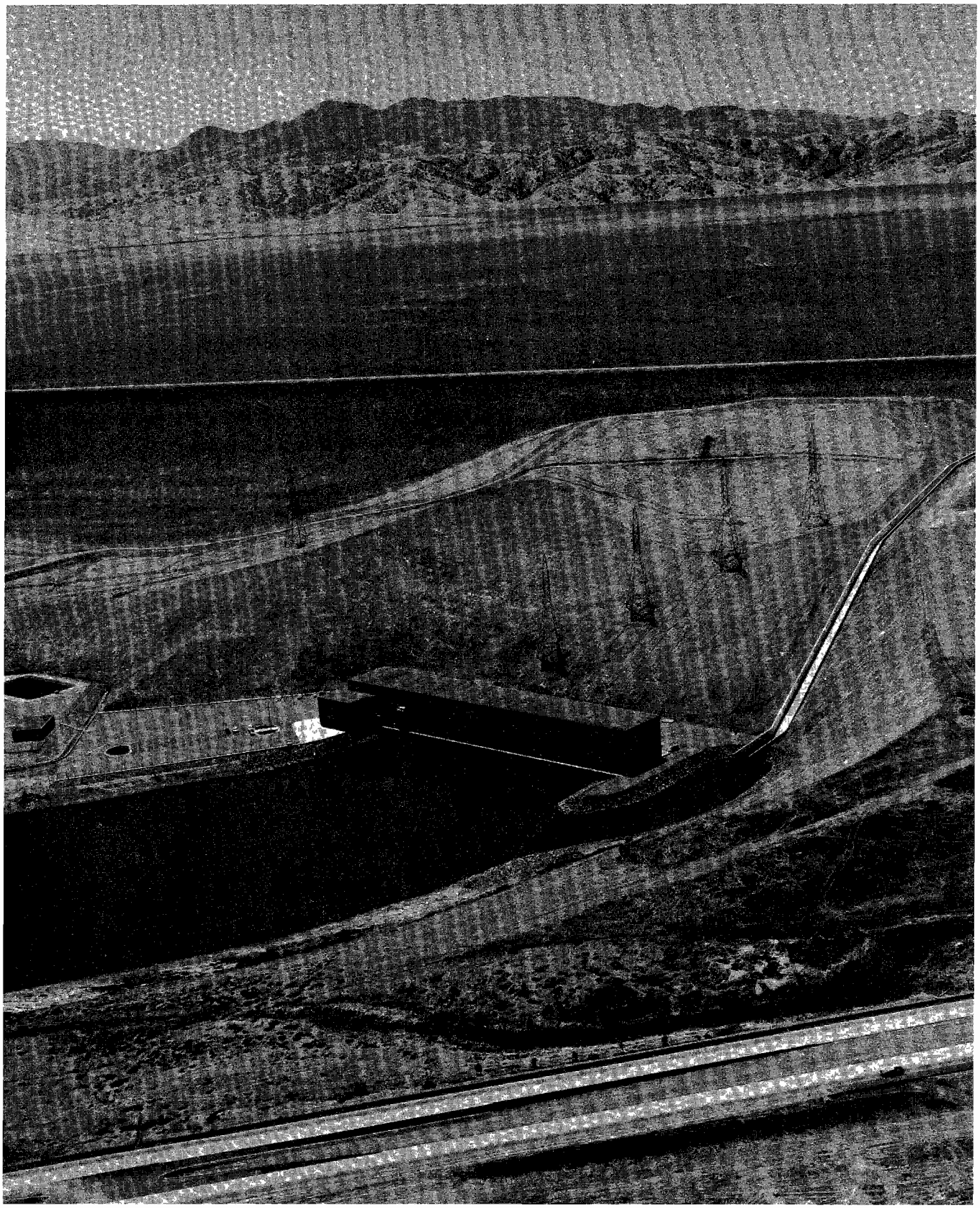
Program EIR. The Department held hearings in San Francisco on April 5, 1976 and in Los Angeles on April 7, 1976 to obtain input for an Environmental Impact Report (EIR) on the Long Range Energy Program. A draft of the Program EIR was distributed on December 28, 1976 for detailed review and comment. The final report is expected to be released during the spring of 1977. The Program EIR explains how the need for energy and the estimated quantities of energy required for project operation are determined by the projected quantities of water to be delivered. Estimates of water needs by the Project's water contractors provide a reasonable basis for the Department to plan for project operations during the next several years. Less is known about water needs over the long-term, and many factors, such as population growth, economic activity, the cost of delivered water, future additional project conservation facilities to be selected (i.e., possible off-aqueduct storage operations), and the success of water conservation activities, will influence the long-term requirements for project water and energy.

The Department is currently involved in several studies, including the Delta Alternatives Study (see Chapter I), which will deal directly with the long-term need for water by the State Water Project. Current estimates on long-term power requirements for each project pumping plant is shown in Table 4 -- based primarily on indicators supplied by the water contractors in the fall of 1976. Figure 7 shows these estimated requirements graphically. However, these estimates are for purposes of this bulletin only and are subject to change.

Specific Program Actions. The basis of the Program is that all energy resources available to the Project, including Hyatt-Thermalito and other project generation, plus additional resources selected or developed through the Program's planning procedure, would be coordinated with electric utilities in the region. Supplemental capacity and energy (primarily off-peak energy) would be purchased as needed from the utilities, and any capacity and energy temporarily in excess of Project needs would be sold to the utilities. The Program would minimize the consumption of natural resources through coordination of project generation with regional generation (cooperation between the Department and other utilities), and by load management (coordination of project energy uses among plants) to reduce total project on-peak energy demands. Specific actions under the Program are as follows:

- Continued Use of Recovery Generation. Project recovery plants recover a part of the energy used to lift water through the California Aqueduct when the water descends to lower elevations in Southern California. Recovery generation at San Luis Pumping-Generating Plant occurs when water is released from storage in San Luis Reservoir to supplement direct diversions from the Delta to the California Aqueduct. Since project recovery generation depends on water flowing in project aqueducts, the most practical use of recovery generation is for project pumping. Recovery generation is presently used for project pumping, and the Program does not propose to modify present operations. (The estimated use of recovery generation to be supplied by the respective project recovery plants is also shown in Table 4.)

- Retention of Hyatt-Thermalito Generation. An integral part of the Program is the retention of Hyatt-Thermalito generation for project use after March 31, 1983. At present, this generation is sold under the terms of the Oroville-Thermalito Power Sale Contract. The Contract is effective for 50 years or until Oroville Revenue Bonds have been repaid (now estimated to be until 2018), whichever period is longer. However, the Contract allows the Department to cancel all or part of



San Luis Pumping-Generating Plant with San Luis Reservoir in the background.

TABLE 4: ANNUAL PROJECT ENERGY

(in millions of

Calendar Year	Energy											
	North Bay Aqueduct Pumping Plants		Delta Facilities Pumping Plant	South Bay Aqueduct Pumping Plants (b	California Aqueduct							
	Calhoun and Travis	Cordelia (a			Delta	San Luis	Dos Amigos	Buena Vista	Wheeler Ridge	Wind Gap	A. D. Edmonston (Tehachapi)	Pearblossom
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Subtotal, Actual for 15 years 1962-1976 (d	0	20	0	965	3,074	1,031	1,149	895	777	1,631	5,681	561
1977	0	2	0	118	626	199	238	292	347	748	2,499	494
1978	0	2	0	119	562	109	240	287	341	733	2,422	496
1979	0	2	0	121	634	202	245	286	338	726	2,381	490
1980	0	2	0	123	658	147	276	332	338	840	2,761	575
1981	0	2	0	125	680	182	288	342	396	857	2,817	537
1982	4	4	0	127	775	218	310	370	426	925	3,047	561
1983	4	4	0	129	791	255	308	356	404	875	2,874	547
1984	5	5	44	131	785	207	328	381	430	933	3,064	561
1985	5	5	46	133	823	221	339	383	428	930	3,045	580
9 years, 1977-1985	18	28	90	1,126	6,334	1,740	2,572	3,029	3,498	7,567	24,910	4,841
10 years, 1986-1995	104	65	571	1,479	10,674	2,563	4,378	5,140	5,757	12,587	41,237	5,962
10 years, 1996-2005	133	99	647	1,649	12,249	2,747	5,057	6,198	7,019	15,427	50,793	6,051
10 years, 2006-2015	140	122	685	1,694	13,055	3,040	5,398	6,772	7,723	17,005	56,161	6,059
10 years, 2016-2025	108	139	807	1,688	13,451	3,096	5,837	7,248	7,947	17,541	58,546	6,290
10 years, 2026-2035	80	140	880	1,680	13,550	3,130	6,070	7,460	7,970	17,610	59,160	6,470

a) During 1968 thru 1980 an interim pumping plant will pump from the federal Solano Project terminal reservoir.
b) Includes South Bay and Del Valle Pumping Plants and, during 1962 thru 1967, an interim pumping plant which pumped a supply provided by the federal Delta Mendota Canal.

REQUIREMENTS FOR PUMPING

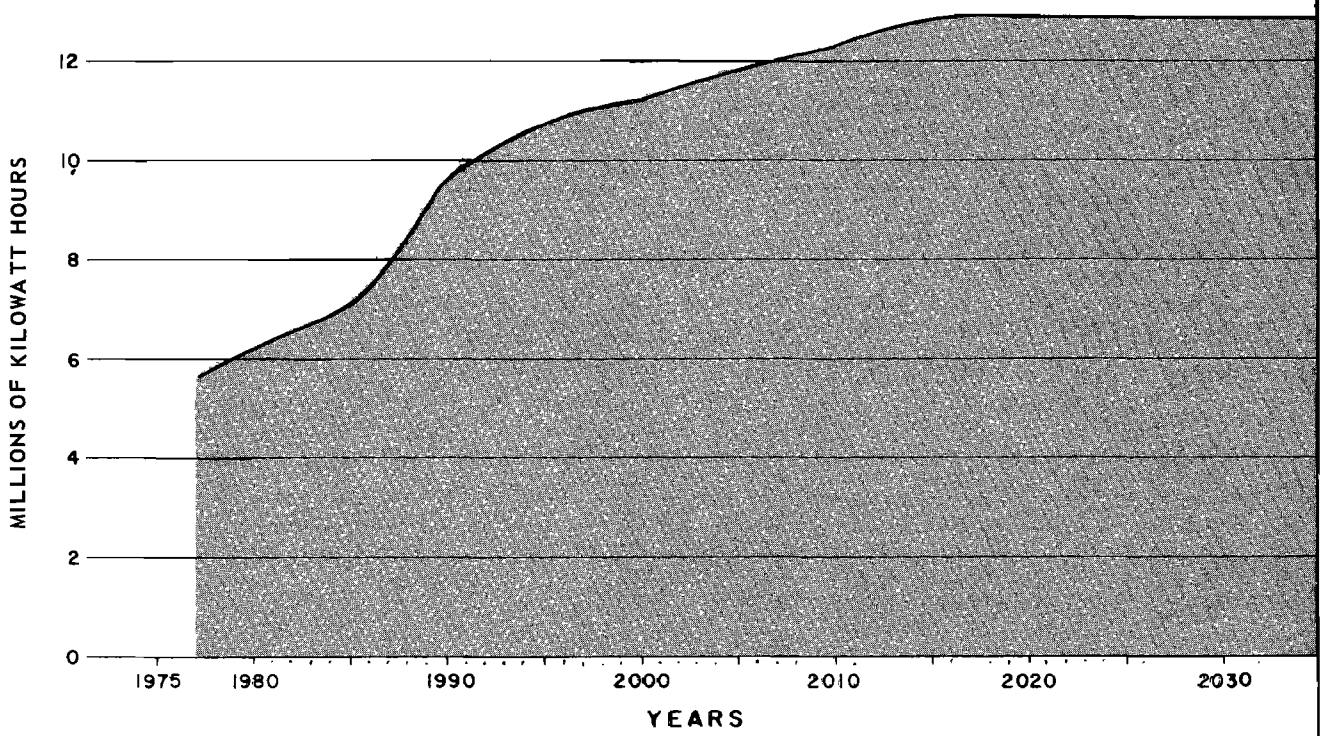
kilowatthours)

Requirements				Energy Generation							Net Energy Requirements	Calendar Year
Pumping Plants				California Aqueduct Powerplants								
Oso	Las Perillas and Badger Hill	Devil's Den Sawtooth and Polonio	Total	San Luis	Devil Canyon	Castaic (c	San Luis Obispo	Cottonwood	Pyramid	Total	Col.(16) minus Col.(23)	
(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	
462	274	0	16,520	596	857	1,311	0	0	0	2,764	13,756	15 years, 1962-1976
94	28	0	5,685	133	799	325	0	0	0	1,257	4,428	1977
82	29	0	5,433	123	824	281	0	0	0	1,228	4,194	1978
76	30	0	5,531	130	803	258	0	0	0	1,191	4,340	1979
86	32	0	6,223	123	901	305	0	0	0	1,329	4,894	1980
108	32	0	6,366	161	851	374	0	33	68	1,487	4,879	1981
123	33	0	6,923	159	888	426	0	100	257	1,830	5,093	1982
107	35	0	6,689	162	873	368	0	98	222	1,723	4,966	1983
124	35	0	7,033	172	886	429	0	101	259	1,847	5,186	1984
113	42	55	7,148	168	901	392	10	104	237	1,812	5,336	1985
916	296	55	57,020	1,331	7,726	3,158	10	436	1,043	13,704	43,316	9 years, 1977-1985
2,343	484	1,116	94,460	1,664	9,237	8,154	216	1,082	4,907	25,260	69,200	10 years, 1986-1995
3,389	551	1,649	113,658	1,729	9,364	11,741	309	1,129	7,109	31,381	82,277	10 years, 1996-2005
4,010	580	1,920	124,364	1,753	8,996	13,794	360	1,140	8,417	34,464	89,900	10 years, 2006-2015
4,357	688	1,926	129,669	1,719	9,459	14,515	390	1,145	9,536	36,764	92,905	10 years, 2016-2025
4,460	760	1,930	131,350	1,700	10,030	14,570	410	1,150	10,010	37,870	93,480	10 years, 2026-2035

c) The City of Los Angeles Department of Water and Power constructed and operates the 1,250,000-kilowatt Castaic Powerplant and will supply the Project with electric power and energy equivalent to the generation from a 213,984-kilowatt powerplant the State originally had planned to construct.

d) 1974 and thereafter -- entitlement deliveries only.

Figure 7: PROJECTED PUMPING ENERGY REQUIREMENTS



the Contract upon five years notice. Retaining Hyatt-Thermalito generation for project use, beginning April 1, 1983, coincides with the termination of the Canadian Entitlement Power contracts and with the effective date for renegotiated rates and charges under the Suppliers Contract.

The basic reason for retention of Hyatt-Thermalito generation is to provide an assured supply of energy for the Project after March 31, 1983. Both the contract for sale of Hyatt-Thermalito generation and the contracts for purchase of energy for the Project include fixed rates and charges which were based on the value of energy in 1966-67. If Hyatt-Thermalito generation were not retained for project use, the Department could find in 1983 that it is obtaining energy at 1983 prices while at the same time selling energy at 1966-67 prices. Considering inflation since 1967, the difference would be substantial. If appropriate arrangements can be made with electric utilities, the retention of Hyatt-Thermalito generation for project use would not require additional generating facilities in the region.

- Purchase Supplemental Capacity and Energy. The Department will continue discussions with the Suppliers in an effort to arrive at mutually agreeable rates, terms, and conditions to purchase supplemental capacity and energy after March 31, 1983.

  Water is currently pumped principally during off-peak hours to minimize on-peak energy use by the Project. Off-peak energy generally is available from existing generating facilities of the Suppliers.

- Select and Develop Additional Resources for the Balance of Project Energy Requirements. The balance of project energy requirements will

not be known until negotiations are complete for supplemental capacity and energy. Meanwhile, the Department is investigating all alternative sources of energy to assure a continued supply of energy for the Project at a reasonable price.

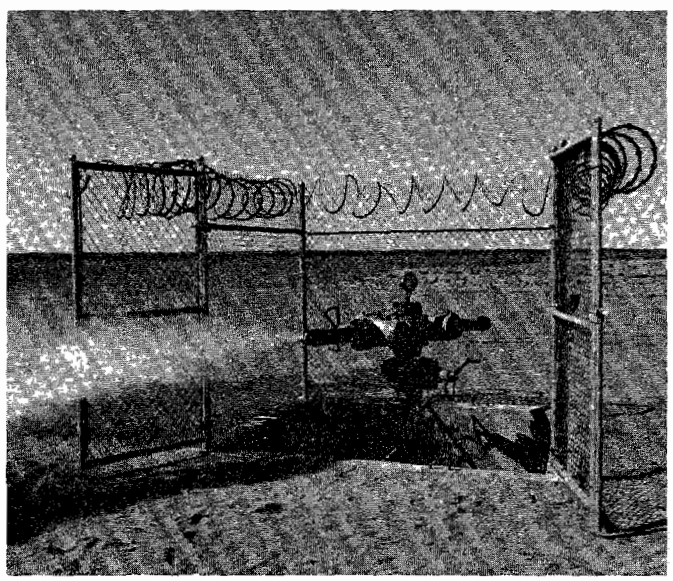
Although the specific sources of energy will not be known until evaluations are completed, certain types of energy sources are expected to be available in the 1980's. These sources are expected to include the following: (1) construction by the Department of new generating facilities; (2) participation by the Department in new generating facilities, either inside or outside of California; (3) energy purchased in the Northwest or Southwest and imported into California; and (4) energy purchased from the Suppliers or other California electric utilities.

The planning procedure for investigating alternative energy sources will be conducted concurrently with discussions with the Suppliers for purchase of supplemental capacity and energy. Lead times limit the number of specific sources of energy that could be selected before April 1, 1983 (75 months from January 1, 1977). Lead time is needed for planning, obtaining approvals, design, construction and other activities. Lead times for various energy sources as estimated by the State Energy Resources Conservation and Development Commission are:

Nuclear (Light Water)	110-144 months
Conventional Coal	86-104 months
Conventional Oil	78-108 months
Combined Cycle	80-88 months
Combustion Turbine	60-74 months
Conventional Hydro	72-96 months
Pumped-Storage Hydro	72-98 months
Geothermal Steam	60-72 months

For example, if the Department were to decide in 1977 to seek approvals for construction of a nuclear power plant, that plant could not be expected to produce energy until between 1985 and 1988, well beyond the 1983 date of initial need. Energy sources resulting from developing technology, such as solar energy, are not expected to be available in substantial quantities until after 1990.

- Sell Excess Capacity and Energy. Energy resource programs usually result in varying amounts of capacity and energy temporarily in excess of requirements. Such excess capacity and energy generally would be short-term in nature and available only until the capacity and energy are needed for the gradually increasing energy requirements. Existing supply arrangements for the Project generally do not permit the Department to sell excess capacity and energy to electric utilities. Under the Program, the Department would continue to seek flexible arrangements with electric utilities, permitting the sale or exchange of Project excess capacity and energy in the best interests of both the Project and the electric utilities in the region.



Geothermal test well capped and ready for use as a future producer of electricity.

1976 Activities Regarding Additional Energy Sources

Under the Long Range Energy Program, the following were some of the more significant of the Department's efforts during 1976 to identify, select, and develop additional energy sources to supply the balance of the Project's energy needs after March 31, 1983:

Sundesert Nuclear Project. On September 30, 1976, the Department executed a Planning and Feasibility Study Agreement with San Diego Gas and Electric Company for the Sundesert Nuclear Project. The Agreement provides that the Department is a 15-percent participant in such studies and that the Department maintains an option to become a 15-percent owner of the plant, which would be located near Blythe, California. However, the Agreement does not commit the Department to Sundesert beyond the initial studies. Should the Department decide not to participate in the project, its money would be refunded.

The planning and feasibility studies are necessary to assemble the data required to complete the EIR. Notice of Intention (NOI) Hearings before the State Energy Commission commended during 1976. The Department prepared comprehensive testimony dated November 1, 1976, and testified before the Energy Resources Conservation and Development Commission (Energy Commission) at its public hearing in San Diego on December 13, 1976, on the Project's need for Sundesert generation. The Energy Commission will prepare the EIR for the project, and public agencies cannot make a commitment to the project until such report is prepared and adopted. The NOI process is expected to be completed during 1977. This will be followed by an 18-month Site Certification process. Generation from the project cannot be expected before 1985. On the basis of present estimates, the Department's share of study costs will be approximately $3.90 million through the NOI and Site Certification processes.

San Joaquin Nuclear Project (Wasco). On November 8, 1973, the Department executed a joint Planning and Feasibility Study Agreement with the City of Los Angeles Department of Water and Power, Southern California Edison Company, San Diego Gas and Electric Company, Pacific Gas and Electric Company, and several Southern California municipalities with respect to siting of a nuclear power plant in Kern County. This initial study was completed in September 1974 and recommended a plant site about 10 miles west of Wasco, Kern County.

The San Joaquin Nuclear Project proposal was highly controversial in Kern County. However, the Kern County Water Agency continued negotiations with the City of Los Angeles Department of Water and Power to develop a letter of intent to produce a joint environmental impact report on its plan to use agricultural waste water as a source of cooling water. However, a December 20, 1976 letter from the Kern County Water Agency advised the City of Los Angeles Department of Water and Power that it would not sign the letter of intent until or unless the San Joaquin Nuclear Project obtained local acceptance. The Department has maintained an interest in the San Joaquin nuclear power plant and participates in the Coordinating Committee meetings.

Monticello Power Plant. On August 25, 1976, the U. S. Department of the Interior supported the Department's request to design, construct, and operate a power plant at the base of Monticello Dam on Putah Creek -- a part of the federal Solano Project. Water releases for downstream diversions and stream maintenance are currently made through energy-dissipator valves.

Investigations completed in 1972 by the Department indicated that a 10- to 15-megawatt plant to use this source of energy would be economically justified. Authorization by the Bureau of Reclamation for the Department's design and construction of the plant was based on the conclusion that the Department could bring the $8.5 million plant on line by late 1981 -- sooner than the Bureau

could obtain necessary authorizations and construct.

The Monticello Power Plant Program includes:

1. Contract negotiations with the Bureau and Solano Project water users.
2. Completion of preliminary designs, drawings, and cost estimates to determine specific engineering and economic feasibility.
3. Completion of necessary project environmental documentation.
4. Securing of a Federal Power Commission power plant license.

Discussions during 1977 indicated that Solano County may develop the Monticello Power Plant.

Survey of Small Hydroelectric Potential in California. Department of Water Resources Bulletin 194, "Hydroelectric Energy Potential in California" (see page 3, Bulletin 132-75) identified possible hydroelectric sites in California with an energy potential of at least 25 million kilowatthours annually.

On March 7, 1976, the Department requested more than 800 California water agencies to complete a survey form to determine if such sites existed in their areas. The purpose of this survey is to identify the remaining sites with hydroelectric potential below 25 million kWh annually that have the physical possibility for development. In most cases, the remaining small sites consist of existing dams where present pressure-reducing devices could be replaced by generators and where power facilities could be installed with minimum environmental effects.

By the end of 1976, the survey produced a 10-percent response. Of 81 water agencies responding, 57 indicated no potential sites, 20 reported 48 sites where energy is presently being wasted, three proposed new dams, and one proposed a pumped-storage facility. The sites where energy is presently being wasted include existing dams, pipelines, an open-chute, and an abandoned power plant.

Since the smaller sites will probably be the least economically attractive, an arbitrary level of 1,000 kW was selected to separate the sites for evaluation purposes. In the category of at least 1,000 kW, 12 projects with energy outputs of at least 25 million kWh per year, but not included in DWR Bulletin 194, were identified.

The potential annual energy output from facilities presently wasting energy is about 800 million kWh. The potential energy at the three proposed dam sites is 188 million kWh annually. The total potential energy supply identified by this survey is 992 million kWh per year, which is equivalent to approximately 1.7 million bbl of oil or 40 percent of the Hyatt-Thermalito average annual output. The Department is preparing a bulletin which will summarize the information acquired on small hydroelectric development.

Pine Flat Power Project. The Kings River Conservation District (KRCD) is planning to construct a power plant at the existing Pine Flat Dam. The Department has expressed interest in obtaining the output of the Pine Flat power project and has negotiated with KRCD for a Planning and Feasibility Study Agreement.

The power plant would have an installed capacity of 165,000 kW; on the long-term annual average, it would produce 367 million kWh of energy. This project would recover energy presently wasted by dissipator valves and would not affect existing water releases. KRCD would design, construct, own, and operate the project and sell the output to the Department. KRCD would perform the planning study for the plant, including the environmental documentation and obtaining the required permits and licenses. The Department would be responsible for obtaining the necessary transmission arrangements and for furnishing all transmission data required by KRCD to obtain permits, licenses, and environmental documentation.

UCLA Coal Study. On February 11, 1976, the Department entered into a contract with the University of California at Los Angeles to investigate alternative sites for a coal-fired power plant to supply energy for State Water Project pumps. The study, which was completed in March 1977, covers eight areas of concern with respect to a 1,000,000-kW coal-fired power plant:

(1) Siting
(2) Coal Supply
(3) Energy Transportation
(4) Air Quality
(5) Water Supply
(6) Environmental Effects
(7) Community Response to Energy Development
(8) Cost Analyses

The study concentrates on plant sites in the southeastern desert of California, east-central Nevada, and central Utah. The most feasible sources of coal are in Utah and New Mexico.

Geothermal Development. During 1976, the Department continued to pursue development possibilities, particularly on state lands in the Geysers area and in the Imperial Valley. However, in an opinion dated June 30, 1976, jointly requested by the Department and the State Lands Commission, the State Attorney General concluded that a State agency is not qualified to enter into any form of agreement with the Commission for the development of geothermal resources under the Geothermal Resources Act of 1967.

Metropolitan Water District Power Agreement. On January 15, 1976, the Metropolitan Water District of Southern California (MWD) advised the Department and other prospective purchasers of its plans to sell the output of proposed power plants to be constructed on its water systems. The Department submitted its proposal to MWD on June 2, 1976, including cost estimates and other relevant information, which was subsequently accepted by MWD on September 14, 1976. Negotiation of an agreement proceeded on the basis that MWD will market the output of all Phase I generating facilities to the Department commencing in 1983.

Wind Energy Project. The Department is investigating application of wind-turbine generators as a source of renewable energy for State Water Project. Two anemometer stations, which record air temperatures and wind velocity and direction, were installed in April 1976 near the Tehachapi Mountains, close to the California Aqueduct.

Wind data will be collected over a period of at least two years before the feasibility of wind energy development can be determined.

Also, wind data unrelated to energy generation are being collected and evaluated at San Luis Reservoir near Padiera Pass. However, the technical and economic feasibility of any wind energy project depends on acceptable costs for large wind turbine-generator units. Such units are being developed by the U. S. Energy Resources Development Administration (ERDA) but are not yet commercially available. No firm cost estimates are available, and reliability of the units is, at best, uncertain. Moreover, whether the public will accept an accumulation of large turbine generators on ridge tops and in other scenic areas remains to be seen.

Wet/Dry Cooling Tower Project. This project would test the feasibility of recycling cooling water in the cooling towers of thermal power plants. This method retains and recycles the significant amounts of water normally lost to evaporation during the tower cooling process.

The Department completed an initial study, prepared necessary environmental documents, and signed a negative declaration. The period for public comment passed on December 8, 1976, and the De-

partment has submitted a contract to Southern California Edison Co. to determine the concept's feasibility.

Solar Energy Proposal. On January 5, 1976, Dr. Otto J. M. Smith of the University of California at Berkeley forwarded a copy of his report, "Smith Multimodule Solar Electric Plant", to the Department for analysis. Subsequently, the Department was contacted by Wismer and Becker Contracting Engineers to determine its interest in joint preparation of a proposal to the Federal Energy Research and Development Administration (ERDA) to test the feasibility of Dr. Smith's concept.

Since the Department is interested in solar energy as one alternative electrical energy source for the State Water Project, it agreed to joint preparation of a proposal. Staff from Wismer and Becker and DWR prepared a plan for a $984,000 solar power study and forwarded it to the Energy Research and Development Administration (ERDA) on March 26, 1976. If funded, the project would study the feasibility of a multi-module solar electric plant and, if found feasible, a single mirror and a single solar receptor would be built and tested at ERDA's facility at Albuquerque, New Mexico. A full-scale power plant would consist of a field of many modules, each containing a solar receptor atop a 35-metre (115-foot) tower and 312 computer-controlled movable mirrors reflecting solar energy onto the receptor. The heat would produce steam to run a turbine connected to a generator to produce electric energy. In a letter received by the Department on October 15, 1976, however, ERDA indicated non-support for the project.

Other 1976 Activities

During 1976, special power management activities included (a) the last full year's order for firm capacity under current provisions of the Suppliers' Contract, (b) temporary modification of the Suppliers' Contract to permit a less-costly water exchange for the Dudley Ridge Water District, and (c) establishment of a special committee to assist in keeping the water contractors informed regarding project energy matters, and to facilitate new cost allocation procedures that appear necessary for post-1982 project energy supplies.

Power Order for 1982. On December 1, 1976, the Department notified the Suppliers of its desire to both purchase 375-MW of on-peak capacity and use the 150-MW Canadian Entitlement power in 1982. This request represents the Department's last full year's order for firm power capacity under current provisions of the Suppliers' Contract. The provisions require that on or before December 1 of each year the Department shall give written notice of the capacity it wishes to purchase for the following six calendar years.

Water Exchange for Dudley Ridge. "Water Contract Management" section of this chapter includes a discussion of the emergency operation that enabled the delivery of 12 950 cubic hectometres (10,500 acre-feet) during 1976 to the Dudley Ridge Water District outside of the provisions of the water supply contract. To provide this water to Dudley Ridge, MWD increased its Colorado River diversions and reduced its State Water Project deliveries by a like amount. In effect, Dudley Ridge paid all additional costs incurred by MWD for the additional Colorado River diversion, as compared with project deliveries.

A significant component of these additional costs was the cost of pumping energy. About one-third less pumping energy is required to pump MWD's Colorado River supply as compared with MWD's project water entitlements. However, under its power purchase arrangements, MWD would have been required to pay the Southern California Edison Company an amount equal to about $46 per acre-foot of Colorado River supply. This compares with about $10 per acre-foot for energy payments under the Suppliers' Contract to pump project deliveries to MWD.

Because of ths potential adverse effect on permanent crops within Dudley Ridge, the Suppliers (excluding the City of Los Angeles Department of Water and Power) by letter agreement dated September 17, 1976, designated Julian Hinds Substation as a temporary power delivery point under the Suppliers' Contract. The agreement enabled the use of lower-cost energy for the additional Colorado River diversion. (The exchange also permitted a reduction of net energy use under the Suppliers' Contract.)

Establishment of Energy Committee. At the January 1976 meeting of the Water Service Contractors Council, the Director established a special committee, chaired by the Chief of the Energy Division and comprised of representatives from each of the water service contractors (see Water Service Contractors Council Memo No. 1021, dated January 27, 1976).

The Energy Committee is to provide a forum for discussion of project energy matters and to address problems relating to State Water Project power costs and other energy pricing problems as reflected in water charges paid by the contractors.

During 1976, the committee met four times. One problem considered was whether the contractors desired the Department to gradually phase in the anticipated five-fold increase in project power costs and a 50-percent escalation in entitlement water charges, which could occur when current power purchase rates expire on March 31, 1983.

The Director suggested a number of alternatives to alleviate this impact, including a gradual escalation of the expected costs over a number of years. However, an amendment of the water contracts would be required in order for the Department to increase charges in advance of project power costs. At the June 29, 1976 meeting of the Energy Committee (see Water Service Contractor's Memo No. 1059, dated July 14, 1976) none of the representatives present desired the Department to initiate a projectwide adjustment of project power charges. Instead, the representatives indicated that their agencies prefer either to smooth out the increase internally within their own fiscal operations or to pass along the increase directly to their users.

The Department will continue to keep the contractors fully informed of the expected timing and magnitude of project power cost increases. The Department feels the contractor's response was short sighted and therefore will expect the contractors to be prepared to assume their respective shares of the increases when incurred by the Project.

PROJECT OPERATIONS

Project Operations in 1976

Water Conditions

The 1975-76 water year (October 1, 1975 through September 30, 1976) was the third driest year of this century in California. The weather scene was dominated by a persistent high-pressure ridge in the atmosphere off the California coast. The high pressure displaced the storm track northward of its usual winter path over California, leaving most of the State deficient in precipitation, runoff, and reservoir storage.

The state-wide average runoff for the 1975-76 water year was about 50 percent of normal. Runoff in the Feather River area was 43 percent of normal.

Details of water supply conditions during the 1975-76 water year are available in

Department of Water Resources Bulletin No. 202-76, "Water Conditions and Flood Events in California".

Water Deliveries

During 1976, water deliveries from State Water Project facilities totaled 2 551 283 822 cubic metres (2,068,329 acre-feet). This is an 8 percent increase over deliveries made in 1975. These deliveries include entitlement and surplus water, regulated delivery of locally supplied water, repayment of preconsolidation water, and conveyance of federal water. The types of deliveries are itemized in Table 3. The year 1976 was the first year that more than two million acre-feet of water was delivered from Project facilities.

Water deliveries to United States Bureau of Reclamation customers from the joint facilities exceeded one million acre-feet for the third time in project history. The Bureau's 1976 water deliveries were 1 649 434 967 cubic metres (1,337,209 acre-feet), down 2 percent from 1975 deliveries. This amount does not include 108 918 050 cubic metres (88,300 acre-feet) wheeled through Project facilities for delivery to Kern County Water Agency's Cross Valley Canal.

Other Activities

Table 5 shows summary data on the quality of water delivered during 1976 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 8 presents a pictorial summary of project water operations during 1976. Also shown on Figure 8 is the areal extent of each 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 1976 are summarized in Table 6.

STATE WATER PROJECT BENEFITS THROUGH 1976

The quantitative benefits of project operations through 1976 are summarized in the tabulation below:

Year	Water Delivered (acre-feet)[a]						Recreation Supported (Recreation days)[b]	Electrical Energy Generated (Megawatt-hours)
	Entitlement Water			Other Deliveries		Total Delivery		
	Municipal and Industrial Use	Agricultural Use	Total	Surplus	Local, Wheeled CVP, and Pre-Consolidation Repayment Water			
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	293,896	400,564	694,460	296,416	42,511	1,033,387	2,502,000	3,298,000
1974	418,519	455,556	874,075	417,676	46,224	1,337,975	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
TOTAL[c]	2,573,625	3,171,303	5,744,928	2,964,042	689,078	9,398,048	25,256,800	24,405,000

a) Metric conversion is acre-feet times 1233.5 equals cubic metres.
b) A recreation day is the visit of one person to a recreation area for any part of one day.
c) In addition, dams of the State Water Project have prevented millions of dollars worth of flood damage.

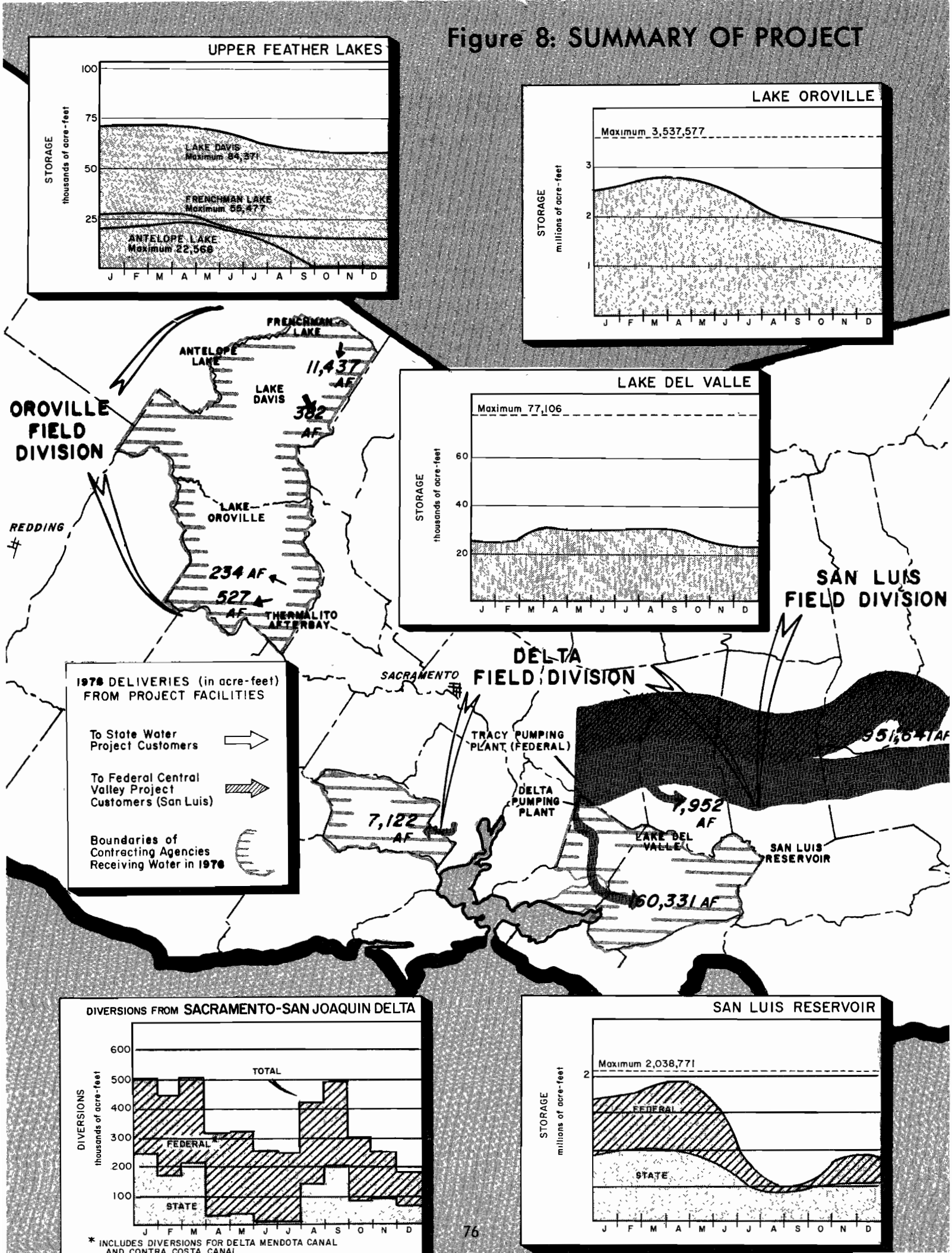
TABLE 5: WATER QUALITY MEASUREMENTS AT SELECTED STATIONS

Station	Monthly Samples	Concentrations (in parts per million unless otherwise noted) Total Dissolved Solids	Total Hardness	Chlorides	Sulfates	Sodium (%) (a	Boron
Thermalito Afterbay, Outlet to Feather River	Minimum	40	34	0.0	0.3	17	0.0
	Average	65	38	1.3	3.1	19	0.0
	Maximum	100	44	2.2	6.9	20	0.1
Sacramento-San Joaquin Delta, Delta Pumping Plant	Minimum	154	71	29	22	43	0.1
	Average	233	88	60	29	51	0.2
	Maximum	352	120	110	40	59	0.3
South Bay Aqueduct, Santa Clara Terminal Facility	Minimum	165	76	30	26	35	0.1
	Average	237	97	60	32	46	0.2
	Maximum	344	144	107	41	59	0.2
California Aqueduct: Entrance to O'Neill Forebay	Minimum	147	69	28	20	43	0.1
	Average	225	87	58	29	51	0.1
	Maximum	347	118	108	39	59	0.2
Outlet from O'Neill Forebay	Minimum	162	75	34	22	44	0.1
	Average	251	103	61	37	50	0.2
	Maximum	358	135	94	44	55	0.2
Near Kettleman City	Minimum	168	77	37	20	46	0.1
	Average	257	103	63	38	51	0.2
	Maximum	381	142	105	52	55	0.2
Coastal Branch near Devil's Den	Minimum	159	74	35	19	44	0.1
	Average	237	97	59	34	50	0.2
	Maximum	342	132	95	43	55	0.2
Near Buena Vista Pumping Plant	Minimum	166	76	33	22	44	0.1
	Average	241	97	59	35	50	0.2
	Maximum	372	139	104	46	55	0.3
At Tehachapi Afterbay	Minimum	145	71	29	23	24	0.1
	Average	214	93	52	34	46	0.2
	Maximum	351	134	100	44	55	0.2
At Pearblossom Pumping Plant	Minimum	178	79	32	29	40	0.1
	Average	253	102	62	36	48	0.2
	Maximum	399	130	105	48	55	0.2
Silverwood Lake, Outlet to San Bernardino Tunnel	Minimum	112	77	32	26	41	0.1
	Average	196	95	47	32	45	0.2
	Maximum	280	105	62	37	49	0.02
Lake Perris, Outlet from Santa Ana Pipeline	Minimum	229	124	62	43	45	0.1
	Average	277	131	67	45	46	0.2
	Maximum	336	137	71	48	49	0.3
Pyramid Lake, Entrance to Angeles Tunnel	Minimum	194	93	37	33	41	0.1
	Average	243	106	52	40	45	0.2
	Maximum	299	114	61	44	48	0.3
Castaic Lake, Outlet Tower	Minimum	224	125	42	55	37	0.1
	Average	256	129	45	59	39	0.2
	Maximum	311	135	48	62	40	0.2
Monthly Average Quality Objectives		440	180	110	110	50	0.6

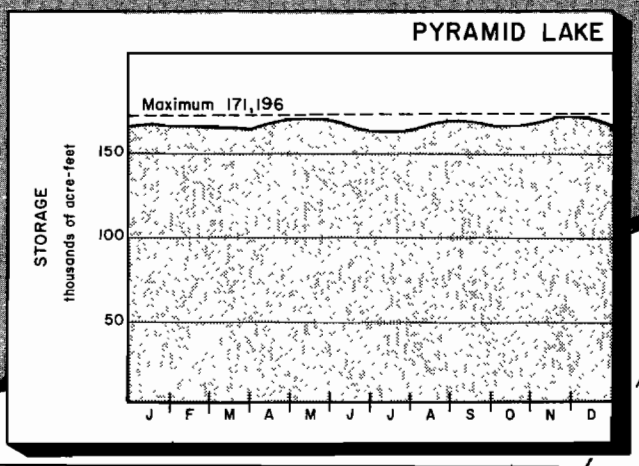
a) *Amount of sodium in solution expressed as a percentage of the total sodium, calcium, magnesium and potassium in solution.*

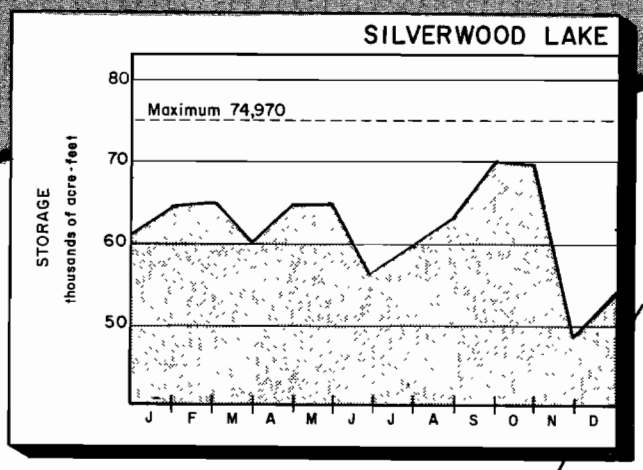
Lake Oroville, October 1976- extreemly low water levels resulting from the current drought in California.

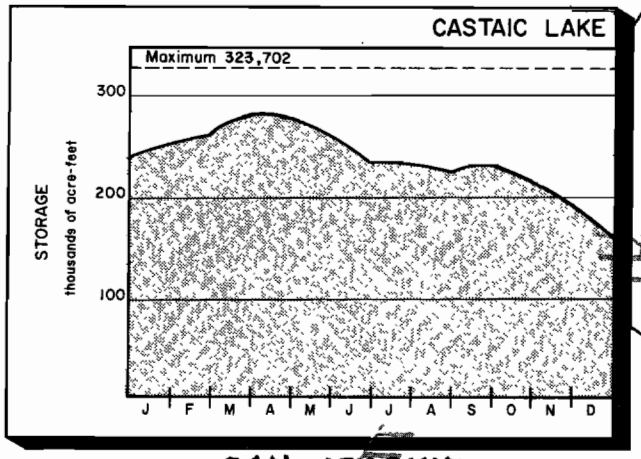
Figure 8: SUMMARY OF PROJECT

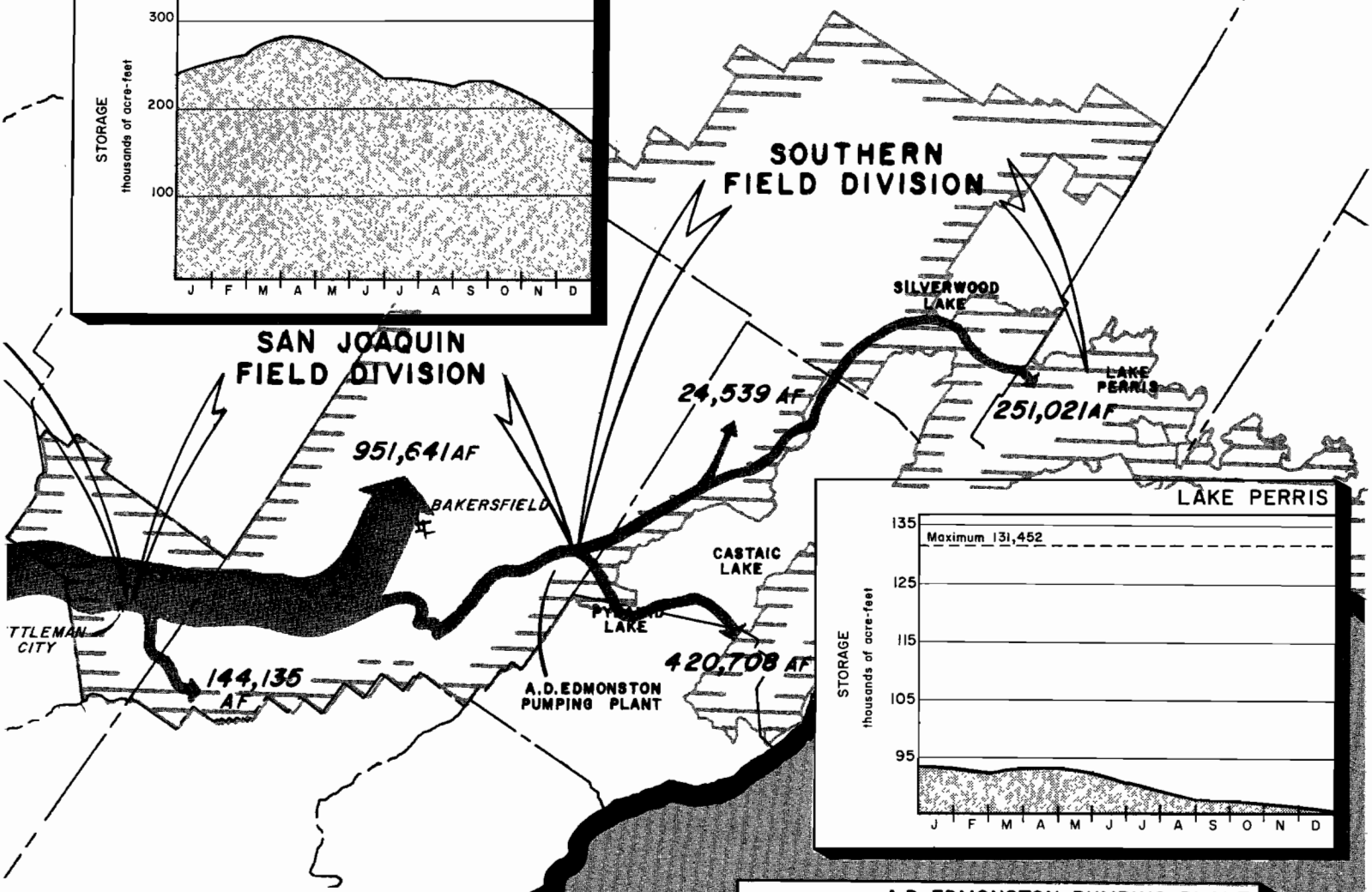


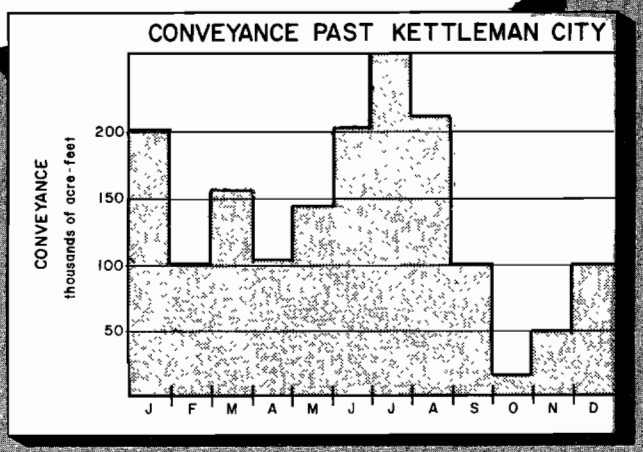
WATER OPERATIONS, 1976











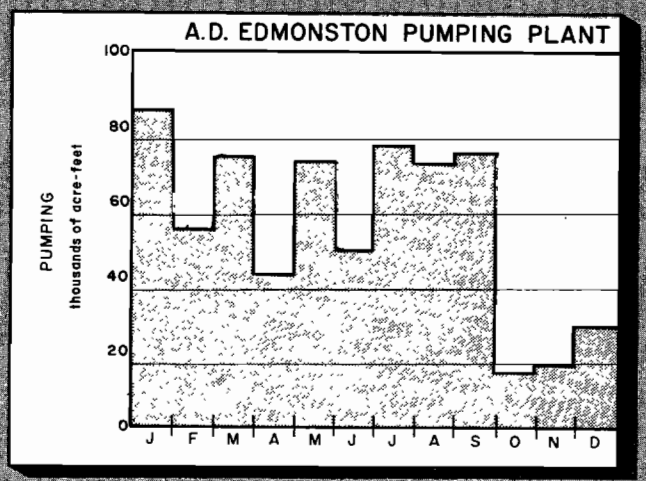


TABLE 6: MONTHLY POWER

(in millions of

Operations	Month						
	January	February	March	April	May	June	July
ENERGY GENERATED BY EDWARD HYATT (OROVILLE) AND THERMALITO POWERPLANTS[a]							
Gross Generation	63.25	89.25	86.42	157.90	159.82	167.16	198.19
Powerplant Use and Pumpback Requirements	.80	.64	.69	.46	22.70	7.68	.45
Delivered to California Power Pool Companies	62.45	88.61	85.73	157.44	137.12	159.48	197.74
ENERGY USED BY PROJECT PUMPING PLANTS							
Cordelia (Interim)	.37	.36	.40	.26	.25	.25	.13
South Bay	9.14	12.02	16.24	12.84	14.16	14.29	15.55
Del Valle	.02	.15	.37	.04	.01	.01	.02
Tracy (State Share)	0	0	0	0	0	0	29.30
Delta	76.22	53.28	69.06	8.33	11.61	5.47	6.16
San Luis (State Share)	9.63	13.78	25.12	0	0	0	0
Dos Amigos (State Share)	27.19	16.67	22.68	14.65	18.49	25.43	37.21
Las Perillas	.93	.73	.91	.68	1.22	1.64	1.98
Badger Hill	2.54	1.99	2.51	1.85	3.35	4.52	5.42
Buena Vista	24.25	17.97	24.15	13.16	15.60	20.58	28.61
Wheeler Ridge	24.65	16.20	21.97	12.98	13.31	16.21	24.17
Wind Gap	54.38	35.08	46.92	26.45	26.19	32.49	50.23
A. D. Edmonston	192.37	121.21	164.14	90.82	87.43	107.82	169.11
Oso (W st Branch)	14.58	9.64	12.20	9.62	6.54	3.46	11.62
Pearblossom	21.19	12.78	19.13	1.38	7.09	21.56	18.93
Devil Canyon S. S.	0	.02	0	.06	.06	0	0
Julian Hinds[b]	0	0	0	0	0	0	0
Total	457.46	311.88	425.80	193.12	205.31	253.73	398.44
SOURCES OF ENERGY FOR PROJECT							
San Luis Pumping-Generating Plant (State Share)	0	0	5.53	25.10	34.13	44.62	38.54
Castaic Generating Plant (State Share)	52.08	32.59	47.16	32.59	18.29	12.79	41.02
Devil Canyon Generating Plant	32.71	19.14	38.71	0	8.23	45.95	29.20
Canadian Entitlement Power	5.84	5.47	5.84	5.46	5.66	5.47	5.66
Bonneville Power Administration	0	0	0	0	0	0	0
California "Suppliers"	366.83	254.68	328.56	130.34	138.62	144.90	284.02
Total	457.46	311.88	425.80	193.49	204.93	253.73	398.44

a) Sold under terms of the Oroville-Thermalito Power Sale Contract, November 29, 1967.
b) Energy for water exchange between MWD and Dudley Ridge Water District.

OPERATIONS IN 1976

kilowatthours)

Month						Operations
August	September	October	November	December	Total	
						ENERGY GENERATED BY EDWARD HYATT (OROVILLE) AND THERMALITO POWERPLANTS[a]
126.14	102.01	71.09	64.45	52.91	1,338.59	Gross Generation
.54	.67	.99	12.21	5.52	53.35	Powerplant Use and Pumpback Requirements
125.60	101.34	70.10	52.24	47.39	1,285.24	Delivered to California Power Pool Companies
						ENERGY USED BY PROJECT PUMPING PLANTS
.17	.26	.38	.40	.47	3.70	Cordelia (Interim)
13.55	13.17	7.77	6.84	7.32	142.89	South Bay
.02	.02	.12	.06	.01	.85	Del Valle
12.45	0	0	0	0	41.75	Tracy (State Share)
39.76	63.52	25.57	28.61	21.01	408.60	Delta
2.74	21.83	14.11	7.16	.01	94.38	San Luis (State Share)
28.80	14.12	3.53	8.10	16.13	233.00	Dos Amigos (State Share)
1.47	.44	.12	.22	.72	11.06	Las Perillas
4.11	1.20	.24	.58	1.95	30.26	Badger Hill
25.18	19.94	4.99	5.17	10.07	209.67	Buena Vista
22.92	21.63	4.85	4.86	8.93	192.68	Wheeler Ridge
48.80	47.98	10.11	10.48	17.15	406.26	Wind Gap
163.92	167.45	35.43	36.16	59.63	1,395.49	A. D. Edmonston
9.71	11.88	2.90	3.41	2.00	97.56	Oso (West Branch)
21.75	19.25	4.59	.59	13.24	161.48	Pearblossom
0	.01	0	0	0	.15	Devil Canyon S. S.
0	0	0	14.72	7.14	21.86	Julian Hinds[b]
395.35	402.70	114.71	127.36	165.78	3,451.64	Total
						SOURCE OF ENERGY FOR PROJECT
14.14	0	0	0	13.70	175.76	San Luis Pumping-Generating Plant (State Share)
32.87	42.62	7.49	9.80	5.64	334.94	Castiac Generating Plant (State Share)
31.61	24.20	21.97	14.70	15.12	281.54	Devil Canyon Generating Plant
5.65	5.47	5.66	5.46	5.66	67.30	Canadian Entitlement Power
0	0	0	0	0	0	Bonneville Power Administration
311.08	330.41	79.59	97.40	125.67	2,592.10	California "Suppliers"
395.35	402.70	114.71	127.36	165.79	3,451.64	Total

Bikeway alongside the California Aqueduct-vicinity of Quail Lake.

Recreation and Fish and Wildlife Activities

About 4.2 million people used the State Water Project for recreation during 1976. This is the same number reported for 1975. The recreation total includes people engaged in camping, boating, swimming, fishing (lake or aqueduct), bicycling, and other recreation activities at facilities provided by the Project.

Approximately 1.3 million visitor days of use occurred at project visitor centers. This is a 13-percent decrease in use from the 1.5 million people visiting the facilities in 1975. Visitors include people entering or stopping near visitor centers and overlooks, and those participating in guided tours of project facilities. Construction of the new visitor center at Castaic Dam was completed the end of 1975, and it was opened to the public in 1976.

About 18,500 cyclists used the California Aqueduct Bikeway in 1976; 900 along the Aqueduct from Bethany Reservoir to O'Neill Forebay, and 17,600 in the Antelope Valley area. This total represents a 76 percent increase from the 10,500 cyclists reported for 1975. The total length of Bikeway in operation is approximately 262 kilometres (163 miles). This includes 21 kilometres (13 miles) added in 1976 to the Southern California bikeway.

Facilities of the State Water Project received about the same recreation use in 1976 as in 1975. However, dry-year conditions did adversely affect the quality of many recreation activities. The primary cause was the shortage of water in storage. If 1977 is another dry year, both quality and quantity of recreation will probably decrease significantly at some facilities. Recreation use in 1976 and 1975 at State Water Project Facilities is shown in the following tabulation.

Additional details on recreation and fish and wildlife activities within each field division are presented in the following paragraphs:

Oroville Field Division

Fishing success at Antelope Lake has been declining for several years. In the fall of 1976 the lake was drawn down to 493 400 cubic metres (400 acre-feet) and chemically treated to control

Facility	Recreati n Use in Recreation Days		Facility	Recreati n Us in Recreation Days	
	1976	1975		1976	1975
Oroville Field Division			**San Luis Field Division (Cont'd)**		
Frenchman Lake	146,600	148,000	California Aqueduct		
Antelope Lake	80,200	100,000	Walk-in fishing	5,000	7,100
Lake Davis	252,000	271,000	**TOTAL**	**382,400**	**449,200**
Lake Oroville Complex	462,800	539,000			
TOTAL	**941,600**	**1,058,000**	**San Joaquin Field Division**		
			Lost Hills F.A.S.	1,100	6,000
Delta Field Division			Buttonwillow F.A.S.	1,000	13,700
Lake Del Valle	228,900	117,400	Cadet Road F.A.S.	400	4,900
Clifton Court Forebay	10,900	2,300	Kettleman City F.A.S.	700	2,100
Cottonwood Road F.A.S.	700	1,300	California Aqueduct		
Niels Hansen F.A.S.	700	1,200	Walk-in fishing	24,000	2,000
Orestimba F.A.S.	900	400	**TOTAL**	**27,200**	**28,700**
California Aqueduct					
Walk-in fishing	18,600	16,800	**Southern Field Division**		
California Aqueduct			Castaic Lake	963,700	1,013,200
Bikeway	900	1,100	Silverwood Lake	412,400	426,000
TOTAL	**261,600**	**140,500**	Pyramid Lake	330,100	276,200
			Lake Perris	879,800	788,100
San Luis Field Division			77th Street, East F.A.S.	7,855	--
San Luis Reservoir,			Longview Road F.A.S.	2,362	--
O'Neill Forebay, and			California Aqueduct		
Los Banos Reservoir	373,400	435,900	Walk-in fishing	13,027	--
Canyon Road F.A.S.	500	700	California Aqueduct		
Mervel Avenue, F.A.S.	300	1,000	Bikeway	17,600	9,400
Fairfax F.A.S.	700	1,100	**TOTAL**	**2,626,844**	**2,512,900**
Three Rocks F.A.S.	800	800			
Huron F.A.S.	600	1,200			
Avenal Cutoff F.A.S.	1,100	1,400	**GRAND TOTAL, SWP**	**4,239,644**	**4,189,300**

A good day to be fishing on Pyramid Lake.

undesirable species of fish. Consequently no trout were planted at Antelope Lake in 1976 and the lake will be replanted in 1977.

The Department of Fish and Game planted Lake Davis with 17,680 Eagle Lake trout (catchable), 556,098 rainbow trout (fingerlings), 13,120 cutthroat-rainbow hybrids (fingerlings).

Frenchman Lake was chemically treated in October 1975 for the removal of rough fish, In 1976 the lake was planted with 98,500 rainbow trout (catchable) and 96,594 rainbow trout (fingerlings).

Lake Oroville was planted with 2,013 rainbow trout (catchable), 12,000 brown trout (catchable), 37,938 Eagle Lake trout (catchable), 70,263 silver salmon (subcatchable), 230,000 Kokanee salmon (fingerlings), and 48,280 king salmon (sub-catchable). The Feather River was planted with 419,760 steelhead (fingerlings), 244,375 steelhead (yearlings), 3,759,300 king salmon (fingerlings), and 1,057,460 king salmon (yearlings) produced at the Feather River Fish Hatchery.

At Lake Oroville, construction was started on a 150-person group campground at Loafer Creek. When completed, it will provide food preparation units, fire rings, comfort stations, and employee trailer quarters. In Bidwell Canyon, work began on restoration of the historic bridge and toll house. The Craig Saddle access road improvements were completed in December 1976.

Work was started on several new boating facilities at Oroville. Construction of 70 boat-in campsites with chemical toilets began at four locations on the lake. Existing boat ramps at Lime Saddle and Loafer Creek are being extended to normal low pool. Work also began on the expansion of the boat ramps from two to three lanes at the north end of Thermalito Forebay. In addition, construction of a new comfort station with landscaping was started at the Spillway Marina boat ramp.

At the Oroville Wildlife Area, public use facilities were maintained and improved with the addition of chemical toilets and additional garbage barrels. Construction of the headquarters building and a well were completed. Twenty-one small ponds and potholes were completed and work began on deepening and enlarging of ponds and potholes due to drought conditions.

Fishing and hunting access was maintained at the Thermalito AfterBay. Estimated use by waterfowl hunters totalled 1,409 user days. Waterfowl depredation control measures were conducted prior to waterfowl hunting season by herding large concentrations of birds from the water with boats and pyrotechnic devices.

Delta Field Division

Public hunting for waterfowl was conducted at Clifton Court Forebay from October 23, 1976 through January 23, 1977. A total of 828 hunters were issued permits. They took 1,295 birds for an average of 1.6 birds per hunter. The Forebay is best suited for scull boating. Hunters using the banks or hunting from conventional boats were least successful.

During 1976 about 5.2 million fish were salvaged at the Delta Fish Protection Facility. This was the second lowest figure recorded since operations began, primarily due to restricted pumping throughout the year. Six species accounted for 97 percent of the total number collected: threadfin shad - 38 percent; striped bass - 32 percent; delta smelt - 13 percent; American shad - 7 percent; prickly sculpin - 5 percent; white catfish - 2 percent. A surge in angler use at Clifton Court Forebay occurred during the last three months of 1976. During November, a high of 3,902 fishermen were observed on Clifton Court Forebay. A total of 10,438 fishermen were observed throughout the year for an average of 870 fishermen per month.

In 1976 the fish and game responsibility at the Delta Fish Protection Facility

was transferred from Department of Fish and Game Region 2 to the Bay-Delta Fishery Project. The Department of Water Resources is currently preparing an environmental impact report for expansion of the facilities. Work on several other projects at the facility, including center wall additions and behavorial studies, is being held in abeyance until the environmental impact report is completed.

San Luis Field Division

Beginning in November 1976 the second phase of the creel census began at San Luis Reservoir and O'Neill Forebay. The number of days devoted to creel censusing was reduced, and the emphasis was placed on collecting background biological and physical information. A Lake Merwin trap has been placed in O'Neill Forebay, and striped bass caught by the trap are tagged and released in both reservoirs. Tagging will provide information on growth rates of the fish as well as information on their movements. Sampling sites are currently being selected to establish an index-of-abundance for the young-of-the-year striped bass. This index can be compared from year to year to determine how various operating procedures of the system affect the abundance of young striped bass.

At San Luis Reservoir, about 123,600 angler days were spent to harvest 170,420 striped bass and 9,250 fish of other species. At O'Neill Forebay about 172,770 angler days were spent to harvest 139,065 striped bass, 132,960 white catfish, and 2,500 fish of other species (mostly channel catfish, sculpin and largemouth bass).

In October 1976, construction of new facilities at Basalt Campground began. This development will include 79 campsites, comfort stations, play areas, landscaping, a trailer sanitation station, and other required utilities.

No additional development work was accomplished along the California Aqueduct Wildlife Habitat Area in 1976. Maintenance work consisted of hand hoeing, piling, and burning Russian thistle and Bassia from around established plants. Approximately 97 hectares (240 acres) of Russian thistle, Bassia and Atriplex encroaching on the Aqueduct right of way were disked. The work area was between Fairfax Avenue in Fresno County on the north to Highway 198 in the south.

California Aqueduct Fishery

Aerial use counts of fishermen along the California Aqueduct from Bethany Reservoir to A. D. Edmonston (Tehachapi) Pumping Plant are made once a month on weekends when weather and airplane schedules permit. A total of nine use counts were made in 1976. Assuming that angler use on weekends is similar and the five weekdays' use is equal to the corresponding weekends' use, an estimated 32,900 anglers used the California Aqueduct from Bethany Reservoir to A. D. Edmonston (Tehachapi) Pumping Plant in 1976. About 21 percent of the angler use took place at developed angler access sites. The total Aqueduct angler use showed a 17.5-percent increase over 1975.

Angler surveys were conducted periodically throughout the year. A total of 917 angler hours accounted for a total catch of 362 fish for an average of 0.4 fish per angler hour. The catch was almost exclusively striped bass ranging up to 533 millimetres (21 inches), along with a few catfish and nongame species noted. Angler success was very low during winter and midsummer months with the maximum of 0.5 fish per angler hour occurring in September.

In late June 1976 the Department dewatered Pool 9 of the California Aqueduct. On July 9 the combined efforts of the Department of Water Resources, the Department of Fish and Game, and members of the Fresno County Sportsmen Club resulted in the removal of an estimated 907 kilograms (2,000 pounds) of fish from the dewatered section. Fish removed from the dewatered section were immediately released in a downstream watered section of the Aqueduct.

Southern Field Division

Silverwood Lake was planted with 226,130 trout. Results of a creel census conducted at Silverwood in the spring of 1976 show that small large mouth bass, generally 254 millimetres (10 inches) or less in length, continue to dominate the warmwater game fish catch. Some striped bass are beginning to occur in the catch at Silverwood.

At Silverwood Lake construction of facilities was completed at three onshore sites: Miller Canyon group day-use area, West Fork group camping area, and Mesa family camping area. Miller Canyon was opened for selected groups on a trial basis in 1976, and all three sites will be opened for public use in 1977. Also, an 8.9-kilometre (5.5-mile) paved trail system for bicyclists and hikers was completed. This trail system includes a rest area and lake overlook.

Lake Perris was planted with 158,450 trout, 6,375 channel catfish (subyearlings), and 15,000 channel catfish (yearlings). Sampling during the summer and fall of 1976 indicated that the Alabama spotted bass were successful in spawning during the spring in Lake Perris. Good numbers of young-of-the-year fish were observed. Young-of-the-year Florida blugill were also collected during routine sampling, verifying that some reproduction occurred for these fish during the spring of 1976. Two groups of channel catfish were tagged with $5.00 reward tags and released in the reservoir. One hundred and twenty fish were tagged in March of 1976 and another one hundred and twenty in November 1976. As of the end of the year approximately 17 percent of the March plant had been caught as indicated from tag returns.

Onshore facilities completed at Lake Perris were an administrative center and a group picnic area. Construction continued on two new entrance stations, recreation vehicle and tent campgrounds, individual picnic areas, and a water treatment plant. New boating construction involved the expansion and landscaping of a parking area to accommodate 75 cars and boat trailers.

The third year of hunting activity at Lake Perris was completed on a successful note. Although hunter take continues to be relatively low, the area continues to provide upland and waterfowl hunting opportunities for the unattached hunter within a reasonable distance from the Los Angeles area.

Pyramid Lake was planted with 120,675 trout and 10,000 channel catfish (yearlings). Pyramid Lake continued to supply good angling with planted rainbow trout and channel catfish during 1976. Large mouth bass were also frequently taken by anglers. Striped bass weighing up to 11.3 kilograms (25 pounds) were taken from Pyramid Lake in 1976.

Castaic Lake and Lagoon were planted with 202,710 trout and 18,050 channel catfish (yearlings). Creel censuses were continued during the spring of 1976 to evaluate angler catch and to determine angler opinion concerning the newly imposed 305-millimetre (12-inch) size limit on large mouth bass. Angler catch continued at a steady rate for warmwater game fish even with the advent of the 305-millimetre (12-inch) size limit, and most anglers contacted did not voice an adverse opinion about the limit. Tags continue to return from the channel catfish which were tagged with $5.00 reward tags in 1975. To date, 45 percent of the group released in March of 1975 have been caught, and 18 percent of the group in November of 1975 have been caught.

At Castaic Lake additional onshore facilities were constructed in the lagoon day-use area. These included installation of concession buildings and parking areas. Expansion of boating facilities at Castaic Ridge was started. This will involve widening the existing boat ramp from four to six lanes and construction will be completed in 1977.

The California Aqueduct in Southern California was planted with 20,200 channel catfish (subyearlings).

During 1976, the Department of Fish and Game completed the third year, and began the fourth year, of a five-year wildlife enhancement project in the Mojave Division along the California Aqueduct. This program consists of planting trees and shrubs of known value as food or cover for wildlife. When completed, the program will provide almost 809 hectares (2,000 acres) of habitat for wildlife in the Antelope Valley.

In 1976, the Department of Water Resources and Fish and Game continued negotiations to arrive at a solution to the wildlife mitigation problems of the State Water Project in Southern California. Land acquisition negotiations between the United States Forest Service and the Department of Water Resources are continuing and an agreement on a final mitigation program for impacted federal lands is expected in the near future.

Comparison of Actual and Estimated Use. The Department of Water Resources is directed by law to do planning for recreation facilities at State Water Project developments. The Davis-Dolwig Act (Water Code Sections 11900 through 11925) assigns to the Department the responsibility for initial planning for recreation and fish and wildlife at State Water Project Facilities, and the acquisition of land for these purposes.

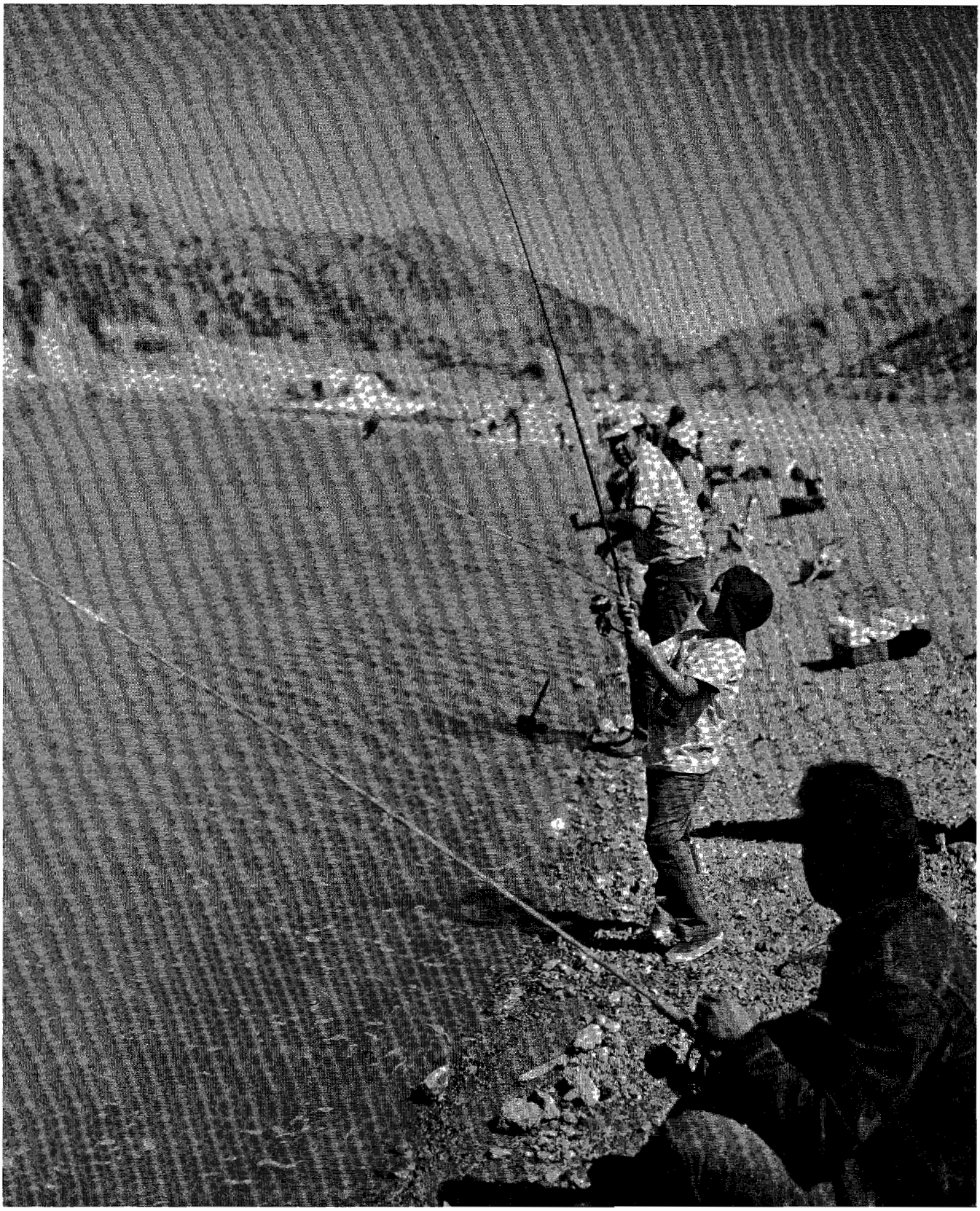
Part of initial planning for recreation requires an estimation of future use at each facility. These projections are difficult to make because of uncertainties that are always involved in predicting the actions and preferences of people. Generally, the actual use at State Water Projects has not reached the estimated use. There are a number of reasons for this with two major reasons being: (1) planned recreation developments have often been delayed; and (2) the scope of the developments have often been reduced from what was initially planned. The following table gives comparisons of estimated and actual recreation uses for several major State Water Project reservoirs.

COMPARISON OF ACTUAL AND ESTIMATED RECREATION USE
AT MAJOR STATE WATER PROJECT RESERVOIRS

(Measured in Recreation Days)1/

Project Reservoir	1968	1970	1972	1973	1974	1975	1976	1977	1979	1980
Lake Oroville	288,000 (754,000)						463,000	(1,281,000)		
San Luis Reservoir & O'Neill Forebay		251,000 (537,000)					348,000			(863,000)
Pyramid Lake					119,000 (144,000)	276,000	330,000		(240,000)	
Castaic Lake			232,000 (500,000)	358,000 (1,000,000)	1,056,000 (1,400,000)	1,013,000 (1,800,000)	964,000			(2,000,000)
Silverwood Lake			216,000	377,000	426,000	426,000	412,000			(2,250,000 2/)
Lake Perris					713,000 (650,000)	788,000 (1,440,000)	880,000			(2,995,000)

1/ Actual days of use are shown with original estimates from Bulletin 117 series in parentheses. A recreation day consists of use of the recreation area by one person for any part of a day.
2/ Estimated use when facilities are fully developed.



Action at Pyramid Lake

FUTURE CONSTRUCTION AND OPERATING COSTS

As of December 31, 1976, over $2.3 billion had been expended by the Department for constructing the facilities of the State Water Project. These expenditures include costs of planning, design, relocations, land acquisition, and operations during the construction of each facility.

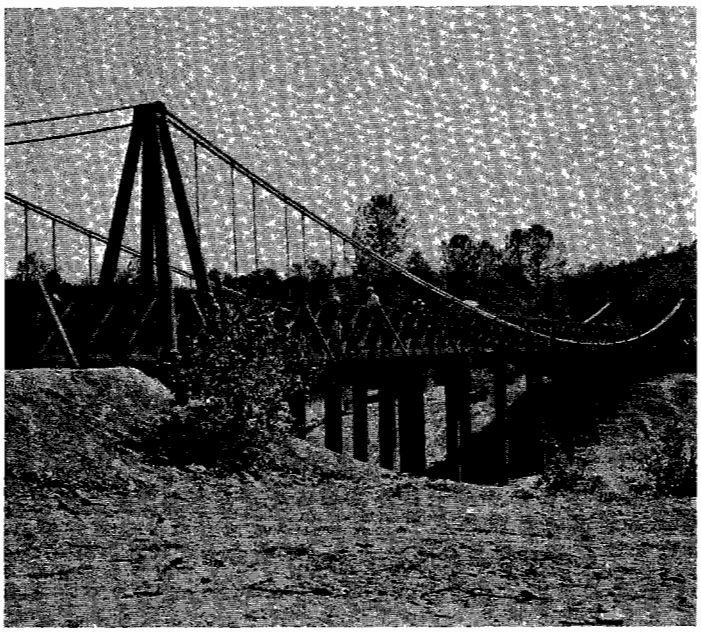
Continuing construction will be required to satisfy future demands. This construction will consist of both water transportation and conservation facilities. Construction of the additional transportation facilities and the Delta facilities is assumed to add over $1.1 billion to the cost of the Project. The additional conservation facilities (which have not been selected) are currently under review within the Department, and these future costs have not been included in this bulletin. Also, construction cost estimates do not include future sources of pumping power which may be financed by the Department and which are now being studied (see Power Contracts Management section). Under current expectations, such construction obligations in excess of other available funds would be financed by the sale of revenue bonds.

Excluded from the above estimate are the costs of project-associated works which, although essential for realizing full project benefits, are financed and constructed by local and state public agencies other than the Department. Such associated works include:

- Distribution systems required to convey water from project aqueducts to users, financed and constructed by water contractors and their member units. The costs of such works are estimated to total $2.9 billion, $1.5 billion of which had been incurred as of the end of 1976.

- Onshore recreation developments at project facilities, financed and constructed by a variety of State and local agencies. Almost $100 million has been expended for such developments through 1976, with a like amount expected in the future.

Also excluded from the above construction expenditures are the Department's disbursements under the Davis-Grunsky Act Program.



Reconstruction of the historic Bidwell Bar Bridge began in 1976. The bridge was preserved from inundation by Lake Oroville during early stages of construction in the 1960's.

Project Construction Expenditures

Actual and projected construction expenditures for each construction division of the Project, together with a preliminary allocation of such total expenditures among project purposes, are shown in Table 7.

Estimates of future construction expenditures are based on prices and salaries prevailing on December 31, 1976, with the following percentages applied to allow for inflation. These escalation rates are believed to be those most probable to occur, given the present economic climate.

Year	Percent Increase Per Annum	
	State Salaries	Construction Prices
1977	6	7
After 1977	5	6

Land acquisition costs are assumed to escalate 7.00 percent per annum.

Described in the following section are the Department's current assumptions concerning the major costs of the future construction program 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.

A generalized construction schedule for the contracts in progress and future contracts is shown in Figure 9.

Oroville Division

Most of the future costs in this division are related to litigation items previously discussed in Chapter I.

In May 1977, the Department paid $16.3 million as a settlement in the McNamara-Fuller suit. This cost is shown in Table 7 as a future expenditure. This expenditure has not been allowed for in previous series of Bulletin 132.

The other cost is related to litigation between the Department and the Oroville-Wyandotte Irrigation District. The cost to construct a tunnel to replace a portion of Miner's Ranch Canal is estimated to be approximately $5.0 million.

The remaining expenditures are miscellaneous completion costs for facilities in this division.

North Bay Aqueduct

The current schedule for Phase II of the North Bay Aqueduct would allow initial delivery from the Delta in 1982. However, the contractors are studying their future needs and may request that design and construction be further delayed.

Delta Facilities

Prior to Bulletin No. 132-76, it was assumed that the Peripheral Canal would be constructed to supply water needs in the Sacramento-San Joaquin Delta and to convey water across the Delta for export. However, due to numerous issues raised during the review of the Draft Environmental Impact Report on the Peripheral Canal, a Delta Alternatives Study was initiated in August 1975 to review and evaluate other Delta Facility alternatives.

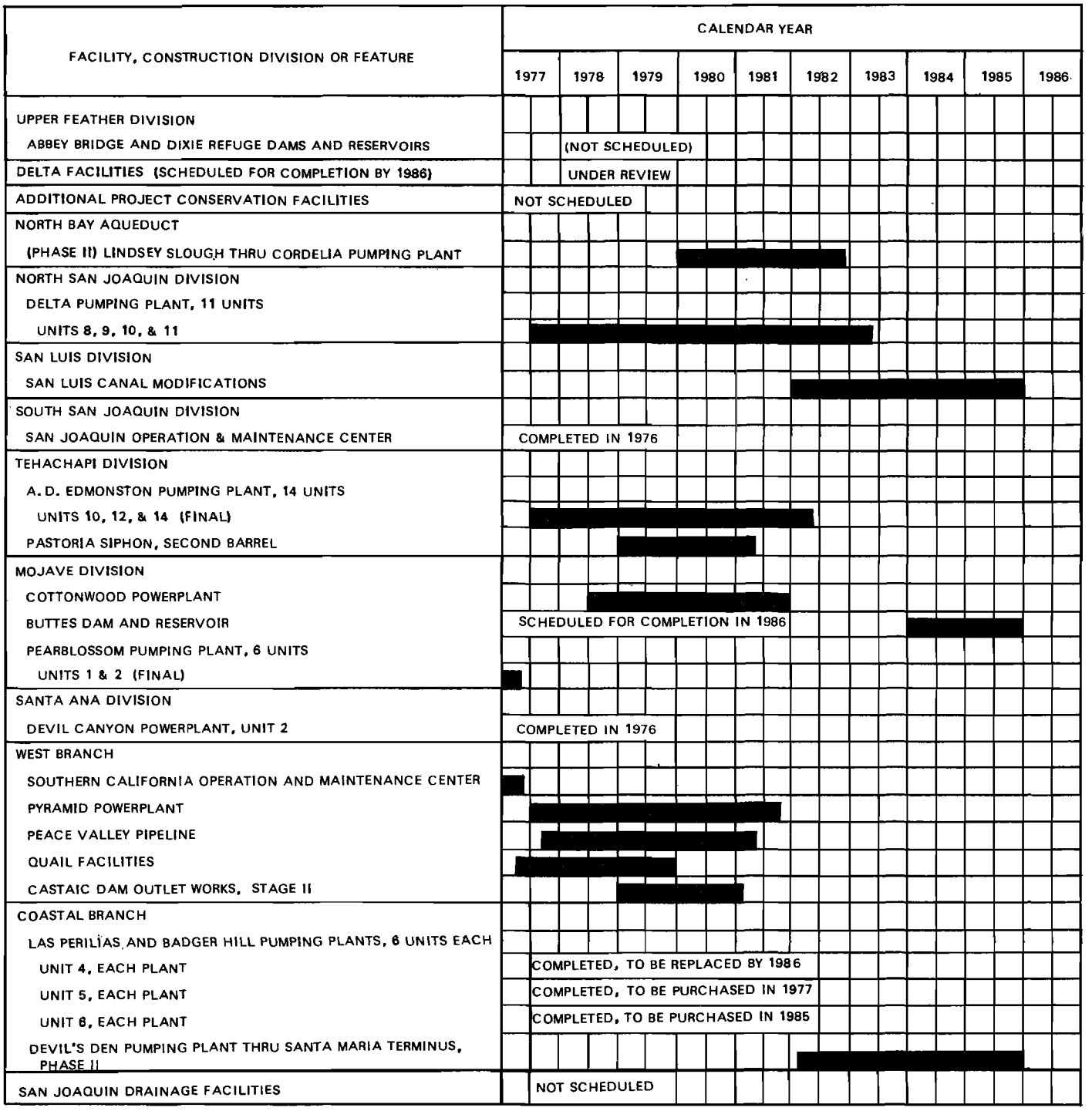
TABLE 7: PROJECT CAPITAL EXPENDITURES

(in thousands of dollars)

FACILITIES AND CONSTRUCTION DIVISIONS	INCURRED THRU 1976	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	14,392	26	14,418	1,284	0	13,134	0
Oroville Division	508,067	25,010	533,077	451,044	69,745	12,288	0
North Bay Aqueduct	4,480	26,152	30,632	30,632	0	0	0
Delta Facilities	36,124	662,512	698,636	313,713	0	51,023	333,900
South Bay Aqueduct	69,799	348	70,147	49,491	7,163	13,469	24
California Aqueduct:							
North San Joaquin Division	156,467	29,809	186,276	179,835	0	6,441	0
San Luis Division	177,307	28,149	205,456	197,610	0	57,636	210
South San Joaquin Division	264,227	2,918	267,145	259,105	0	8,040	0
Tehachapi Division	263,895	43,159	307,054	297,851	0	9,203	0
Mojave Division	216,408	53,409	269,817	261,340	0	8,477	0
Santa Ana Division	187,148	2,851	190,007	179,573	0	10,434	0
West Branch	365,313	104,732	470,045	453,065	0	16,743	237
Coastal Branch	14,981	151,205	166,186	166,082	0	0	104
Subtotal	1,645,746	416,240	2,061,986	1,994,461	0	66,974	551
Additional Conservation Facilities	8,579	[c]	8,579	6,230	0	0	2,349
San Joaquin Drainage Facilities	7,727	3,790	11,517	0	0	0	11,517
Unassigned	9,520	10,603	20,123	0	0	0	20,123
Subtotal [d]	2,304,434	1,144,681	3,449,115	2,846,855	76,908	156,888	368,464
OTHER CAPITAL REQUIREMENTS							
Davis-Grunsky Act Program	100,207	29,793	130,000	0	0	0	130,000
TOTAL [d]	2,404,641	1,174,474	3,579,115	2,846,855	76,908	156,888	498,464

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) The additional conservation facilities program is currently under review.
d) Totals do not include costs for future additional conservation facilities.

Figure 9: GENERALIZED CONSTRUCTION SCHEDULE



During 1976 the alternatives to serve as a Delta water transfer facility were narrowed to three choices:

1. New Hope Cross Channel with an enlarged Clifton Court Forebay.

2. New Hope Cross Channel with a South Delta Intake Channel Plan.

3. The Peripheral Canal.

(See Chapter I for further discussion of Delta Alternative Study activities during 1976.)

The expenditures shown in Table 7 are assumed to be representative of costs for any of the above facilities. It is also assumed the selected facility would be a joint state-federal facility and would be operational in 1984. These assumed expenditures were also used in calculation of the 1978 Delta Water Charge. The estimated expenditures shown in Bulletin 132-76 assumed that some type of Delta Facility would be constructed, and operational in 1982. It was further assumed this facility would cost essentially the same as the Peripheral Canal.

The present timing of the facility (1984) is considered to be the earliest date at which the State would be able to develop a water supply in addition to that developed from existing facilities. However, pending further studies of the effect of the current drought on project yield under critical year water supply Delta water quality assumptions, the State believes it would not be able to supply enough water to meet presently requested 1982 and 1983 entitlement water amounts under dry or critical year conditions. If the Delta Facility or some additional conservation facility became operational in 1984 or earlier, the yield of the State Water Project would then be sufficient to meet currently requested amounts of entitlement water.

California Aqueduct

North San Joaquin Division. A major portion of cost is for the final four units at Delta Pumping Plant. Two of these 30.2-cubic-metres-per-second (1,067-cubic-feet-per-second) units would be operational in 1982 and the remaining two in 1983.

San Luis Division. Modifications to the San Luis Canal would be required to maintain and, eventually, to augment the present conveyance capacity between Dos Amigos Pumping Plant and Kettlemen City. Measures to compensate for subsidence along the canal would cost about $8.5 million (State share) during the period 1981 through 1985. Allowance is included for a total expenditure of about $19 million during the period 1983 through 1985 for increasing the State's share of conveyance capacity by about 28.3 cubic metres per second (1,000 cubic feet per second). This increase would be required to accommodate greater projected deliveries than estimated in 1959, when design capacities were established for the canal.

Tehachapi Division. Bulletin 132-76 indicated that the final units at A. D. Edmonston (Tehachapi) Pumping Plant would be operational in 1984, but subject to a review of the schedule. The current schedule is for two of these 8.9-cubic-metres-per-second (315-cubic-feet-per-second) units to be operational in 1981 and the third unit in January 1982. The schedule was accelerated to provide increased operational flexibility and a greater use of off-peak pumping.

The second barrel of Pastoria Creek Siphon would be completed in 1981 to convey growing project water deliveries.

Mojave Division. Current assumptions are that the Buttes Dam and Reservoir (an 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 depends on engineering and financial feasibility.

Cottonwood Powerplant is currently scheduled for operation in 1981. Since the Cottonwood Energy Dissipator Chutes are already constructed, the Powerplant is not essential for conveying water deliveries. However, the plant could generate energy equivalent to burning nearly 31 800 cubic metres (200,000 barrels) of oil a year in an oil-fired thermal plant.

The final two pumping units and discharge line at Pearblossom Pumping Plant are to be completed during 1977. Installation of these pumps will bring the capability of the plant to 39.1 cubic metres per second (1,380 cfs). This is the total capacity required to pump maximum entitlements to project contractors under their water contracts.

West Branch. The Pyramid Powerplant and Peace Valley Pipeline complex is the major feature of future construction in the West Branch. Bulletin 132-76 cost estimates assumed construction of a 157-MW powerplant and a twin-barrel pipeline which would be operational in 1981. As a result of studies conducted during 1976 (see Chapter I, Actions Concerning Project Power), the current plan is for construction of staged facilities which would be dependent on future water demands from the West Branch. The first stage, consisting of two 37.5-MW units and one 3.65-metre (12-foot) diameter pipeline, is scheduled for completion in 1981. The second stage, which would require additional units and a second pipeline, has not been scheduled.

The second stage of the Castaic Dam outlet works is scheduled to be completed in 1981.

Coastal Branch. Construction of the Coastal Branch, Phase II, 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. Phase II is assumed to be operational in 1986.

The final three units at both Las Perillas and Badger Hill Pumping Plants have already been installed by the Berenda Mesa Water District, at the District's expense, under special agreement with the Department. Unit No. 5 and the second discharge line at Badger Hill Pumping Plant (also constructed by the District) was purchased, at depreciated values, in January 1977. Current assumptions are that the Department would replace Unit No. 4 by January 1986, and purchase Unit No. 6 at depreciated values in 1985.

San Joaquin Drainage Facilities

The costs consist of (1) monitoring the quality of subsurface agricultural waste waters in the San Joaquin Valley; (2) studies on treatment of agricultural waste waters for reuse, management, and disposal; and (3) the Department's share of the costs for the San Joaquin Valley Interagency Drainage Program involving the Department, the State Water Resources Control Board, and the U. S. Bureau of Reclamation.

A major component of the Interagency Drainage Program will be to determine an equitable method for repayment of the construction and operation costs of drainage facilities. The Department believes that consideration should be given to methods that do not necessarily require full repayment by the primary beneficiaries, as is usually the case with a water delivery system. The Department also believes there is a statewide interest in solving Valley drainage problems. The Program will propose a specific plan, including recommended facilities, by the latter part of 1978.

Additional Conservation Facilities

The water supply provided by Oroville and San Luis Reservoirs and a Delta Facility will eventually be insufficient to satisfy growing water-delivery obligations under executed contracts. Prior to Bulletin 132-76 it had been assumed that the needs for additional water would be met primarily by some form of Eel River development (see pages 73 and 74 Bulletin 132-75 for a more complete description).

In 1972 development of the Eel River was suspended under the California Wild and Scenic Rivers Act. In 1975, the Department began studying other sources of additional conservation facilities in conjunction with the Delta Alternatives Study.

For the Bulletin 132-76 financial analysis, an estimate of additional conservation-facility costs was based on unit costs of facility construction and yearly operation. The total cost was considered only representative of the eventual cost of meeting the future project needs from surface water shortage, and was used for financial analysis only.

The Department continued studies of future facilities during 1976, primarily in conjunction with the Delta Alternatives Study. However, planning for these future facilities is not far enough along for inclusion in this bulletin; therefore, projections of future costs have not been included in this chapter or in Appendix B.

Other Capital Requirements

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.)

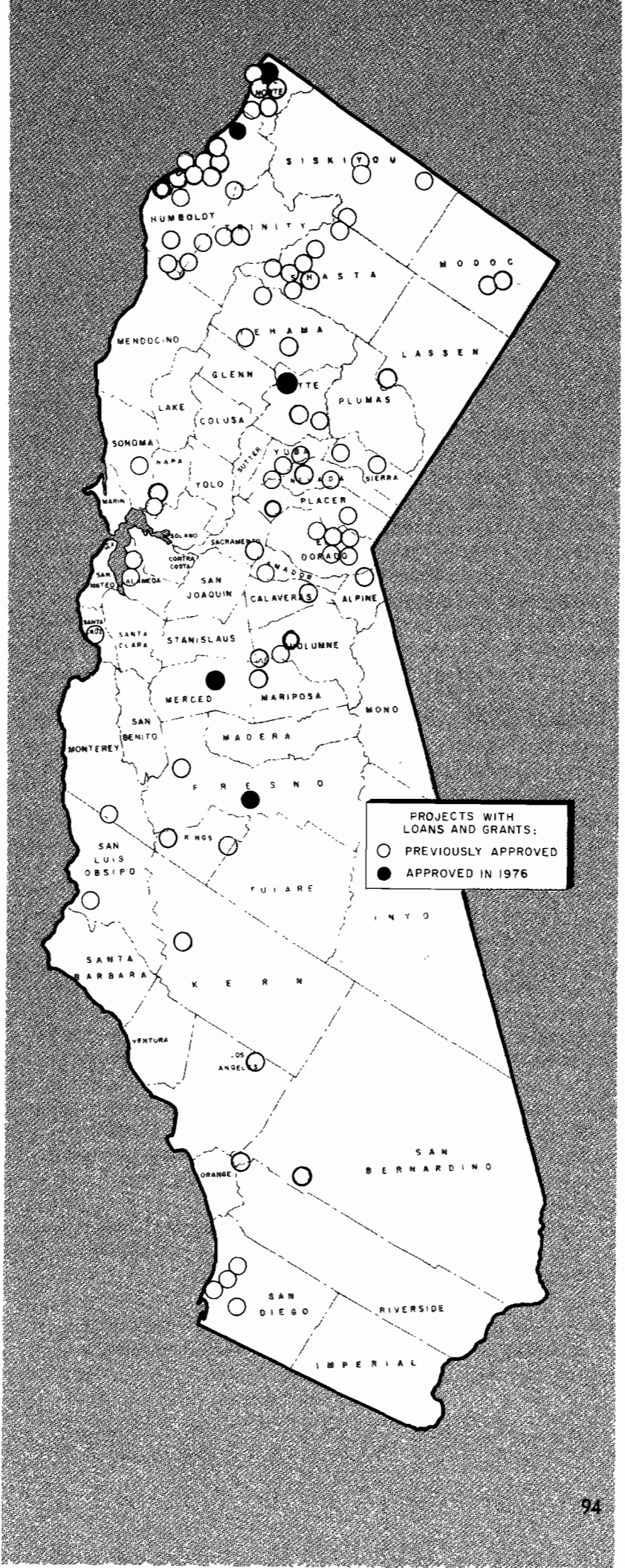
As of December 31, 1976, the Department and the California Water Commission had approved more than $105.8 million in grants and loans for 80 local agencies located throughout the State as indicated on Figure 10. New loan and grant applications were approved during 1976 for the following agencies:

- $150,000 construction loan to Orick Community Services District, Humboldt County.
- $400,000 construction loan to City of Fowler, Fresno County.
- $396,000 construction loan to Smith River Community Services District, Del Norte County.
- $400,000 supplemental construction loan to Paradise Irrigation District, Butte County.
- $120,000 construction loan to Celeste County Water District, Merced County.

Of the total approved applications, over $43.2 million (41 percent) were for loans and the remaining $62.6 million (59 percent) were for grants.

The Department estimates that funds presently authorized for the program would be disbursed by 1982.

During 1976, two bills amending the Davis-Grunsky Act were approved by the Governor.



Figur 10: LOCAL PROJECTS UNDER THE DAVIS-GRUNSKY ACT PROGRAM

- AB 4193, amending Section 12881.4 of the Davis-Grunsky Act, authorizes the Department to consider projects that would rehabilitate a dam and reservoir for water supply purposes.

- AB 3793 added Section 12885.9 to the Water Code, authorizing the Department, during calendar years 1976 and 1977, to make loans not exceeding $100,000 to public agencies for emergency facilities needed to maintain water supplies for drought relief. Two million dollars has been earmarked for such loans from the remaining available funds.

Project Operating Costs

Historical and estimated project operating costs are presented in Table 8 by: (1) project facilities; (2) type of component costs; and (3) project purpose. Except for power costs, allowances for future long-term price escalation are not included in these estimates. Power cost estimates include allowances for future price escalation through 1984.

Power costs are the largest single expense for Project Operation. Under full operating conditions, power costs are estimated at $315 million annually, including costs of transmission service. In 1976, 3.452 billion kilowatthours were expended in Project operation. Project energy requirements will continue to increase each year to about 13 billion kilowatthours under full operation.

Since the mid-1960s, the basis for post-1982 project power cost estimate, reflected in Bulletin 132 has been state construction of, or participation in, unspecified future nuclear power development. In fact, energy from any such future nuclear development will not be available to the Project until 1984 at the earliest. In accordance with the Long Range Energy Program, summarized earlier in this Bulletin, the primary immediate source of post-1982 Project energy, in addition to recovery generation, will be Hyatt-Thermalito generation. Other post-1982 energy sources are expected to include geothermal generation, purchases of future hydroelectric generation by The Metropolitan Water District of Southern California and by a future power plant at Pine Flat, other relatively small project developments, and purchases of off-peak energy from the Suppliers. Considering the current status of discussions and negotiations between the Department and the Suppliers with respect to future Project energy arrangements, it would be premature to attempt scheduling of specific energy sources or to predict associated energy costs for the long-term projections. In recognition of this and other relevant factors, the Department is extending, for one year only, the nuclear energy assumption for thie Bulletin. Bulletin 132-77 represents the last year of scheduling firm power six years in advance under current contracts and the last year prior to establishment of an identifiable, yet necessarily tentative, staged plan for energy sources and associated costs to meet Project energy demands subsequent to 1982.

Since 1977 is the last year for utilizing the basic nuclear energy assumption regarding post-1982 energy costs, rates associated with future nuclear power development (25 mills/kWh), as reflected in Bulletin 132-76, will not be revised for reasons including the following:

1) The possibility that Oroville energy (which would supply a substantial portion of the demand) may be valued essentially at cost (about 8 mills/kWh) for water charge calculations.

TABLE 8: PROJECT

(in thousands

FEATURE	Calendar					
	1962-1976	1977	1978	1979	1980	1981
BY PROJECT FACILITY						
Feather River Facilities	35,367	7,250	6,740	6,515	6,521	6,514
North Bay Aqueduct	503	68	74	71	72	78
Delta Facilities	0	0	0	0	0	0
South Bay Aqueduct	13,674	1,653	1,890	1,825	1,905	1,896
California Aqueduct:						
Main Line - Delta to A. D. Edmonston	100,993	21,985	23,740	25,095	24,135	25,807
Main Line - A. D. Edmonston to Perris	41,367	13,644	16,546	15,276	17,628	18,076
West Branch	10,250	-811	1,700	968	1,155	1,068
Coastal Branch	7,026	943	1,062	1,000	1,037	1,029
Additional Conservation Facilities				(Program is currently		
Water Quality Monitoring Program- Sacramento-San Joaquin Delta	1,703	851	607	607	607	607
Davis-Grunsky Act Program (continuing administrative costs)	374	60	60	60	60	60
TOTAL OPERATING COSTS[a]	211,257	45,643	52,419	51,417	53,120	55,135
BY COMPOSITION:						
Salaries and Expenses of Headquarters Personnel	94,260	7,486	11,506	10,698	10,725	10,725
Salaries and Expenses of Field Personnel	119,482	24,725	24,859	25,077	25,077	25,416
Pumping Power:						
Used by Pumping Plants	64,392	21,240	23,109	23,491	25,565	28,172
Produced by Recovery Plants	-13,753	-6,735	-7,492	-8,290	8,623	-9,577
Deposits to Replacement Reserves	5,528	900	900	900	904	1,051
Oroville Thermalito Insurance Premiums	2,182	340	308	255	255	255
Less, Portion of Costs Incurred During Construction	-60,834	-2,313	-771	-714	-783	-907
TOTAL OPERATING COSTS[a]	211,257	45,643	52,419	51,417	53,120	55,135
BY PROJECT PURPOSE:						
Water Supply and Power Generation	186,069	40,652	47,204	46,278	47,881	49,850
Recreation and Fish and Wildlife Enhancement	9,471	2,167	2,292	2,211	2,312	2,359
Flood Control	273	54	59	38	38	38
Miscellaneous Purposes:						
Federal Share, San Luis and Delta Facilities	14,858	2,542	2,614	2,643	2,642	2,641
Other (Davis-Grunsky, Drainage, City of Los Angeles)	586	228	250	247	247	247
TOTAL OPERATING COSTS[a]	211,257	45,643	52,419	51,417	53,120	55,135

a) Totals do not reflect future operating costs for additional conservation facilities.

OPERATING COSTS

of dollars)

Year									
1982	1983	1984	1985	1986-1995	1996-2005	2006-2015	2016-2025	2026 2035	TOTAL, 1962-2035
6,463	6,470	6,480	6,484	64,992	65,036	65,253	65,253	65,253	420,591
132	586	632	632	8,138	9,826	10,598	11,456	11,640	54,506
0	0	3,736	3,722	55,703	39,977	41,096	41,714	41,824	227,772
1,954	5,836	5,686	5,610	57,881	58,289	58,451	58,422	58,814	333,786
25,759	70,306	71,759	75,077	980,481	1,210,153	1,347,997	1,388,146	1,386,660	6,778,093
18,925	63,600	67,027	69,363	965,341	1,194,841	1,339,406	1,377,263	1,384,412	6,602,715
900	-10,224	-10,526	-12,863	-219,065	-331,936	-390,158	-404,126	-403,362	-1,767,030
1,051	2,357	2,299	2,392	53,950	65,668	68,956	68,956	69,695	347,546
under review)									
607	607	607	607	6,070	6,070	6,070	6,070	6,070	37,760
60	60	60	60	600	600	600	600	600	3,914
55,851	139,598	147,760	151,084	1,974,091	2,318,524	2,548,269	2,613,879	2,621,606	13,039,653
10,729	10,740	12,352	10,770	137,887	120,057	118,567	118,567	126,294	811,363
25,990	26,046	26,001	26,128	261,280	261,280	261,280	261,280	261,280	1,655,201
30,321	150,735	159,491	163,379	2,237,040	2,754,743	3,054,704	3,141,108	3,141,108	15,018,598
-11,045	-47,904	-50,441	-49,705	-672,242	-828,628	-899,782	-920,576	-920,576	-4,455,369
1,082	1,078	1,078	1,095	10,950	10,950	10,950	10,950	10,950	69,266
255	255	255	255	2,550	2,550	2,550	2,550	2,550	17,365
-1,481	-1,352	-976	-838	-3,374	-2,428	0	0	0	-76,771
55,851	139,598	147,760	151,084	1,974,091	2,318,524	2,548,269	2,613,879	2,621,606	13,039,653
50,499	133,512	139,582	142,893	1,887,749	2,235,587	2,464,074	2,530,116	2,538,008	12,539,954
2,438	3,138	4,212	4,237	44,865	43,702	44,824	44,389	44,221	256,838
38	70	67	66	691	545	618	621	624	3,840
2,629	2,631	3,652	3,641	38,321	36,225	36,288	36,288	36,288	223,903
247	247	247	247	2,465	2,465	2,465	2,465	2,465	15,118
55,851	139,598	147,760	151,084	1,974,091	2,318,524	2,548,269	2,613,879	2,621,606	13,039,653

2) The possibility that all or a substantial portion or recovery energy may be valued for water charge purposes at a level considerably below that of the least-expensive alternative source, e.g., nuclear energy.

3) The fact that the 25-mill rate includes allowances for future price escalation through about 1984 in contrast to operating costs shown elsewhere in the Bulletin, which are generally referenced to current price levels.

The 25-mill nuclear energy assumption, commencing in 1983, may not reflect unrealistically low energy rates even when referenced to 1984 price levels. There is no definite basis to either increase or decrease the projected general rate at this time.

APPENDIX B

DATA AND COMPUTATIONS USED IN DETERMINING WATER CHARGES FOR 1978

APPENDIX B - DATA AND COMPUTATIONS USED IN DETERMINING WATER CHARGES

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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 1978 and is based on aspects of the State Water Proj-

ect known January 1, 1977. 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

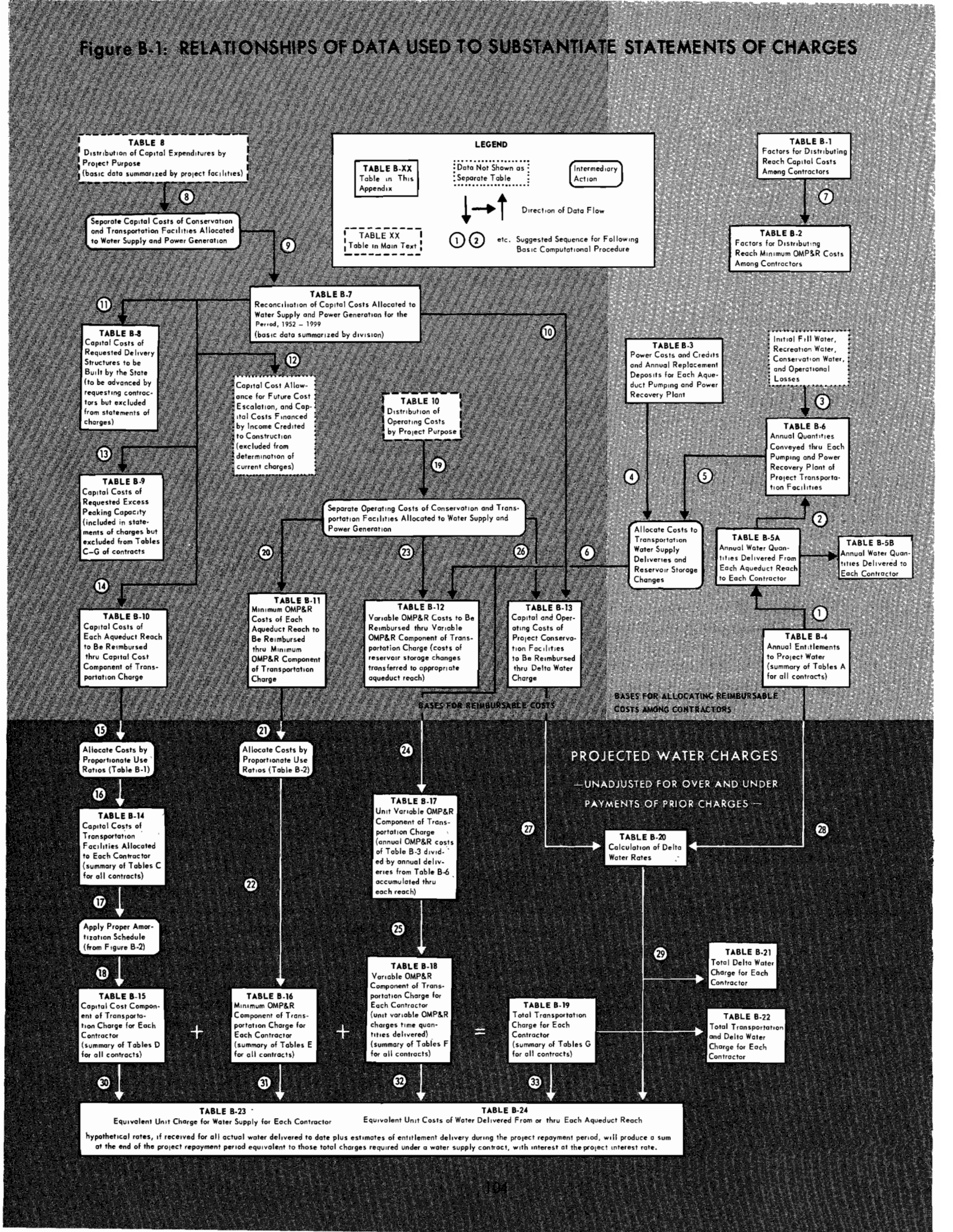
- Grizzly Valley Pipeline
- North Bay Aqueduct
- South Bay Aqueduct (including Del Valle Dam and Lake Del Valle)
- The remaining portion of the California Aqueduct (the remaining portion of the works between the Delta Facilities and Dos Amigos Pumping Plant and all works south, including Dos Amigos Pumping 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

Figure B-1: RELATIONSHIPS OF DATA USED TO SUBSTANTIATE STATEMENTS OF CHARGES



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", 5 217 705 000 cubic metres (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.
- A minimum operation, maintenance, power, and replacement (OMP&R) component, which will return to the State all reimbursable operating costs that are incurred irrespective 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 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 semiannaul 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 1976, 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 1978 (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 determination of the Delta Water Rate for 1978.

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, any advances which are projected to exceed the additional capital costs for such excess capacity in completed aqueduct reaches have not been credited to future capital cost components of the Transportation Charge. Application of these credits are 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 of 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.)

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 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 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.

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 assigned directly to surplus water service for 1976 are as follows: Delta, $658,138; South Bay, $125,619, Dos Amigos, $288,914; Las Perillas and Badger Hill, $75,550; Buena Vista, $188,628; Wheeler Ridge, $13,464; Wind Gap, $5,385; and Edmonston, 0 (see Bulletin 132-76 for 1975 amounts).

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 and projected annual water quantities delivered and to be delivered from each aqueduct reach to each contractor. These water deliveries do not necessarily correspond with annual entitlements. (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.

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 ("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").

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.

Bases for Reimbursable Costs

Tables 7 and 8 (Chapter II) 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 tabulation below. 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.

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)			
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
Abbey Bridge Dam and Reservoir	0	0	100.0	100.0
Dixie Refuge Dam and Reservoir	0	0	100.0	100.0
Oroville Division[a]	97.1	99.0	2.9	1.0
California Aqueduct	96.5	94.1	3.5	5.9
Delta Facilities	86.0	86.0	14.0	14.0
Additional Conservation Facilities	90.0	90.0	10.0	10.0
Transportation Facilities				
California Aqueduct, excluding Coastal Branch	97.0	92.9	3.0	7.1
South Bay Aqueduct:				
Del Valle Dam and Lake Del Valle	25.2	22.0	74.8	78.0
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.

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 II and (b) current redetermination of water charges.

Costs of Delivery Structures. Costs of delivery structures constructed by the State are paid directly by each contractor requesting such structures (see pages 87 and 88. Bulletin 132-71 for a description of the method of payment for the capital costs of a delivery structure constructed by the State). Capital costs of all delivery structures constructed and to be constructed by the State are shown for each contractor in Table B-8. However, these costs are incomplete in some respects and should not be construed as preliminary estimates or final invoices to be furnished by the State. The following tabulation indicates the general location and construction status of delivery structures requested as of the end of 1976.

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	1	1	0	1
South Bay Aqueduct	19	0	1	10	6	2
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	50	0	5	9	26	10
Tehachapi Division	3	0	0	0	2	1
Mojave Division	21	0	2	0	9	10
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	125	0	10	25	61	29

a) Will be completed at a later date. Temporary facilities for delivery of water have been installed at several of the stubs.

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 estimates of the annual amounts for:

- Additional costs incurred by the State for requested excess capacity.
- Required annual advances, by water contractors, of funds for such costs.
- Any credits for advances estimated to be in excess of costs which will be applied to the respective contractor's accounts (generally, to the contractors' next installment of the capital cost component of the Transportation Charge).

Under Amendment 2 of Metropolitan's contract, 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 8 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.
- All costs for equipment, materials, and supplies and for replacement of works other than rotating machinery of pumping and power recovery plants.
- 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 refered 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 Transpotation 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. Future costs of "additional and supplemental" project conservation facilities are not projected in Table B-13. These facilities are currently under review as a part of the Department's Delta Alternative Program. Because of the extensive review, it would not be meaningful in this bulletin to select any one of a number of different plans for these facilities for use in projecting future Delta Water Charges. Not included in Table B-13 are credits to be 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 1972 (see section entitled "Negotiation of Water Charge Settlements". Chapter II). These credits are as shown below:

Year	Credit	Year	Credit
Thru 1960	$4,850,000	1967. . .	$ 812,145
1961. . .	431,527	1968. . .	409,386
1962. . .	479,280	1969. . .	245,732
1963. . .	478,743	1970. . .	192,432
1964. . .	751,330	1971. . .	187,320
1965. . .	763,541	1972. . .	196,361
1966. . .	748,649	Total. . .	$10,546,446

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 Rate for the "initial" conservation facilities. 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 to be 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 includes 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 ignored 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	1978 . . .	$ 61,344
1970 . . .	46,306	1979 . . .	60,363
1971 . . .	139,390	1980 . . .	60,366
1972 . . .	93,379	1981 . . .	60,281
1973 . . .	70,791	1982 . . .	59,664
1974 . . .	97,498	1983 . . .	59,777
1975 . . .	123,351	1984 . . .	59,929
1976 . . .	135,242	1985 . . .	59,939
1977 . . .	58,904	Total . . .	$1,292,989

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-12 by the delivery 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 not allocated in accordance with annual delivery quantities and 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	Las Perillas and Badger Hill	Delta
			(dollars)	
1972	Kern County W.A.	$9,553	$24,700	0
	Hacienda W.D.	10	0	0
1973	Kern County W.A.	0	6,016	0
1974	Kern County W.A.	0	7,140	0
1975	Kern County W.A.	494	6,397	0
1976	Kern County W.A. (estimated)	2,000	7,000	1,000

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 County 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 Annual 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, 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 after December 31, 1977, is shown in Table B-20 in accordance with the amended Articles 22(e) and 22(g) of 29 contracts. Calculation of Delta Water Rates for "additional and supplemental" conservation facilities are not projected herein. See discussion of "Costs to be reimbursed through payments under the Delta Water Charge and the Oroville Power Sales Contract" shown in 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.

Total Transportation and Delta Water Charges

Annual Delta Water Charges for each contractor and Total Annual Transportation and Delta Water Charges as shown in Bulletin 132-76, Table B-21 and Table B-22, are not included in this bulletin. Projection of these charges would require a projection of future Delta Water Rates to include amounts for "additional and supplemental" conservation facilities. As previously noted, this has not been made in this bulletin due to the review of these facilities under the Delta Alternative Program.

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 Cost, by Reach

Table B-24 presents a summary of the equivalent unit cost of conveying entitlement water through respective aqueduct reaches of the project transportation facilities. These unit costs provide basis of charges to be 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 convey-

ance 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 deliveries have been made during each of the years 1968 through 1976. Beginning May 1, 1973, surplus water service has been provided under contracts which specify a different scheduling procedure than that used for scheduling entitlement water and a different rate structure than that previously applicable to surplus water prior to May 1973. Under these contracts, approved monthly surplus water delivery schedules are issued on December 1 for the first four months of the following year and on May 1 for the last eight months. This procedure allows scheduling for the last eight months of the year to be based on fairly reliable information concerning need and water supply.

Table B-25 shows the quantities of surplus water delivered to long-term contractors between May 1, 1973 and December 31, 1976. However, no approved surplus water delivery schedules were issued on December 1, 1976 for service during the first four months of 1977, and projected surplus water deliveries such as those shown in Table B-28 of Bulletin 132-76 are not included in this Bulletin. Conditions brought upon by the drought in California have resulted in the Department modifying its plans for future surplus water service from that shown in Bulletin 132-76. There is no assurance that surplus water will be available in 1977, and since the extent of the drought is unknown, it is difficult to make meaningful projections of surplus water availability in future years.

Surplus Water Costs. Table B-26 shows the charges for both the energy and capacity power components at each pumping plant associated with the surplus water deliveries from May 1, 1973 through the end of 1976. Costs for estimated future deliveries, as projected in Table B-29 of Bulletin 132-76, have not been included in this Bulletin since the effect of the continuing drought makes it difficult to project future surplus water availability.

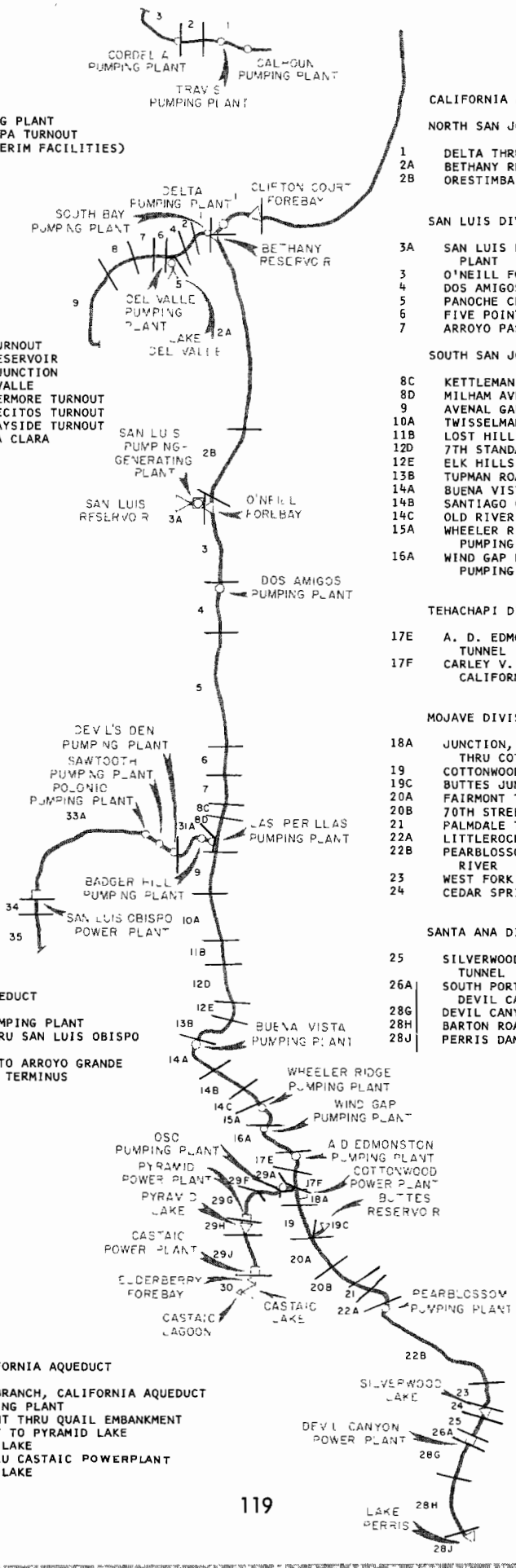
Surplus Water Charges. Table B-27 shows contractors' actual power, replacement, and administrative charges in past years associated with the surplus water deliveries shown in Table B-25. These charges are determined in the following manner. Power capacity charges are based on an allocation of each month's capacity costs at each pumping plant. A contractor's allocated share of the monthly capacity cost is in proportion to either the contractor's surplus water scheduled at the time the commitment was made for power capacity or the amount actually delivered through the plant in that month, whichever is greater. A contractor's energy charge at each pumping plant is in the same proportion to total energy costs for pumping surplus water for the year as the contractor's surplus water pumped during the year (eight months in 1973) is to the total surplus water pumped at the respective pumping plant for the year. The replacement charge to each contractor is a function of the time rotating equipment at the pumping plant is operated to pump surplus water. Each contractor's allocated share of the State's total surplus water administrative costs for the year is in proportion to either the total surplus water scheduled for the year, as shown on the approved December 1 and May 1 schedules,

or the total delivered during the year, whichever is greater.
Estimates of future unit power rates for surplus water pumping, such as those shown in Table B-30 of Bulletin 132-76, are also not included in this bulletin since future surplus water amounts have not been projected.

Table B-31 shows surplus water quantities requested and future financial obligations which have been incurred as a result of past commitments for electrical power ordered under amended Article 21 of the long-term contracts. This article provides for the State to order power for surplus water deliveries in a future year or years if there is a written commitment from a contractor to pay the costs of such power. These commitments are made to be assured of obtaining from the project's energy suppliers the lowest possible priced power for surplus water pumping. A commitment of this type, however, does not provide a contractor with a greater right or priority to receive surplus water than contractors which have not made commitments.

Figure B-3: REPAYMENT REACHES AND DESCRIPTIONS

PROJECT TRANSPORTATION FACILITIES



NORTH BAY AQUEDUCT

1 LINDSEY SLOUGH TO SUISUN CITY
2 SUISUN CITY TO CORDELIA PUMPING PLANT
3 CORDELIA PUMPING PLANT THRU NAPA TURNOUT RESERVOIR (INCLUDING THE INTERIM FACILITIES)

SOUTH BAY AQUEDUCT

1 BETHANY RESERVOIR THRU ALTAMONT TURNOUT
2 ALTAMONT TURNOUT THRU PATTERSON RESERVOIR
4 PATTERSON RESERVOIR TO DEL VALLE JUNCTION
5 DEL VALLE JUNCTION THRU LAKE DEL VALLE
6 DEL VALLE JUNCTION THRU SOUTH LIVERMORE TURNOUT
7 SOUTH LIVERMORE TURNOUT THRU VALLECITOS TURNOUT
8 VALLECITOS TURNOUT THRU ALAMEDA-BAYSIDE TURNOUT
9 ALAMEDA-BAYSIDE TURNOUT THRU SANTA CLARA TERMINAL FACILITIES

COASTAL BRANCH, CALIFORNIA AQUEDUCT

31A AVENAL GAP TO DEVIL'S DEN PUMPING PLANT
33A DEVIL'S DEN PUMPING PLANT THRU SAN LUIS OBISPO POWERPLANT
34 SAN LUIS OBISPO POWERPLANT TO ARROYO GRANDE
35 ARROYO GRANDE THRU SAN MARIA TERMINUS

WEST BRANCH, CALIFORNIA AQUEDUCT

29A JUNCTION, WEST BRANCH, CALIFORNIA AQUEDUCT THRU OSO PUMPING PLANT
29F OSO PUMPING PLANT THRU QUAIL EMBANKMENT
29G QUAIL EMBANKMENT TO PYRAMID LAKE
29H PYRAMID DAM AND LAKE
29J PYRAMID LAKE THRU CASTAIC POWERPLANT
30 CASTAIC DAM AND LAKE

CALIFORNIA AQUEDUCT

NORTH SAN JOAQUIN DIVISION

1 DELTA THRU BETHANY RESERVOIR
2A BETHANY RESERVOIR TO ORESTIMBA CREEK
2B ORESTIMBA CREEK TO O'NEILL FOREBAY

SAN LUIS DIVISION

3A SAN LUIS DAM, RESERVOIR AND PUMPING-GENERATING PLANT
3 O'NEILL FOREBAY TO DOS AMIGOS PUMPING PLANT
4 DOS AMIGOS PUMPING PLANT TO PANOCHE CREEK
5 PANOCHE CREEK TO FIVE POINTS
6 FIVE POINTS TO ARROYO PASAJERO
7 ARROYO PASAJERO TO KETTLEMAN CITY

SOUTH SAN JOAQUIN DIVISION

8C KETTLEMAN CITY THRU MILHAM AVENUE
8D MILHAM AVENUE THRU AVENAL GAP
9 AVENAL GAP THRU TWISSELMAN ROAD
10A TWISSELMAN ROAD THRU LOST HILLS
11B LOST HILLS TO 7TH STANDARD ROAD
12D 7TH STANDARD ROAD THRU ELK HILLS ROAD
12E ELK HILLS ROAD THRU TUPMAN ROAD
13B TUPMAN ROAD TO BUENA VISTA PUMPING PLANT
14A BUENA VISTA PUMPING PLANT THRU SANTIAGO CREEK
14B SANTIAGO CREEK THRU OLD RIVER ROAD
14C OLD RIVER ROAD TO WHEELER RIDGE PUMPING PLANT
15A WHEELER RIDGE PUMPING PLANT TO WIND GAP PUMPING PLANT
16A WIND GAP PUMPING PLANT TO A. D. EDMONSTON PUMPING PLANT

TEHACHAPI DIVISION

17E A. D. EDMONSTON PUMPING PLANT TO CARLEY V. PORTER TUNNEL
17F CARLEY V. PORTER TUNNEL TO JUNCTION, WEST BRANCH, CALIFORNIA AQUEDUCT

MOJAVE DIVISION

18A JUNCTION, WEST BRANCH, CALIFORNIA AQUEDUCT THRU COTTONWOOD CHUTES
19 COTTONWOOD CHUTES TO FAIRMONT
19C BUTTES JUNCTION THRU BUTTES RESERVOIR
20A FAIRMONT THRU 70TH STREET WEST
20B 70TH STREET WEST TO PALMDALE
21 PALMDALE TO LITTLEROCK CREEK
22A LITTLEROCK CREEK TO PEARBLOSSOM PUMPING PLANT
22B PEARBLOSSOM PUMPING PLANT TO WEST FORK MOJAVE RIVER
23 WEST FORK MOJAVE RIVER TO SILVERWOOD LAKE
24 CEDAR SPRINGS DAM AND SILVERWOOD LAKE

SANTA ANA DIVISION

25 SILVERWOOD LAKE TO SOUTH PORTAL, SAN BERNARDINO TUNNEL
26A SOUTH PORTAL, SAN BERNARDINO TUNNEL THRU DEVIL CANYON POWERPLANT
28G DEVIL CANYON POWERPLANT TO BARTON ROAD
28H BARTON ROAD TO LAKE PERRIS
28J PERRIS DAM AND LAKE PERRIS

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 County 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 County 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			
12F					.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 15 A Wheeler Ridge Pumping Plant	Reach 16A Wind Gap Pumping Plant	Reach 17E A.D. Edmonston (Tehachapi) 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	10,577	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	16,999	594,400	1,622,489	783,100	775,907	680,082	1,395,695	4,811,724
1977	0	15,100	599,200	1,197,500	468,500	505,900	569,300	1,221,800	4,118,200
1978	0	13,000	757,400	1,867,000	1,201,100	1,133,800	1,375,300	2,803,400	9,647,600
1979	0	10,000	632,400	3,768,000	1,086,100	1,123,800	1,262,300	2,622,400	8,740,600
1980	0	14,000	716,400	2,448,000	1,359,100	1,343,800	1,553,300	3,089,400	10,332,600
1981	7,000	14,000	706,400	3,613,000	1,210,100	1,438,800	1,732,300	3,409,400	11,264,400
1982	27,000	23,200	778,400	3,220,400	1,374,100	1,717,800	1,786,300	3,735,400	12,518,400
1983	167,000	134,200	4,613,400	17,542,400	7,645,100	8,454,800	9,038,300	19,290,400	57,330,400
1984	169,000	224,200	4,465,400	15,829,400	8,123,100	9,275,800	9,325,300	19,842,400	65,328,400
1985	172,000	221,200	4,388,400	17,003,400	8,405,100	9,075,800	10,017,300	21,266,400	63,409,400
1986	236,000	233,200	4,574,400	17,688,400	9,266,100	10,314,800	10,488,300	22,266,400	66,136,400
1987	232,000	220,200	4,311,400	21,065,400	9,446,100	10,731,800	10,208,300	21,712,400	71,591,400
1988	311,000	232,200	4,479,400	18,248,400	10,598,100	11,376,800	11,784,300	25,035,400	82,971,400
1989	322,000	229,200	4,396,400	20,082,400	11,626,100	12,317,800	13,223,300	28,332,400	92,084,400
1990	378,000	223,200	4,294,400	25,700,400	12,569,100	13,034,800	14,173,300	30,020,400	99,129,400
1991	384,000	231,200	4,387,400	23,998,400	12,786,100	13,260,800	14,412,300	30,856,400	100,832,400
1992	389,000	237,200	4,598,400	26,030,400	13,361,100	14,318,800	14,954,300	33,705,400	103,268,400
1993	397,000	245,200	4,994,400	24,648,400	13,557,100	14,511,800	14,936,300	31,996,400	104,620,400
1994	375,000	234,200	4,734,400	28,268,400	13,006,100	14,681,800	15,564,300	32,894,400	108,069,400
1995	382,000	241,200	4,812,400	28,114,400	13,413,100	14,918,800	15,810,300	33,405,400	109,761,400
1996	383,000	245,200	4,805,400	31,461,400	13,684,100	14,987,800	15,898,300	33,607,400	110,467,400
1997	383,000	326,200	4,796,400	32,473,400	13,669,100	14,917,800	15,813,300	35,477,400	109,819,400
1998	400,000	344,200	4,656,400	27,930,400	14,224,100	15,506,800	16,429,300	35,050,400	114,073,400
1999	378,000	327,200	4,571,400	30,758,400	13,811,100	15,500,800	15,887,300	35,182,400	116,086,400
2000	428,000	334,200	4,600,400	31,257,400	13,768,100	15,601,800	16,758,300	35,427,400	116,903,400
2001	432,000	338,200	4,509,400	35,107,400	14,224,100	15,747,800	16,914,300	36,077,400	117,994,400
2002	440,000	346,200	4,478,400	30,746,400	14,406,100	15,991,800	17,167,300	36,269,400	119,718,400
2003	432,000	341,200	4,480,400	30,116,400	14,428,100	15,828,800	17,209,300	38,336,400	125,867,400
2004	429,000	339,200	4,446,400	31,999,400	14,511,100	16,431,800	17,043,300	37,966,400	124,650,400
2005	431,000	342,200	4,598,400	33,904,400	14,599,100	16,535,800	17,157,300	38,224,400	125,516,400
2006	435,000	347,200	4,639,400	34,193,400	14,921,100	16,749,800	18,384,300	38,738,400	127,227,400
2007	423,000	339,200	4,508,400	35,105,400	14,555,100	16,323,800	17,925,300	38,112,400	131,124,400
2008	435,000	350,200	4,619,400	37,655,400	14,906,100	16,685,800	18,312,300	38,912,400	126,700,400
2009	431,000	348,200	4,566,400	33,290,400	15,182,100	17,375,800	18,241,300	40,511,400	133,508,400
2010	430,000	349,200	4,693,400	34,773,400	14,727,100	16,527,800	18,150,300	40,304,400	132,813,400
2011	436,000	355,200	4,611,400	34,232,400	15,431,100	17,640,800	18,544,300	41,186,400	135,761,400
2012	433,000	432,200	4,566,400	38,325,400	15,426,100	17,504,800	19,390,300	40,851,400	134,666,400
2013	442,000	443,200	4,639,400	36,826,400	15,692,100	17,788,800	19,697,300	41,814,400	136,698,400
2014	438,000	440,200	4,604,400	36,026,400	15,558,100	17,657,800	19,561,300	41,211,400	135,857,400
2015	437,000	440,200	4,586,400	38,978,400	15,514,100	17,634,800	19,543,300	41,190,400	135,800,400
2016	431,000	435,200	4,505,400	35,613,400	15,256,100	17,336,800	19,211,300	42,871,400	140,635,400
2017	439,000	445,200	4,588,400	37,478,400	15,502,100	17,601,800	19,500,300	41,087,400	135,449,400
2018	430,000	437,200	4,490,400	39,801,400	15,006,100	17,164,800	18,054,300	40,094,400	132,161,400
2019	441,000	450,200	4,578,400	40,325,400	15,532,100	17,638,800	19,541,300	41,157,400	135,699,400
2020(d	452,000	470,200	4,637,400	38,022,400	15,711,100	17,824,800	19,743,300	41,578,400	137,075,400

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 1980 are for an interim facility.

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	1,717,032	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	-2,904,939	101,109	0	7,086,726	1975
0	774,372	-1,543,100	327,800	0	-2,658,900	203,699	0	7,784,267	1976
0	1,528,800	-2,537,000	49,000	0	-1,547,200	161,500	0	6,350,600	1977
0	2,649,900	-4,240,100	277,800	0	-2,859,000	240,700	0	14,867,900	1978
0	2,423,900	-4,368,100	261,800	0	-3,094,000	188,700	0	14,657,900	1979
0	2,951,900	-4,507,100	301,800	0	-3,387,000	225,500	0	16,441,700	1980
-202,400	2,906,900	-4,237,100	359,800	-614,800	-3,436,000	218,500	0	18,390,300	1981
-407,400	3,093,900	-4,383,100	403,800	-1,497,800	-3,493,000	247,500	0	19,144,900	1982
-1,390,400	17,644,900	-18,838,100	1,611,800	-7,764,800	-8,598,000	1,505,500	0	108,386,900	1983
-1,545,400	17,188,900	-21,552,100	1,821,800	-10,316,800	-10,906,000	1,448,500	0	108,721,900	1984
-1,544,400	18,041,900	-21,073,100	1,623,800	-9,757,800	-10,239,000	1,542,500	0	112,552,900	1985
-1,767,400	18,569,900	-20,695,100	1,856,800	-10,103,800	-10,165,000	1,717,500	1,761,800	122,378,700	1986
-1,740,400	17,514,900	-21,440,100	1,972,800	-10,951,800	-12,467,000	1,621,500	2,106,800	126,135,700	1987
-2,203,400	18,104,900	-21,715,100	3,244,800	-12,741,800	-14,964,000	1,707,500	2,292,800	138,762,700	1988
-2,147,400	17,806,900	-21,391,100	4,552,800	-12,860,800	-17,680,000	1,687,500	2,699,800	155,281,700	1989
-2,158,400	17,182,900	-22,758,100	5,159,800	-13,939,800	-21,774,000	1,678,500	2,669,800	165,583,700	1990
-2,453,400	17,529,900	-22,153,100	5,234,800	-13,568,800	-21,155,000	1,707,500	2,729,800	169,020,700	1991
-2,194,400	17,415,900	-23,129,100	6,057,800	-14,627,800	-23,956,000	1,730,500	2,751,800	174,911,700	1992
-2,278,400	17,769,900	-22,577,100	6,074,800	-14,170,800	-24,005,000	1,853,500	2,997,800	175,571,700	1993
-2,207,400	16,778,900	-22,204,100	6,892,800	-19,720,800	-24,382,000	1,746,500	2,835,800	177,567,700	1994
-2,148,400	16,928,900	-22,259,100	7,049,800	-19,903,800	-24,276,000	1,780,500	2,896,800	180,927,700	1995
-2,031,400	16,965,900	-21,839,100	7,118,800	-20,192,800	-27,042,000	1,780,500	3,300,800	183,600,700	1996
-2,387,400	16,972,900	-21,400,100	6,968,800	-19,154,800	-26,836,000	1,783,500	3,341,800	186,964,700	1997
-2,289,400	17,400,900	-21,918,100	7,338,800	-20,097,800	-27,438,000	1,861,500	3,493,800	186,966,700	1998
-2,111,400	16,504,900	-22,033,100	8,386,800	-19,958,800	-26,228,000	1,752,500	3,297,800	192,113,700	1999
-2,344,400	16,543,900	-22,968,100	8,011,800	-20,711,800	-26,729,000	1,765,500	3,333,800	191,980,700	2000
-2,597,400	16,670,900	-22,003,100	8,578,800	-20,665,800	-29,914,000	1,784,500	3,913,800	197,112,700	2001
-2,446,400	16,911,900	-22,420,100	8,233,800	-20,375,800	-29,517,000	1,860,500	3,976,800	195,787,700	2002
-2,276,400	16,557,900	-22,748,100	9,562,800	-20,813,800	-30,921,000	1,828,500	3,966,800	202,196,700	2003
-2,123,400	16,513,900	-22,551,100	8,952,800	-20,559,800	-28,407,000	1,819,500	3,991,800	205,453,700	2004
-2,519,400	16,388,900	-22,998,100	9,576,800	-21,147,800	-30,777,000	1,832,500	3,996,800	205,661,700	2005
-2,280,400	16,597,900	-23,416,100	9,250,800	-21,337,800	-32,589,000	1,849,500	4,014,800	207,725,700	2006
-2,260,400	16,193,900	-22,796,100	9,472,800	-21,043,800	-33,571,000	1,794,500	3,905,800	210,112,700	2007
-2,196,400	16,483,900	-22,023,100	9,716,800	-20,552,800	-32,955,000	1,840,500	4,009,800	212,900,700	2008
-2,722,400	16,323,900	-22,904,100	9,730,800	-21,357,800	-33,760,000	1,818,500	3,959,800	214,543,700	2009
-2,230,400	16,224,900	-22,452,100	9,286,800	-21,473,800	-32,621,000	1,812,500	3,930,800	215,246,700	2010
-2,731,400	16,427,900	-22,864,100	9,957,800	-22,400,800	-35,864,000	1,835,500	3,956,800	216,516,700	2011
-2,615,400	16,188,900	-21,102,100	10,403,800	-21,568,800	-36,366,000	1,818,500	3,941,800	222,296,700	2012
-2,363,400	16,506,900	-22,535,100	10,557,800	-21,678,800	-35,923,000	1,852,500	4,005,800	224,464,700	2013
-2,577,400	16,482,900	-21,998,100	9,961,800	-21,092,800	-35,081,000	1,834,500	4,002,800	222,887,700	2014
-2,361,400	16,281,900	-23,262,100	10,499,800	-22,560,800	-36,168,000	1,825,500	3,925,800	222,305,700	2015
-2,334,400	16,010,900	-22,186,100	9,859,800	-21,784,800	-35,998,000	1,794,500	3,883,800	225,541,700	2016
-2,439,400	16,413,900	-23,048,100	10,411,800	-21,863,800	-35,385,000	1,827,500	3,953,800	221,962,700	2017
-2,287,400	15,790,900	-22,867,100	9,763,800	-22,349,800	-34,980,000	1,783,500	3,836,800	216,330,700	2018
-2,341,400	16,354,900	-22,178,100	10,008,800	-21,788,800	-36,003,000	1,827,500	3,952,800	225,196,700	2019
-2,337,400	16,500,900	-22,196,100	10,116,800	-21,781,800	-35,993,000	1,850,500	4,012,800	225,687,700	2020

c) The estimated costs of Del Valle Pumping Plant are combined with those of South Bay Pumping Plant to simplify the cost allocations.

d) And each year thereafter for the remainder of the project repayment period.

(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)
1960	0	0	0	0	0	0	0	0	0	0
1961	0	0	0	0	0	0	0	0	0	0
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	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	6,750	19,250	22,000	24,800	88,000	134,800	1,000	1,200	2,200
1981	13,750	8,000	21,750	23,000	26,000	88,000	137,000	1,000	2,300	3,300
1982	15,000	9,400	24,400	24,000	27,200	88,000	139,200	2,000	4,600	6,600
1983	16,250	10,800	27,050	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	2,091,050	3,422,300	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, 1972.

b) Metric conversion is acre-feet times 1233.5 equals cubic metre.

c) Entitlements for 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
	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)
1960	0	0	0	0	0	0	0	0	0
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	3,700	14,300	1,000	0	46,600	900	2,300	12,250	81,050
1969	5,000	14,325	3,000	2,400	95,700	1,200	2,500	43,950	168,075
1970	5,700	15,700	3,000	2,500	145,100	1,300	2,600	31,800	207,700
1971	6,700	17,900	3,000	2,300	190,300	1,300	2,800	34,200	258,500
1972	7,700	20,000	3,000	2,600	270,700	1,400	5,366	110,000	420,766
1973	8,700	22,000	3,000	2,900	310,500	1,500	3,100	40,652	392,352
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	30,921	3,000	3,900	442,150	1,600	4,039	57,807	555,117
1977	12,700	30,400	3,000	4,200	483,600	1,700	3,700	54,800	594,100
1978	12,700	32,500	3,000	4,600	534,300	1,900	3,900	58,700	651,600
1979	12,700	34,600	3,000	4,900	583,900	2,000	4,000	62,600	707,700
1980	12,700	36,700	3,000	5,200	634,500	2,200	4,200	66,500	765,000
1981	12,700	38,800	3,000	5,600	691,400	2,300	4,300	70,400	828,500
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	1,023,500	4,000	5,200	93,900	1,201,200
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	818,900	3,422,291	202,000	495,358	65,747,570	233,900	352,152	6,559,148	77,831,319

(in acre-feet) (b

Calendar Year	SOUTHERN CALIFORNIA AREA									
	Antelope Valley-East Kern Water Agency	Castaic Lake Water Agency	Coachella Valley County 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)
1960	0	0	0	0	0	0	0	0	0	0
1961	0	0	0	0	0	0	0	0	0	0
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	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	93,800	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	
	(30)	(31)	(32)	(33)	(34)	(35)	(36)	(37)	(38)
1960	0	0	0	0	0	0	0	0	0
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	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	2,200	650	2,850	1,845,872
1979	0	956,600	0	1,177,873	0	2,600	680	3,280	2,021,553
1980	6,800	1,057,000	1,000	1,304,914	0	4,000	710	4,710	2,230,874
1981	7,800	1,157,300	2,000	1,425,865	4,200	5,450	740	10,390	2,426,805
1982	8,800	1,257,600	3,000	1,546,806	4,600	6,900	770	12,270	2,618,476
1983	9,800	1,358,000	4,000	1,668,557	5,050	8,350	800	14,200	2,816,607
1984	10,800	1,458,300	5,000	1,790,398	5,500	9,800	830	16,130	3,012,528
1985	11,800	1,558,700	6,000	1,912,549	5,950	12,250	860	19,060	3,214,059
1986	12,900	1,659,300	8,000	2,035,890	6,600	14,700	890	22,190	3,414,980
1987	14,000	1,759,800	10,000	2,160,241	7,300	17,150	920	25,370	3,619,661
1988	15,100	1,860,400	13,000	2,286,182	8,000	20,600	960	29,560	3,827,842
1989	16,200	1,961,000	16,000	2,411,933	8,800	24,050	1,000	33,850	4,029,933
1990	17,300	2,011,500	20,000	2,487,900	9,600	27,500	1,040	38,140	4,191,640
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	1,400,600	112,820	2,011,020	238,177,881

TABLE B-5A: ANNUAL WATER QUANTITIES DELIVERED

(in acre-feet) (b

Calendar Year	Grizzly Valley Pipeline PC FC&WCD	NORTH BAY AQUEDUCT (c Reach 2 SC FC&WCD	NORTH BAY AQUEDUCT (c Reach 3 NC FC&WCD(a	NORTH BAY AQUEDUCT (c TOTAL	SOUTH BAY AQUEDUCT 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	620	0	7,350	7,350	0	213	7,195	2,208	0	1,123	5,292
1978	650	0	5,495	5,495	0	221	8,552	2,703	0	1,912	6,212
1979	680	0	5,550	5,550	0	221	8,681	3,180	0	2,390	6,328
1980	710	0	5,605	5,605	0	221	8,809	3,663	0	2,873	6,434
1981	740	0	5,655	5,655	0	221	7,060	3,813	0	3,022	8,884
1982	770	9,400	5,700	15,100	0	221	5,445	4,061	0	3,269	11,004
1983	800	10,800	5,745	16,545	0	221	5,531	4,427	0	3,636	11,185
1984	830	11,160	7,900	19,060	0	400	6,100	4,400	0	2,850	12,250
1985	860	12,870	8,100	20,970	0	600	6,700	4,300	0	2,100	13,300
1986	890	15,240	8,410	23,650	0	700	7,000	4,200	0	2,050	14,050
1987	920	18,320	8,720	27,040	0	800	7,300	4,100	0	2,000	14,800
1988	960	24,900	9,030	33,930	0	900	4,500	4,000	0	1,950	18,650
1989	1,000	31,350	9,340	40,690	0	950	4,700	3,900	0	1,900	19,550
1990	1,040	37,800 (d	9,650	47,450	0	1,000	4,900	3,800	0	1,900	20,400
1991	1,080	37,800	10,200	48,000	0	1,000	5,000	3,900	0	1,900	21,000
1992	1,120	37,800	10,750	48,550	0	1,000	5,200	3,900	0	1,700	21,800
1993	1,160	37,800	11,300	49,100	0	1,000	5,300	4,200	0	1,700	22,200
1994	1,200	37,800	11,850	49,650	0	1,000	5,400	4,400	0	1,800	22,600
1995	1,250	37,800	12,400	50,200	0	1,000	9,400	4,400	0	1,600	19,600
1996	1,300	37,800	13,100	50,900	0	1,000	9,600	4,600	0	1,500	20,100
1997	1,350	37,800	13,800	51,600	0	1,000	9,900	4,700	0	1,400	20,600
1998	1,400	37,800	14,500	52,300	0	1,000	10,100	4,800	0	1,400	21,100
1999	1,450	37,800	15,200	53,000	0	1,000	10,400	4,900	0	1,300	21,600
2000	1,510	37,800	15,900	53,700	0	1,000	10,600	5,100	0	1,200	22,100
2001	1,570	37,800	16,220	54,020	0	1,000	10,800	5,200	0	1,300	22,500
2002	1,630	37,800	16,540	54,340	0	1,000	11,100	5,200	0	1,300	23,000
2003	1,690	37,800	16,860	54,660	0	1,000	11,400	5,200	0	1,400	23,400
2004	1,750	37,800	17,180	54,980	0	1,000	11,600	5,300	0	1,400	23,900
2005	1,810	37,800	17,500	55,300	0	1,000	11,800	5,300	0	1,500	24,400
2006	1,880	37,800	17,840	55,640	0	1,000	12,100	5,000	0	1,400	24,900
2007	1,950	37,800	18,180	55,980	0	1,000	12,300	4,800	0	1,400	25,300
2008	2,020	37,800	18,520	56,320	0	1,000	12,600	4,500	0	1,300	25,800
2009	2,090	37,800	18,860	56,660	0	1,000	12,800	4,300	0	1,300	26,200
2010	2,160	37,800	19,200	57,000	0	1,000	13,000	4,100	0	1,200	26,700
2011	2,240	37,800	19,560	57,360	0	1,000	13,200	3,800	0	900	27,100
2012	2,320	37,800	19,920	57,720	0	1,000	13,400	3,400	0	600	27,600
2013	2,410	37,800	20,280	58,080	0	1,000	13,600	3,400	0	0	28,000
2014	2,500	37,800	20,640	58,440	0	900	13,800	3,000	0	0	28,300
2015	2,600	37,800	21,000	58,800	0	800	14,000	2,400	0	0	28,800
2016	2,700	37,800	21,400	59,200	0	700	14,200	1,800	0	0	29,300
2017	2,700	37,800	21,800	59,600	0	600	14,400	1,800	0	0	29,200
2018	2,700	37,800	22,200	60,000	0	600	14,600	1,000	0	0	29,800
2019	2,700	37,800	22,600	60,400	0	0	14,800	800	0	0	30,400
2020 (f	2,700	37,800	25,000	62,800	0	0	15,000	0	0	0	31,000

a) Includes surplus water delivered prior to May 1, 1973, and nonproject water.
b) Metric conversion is acre-feet times 1233.5 equals cubic metre.
c) For the period 1968 through 1981 annual quantities delivered are nonproject water pumped through an interim facility.
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 June 1962 through November 1967, deliveries were supplied by nonproject water.
f) And thereafter for the remainder of the project repayment period.

FROM EACH AQUEDUCT REACH TO EACH CONTRACTOR[a]

(in acre-feet)[b]

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 (g	3,900
1977	12,290	7,690	76,282	112,293	1,407	0	14,775	1,200	1,530	0	12,160	1,680
1978	14,326	8,774	88,000	130,700	3,900	0	29,500	3,000	1,900	0	41,000	4,600
1979	15,126	8,774	88,000	132,700	4,000	0	31,400	3,000	2,000	0	41,000	4,900
1980	16,026	8,774	88,000	134,800	4,200	0	33,400	3,000	2,200	0	41,000	5,200
1981	17,226	8,774	88,000	137,000	4,300	0	35,300	3,000	2,300	0	41,000	5,600
1982	18,426	8,774	88,000	139,200	4,500	0	37,300	3,000	2,500	0	41,000	5,900
1983	19,626	8,774	88,000	141,400	4,600	0	39,300	3,000	2,800	0	42,900	6,200
1984	20,826	8,774	88,000	143,600	4,800	0	41,100	3,000	3,100	0	45,100	6,500
1985	22,026	8,774	88,000	145,800	4,900	0	43,100	3,000	3,400	0	47,200	6,900
1986	23,326	8,774	88,000	148,100	5,100	0	45,100	3,000	3,700	0	49,300	7,200
1987	24,526	8,774	88,000	150,300	5,200	0	47,000	3,000	4,000	0	51,400	7,500
1988	25,726	8,774	88,000	152,500	5,400	0	49,000	3,000	4,000	0	53,500	7,800
1989	26,926	8,774	90,000	156,700	5,600	0	50,900	3,000	4,000	0	55,600	8,200
1990	28,126	8,774	92,000	160,900	5,700	0	55,100	3,000	4,000	0	57,700	8,500
1991	29,626	8,774	94,000	165,200	5,700	0	55,100	3,000	4,000	0	57,700	8,500
1992	31,126	8,774	96,000	169,500	5,700	0	55,100	3,000	4,000	0	57,700	8,500
1993	32,626	8,774	98,000	173,800	5,700	0	55,100	3,000	4,000	0	57,700	8,500
1994	33,226	8,774	100,000	177,200	5,700	0	55,100	3,000	4,000	0	57,700	8,500
1995	33,226	8,774	100,000	178,000	5,700	0	55,100	3,000	4,000	0	57,700	8,500
1996	33,226	8,774	100,000	178,800	5,700	0	55,100	3,000	4,000	0	57,700	8,500
1997	33,226	8,774	100,000	179,600	5,700	0	55,100	3,000	4,000	0	57,700	8,500
1998	33,226	8,774	100,000	180,400	5,700	0	55,100	3,000	4,000	0	57,700	8,500
1999	33,226	8,774	100,000	181,200	5,700	0	55,100	3,000	4,000	0	57,700	8,500
2000	33,226	8,774	100,000	182,000	5,700	0	55,100	3,000	4,000	0	57,700	8,500
2001	33,226	8,774	100,000	182,800	5,700	0	55,100	3,000	4,000	0	57,700	8,500
2002	33,226	8,774	100,000	183,600	5,700	0	55,100	3,000	4,000	0	57,700	8,500
2003	33,226	8,774	100,000	184,400	5,700	0	55,100	3,000	4,000	0	57,700	8,500
2004	33,226	8,774	100,000	185,200	5,700	0	55,100	3,000	4,000	0	57,700	8,500
2005	33,226	8,774	100,000	186,000	5,700	0	55,100	3,000	4,000	0	57,700	8,500
2006	33,226	8,774	100,000	186,400	5,700	0	55,100	3,000	4,000	0	57,700	8,500
2007	33,226	8,774	100,000	186,800	5,700	0	55,100	3,000	4,000	0	57,700	8,500
2008	33,226	8,774	100,000	187,200	5,700	0	55,100	3,000	4,000	0	57,700	8,500
2009	33,226	8,774	100,000	187,600	5,700	0	55,100	3,000	4,000	0	57,700	8,500
2010 (f	33,226	8,774	100,000	188,000	5,700	0	55,100	3,000	4,000	0	57,700	8,500

Calendar Year	CALIFORNIA AQUEDUCT (continued)												
	SOUTH SAN JOAQUIN DIVISION (continued)												
	Reach 8 D (continued)	Reach 9		Reach 10 A			Reach 11 B		Reach 12D	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 (M&I)	KCWA (Ag.)	KCWA (M&I)	KCWA (Ag.)
	(24)	(25)	(26)	(27)	(28)	(29)	(30)	(31)	(32)	(33)	(34)	(35)	(36)
1968	0	30,951	0	0	0	0	0	24,776	0	0	0	0	0
1969	0	24,489	0	0	0	2,842	0	64,682	0	0	0	0	0
1970	0	46,114	1,855	0	158	4,315	0	72,279	0	0	9,279	0	4,891
1971	34,920	58,356	0	0	9,973	0	0	63,773	0	0	28,056	0	0
1972	107,699	75,464	0	0	5,876	0	0	72,358	0	0	62,342	0	17,388
1973	21,387	54,583	0	0	22,948	0	0	67,544	0	0	13,082	0	9,297
1974	36,386	63,814	0	10,019	22,719	0	0	87,476	0	2,651	4,248	8,038	4,246
1975	40,964	50,021	0	2,791	72,121	0	0	85,675	0	0	10,787	8,538	7,059
1976	28,316	53,465	0	74	50,444	0	0	85,067	0	37,519	20,555	5,626	8,855
1977	10,041	22,675	0	420	36,527	0	5,073	37,893	0	17,631	26,627	0	3,573
1978	29,200	48,900	0	0	99,090	0	0	100,500	1,029	25,716	43,981	14,971	10,313
1979	31,200	52,800	0	0	110,982	0	0	106,908	4,635	26,470	49,940	10,140	12,000
1980	33,100	57,500	0	0	123,245	0	0	112,765	6,451	27,230	56,385	3,444	13,875
1981	35,100	67,350	0	0	137,390	0	0	118,900	7,161	27,940	63,882	2,774	15,938
1982	37,000	71,700	0	0	150,910	0	0	124,500	9,036	28,360	72,292	1,304	17,938
1983	38,900	73,750	0	0	166,550	0	0	128,900	10,620	28,420	81,617	285	20,563
1984	41,000	79,300	0	0	181,500	0	0	133,500	10,620	29,210	90,990	0	22,300
1985	42,900	85,600	0	0	196,200	0	0	138,100	10,620	30,000	100,400	0	23,550
1986	44,900	92,000	0	0	210,000	0	0	142,700	10,620	30,000	109,600	0	24,500
1987	46,900	98,300	0	0	222,500	0	0	147,300	10,620	30,000	119,800	0	25,250
1988	48,800	104,700	0	0	236,000	0	0	152,700	10,620	30,000	128,700	0	25,850
1989	50,800	109,100	0	0	245,700	0	0	156,000	10,620	30,000	136,900	0	26,150
1990 (f	54,900	113,500	0	0	255,510	0	0	160,200	10,620	30,000	145,840	0	26,900

g) *Includes 10,500 A/F of water delivered in accordance with an "exchange water" agreement with Metropolitan Water District.*

TABLE B-5A: ANNUAL WATER QUANTITIES DELIVERED

(in acre-feet)[b]

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
	(37)	(38)	(39)	(40)	(41)	(42)	(43)	(44)	(45)	(46)	(47)
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	6,587	15,551	5,436	5,872	3,148	1,793	0	1,411	10,245	5,485
1978	0	0	20,400	0	50,000	4,100	24,200	900	3,435	25,690	14,189
1979	2,025	0	25,600	0	50,000	4,400	31,300	935	3,277	23,560	18,391
1980	7,605	0	35,700	0	50,000	4,800	34,400	1,100	3,435	25,230	25,474
1981	8,265	0	50,800	0	50,000	5,200	34,600	1,182	3,387	25,078	29,649
1982	8,660	0	64,700	0	50,000	5,700	34,800	1,300	3,435	25,780	41,194
1983	8,895	0	82,300	0	50,000	6,300	35,000	1,400	3,435	25,780	41,194
1984	9,880	0	91,350	4,000	50,000	7,200	38,000	1,500	3,435	25,805	41,680
1985	10,580	0	99,200	8,000	50,000	8,200	41,000	1,600	3,435	25,830	42,155
1986	11,380	0	107,350	12,000	51,000	9,400	44,000	1,700	3,685	25,905	42,855
1987	12,180	0	118,100	16,000	52,000	10,700	47,000	1,800	3,710	25,955	43,655
1988	12,880	0	124,000	20,000	53,000	12,300	50,000	1,900	3,735	26,005	44,455
1989	13,580	0	126,000	24,100	54,000	13,600	52,600	2,000	3,760	26,055	45,255
1990	14,380	0	129,100	28,200	55,000	15,000	55,200	2,000	3,785	26,105	46,055
1991	14,380	0	129,100	28,200	55,000	15,000	55,200	2,000	3,810	26,155	46,855
1992	14,380	0	129,100	28,200	55,000	15,000	55,200	2,000	3,835	26,205	47,655
1993	14,380	0	129,100	28,200	55,000	15,000	55,200	2,000	3,860	26,255	48,455
1994	14,380	0	129,100	28,200	55,000	15,000	55,200	2,000	3,885	26,305	49,255
1995	14,380	0	129,100	28,200	55,000	15,000	55,200	2,000	3,910	26,355	50,055
1996	14,380	0	129,100	28,200	55,000	15,000	55,200	2,000	3,985	26,455	51,155
1997	14,380	0	129,100	28,200	55,000	15,000	55,200	2,000	4,060	26,555	52,255
1998	14,380	0	129,100	28,200	55,000	15,000	55,200	2,000	4,135	26,655	53,355
1999	14,380	0	129,100	28,200	55,000	15,000	55,200	2,000	4,210	26,755	54,455
2000	14,380	0	129,100	28,200	55,000	15,000	55,200	2,000	4,285	26,855	55,555
2001	14,380	0	129,100	28,200	55,000	15,000	55,200	2,000	4,405	26,980	56,790
2002	14,380	0	129,100	28,200	55,000	15,000	55,200	2,000	4,515	27,100	58,025
2003	14,380	0	129,100	28,200	55,000	15,000	55,200	2,000	4,635	27,225	59,260
2004	14,380	0	129,100	28,200	55,000	15,000	55,200	2,000	4,750	27,350	60,500
2005	14,380	0	129,100	28,200	55,000	15,000	55,200	2,000	4,750	27,350	60,500
2006	14,380	0	129,100	28,200	55,000	15,000	55,200	2,000	4,750	27,350	60,500
2007	14,380	0	129,100	28,200	55,000	15,000	55,200	2,000	4,750	27,350	60,500
2008	14,380	0	129,100	28,200	55,000	15,000	55,200	2,000	4,750	27,350	60,500
2009	14,380	0	129,100	28,200	55,000	15,000	55,200	2,000	4,750	27,350	60,500
2010	14,380	0	129,100	28,200	55,000	15,000	55,200	2,000	4,750	27,350	60,500
2011	14,380	0	129,100	28,200	55,000	15,000	55,200	2,000	4,750	27,350	60,500
2012	14,380	0	129,100	28,200	55,000	15,000	55,200	2,000	4,750	27,350	60,500
2013	14,380	0	129,100	28,200	55,000	15,000	55,200	2,000	4,750	27,350	60,500
2014	14,380	0	129,100	28,200	55,000	15,000	55,200	2,000	4,750	27,350	60,500
2015	14,380	0	129,100	28,200	55,000	15,000	55,200	2,000	4,750	27,350	60,500
2016	14,380	0	129,100	28,200	55,000	15,000	55,200	2,000	4,750	27,350	60,500
2017	14,380	0	129,100	28,200	55,000	15,000	55,200	2,000	4,750	27,350	60,500
2018	14,380	0	129,100	28,200	55,000	15,000	55,200	2,000	4,750	27,350	60,500
2019	14,380	0	129,100	28,200	55,000	15,000	55,200	2,000	4,750	27,350	60,500
2020(f	14,380	0	129,100	28,200	55,000	15,000	55,200	2,000	4,750	27,350	60,500

FROM EACH AQUEDUCT REACH TO EACH CONTRACTOR [a]

(in acre-feet) [b]

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]	CVCWD [h]	DWA [h]	MWA	MWA	CLAWA
	(48)	(49)	(50)	(51)	(52)	(53)	(54)	(55)	(56)	(57)	(58)	(59)
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	5,739	0	0	292	514	0	19,279-	7,579	11,700	62	0	1,363
1978	11,805	100	0	920	1,286	570	23,242-	9,242	14,000	12,600	0	1,847
1979	10,580	300	0	957	1,359	775	25,063-	10,063	15,000	13,033	0	2,200
1980	12,655	600	0	1,150	1,461	920	27,884-	10,884	17,000	17,200	0	2,565
1981	12,940	1,000	0	1,270	1,486	953	31,105-	12,105	19,000	28,375	0	2,970
1982	14,355	2,100	0	1,380	1,586	1,075	34,326-	13,326	21,000	31,900	0	3,475
1983	14,355	3,000	0	1,490	1,586	1,075	37,547-	14,547	23,000	34,300	0	3,755
1984	14,880	4,000	0	1,610	1,625	1,125	40,768-	15,768	25,000	36,700	0	4,060
1985	15,405	5,000	0	1,730	1,675	1,175	43,989-	16,989	27,000	39,000	0	4,350
1986	16,205	6,000	0	1,840	1,750	1,250	47,210-	18,210	29,000	41,400	0	4,640
1987	17,105	7,000	0	1,960	1,825	1,350	50,931-	19,431	31,500	43,700	0	4,930
1988	18,005	8,000	0	2,070	1,900	1,450	54,652-	20,652	34,000	46,000	0	5,220
1989	18,905	9,000	0	2,190	1,975	1,550	58,373-	21,873	36,500	48,500	0	5,510
1990	19,805	10,000	0	2,300	2,050	1,650	61,200-	23,100	38,100	50,800	0	5,800
1991	20,705	11,460	0	2,300	2,125	1,750	61,200-	23,100	38,100	50,800	0	5,800
1992	21,605	12,920	0	2,300	2,200	1,850	61,200-	23,100	38,100	50,800	0	5,800
1993	22,505	14,380	0	2,300	2,275	1,950	61,200-	23,100	38,100	50,800	0	5,800
1994	23,405	15,840	0	2,300	2,350	2,050	61,200-	23,100	38,100	50,800	0	5,800
1995	24,305	17,300	0	2,300	2,425	2,150	61,200-	23,100	38,100	50,800	0	5,800
1996	25,680	17,300	0	2,300	2,525	2,300	61,200-	23,100	38,100	50,800	0	5,800
1997	27,055	17,300	0	2,300	2,625	2,450	61,200-	23,100	38,100	50,800	0	5,800
1998	28,430	17,300	0	2,300	2,725	2,600	61,200-	23,100	38,100	50,800	0	5,800
1999	29,805	17,300	0	2,300	2,825	2,750	61,200-	23,100	38,100	50,800	0	5,800
2000	31,180	17,300	0	2,300	2,925	2,900	61,200-	23,100	38,100	50,800	0	5,800
2001	32,635	17,300	0	2,300	3,050	3,080	61,200-	23,100	38,100	50,800	0	5,800
2002	34,090	17,300	0	2,300	3,175	3,260	61,200-	23,100	38,100	50,800	0	5,800
2003	35,545	17,300	0	2,300	3,300	3,440	61,200-	23,100	38,100	50,800	0	5,800
2004	37,000	17,300	0	2,300	3,425	3,625	61,200-	23,100	38,100	50,800	0	5,800
2005	37,000	17,300	0	2,300	3,425	3,625	61,200-	23,100	38,100	50,800	0	5,800
2006	37,000	17,300	0	2,300	3,425	3,625	61,200-	23,100	38,100	50,800	0	5,800
2007	37,000	17,300	0	2,300	3,425	3,625	61,200-	23,100	38,100	50,800	0	5,800
2008	37,000	17,300	0	2,300	3,425	3,625	61,200-	23,100	38,100	50,800	0	5,800
2009	37,000	17,300	0	2,300	3,425	3,625	61,200-	23,100	38,100	50,800	0	5,800
2010	37,000	17,300	0	2,300	3,425	3,625	61,200-	23,100	38,100	50,800	0	5,800
2011	37,000	17,300	0	2,300	3,425	3,625	0	23,100	38,100	50,800	0	5,800
2012	37,000	17,300	0	2,300	3,425	3,625	0	23,100	38,100	50,800	0	5,800
2013	37,000	17,300	0	2,300	3,425	3,625	0	23,100	38,100	50,800	0	5,800
2014	37,000	17,300	0	2,300	3,425	3,625	0	23,100	38,100	50,800	0	5,800
2015	37,000	17,300	0	2,300	3,425	3,625	0	23,100	38,100	50,800	0	5,800
2016	37,000	17,300	0	2,300	3,425	3,625	0	23,100	38,100	50,800	0	5,800
2017	37,000	17,300	0	2,300	3,425	3,625	0	23,100	38,100	50,800	0	5,800
2018	37,000	17,300	0	2,300	3,425	3,625	0	23,100	38,100	50,800	0	5,800
2019	37,000	17,300	0	2,300	3,425	3,625	0	23,100	38,100	50,800	0	5,800
2020 (f	37,000	17,300	0	2,300	3,425	3,625	0	23,100	38,100	50,800	0	5,800

h) In accordance with the Exchange Agreement between the noted agencies, Metropolitan Water District assumed responsibility for repayment of variable OMP&R costs on the exchange water in reaches beyond Reach 22B, and Desert Water Agency and Coachella Valley County Water District for such costs from the Delta through Reach 22B. The adjustment in deliveries shown in Column 54 provides for compliance with the repayment of the Agreement.

TABLE B-5A: ANNUAL WATER QUANTITIES DELIVERED

(in acre-feet)[b]

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	MWD-SC	SBVMWD	MWD-SC	MWD-SC
	(60)	(61)	(62)	(63)	(64)	(65)	(66)	(67)
1972	0	1,275	0	0	0	0	0	0
1973	444	32,426	0	0	18,942	0	0	0
1974	84,979	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	300,696	40,592	9,000	0	0	0	100	129,572
1978	435,510	60,000	15,700	0	0	0	11,690	170,500
1979	384,928	62,500	16,600	0	0	0	18,300	206,560
1980	421,600	65,500	17,400	6,800	0	0	22,500	173,600
1981	236,965	68,500	18,300	7,800	0	0	187,400	193,335
1982	244,000	71,500	19,100	8,800	0	0	195,900	177,800
1983	237,500	73,500	19,900	9,800	0	1,000	200,400	179,800
1984	288,750	75,500	20,700	10,800	0	2,500	116,150	212,800
1985	340,000	77,400	21,800	11,800	0	4,100	32,000	245,700
1986	330,000	79,300	23,200	12,900	0	5,700	33,000	254,700
1987	310,000	81,700	24,600	14,000	0	7,300	34,000	273,700
1988	290,000	84,200	26,000	15,100	0	8,800	36,000	291,700
1989	280,000	86,700	27,400	16,200	0	10,300	37,000	300,700
1990	275,000	89,900	28,800	17,300	0	11,600	38,000	304,700
1991	270,000	91,000	28,800	17,300	0	11,600	39,000	308,700
1992	265,000	91,000	28,800	17,300	0	11,600	40,000	312,700
1993	260,000	91,000	28,800	17,300	0	11,600	41,000	316,700
1994	255,000	91,000	28,800	17,300	0	11,600	42,000	320,700
1995	250,000	91,000	28,800	17,300	0	11,600	43,000	324,700
1996	249,660	91,000	28,800	17,300	0	11,600	44,200	323,840
1997	249,320	91,000	28,800	17,300	0	11,600	45,400	322,980
1998	248,980	91,000	28,800	17,300	0	11,600	46,600	322,120
1999	248,640	91,000	28,800	17,300	0	11,600	47,800	321,260
2000	248,300	91,000	28,800	17,300	0	11,600	49,000	320,400
2001	250,300	91,000	28,800	17,300	0	11,600	50,000	319,400
2002	252,300	91,000	28,800	17,300	0	11,600	51,000	318,400
2003	254,300	91,000	28,800	17,300	0	11,600	52,000	317,400
2004	256,300	91,000	28,800	17,300	0	11,600	53,000	316,400
2005	258,300	91,000	28,800	17,300	0	11,600	54,000	315,400
2006	256,300	91,000	28,800	17,300	0	11,600	54,800	314,600
2007	254,300	91,000	28,800	17,300	0	11,600	55,600	313,800
2008	252,300	91,000	28,800	17,300	0	11,600	56,400	313,000
2009	250,300	91,000	28,800	17,300	0	11,600	57,200	312,200
2010	248,300	91,000	28,800	17,300	0	11,600	58,000	311,400
2011	187,100	91,000	28,800	17,300	0	11,600	58,800	310,600
2012	187,100	91,000	28,800	17,300	0	11,600	59,600	309,800
2013	187,100	91,000	28,800	17,300	0	11,600	60,400	309,000
2014	187,100	91,000	28,800	17,300	0	11,600	61,200	308,200
2015	187,100	91,000	28,800	17,300	0	11,600	61,200	308,200
2016	187,100	91,000	28,800	17,300	0	11,600	61,200	308,200
2017	187,100	91,000	28,800	17,300	0	11,600	61,200	308,200
2018	187,100	91,000	28,800	17,300	0	11,600	61,200	308,200
2019	187,100	91,000	28,800	17,300	0	11,600	61,200	308,200
2020 (f	187,100	91,000	28,800	17,300	0	11,600	61,200	308,200

FROM EACH AQUEDUCT REACH TO EACH CONTRACTOR [a]

(in acre-feet) [b]

Calendar Year	CALIFORNIA AQUEDUCT (continued)										Total California Aqueduct
	WEST BRANCH, CALIFORNIA AQUEDUCT				COASTAL BRANCH, CALIFORNIA AQUEDUCT						
	Reach 29 F	Reach 30			Reach 31 A		Reach 33 A	Reach 34	Reach 35		
	AVEKWA	MWD-SC	VCFCD	CLWA	KCWA (Ag.)	DDWD	SLOC FC&WCD	SLOC FC&WCD	SLOC FC&WCD	SBC FC&WCD	
	(68)	(69)	(70)	(71)	(72)	(73)	(74)	(75)	(76)	(77)	(78)
1962	0	0	0	0	0	0	0	0	0	0	8,906-
1963	0	0	0	0	0	0	0	0	0	0	12,645-
1964	0	0	0	0	0	0	0	0	0	0	20,911-
1965	0	0	0	0	0	0	0	0	0	0	34,026-
1966	0	0	0	0	0	0	0	0	0	0	54,913-
1967	0	0	0	0	0	0	0	0	0	0	45,225-
1968	0	0	0	0	71,657	7,382	0	0	0	0	192,188
1969	0	0	0	0	52,094	9,970	0	0	0	0	195,705
1970	0	0	0	0	71,910	11,739	0	0	0	0	276,211
1971	0	0	0	0	98,481	12,490	0	0	0	0	553,081
1972	53	71,938	0	0	107,850	13,905	0	0	0	0	895,006
1973	20	155,297	0	0	69,227	9,418	0	0	0	0	638,930
1974	36	209,136	0	0	68,474	9,700	0	0	0	0	783,982
1975	26	374,280	0	0	74,516	10,700	0	0	0	0	1,129,728
1976	24	420,684	0	0	78,358	11,700	0	0	0	0	1,245,662
1977	21	213,379	0	4,500	33,084	5,080	0	0	0	0	992,734
1978	25	261,842	0	5,000	90,200	12,700	0	0	0	0	1,692,809
1979	25	277,000	0	5,000	95,700	12,700	0	0	0	0	1,759,380
1980	25	292,100	1,000	7,000	100,000	12,700	0	0	0	0	1,867,515
1981	122	348,000	2,000	8,200	100,000	12,700	0	0	0	0	2,008,412
1982	275	368,500	3,000	9,400	104,100	12,700	0	0	0	0	2,113,755
1983	275	382,600	4,000	10,600	110,500	12,700	0	0	0	0	2,204,845
1984	300	382,400	5,000	11,800	111,250	12,700	0	0	0	0	2,279,520
1985	325	382,300	6,000	13,000	111,950	12,700	0	0	0	0	2,353,280
1986	350	422,300	8,000	13,600	111,950	12,700	2,228	1,113	2,228	22,260	2,495,609
1987	400	467,300	10,000	14,200	111,950	12,700	2,509	1,255	2,509	27,220	2,623,083
1988	450	602,300	13,000	14,800	111,950	12,700	2,791	1,395	2,791	32,180	2,837,147
1989	500	732,300	16,000	15,400	111,950	12,700	3,072	1,537	3,072	37,140	3,033,121
1990	550	857,300	20,000	16,000	111,950	12,700	3,354	1,677	3,354	42,100	3,232,985
1991	600	894,300	20,000	16,600	111,950	12,700	3,762	1,880	3,762	42,640	3,276,704
1992	650	931,300	20,000	17,200	111,950	12,700	4,169	2,085	4,169	43,180	3,319,323
1993	700	968,300	20,000	17,800	111,950	12,700	4,577	2,288	4,577	43,720	3,361,942
1994	750	1,005,300	20,000	18,400	111,950	12,700	4,984	2,493	4,984	44,260	3,404,561
1995	800	1,042,300	20,000	19,000	111,950	12,700	5,392	2,696	5,392	44,800	3,447,180
1996	900	1,064,300	20,000	19,400	111,950	12,700	5,796	2,899	5,796	45,800	3,474,591
1997	1,000	1,086,300	20,000	19,800	111,950	12,700	6,201	3,100	6,201	46,880	3,502,082
1998	1,100	1,108,300	20,000	20,200	111,950	12,700	6,606	3,301	6,606	47,920	3,529,533
1999	1,200	1,130,300	20,000	20,600	111,950	12,700	7,010	3,504	7,010	48,960	3,556,984
2000	1,300	1,152,300	20,000	21,000	111,950	12,700	7,414	3,707	7,414	50,000	3,584,435
2001	1,400	1,174,300	20,000	21,600	111,950	12,700	7,931	3,965	7,931	51,540	3,615,207
2002	1,500	1,196,300	20,000	22,200	111,950	12,700	8,448	4,223	8,448	53,080	3,645,964
2003	1,600	1,218,300	20,000	22,800	111,950	12,700	8,965	4,481	8,965	54,620	3,676,736
2004	1,750	1,240,300	20,000	23,400	111,950	12,700	9,482	4,739	9,482	56,160	3,707,563
2005	1,750	1,262,300	20,000	24,000	111,950	12,700	10,000	5,000	10,000	57,700	3,735,000
2006	1,750	1,286,300	20,000	24,400	111,950	12,700	10,000	5,000	10,000	57,700	3,757,400
2007	1,750	1,310,300	20,000	24,800	111,950	12,700	10,000	5,000	10,000	57,700	3,779,800
2008	1,750	1,334,300	20,000	25,200	111,950	12,700	10,000	5,000	10,000	57,700	3,802,200
2009	1,750	1,358,300	20,000	25,600	111,950	12,700	10,000	5,000	10,000	57,700	3,824,600
2010	1,750	1,382,300	20,000	26,000	111,950	12,700	10,000	5,000	10,000	57,700	3,847,000
2011	1,750	1,406,300	20,000	26,600	111,950	12,700	10,000	5,000	10,000	57,700	3,871,600
2012	1,750	1,430,300	20,000	27,200	111,950	12,700	10,000	5,000	10,000	57,700	3,896,200
2013	1,750	1,454,300	20,000	27,800	111,950	12,700	10,000	5,000	10,000	57,700	3,920,800
2014	1,750	1,455,000	20,000	28,400	111,950	12,700	10,000	5,000	10,000	57,700	3,922,100
2015	1,750	1,455,000	20,000	29,000	111,950	12,700	10,000	5,000	10,000	57,700	3,922,700
2016	1,750	1,455,000	20,000	29,600	111,950	12,700	10,000	5,000	10,000	57,700	3,923,300
2017	1,750	1,455,000	20,000	30,200	111,950	12,700	10,000	5,000	10,000	57,700	3,923,900
2018	1,750	1,455,000	20,000	30,800	111,950	12,700	10,000	5,000	10,000	57,700	3,924,500
2019	1,750	1,455,000	20,000	31,400	111,950	12,700	10,000	5,000	10,000	57,700	3,925,100
2020(f	1,750	1,455,000	20,000	41,500	111,950	12,700	10,000	5,000	10,000	57,700	3,935,200

(in acre-feet) [b]

Calendar Year	NORTH BAY AREA [c]			SOUTH BAY AREA [d]				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)
1960	0	0	0	0	0	0	0	0	0	0
1961	0	0	0	0	0	0	0	0	0	0
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	7,350	0	7,350	16,031	19,980	76,282	112,293	0	0	0
1978	5,495	0	5,495	19,600	23,100	88,000	130,700	0	0	0
1979	5,550	0	5,550	20,800	23,900	88,000	132,700	0	0	0
1980	5,605	0	5,605	22,000	24,800	88,000	134,800	0	0	0
1981	5,655	0	5,655	23,000	26,000	88,000	137,000	0	0	0
1982	5,700	9,400	15,100	24,000	27,200	88,000	139,200	0	0	0
1983	5,745	10,800	16,545	25,000	28,400	88,000	141,400	0	0	0
1984	7,900	11,160	19,060	26,000	29,600	88,000	143,600	0	0	0
1985	8,100	12,870	20,970	27,000	30,800	88,000	145,800	0	0	0
1986	8,410	15,240	23,650	28,000	32,100	88,000	148,100	5,569	22,260	27,829
1987	8,720	18,320	27,040	29,000	33,300	88,000	150,300	6,273	27,220	33,493
1988	9,030	24,900	33,930	30,000	34,500	88,000	152,500	6,977	32,180	39,157
1989	9,340	31,350	40,690	31,000	35,700	90,000	156,700	7,681	37,140	44,821
1990	9,650	37,800	47,450	32,000	36,900	92,000	160,900	8,385	42,100	50,485
1991	10,200	37,800	48,000	32,800	38,400	94,000	165,200	9,404	42,640	52,044
1992	10,750	37,800	48,550	33,600	39,900	96,000	169,500	10,423	43,180	53,603
1993	11,300	37,800	49,100	34,400	41,400	98,000	173,800	11,442	43,720	55,162
1994	11,850	37,800	49,650	35,200	42,000	100,000	177,200	12,461	44,260	56,721
1995	12,400	37,800	50,200	36,000	42,000	100,000	178,000	13,480	44,800	58,280
1996	13,100	37,800	50,900	36,800	42,000	100,000	178,800	14,491	45,800	60,291
1997	13,800	37,800	51,600	37,600	42,000	100,000	179,600	15,502	46,880	62,382
1998	14,500	37,800	52,300	38,400	42,000	100,000	180,400	16,513	47,920	64,433
1999	15,200	37,800	53,000	39,200	42,000	100,000	181,200	17,524	48,960	66,484
2000	15,900	37,800	53,700	40,000	42,000	100,000	182,000	18,535	50,000	68,535
2001	16,220	37,800	54,020	40,800	42,000	100,000	182,800	19,827	51,540	71,367
2002	16,540	37,800	54,340	41,600	42,000	100,000	183,600	21,119	53,080	74,199
2003	16,860	37,800	54,660	42,400	42,000	100,000	184,400	22,411	54,620	77,031
2004	17,180	37,800	54,980	43,200	42,000	100,000	185,200	23,703	56,160	79,863
2005	17,500	37,800	55,300	44,000	42,000	100,000	186,000	25,000	57,700	82,700
2006	17,840	37,800	55,640	44,400	42,000	100,000	186,400	25,000	57,700	82,700
2007	18,180	37,800	55,980	44,800	42,000	100,000	186,800	25,000	57,700	82,700
2008	18,520	37,800	56,320	45,200	42,000	100,000	187,200	25,000	57,700	82,700
2009	18,860	37,800	56,660	45,600	42,000	100,000	187,600	25,000	57,700	82,700
2010	19,200	37,800	57,000	46,000	42,000	100,000	188,000	25,000	57,700	82,700
2011	19,560	37,800	57,360	46,000	42,000	100,000	188,000	25,000	57,700	82,700
2012	19,920	37,800	57,720	46,000	42,000	100,000	188,000	25,000	57,700	82,700
2013	20,280	37,800	58,080	46,000	42,000	100,000	188,000	25,000	57,700	82,700
2014	20,640	37,800	58,440	46,000	42,000	100,000	188,000	25,000	57,700	82,700
2015	21,000	37,800	58,800	46,000	42,000	100,000	188,000	25,000	57,700	82,700
2016	21,400	37,800	59,200	46,000	42,000	100,000	188,000	25,000	57,700	82,700
2017	21,800	37,800	59,600	46,000	42,000	100,000	188,000	25,000	57,700	82,700
2018	22,200	37,800	60,000	46,000	42,000	100,000	188,000	25,000	57,700	82,700
2019	22,600	37,800	60,400	46,000	42,000	100,000	188,000	25,000	57,700	82,700
2020	25,000	37,800	62,800	46,000	42,000	100,000	188,000	25,000	57,700	82,700
2021	25,000	37,800	62,800	46,000	42,000	100,000	188,000	25,000	57,700	82,700
2022	25,000	37,800	62,800	46,000	42,000	100,000	188,000	25,000	57,700	82,700
2023	25,000	37,800	62,800	46,000	42,000	100,000	188,000	25,000	57,700	82,700
2024	25,000	37,800	62,800	46,000	42,000	100,000	188,000	25,000	57,700	82,700
2025	25,000	37,800	62,800	46,000	42,000	100,000	188,000	25,000	57,700	82,700
2026	25,000	37,800	62,800	46,000	42,000	100,000	188,000	25,000	57,700	82,700
2027	25,000	37,800	62,800	46,000	42,000	100,000	188,000	25,000	57,700	82,700
2028	25,000	37,800	62,800	46,000	42,000	100,000	188,000	25,000	57,700	82,700
2029	25,000	37,800	62,800	46,000	42,000	100,000	188,000	25,000	57,700	82,700
2030	25,000	37,800	62,800	46,000	42,000	100,000	188,000	25,000	57,700	82,700
2031	25,000	37,800	62,800	46,000	42,000	100,000	188,000	25,000	57,700	82,700
2032	25,000	37,800	62,800	46,000	42,000	100,000	188,000	25,000	57,700	82,700
2033	25,000	37,800	62,800	46,000	42,000	100,000	188,000	25,000	57,700	82,700
2034	25,000	37,800	62,800	46,000	42,000	100,000	188,000	25,000	57,700	82,700
2035	25,000	37,800	62,800	46,000	42,000	100,000	188,000	25,000	57,700	82,700
TOTAL	1,033,861	1,872,840	2,906,701	2,385,786	2,456,770	6,556,069	11,398,625	1,036,720	2,623,160	3,659,880

a) Includes surplus water delivered prior to May 1, 1973 and nonproject water.
b) Metric conversion is acre-feet times 1233.5 equals cubic metre.
c) For the period 1968 through 1981, annual quantities delivered are nonproject water pumped through an interim facility.
d) For the period June 1962 through November 1967, deliveries were supplied by nonproject water.

DELIVERED TO EACH CONTRACTOR[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
	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)
1960	0	0	0	0	0	0	0	0	0
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	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 (e	3,000	3,900	439,250	1,600	4,112	54,911	559,894
1977	5,080	12,160	1,200	1,680	221,890	1,530	1,407	24,816	269,763
1978	12,700	41,000	3,000	4,600	534,300	1,900	3,900	58,700	660,100
1979	12,700	41,000	3,000	4,900	583,835	2,000	4,000	62,600	714,035
1980	12,700	41,000	3,000	5,200	634,500	2,200	4,200	66,500	769,300
1981	12,700	41,000	3,000	5,600	691,382	2,300	4,300	70,400	830,682
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	1,023,500	4,000	5,200	93,900	1,201,200
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	838,684	3,535,421	204,961	507,968	66,089,661	233,730	361,869	6,701,529	78,473,823

e) *Includes 10,500 acre-feet of water delivered in accordance with an "exchange water" agreement with Metropolitan Water District.*

(in acre-feet) [b]

Calendar Year	SOUTHERN CALIFORNIA AREA									
	Antelope Valley-East Kern Water Agency	Castaic Lake Water Agency	Coachella Valley County 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)
1960	0	0	0	0	0	0	0	0	0	0
1961	0	0	0	0	0	0	0	0	0	0
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	23,415	4,500	7,579	1,363	11,700	292	62	0	40,592	9,000
1978	57,000	5,000	9,242	1,847	14,000	920	12,600	100	60,000	15,700
1979	57,967	5,000	10,063	2,200	15,000	957	13,033	300	62,500	16,600
1980	69,200	7,000	10,884	2,565	17,000	1,150	17,200	600	65,500	17,400
1981	73,615	8,200	12,105	2,970	19,000	1,270	28,375	1,000	68,500	18,300
1982	87,700	9,400	13,326	3,475	21,000	1,380	31,900	2,100	71,500	19,100
1983	87,700	10,600	14,547	3,755	23,000	1,490	34,300	3,000	74,500	19,900
1984	88,850	11,800	15,768	4,060	25,000	1,610	36,700	4,000	78,000	20,700
1985	90,000	13,000	16,989	4,350	27,000	1,730	39,000	5,000	81,500	21,800
1986	92,000	13,600	18,210	4,640	29,000	1,840	41,400	6,000	85,000	23,200
1987	94,000	14,200	19,431	4,930	31,500	1,960	43,700	7,000	89,000	24,600
1988	96,000	14,800	20,652	5,220	34,000	2,070	46,000	8,000	93,000	26,000
1989	98,000	15,400	21,873	5,510	36,500	2,190	48,500	9,000	97,000	27,400
1990	100,000	16,000	23,100	5,800	38,100	2,300	50,800	10,000	101,500	28,800
1991	102,000	16,600	23,100	5,800	38,100	2,300	50,800	11,460	102,600	28,800
1992	104,000	17,200	23,100	5,800	38,100	2,300	50,800	12,920	102,600	28,800
1993	106,000	17,800	23,100	5,800	38,100	2,300	50,800	14,380	102,600	28,800
1994	108,000	18,400	23,100	5,800	38,100	2,300	50,800	15,840	102,600	28,800
1995	110,000	19,000	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
1996	113,000	19,400	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
1997	116,000	19,800	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
1998	119,000	20,200	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
1999	122,000	20,600	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
2000	125,000	21,000	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
2001	128,340	21,600	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
2002	131,665	22,200	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
2003	135,005	22,800	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
2004	138,400	23,400	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
2005	138,400	24,000	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
2006	138,400	24,400	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
2007	138,400	24,800	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
2008	138,400	25,200	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
2009	138,400	25,600	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
2010	138,400	26,000	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
2011	138,400	26,600	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
2012	138,400	27,200	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
2013	138,400	27,800	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
2014	138,400	28,400	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
2015	138,400	29,000	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
2016	138,400	29,600	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
2017	138,400	30,200	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
2018	138,400	30,800	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
2019	138,400	31,400	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	7,101,439	1,503,500	1,280,069	316,992	2,098,300	126,796	2,729,639	820,000	5,761,536	1,596,633

DELIVERED TO EACH CONTRACTOR[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	
	(30)	(31)	(32)	(33)	(34)	(35)	(36)	(37)	(38)
1960	0	0	0	0	0	0	0	0	0
1961	0	0	0	0	0	0	0	0	0
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	277,715	0	313,632	0	127	648	775	878,945
1975	0	526,491	0	573,219	0	253	405	658	1,230,830
1976	0	618,451	0	685,768	0	900	382	1,282	1,380,497
1977	0	624,468	0	722,971	0	1,050	620	1,670	1,114,047
1978	0	856,300	0	1,032,709	0	1,200	650	1,850	1,830,854
1979	0	861,725	0	1,045,345	0	1,350	680	2,030	1,899,660
1980	6,800	881,916	1,000	1,098,215	0	1,500	710	2,210	2,010,130
1981	7,800	934,595	2,000	1,177,730	4,200	1,700	740	6,640	2,157,707
1982	8,800	951,874	3,000	1,224,555	4,600	6,900	770	12,270	2,280,325
1983	9,800	962,753	4,000	1,249,345	5,050	8,350	800	14,200	2,376,990
1984	10,800	959,332	5,000	1,261,620	5,500	9,800	830	16,130	2,458,310
1985	11,800	956,011	6,000	1,274,180	5,950	12,250	860	19,060	2,539,110
1986	12,900	992,790	8,000	1,328,580	6,600	14,700	890	22,190	2,689,549
1987	14,000	1,034,069	10,000	1,388,390	7,300	17,150	920	25,370	2,825,793
1988	15,100	1,165,348	13,000	1,539,190	8,000	20,600	960	29,560	3,053,137
1989	16,200	1,291,627	16,000	1,685,200	8,800	24,050	1,000	33,850	3,264,361
1990	17,300	1,413,800	20,000	1,827,500	9,600	27,500	1,040	38,140	3,479,475
1991	17,300	1,450,800	20,000	1,869,660	9,600	27,500	1,080	38,180	3,528,084
1992	17,300	1,487,800	20,000	1,910,720	9,600	27,500	1,120	38,220	3,575,593
1993	17,300	1,524,800	20,000	1,951,780	9,600	27,500	1,160	38,260	3,623,102
1994	17,300	1,561,800	20,000	1,992,840	9,600	27,500	1,200	38,300	3,669,711
1995	17,300	1,598,800	20,000	2,033,900	9,600	27,500	1,250	38,350	3,713,730
1996	17,300	1,620,800	20,000	2,059,300	9,600	27,500	1,300	38,400	3,742,691
1997	17,300	1,642,800	20,000	2,084,700	9,600	27,500	1,350	38,450	3,771,732
1998	17,300	1,664,800	20,000	2,110,100	9,600	27,500	1,400	38,500	3,800,733
1999	17,300	1,686,800	20,000	2,135,500	9,600	27,500	1,450	38,550	3,829,734
2000	17,300	1,708,800	20,000	2,160,900	9,600	27,500	1,510	38,610	3,858,745
2001	17,300	1,732,800	20,000	2,188,840	9,600	27,500	1,570	38,670	3,890,697
2002	17,300	1,756,800	20,000	2,216,765	9,600	27,500	1,630	38,730	3,922,634
2003	17,300	1,780,800	20,000	2,244,705	9,600	27,500	1,690	38,790	3,954,586
2004	17,300	1,804,800	20,000	2,272,700	9,600	27,500	1,750	38,850	3,986,593
2005	17,300	1,828,800	20,000	2,297,300	9,600	27,500	1,810	38,910	4,015,210
2006	17,300	1,850,800	20,000	2,319,700	9,600	27,500	1,880	38,980	4,038,420
2007	17,300	1,872,800	20,000	2,342,100	9,600	27,500	1,950	39,050	4,061,630
2008	17,300	1,894,800	20,000	2,364,500	9,600	27,500	2,020	39,120	4,084,840
2009	17,300	1,916,800	20,000	2,386,900	9,600	27,500	2,090	39,190	4,108,050
2010	17,300	1,938,800	20,000	2,409,300	9,600	27,500	2,160	39,260	4,131,260
2011	17,300	1,962,800	20,000	2,433,900	9,600	27,500	2,240	39,340	4,156,300
2012	17,300	1,986,800	20,000	2,458,500	9,600	27,500	2,320	39,420	4,181,340
2013	17,300	2,010,800	20,000	2,483,100	9,600	27,500	2,410	39,510	4,206,390
2014	17,300	2,011,500	20,000	2,484,400	9,600	27,500	2,500	39,600	4,208,140
2015	17,300	2,011,500	20,000	2,485,000	9,600	27,500	2,600	39,700	4,209,200
2016	17,300	2,011,500	20,000	2,485,600	9,600	27,500	2,700	39,800	4,210,300
2017	17,300	2,011,500	20,000	2,486,200	9,600	27,500	2,700	39,800	4,211,300
2018	17,300	2,011,500	20,000	2,486,800	9,600	27,500	2,700	39,800	4,212,300
2019	17,300	2,011,500	20,000	2,487,400	9,600	27,500	2,700	39,800	4,213,300
2020	17,300	2,011,500	20,000	2,497,500	9,600	27,500	2,700	39,800	4,225,800
2021	17,300	2,011,500	20,000	2,497,500	9,600	27,500	2,700	39,800	4,225,800
2022	17,300	2,011,500	20,000	2,497,500	9,600	27,500	2,700	39,800	4,225,800
2023	17,300	2,011,500	20,000	2,497,500	9,600	27,500	2,700	39,800	4,225,800
2024	17,300	2,011,500	20,000	2,497,500	9,600	27,500	2,700	39,800	4,225,800
2025	17,300	2,011,500	20,000	2,497,500	9,600	27,500	2,700	39,800	4,225,800
2026	17,300	2,011,500	20,000	2,497,500	9,600	27,500	2,700	39,800	4,225,800
2027	17,300	2,011,500	20,000	2,497,500	9,600	27,500	2,700	39,800	4,225,800
2028	17,300	2,011,500	20,000	2,497,500	9,600	27,500	2,700	39,800	4,225,800
2029	17,300	2,011,500	20,000	2,497,500	9,600	27,500	2,700	39,800	4,225,800
2030	17,300	2,011,500	20,000	2,497,500	9,600	27,500	2,700	39,800	4,225,800
2031	17,300	2,011,500	20,000	2,497,500	9,600	27,500	2,700	39,800	4,225,800
2032	17,300	2,011,500	20,000	2,497,500	9,600	27,500	2,700	39,800	4,225,800
2033	17,300	2,011,500	20,000	2,497,500	9,600	27,500	2,700	39,800	4,225,800
2034	17,300	2,011,500	20,000	2,497,500	9,600	27,500	2,700	39,800	4,225,800
2035	17,300	2,011,500	20,000	2,497,500	9,600	27,500	2,700	39,800	4,225,800
TOTAL	909,800	100,080,486	988,000	125,313,190	497,600	1,387,311	111,663	1,996,574	223,748,793

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	2,572	1,391	126,431	0	130,394
1977	0	0	0	0	0	7,350	7,350	0	4,185	0	112,293	210	116,688
1978	0	0	0	0	0	5,495	5,495	0	4,185	0	130,700	240	135,125
1979	0	0	0	0	0	5,550	5,550	0	4,185	0	132,700	260	137,145
1980	0	0	0	0	0	5,605	5,605	0	4,185	0	134,800	280	139,265
1981	0	0	0	0	0	5,655	5,655	0	4,185	0	137,000	290	141,475
1982	1,400	15,100	16,500	0	0	5,700	5,700	0	4,185	0	139,200	300	143,685
1983	1,400	16,545	17,945	0	0	5,745	5,745	0	4,185	0	141,400	320	145,905
1984	1,400	19,060	20,460	0	0	7,900	7,900	0	4,090	0	143,600	330	148,020
1985	1,400	20,970	22,370	0	0	8,100	8,100	0	4,047	0	145,800	350	150,197
1986	1,400	23,650	25,050	0	0	8,410	8,410	0	4,016	0	148,100	360	152,476
1987	1,400	27,040	28,440	0	0	8,720	8,720	0	3,995	0	150,300	380	154,675
1988	1,400	33,930	35,330	0	0	9,030	9,030	0	3,948	0	152,500	400	156,848
1989	1,400	40,690	42,090	0	0	9,340	9,340	0	3,969	0	156,700	400	161,069
1990	1,400	47,450	48,850	0	0	9,650	9,650	0	3,935	0	160,900	400	165,235
1991	1,400	48,000	49,400	0	0	10,200	10,200	0	3,899	0	165,200	400	169,499
1992	1,400	48,550	49,950	0	0	10,750	10,750	0	3,847	0	169,500	400	173,747
1993	1,400	49,100	50,500	0	0	11,300	11,300	0	3,818	0	173,800	400	178,018
1994	1,400	49,650	51,050	0	0	11,850	11,850	0	3,791	0	177,200	400	181,391
1995	1,400	50,200	51,600	0	0	12,400	12,400	0	3,802	0	178,000	400	182,202
1996	1,400	50,900	52,300	0	0	13,100	13,100	0	3,791	0	178,800	400	182,991
1997	1,400	51,600	53,000	0	0	13,800	13,800	0	3,780	0	179,600	400	183,780
1998	1,400	52,300	53,700	0	0	14,500	14,500	0	3,644	0	180,400	400	184,444
1999	1,400	53,000	54,400	0	0	15,200	15,200	0	3,636	0	181,200	400	185,236
2000	1,400	53,700	55,100	0	0	15,900	15,900	0	3,626	0	182,000	400	186,026
2001	1,400	54,020	55,420	0	0	16,220	16,220	0	3,896	0	182,800	400	187,096
2002	1,400	54,340	55,740	0	0	16,540	16,540	0	3,969	0	183,600	400	187,969
2003	1,400	54,660	56,060	0	0	16,860	16,860	0	3,960	0	184,400	400	188,760
2004	1,400	54,980	56,380	0	0	17,180	17,180	0	3,951	0	185,200	400	189,551
2005	1,400	55,300	56,700	0	0	17,500	17,500	0	3,942	0	186,000	400	190,342
2006	1,400	55,640	57,040	0	0	17,840	17,840	0	3,938	0	186,400	400	190,738
2007	1,400	55,980	57,380	0	0	18,180	18,180	0	3,934	0	186,800	400	191,134
2008	1,400	56,320	57,720	0	0	18,520	18,520	0	3,930	0	187,200	400	191,530
2009	1,400	56,660	58,060	0	0	18,860	18,860	0	3,926	0	187,600	400	191,926
2010	1,400	57,000	58,400	0	0	19,200	19,200	0	3,922	0	188,000	400	192,322
2011	1,400	57,360	58,760	0	0	19,560	19,560	0	3,930	0	188,000	400	192,330
2012	1,400	57,720	59,120	0	0	19,920	19,920	0	3,930	0	188,000	400	192,330
2013	1,400	58,080	59,480	0	0	20,280	20,280	0	3,930	0	188,000	400	192,330
2014	1,400	58,440	59,840	0	0	20,640	20,640	0	3,930	0	188,000	400	192,330
2015	1,400	58,800	60,200	0	0	21,000	21,000	0	3,930	0	188,000	400	192,330
2016	1,400	59,200	60,600	0	0	21,400	21,400	0	3,930	0	188,000	400	192,330
2017	1,400	59,600	61,000	0	0	21,800	21,800	0	3,930	0	188,000	400	192,330
2018	1,400	60,000	61,400	0	0	22,200	22,200	0	3,930	0	188,000	400	192,330
2019	1,400	60,400	61,800	0	0	22,600	22,600	0	3,930	0	188,000	400	192,330
2020(e	1,400	62,800	64,200	0	0	25,000	25,000	0	3,930	0	188,000	400	192,330

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 deliveres 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 the 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.

a) Includes surplus water prior to May 1, 1973.

b) Metric conversion is acre-feet times 1233.5 equals cubic metre.

c) For the period 1968 through 1981, deliveries are from nonproject water pumped through an interim facility.

d) For the period June 1962 through November 1967, deliveries were nonproject water.

e) And each year thereafter for the remainder of the project repayment period.

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								Deliveries		
	Initial Fill Water	Operational Losses	Reservoir Storage Changes	Water Supply	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	733,080	1,083	947,055	55,846	1,002,901	214,941	-6,778	1,329	635,788	1,075	846,355
1974	256,960	-11,524	-41,576	873,300	2,118	1,079,278	54,683	1,133,961	256,960	-16,763	-24,361	780,511	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	67,686	5,732	-244,124	1,372,093	1,604	1,202,991	-442,348	741,783	67,686	-308	-152,171	1,223,039	1,581	1,139,827
1977	18,036	140,203	-308,063	1,105,027	6,461	961,664	-402,022	559,642	18,036	119,204	-308,063	991,327	5,541	826,045
1978	4,360	141,598	-32,486	1,823,509	7,416	1,944,397	-115,154	1,829,243	4,360	120,599	-32,486	1,688,909	6,460	1,787,842
1979	0	139,728	-71,748	1,892,080	7,504	1,967,564	80,363	2,047,927	0	118,729	-71,748	1,755,380	6,511	1,808,872
1980	0	139,754	58,428	2,002,315	7,813	2,208,310	-67,203	2,141,107	0	118,755	58,428	1,863,315	6,800	2,047,298
1981	0	140,013	-3,061	2,145,412	15,888	2,298,252	-84,790	2,213,462	0	119,014	-3,061	2,004,112	14,315	2,134,380
1982	294	141,795	47,474	2,252,955	20,427	2,462,945	58,211	2,521,156	294	120,796	47,474	2,109,255	18,280	2,296,099
1983	0	141,252	-73,140	2,346,245	20,177	2,434,534	29,144	2,463,678	0	120,253	-73,140	2,200,245	18,010	2,265,368
1984	2,264	141,688	14,372	2,423,120	23,780	2,605,224	-52,260	2,552,964	2,264	120,784	14,372	2,274,720	19,650	2,431,790
1985	0	141,655	-4,272	2,499,080	23,900	2,660,363	-6,253	2,654,110	0	120,794	-4,272	2,348,380	19,650	2,484,552
1986	0	143,945	8,473	2,643,709	24,010	2,820,137	-18,431	2,801,706	0	123,115	8,473	2,490,509	19,650	2,641,747
1987	0	143,703	-1,793	2,773,383	24,130	2,939,423	66,728	3,006,151	0	122,894	-1,793	2,617,883	19,650	2,758,634
1988	0	143,682	-26,084	2,989,647	24,250	3,131,495	285,858	3,417,353	0	122,920	-26,084	2,831,747	19,650	2,948,233
1989	0	143,557	17,211	3,189,821	24,350	3,374,939	-164,488	3,210,451	0	122,774	17,211	3,027,521	19,650	3,187,156
1990	0	143,660	-13,950	3,393,885	24,500	3,548,095	150,427	3,698,522	0	122,911	-13,950	3,227,285	19,650	3,355,896
1991	0	143,329	-14,234	3,441,904	24,500	3,595,499	-109,464	3,486,035	0	122,616	-14,234	3,271,004	19,650	3,399,036
1992	0	143,369	26,487	3,488,823	24,500	3,683,179	44,024	3,727,203	0	122,708	26,487	3,313,623	19,650	3,482,468
1993	0	143,405	-25,516	3,535,742	24,500	3,678,131	187,277	3,865,408	0	122,773	-25,516	3,356,242	19,650	3,473,149
1994	0	143,356	13,122	3,581,761	24,500	3,762,739	-84,994	3,677,745	0	122,751	13,122	3,398,861	19,650	3,554,384
1995	0	143,303	-10,854	3,625,180	24,500	3,782,129	61,597	3,843,726	0	122,687	-10,854	3,441,480	19,650	3,572,963
1996	0	143,233	14,510	3,653,391	24,500	3,835,634	10,366	3,846,000	0	122,628	14,510	3,468,891	19,650	3,625,679
1997	0	143,329	-6,871	3,681,682	24,500	3,842,640	22,086	3,864,726	0	122,735	-6,871	3,496,382	19,650	3,631,896
1998	0	143,163	-9,578	3,709,933	24,500	3,868,018	75,800	3,943,818	0	122,705	-9,578	3,523,833	19,650	3,656,610
1999	0	143,050	4,313	3,738,184	24,500	3,910,047	-24,727	3,885,320	0	122,600	4,313	3,551,284	19,650	3,697,847
2000	0	142,883	-8,895	3,766,435	24,500	3,924,923	69,257	3,994,180	0	122,443	-8,895	3,578,735	19,650	3,711,933
2001	0	143,319	11,880	3,798,007	24,500	3,977,706	116,886	4,094,592	0	122,609	11,880	3,609,507	19,650	3,763,646
2002	0	143,207	-22,286	3,829,564	24,500	3,974,985	24,434	3,999,419	0	122,424	-22,286	3,640,264	19,650	3,760,052
2003	0	143,382	22,799	3,861,136	24,500	4,051,817	-30,704	4,021,113	0	122,608	22,799	3,671,036	19,650	3,836,093
2004	0	143,244	-9,178	3,892,763	24,500	4,051,329	-31,878	4,019,451	0	122,479	-9,178	3,701,863	19,650	3,834,814
2005	0	143,071	-7,346	3,921,000	24,500	4,081,225	107,576	4,188,801	0	122,315	-7,346	3,729,300	19,650	3,863,919
2006	0	142,976	7,681	3,943,800	24,500	4,118,957	78,505	4,197,462	0	122,224	7,681	3,751,700	19,650	3,901,255
2007	0	143,161	6,296	3,966,600	24,500	4,140,557	-20,254	4,120,303	0	122,413	6,296	3,774,100	19,650	3,922,459
2008	0	143,092	-18,954	3,989,400	24,500	4,138,038	102,746	4,240,784	0	122,348	-18,954	3,796,500	19,650	3,919,544
2009	0	143,093	16,036	4,012,200	24,500	4,195,829	-90,960	4,104,869	0	122,353	16,036	3,818,900	19,650	3,976,939
2010	0	143,024	-31,110	4,035,000	24,500	4,171,414	88,933	4,260,347	0	122,288	-31,110	3,841,300	19,650	3,952,128
2011	0	142,929	10,224	4,059,600	24,500	4,237,253	74,018	4,311,271	0	122,185	10,224	3,865,900	19,650	4,017,959
2012	0	142,941	9,543	4,084,200	24,500	4,261,184	-7,457	4,253,727	0	122,197	9,543	3,890,500	19,650	4,041,890
2013	0	142,971	-5,592	4,108,800	24,500	4,270,679	101,171	4,371,850	0	122,227	-5,592	3,915,100	19,650	4,051,385
2014	0	142,866	-11,374	4,110,100	24,500	4,266,092	-68,511	4,197,581	0	122,122	-11,374	3,916,400	19,650	4,046,798
2015	0	142,861	4,771	4,110,700	24,500	4,282,832	140,637	4,423,469	0	122,117	4,771	3,917,000	19,650	4,063,538
2016	0	142,926	10,573	4,111,300	24,500	4,289,299	31,161	4,320,460	0	122,182	10,573	3,917,600	19,650	4,070,005
2017	0	142,982	-12,479	4,111,900	24,500	4,266,903	14,677	4,281,580	0	122,238	-12,479	3,918,200	19,650	4,047,609
2018	0	142,289	-47,357	4,112,500	24,500	4,231,932	-30,247	4,201,685	0	121,545	-47,357	3,918,800	19,650	4,012,638
2019	0	142,860	26,882	4,113,100	24,500	4,307,342	202,171	4,509,513	0	122,116	26,882	3,919,400	19,650	4,088,048
2020[c]	0	142,844	0	4,123,200	24,500	4,290,544	40,565	4,331,109	0	122,100	0	3,929,500	19,650	4,071,250

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	311,168	1,075	553,905	204,638	21,543	1,329	229,757	1,075	458,342
1974	246,620	19,674	-24,361	388,947	2,108	632,988	246,620	11,845	-24,361	336,196	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	781,688	1,581	721,648	61,122	18,552	-152,171	738,940	1,581	668,024
1977	18,036	81,045	-308,063	761,358	5,541	557,917	18,036	69,245	-308,063	733,784	5,541	518,543
1978	4,360	82,440	-32,486	1,132,309	6,460	1,193,083	4,360	70,640	-32,486	1,111,909	6,460	1,160,883
1979	0	80,570	-71,748	1,159,605	6,511	1,174,938	0	68,770	-71,748	1,131,980	6,511	1,135,513
1980	0	80,596	58,428	1,231,820	6,800	1,377,644	0	68,796	58,428	1,188,515	6,800	1,322,539
1981	0	80,855	-3,061	1,327,777	13,515	1,419,086	0	69,055	-3,061	1,268,712	13,515	1,348,221
1982	294	82,637	47,474	1,389,715	16,680	1,536,800	294	70,837	47,474	1,316,355	16,680	1,451,640
1983	0	82,094	-73,140	1,433,240	16,410	1,458,604	0	70,294	-73,140	1,342,045	16,410	1,355,609
1984	2,264	82,625	14,372	1,463,550	17,980	1,580,791	2,264	70,825	14,372	1,358,320	17,980	1,463,761
1985	0	82,635	-4,272	1,492,760	17,980	1,589,103	0	70,835	-4,272	1,374,980	17,980	1,459,523
1986	0	82,756	8,473	1,565,410	17,980	1,674,619	0	70,956	8,473	1,434,680	17,980	1,532,089
1987	0	82,535	-1,793	1,646,170	17,980	1,744,892	0	70,735	-1,793	1,499,890	17,980	1,586,812
1988	0	82,561	-26,084	1,813,270	17,980	1,887,727	0	70,761	-26,084	1,656,390	17,980	1,719,047
1989	0	82,415	17,211	1,971,080	17,980	2,088,686	0	70,615	17,211	1,807,400	17,980	1,913,206
1990	0	82,552	-13,950	2,126,380	17,980	2,212,962	0	70,752	-13,950	1,954,700	17,980	2,029,482
1991	0	82,257	-14,234	2,168,540	17,980	2,254,543	0	70,457	-14,234	1,996,860	17,980	2,071,063
1992	0	82,349	26,487	2,209,600	17,980	2,336,416	0	70,549	26,487	2,037,920	17,980	2,152,936
1993	0	82,414	-25,516	2,250,660	17,980	2,325,538	0	70,614	-25,516	2,078,980	17,980	2,142,058
1994	0	82,392	13,122	2,291,720	17,980	2,405,214	0	70,592	13,122	2,120,040	17,980	2,221,734
1995	0	82,328	-10,854	2,332,780	17,980	2,422,234	0	70,528	-10,854	2,161,100	17,980	2,238,754
1996	0	82,269	14,510	2,358,180	17,980	2,472,939	0	70,469	14,510	2,186,500	17,980	2,289,459
1997	0	82,376	-6,871	2,383,580	17,980	2,477,065	0	70,576	-6,871	2,211,900	17,980	2,293,585
1998	0	82,346	-9,578	2,408,980	17,980	2,499,728	0	70,546	-9,578	2,237,300	17,980	2,316,248
1999	0	82,241	4,313	2,434,380	17,980	2,538,914	0	70,441	4,313	2,262,700	17,980	2,355,434
2000	0	82,084	-8,895	2,459,780	17,980	2,550,949	0	70,284	-8,895	2,288,100	17,980	2,367,469
2001	0	82,250	11,880	2,487,720	17,980	2,599,830	0	70,450	11,880	2,316,040	17,980	2,416,350
2002	0	82,065	-22,286	2,515,645	17,980	2,593,404	0	70,265	-22,286	2,343,965	17,980	2,409,924
2003	0	82,249	22,799	2,543,585	17,980	2,666,613	0	70,449	22,799	2,371,905	17,980	2,483,133
2004	0	82,120	-9,178	2,571,580	17,980	2,662,502	0	70,320	-9,178	2,399,900	17,980	2,479,022
2005	0	81,956	-7,346	2,596,180	17,980	2,688,770	0	70,156	-7,346	2,424,500	17,980	2,505,290
2006	0	81,865	7,681	2,618,580	17,980	2,726,106	0	70,065	7,681	2,446,900	17,980	2,542,626
2007	0	82,054	6,296	2,640,980	17,980	2,747,310	0	70,254	6,296	2,469,300	17,980	2,563,830
2008	0	81,989	-18,954	2,663,380	17,980	2,744,395	0	70,189	-18,954	2,491,700	17,980	2,560,915
2009	0	81,994	16,036	2,685,780	17,980	2,801,790	0	70,194	16,036	2,514,100	17,980	2,618,310
2010	0	81,929	-31,110	2,708,180	17,980	2,776,979	0	70,129	-31,110	2,536,500	17,980	2,593,499
2011	0	81,826	10,224	2,732,780	17,980	2,842,810	0	70,026	10,224	2,561,100	17,980	2,659,330
2012	0	81,838	9,543	2,757,380	17,980	2,866,741	0	70,038	9,543	2,585,700	17,980	2,683,261
2013	0	81,868	-5,592	2,781,980	17,980	2,876,236	0	70,068	-5,592	2,610,300	17,980	2,692,756
2014	0	81,763	-11,374	2,783,280	17,980	2,871,649	0	69,963	-11,374	2,611,600	17,980	2,688,169
2015	0	81,758	4,771	2,783,880	17,980	2,888,389	0	69,958	4,771	2,612,200	17,980	2,704,909
2016	0	81,823	10,573	2,784,480	17,980	2,894,856	0	70,023	10,573	2,612,800	17,980	2,711,376
2017	0	81,879	-12,479	2,785,080	17,980	2,872,460	0	70,079	-12,479	2,613,400	17,980	2,688,980
2018	0	81,186	-47,357	2,785,680	17,980	2,837,489	0	69,386	-47,357	2,614,000	17,980	2,654,009
2019	0	81,757	26,882	2,786,280	17,980	2,912,899	0	69,957	26,882	2,614,600	17,980	2,729,419
2020(e	0	81,741	0	2,796,380	17,980	2,896,101	0	69,941	0	2,624,700	17,980	2,712,621

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 (TEHACHAPI) 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	1,075	449,225	204,638	34,051	1,329	207,880	1,075	448,973
1974	246,620	17,657	-24,361	318,196	2,108	560,220	246,620	18,183	-24,361	313,632	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	701,060	1,581	633,060	61,122	21,096	-152,171	685,768	1,581	617,396
1977	18,036	68,445	-308,063	727,912	5,541	511,871	18,036	65,845	-308,063	722,971	5,361	504,150
1978	4,360	69,840	-32,486	1,061,909	6,460	1,110,083	4,360	67,240	-32,486	1,033,609	6,300	1,079,023
1979	0	67,970	-71,748	1,081,980	6,511	1,084,713	0	65,370	-71,748	1,046,280	6,371	1,046,273
1980	0	67,996	58,428	1,138,515	6,800	1,271,739	0	65,396	58,428	1,099,315	6,680	1,229,819
1981	0	68,255	-3,061	1,218,712	13,515	1,297,421	0	65,655	-3,061	1,178,912	13,405	1,254,911
1982	294	70,037	47,474	1,266,355	16,680	1,400,840	294	67,437	47,474	1,225,855	16,580	1,357,640
1983	0	69,494	-73,140	1,292,045	16,410	1,304,809	0	66,894	-73,140	1,250,745	16,330	1,260,829
1984	2,264	70,025	14,372	1,308,320	17,980	1,412,961	2,264	67,425	14,372	1,263,120	17,780	1,364,961
1985	0	70,035	-4,272	1,324,980	17,980	1,408,723	0	67,435	-4,272	1,275,780	17,780	1,356,723
1986	0	70,156	8,473	1,383,680	17,980	1,480,289	0	67,556	8,473	1,330,280	17,780	1,424,089
1987	0	69,935	-1,793	1,447,890	17,980	1,534,012	0	67,335	-1,793	1,390,190	17,780	1,473,512
1988	0	69,961	-26,084	1,603,390	17,980	1,665,247	0	67,361	-26,084	1,541,090	17,780	1,600,147
1989	0	69,815	17,211	1,753,400	17,980	1,858,406	0	67,215	17,211	1,687,200	17,780	1,789,406
1990	0	69,952	-13,950	1,899,700	17,980	1,973,682	0	67,352	-13,950	1,829,500	17,780	1,900,682
1991	0	69,657	-14,234	1,941,860	17,980	2,015,263	0	67,057	-14,234	1,871,660	17,780	1,942,263
1992	0	69,749	26,487	1,982,920	17,980	2,097,136	0	67,149	26,487	1,912,720	17,780	2,024,136
1993	0	69,814	-25,516	2,023,980	17,980	2,086,258	0	67,214	-25,516	1,953,780	17,780	2,013,258
1994	0	69,792	13,122	2,065,040	17,980	2,165,934	0	67,192	13,122	1,994,840	17,780	2,092,934
1995	0	69,728	-10,854	2,106,100	17,980	2,182,954	0	67,128	-10,854	2,035,900	17,780	2,109,954
1996	0	69,669	14,510	2,131,500	17,980	2,233,659	0	67,069	14,510	2,061,300	17,780	2,160,659
1997	0	69,776	-6,871	2,156,900	17,980	2,237,785	0	67,176	-6,871	2,086,700	17,780	2,164,785
1998	0	69,746	-9,578	2,182,300	17,980	2,260,448	0	67,146	-9,578	2,112,100	17,780	2,187,448
1999	0	69,641	4,313	2,207,700	17,980	2,299,634	0	67,041	4,313	2,137,500	17,780	2,226,634
2000	0	69,484	-8,895	2,233,100	17,980	2,311,669	0	66,884	-8,895	2,162,900	17,780	2,238,669
2001	0	69,650	11,880	2,261,040	17,980	2,360,550	0	67,050	11,880	2,190,840	17,780	2,287,550
2002	0	69,465	-22,286	2,288,965	17,980	2,354,124	0	66,865	-22,286	2,218,765	17,780	2,281,124
2003	0	69,649	22,799	2,316,905	17,980	2,427,333	0	67,049	22,799	2,246,705	17,780	2,354,333
2004	0	69,520	-9,178	2,344,900	17,980	2,423,222	0	66,920	-9,178	2,274,700	17,780	2,350,222
2005	0	69,356	-7,346	2,369,500	17,980	2,449,490	0	66,756	-7,346	2,299,300	17,780	2,376,490
2006	0	69,265	7,681	2,391,900	17,980	2,486,826	0	66,665	7,681	2,321,700	17,780	2,413,826
2007	0	69,454	6,296	2,414,300	17,980	2,508,030	0	66,854	6,296	2,344,100	17,780	2,435,030
2008	0	69,389	-18,954	2,436,700	17,980	2,505,115	0	66,789	-18,954	2,366,500	17,780	2,432,115
2009	0	69,394	16,036	2,459,100	17,980	2,562,510	0	66,794	16,036	2,388,900	17,780	2,489,510
2010	0	69,329	-31,110	2,481,500	17,980	2,537,699	0	66,729	-31,110	2,411,300	17,780	2,464,699
2011	0	69,226	10,224	2,506,100	17,980	2,603,530	0	66,626	10,224	2,435,900	17,780	2,530,530
2012	0	69,238	9,543	2,530,700	17,980	2,627,461	0	66,638	9,543	2,460,500	17,780	2,554,461
2013	0	69,268	-5,592	2,555,300	17,980	2,636,956	0	66,668	-5,592	2,485,100	17,780	2,563,956
2014	0	69,163	-11,374	2,556,600	17,980	2,632,369	0	66,563	-11,374	2,486,400	17,780	2,559,369
2015	0	69,158	4,771	2,557,200	17,980	2,649,109	0	66,558	4,771	2,487,000	17,780	2,576,109
2016	0	69,223	10,573	2,557,800	17,980	2,655,576	0	66,623	10,573	2,487,600	17,780	2,582,576
2017	0	69,279	-12,479	2,558,400	17,980	2,633,180	0	66,679	-12,479	2,488,200	17,780	2,560,180
2018	0	68,586	-47,357	2,559,000	17,980	2,598,209	0	65,986	-47,357	2,488,800	17,780	2,525,209
2019	0	69,157	26,882	2,559,600	17,980	2,673,619	0	66,557	26,882	2,489,400	17,780	2,600,619
2020 (e	0	69,141	0	2,569,700	17,980	2,656,821	0	66,541	0	2,499,500	17,780	2,583,821

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	52,273	0	151,272
1974	0	0	0	0	0	0	76,694	10,849	-11,149	102,837	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	237,180	152	232,485
1977	0	0	0	0	0	0	12,159	28,069	-80,105	481,385	900	442,408
1978	0	0	0	0	0	0	0	28,128	-31,731	707,847	1,150	705,394
1979	0	0	0	0	0	0	0	27,674	-36,605	704,121	1,316	696,506
1980	0	0	0	0	0	0	0	27,230	61,840	727,165	1,580	817,815
1981	0	41,965	-12,338	819,408	8,630	857,665	0	28,065	-12,338	743,645	4,230	763,602
1982	294	42,316	9,795	843,380	11,430	907,215	294	28,416	9,795	752,475	6,930	797,910
1983	0	41,847	-44,109	851,870	11,180	860,788	0	27,947	-44,109	759,955	6,680	750,473
1984	2,264	42,429	-8,656	862,120	12,780	910,937	2,264	28,529	-8,656	767,960	7,830	797,927
1985	0	42,514	12,936	872,555	12,780	940,785	0	28,614	12,936	776,150	7,830	825,530
1986	0	42,728	-3,599	884,330	12,780	936,239	0	28,828	-3,599	784,840	7,830	817,899
1987	0	42,363	-4,048	896,490	12,780	947,585	0	28,463	-4,048	793,930	7,830	826,175
1988	0	42,437	-6,110	908,640	12,780	957,747	0	28,537	-6,110	803,020	7,830	833,277
1989	0	42,377	12,794	921,000	12,780	988,951	0	28,477	12,794	812,310	7,830	861,411
1990	0	42,561	-1,969	933,650	12,780	987,022	0	28,661	-1,969	821,900	7,830	856,422
1991	0	42,624	16,137	938,160	12,780	1,009,701	0	28,724	16,137	823,000	7,830	875,691
1992	0	42,477	-13,605	941,570	12,780	983,222	0	28,577	-13,605	823,000	7,830	845,802
1993	0	42,574	-2,831	944,980	12,780	997,503	0	28,674	-2,831	823,000	7,830	856,673
1994	0	42,463	285	948,390	12,780	1,003,918	0	28,563	285	823,000	7,830	859,678
1995	0	42,459	-11,207	951,800	12,780	995,832	0	28,559	-11,207	823,000	7,830	848,182
1996	0	42,327	2,256	954,700	12,780	1,012,063	0	28,427	2,256	823,000	7,830	861,513
1997	0	42,541	11,831	957,600	12,780	1,024,752	0	28,641	11,831	823,000	7,830	871,302
1998	0	42,495	-14,554	960,500	12,780	1,001,221	0	28,595	-14,554	823,000	7,830	844,871
1999	0	42,352	519	963,400	12,780	1,019,051	0	28,452	519	823,000	7,830	859,801
2000	0	42,234	-4,193	966,300	12,780	1,017,121	0	28,334	-4,193	823,000	7,830	854,971
2001	0	42,382	3,898	971,540	12,780	1,030,600	0	28,482	3,898	825,000	7,830	865,210
2002	0	42,314	-3,952	976,765	12,780	1,027,907	0	28,414	-3,952	827,000	7,830	859,292
2003	0	42,396	-3,731	982,005	12,780	1,033,450	0	28,496	-3,731	829,000	7,830	861,595
2004	0	42,281	9,317	987,250	12,780	1,051,628	0	28,381	9,317	831,000	7,830	876,528
2005	0	42,147	-16,135	989,250	12,780	1,028,042	0	28,247	-16,135	833,000	7,830	852,942
2006	0	41,946	-2,785	987,250	12,780	1,039,191	0	28,046	-2,785	831,000	7,830	864,091
2007	0	42,064	9,830	985,250	12,780	1,049,924	0	28,164	9,830	829,000	7,830	874,824
2008	0	42,114	-1,692	983,250	12,780	1,036,452	0	28,214	-1,692	827,000	7,830	861,352
2009	0	42,104	6,577	981,250	12,780	1,042,711	0	28,204	6,577	825,000	7,830	867,611
2010	0	42,313	-902	979,250	12,780	1,033,441	0	28,413	-902	823,000	7,830	858,341
2011	0	42,078	1,314	979,250	12,780	1,035,422	0	28,178	1,314	823,000	7,830	860,322
2012	0	42,163	-9,505	979,250	12,780	1,024,688	0	28,263	-9,505	823,000	7,830	849,588
2013	0	42,180	-813	979,250	12,780	1,033,397	0	28,280	-813	823,000	7,830	858,297
2014	0	42,110	14,545	979,250	12,780	1,048,685	0	28,210	14,545	823,000	7,830	873,585
2015	0	42,128	-5,803	979,250	12,780	1,028,355	0	28,228	-5,803	823,000	7,830	853,255
2016	0	42,089	-3,735	979,250	12,780	1,030,384	0	28,189	-3,735	823,000	7,830	855,284
2017	0	42,296	12,436	979,250	12,780	1,046,762	0	28,396	12,436	823,000	7,830	871,662
2018	0	41,982	-27,543	979,250	12,780	1,006,469	0	28,082	-27,543	823,000	7,830	831,369
2019	0	42,063	9,211	979,250	12,780	1,043,304	0	28,163	9,211	823,000	7,830	868,204
2020(e	0	42,089	0	979,250	12,780	1,034,119	0	28,189	0	823,000	7,830	859,019

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	8,369	-4,925	102,196	0	180,306	169,926	12,702	-13,212	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	236,178	23	236,367	56,954	15,845	-136,116	420,708	1,429	358,820
1977	12,159	12,161	-68,393	479,960	600	436,487	5,877	23,721	-227,958	217,900	3,836	23,376
1978	0	12,482	-13,163	693,400	800	693,519	4,360	25,057	-755	266,867	4,400	299,929
1979	0	12,939	-27,738	688,888	1,000	675,089	0	24,733	-35,143	282,025	4,493	276,108
1980	0	12,370	36,336	707,400	1,250	757,356	0	24,111	-3,412	300,125	4,475	325,299
1981	0	12,488	-12,606	712,300	3,750	715,932	0	23,535	9,277	358,322	4,775	395,909
1982	294	12,793	10,200	717,100	6,250	746,637	0	24,966	37,679	381,175	5,150	448,970
1983	0	12,365	-24,964	721,900	6,000	715,301	0	24,892	-29,031	397,475	5,150	398,486
1984	2,264	12,950	-3,005	727,200	6,000	745,409	0	24,841	23,028	399,500	5,000	452,369
1985	0	12,857	5,715	732,800	6,000	757,372	0	24,766	-17,208	401,625	5,000	414,183
1986	0	12,976	-1,074	738,800	6,000	756,702	0	24,673	12,072	444,250	5,000	485,995
1987	0	12,666	-5,971	745,300	6,000	757,995	0	24,817	2,255	491,900	5,000	523,972
1988	0	12,805	-2,871	751,800	6,000	767,734	0	24,769	-19,974	630,550	5,000	640,345
1989	0	12,726	-3,696	758,300	6,000	773,330	0	24,683	4,417	764,200	5,000	798,300
1990	0	12,850	7,746	765,300	6,000	791,896	0	24,636	-11,981	893,850	5,000	911,505
1991	0	12,871	7,367	766,400	6,000	792,638	0	24,278	-30,371	931,500	5,000	930,407
1992	0	12,845	-6,490	766,400	6,000	778,755	0	24,517	40,092	969,150	5,000	1,038,759
1993	0	12,831	-3,668	766,400	6,000	781,563	0	24,485	-22,685	1,006,800	5,000	1,013,600
1994	0	12,871	7,707	766,400	6,000	792,978	0	24,574	12,837	1,044,450	5,000	1,086,861
1995	0	12,778	-11,568	766,400	6,000	773,610	0	24,514	353	1,082,100	5,000	1,111,967
1996	0	12,702	2,028	766,400	6,000	787,130	0	24,587	12,254	1,104,600	5,000	1,146,441
1997	0	12,725	2,085	766,400	6,000	787,210	0	24,480	-18,702	1,127,100	5,000	1,137,878
1998	0	12,788	-4,292	766,400	6,000	780,896	0	24,496	4,976	1,149,600	5,000	1,184,072
1999	0	12,745	2,081	766,400	6,000	787,226	0	24,534	3,794	1,172,100	5,000	1,205,428
2000	0	12,648	-3,595	766,400	6,000	781,453	0	24,495	-4,702	1,194,600	5,000	1,219,393
2001	0	12,635	2,597	768,400	6,000	789,632	0	24,513	7,982	1,217,300	5,000	1,254,795
2002	0	12,705	546	770,400	6,000	789,651	0	24,396	-18,334	1,240,000	5,000	1,251,062
2003	0	12,728	-1,587	772,400	6,000	789,541	0	24,498	26,530	1,262,700	5,000	1,318,728
2004	0	12,651	2,128	774,400	6,000	795,179	0	24,484	-18,495	1,285,450	5,000	1,296,439
2005	0	12,423	-8,613	776,400	6,000	786,210	0	24,454	8,789	1,308,050	5,000	1,346,293
2006	0	12,360	408	774,400	6,000	793,168	0	24,564	10,466	1,332,450	5,000	1,372,480
2007	0	12,449	409	772,400	6,000	791,258	0	24,635	-3,534	1,356,850	5,000	1,382,951
2008	0	12,528	369	770,400	6,000	789,297	0	24,520	-17,262	1,381,250	5,000	1,393,508
2009	0	12,480	226	768,400	6,000	787,106	0	24,535	9,459	1,405,650	5,000	1,444,644
2010	0	12,678	474	766,400	6,000	785,552	0	24,261	-30,208	1,430,050	5,000	1,429,103
2011	0	12,425	82	705,200	6,000	723,707	0	24,393	8,910	1,454,650	5,000	1,492,953
2012	0	12,497	38	705,200	6,000	723,735	0	24,320	19,048	1,479,250	5,000	1,527,618
2013	0	12,560	38	705,200	6,000	723,798	0	24,333	-4,779	1,503,850	5,000	1,528,404
2014	0	12,486	531	705,200	6,000	724,217	0	24,298	-25,919	1,505,150	5,000	1,508,529
2015	0	12,683	241	705,200	6,000	724,124	0	24,275	10,574	1,505,750	5,000	1,545,599
2016	0	12,522	-735	705,200	6,000	722,987	0	24,379	14,308	1,506,350	5,000	1,550,037
2017	0	12,670	976	705,200	6,000	724,846	0	24,228	-24,915	1,506,950	5,000	1,511,263
2018	0	12,521	-977	705,200	6,000	722,744	0	23,849	-19,814	1,507,550	5,000	1,516,585
2019	0	12,531	0	705,200	6,000	723,731	0	24,339	17,671	1,508,150	5,000	1,555,160
2020(e	0	12,528	0	705,200	6,000	723,728	0	24,297	0	1,518,250	5,000	1,547,547

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	510	209,136	541	294,323
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	5,877	12,048	-121,773	217,879	1,800	115,831
1978	0	0	0	0	0	0	4,360	13,088	-755	266,842	2,100	285,635
1979	0	0	0	0	0	0	0	13,099	-35,143	282,000	2,330	262,286
1980	0	0	0	0	0	0	0	12,142	-3,412	300,100	1,630	310,460
1981	0	20,535	9,277	358,200	4,725	392,737	0	11,566	9,277	358,200	1,815	380,858
1982	0	21,966	37,679	380,900	5,100	445,645	0	12,997	37,679	380,900	2,000	433,576
1983	0	21,892	-29,031	397,200	5,100	395,161	0	12,923	-29,031	397,200	2,000	383,092
1984	0	21,841	23,028	399,200	5,000	449,069	0	12,872	23,028	399,200	2,000	437,100
1985	0	21,766	-17,208	401,300	5,000	410,858	0	12,797	-17,208	401,300	2,000	398,889
1986	0	21,673	12,072	443,900	5,000	482,645	0	12,704	12,072	443,900	2,000	470,676
1987	0	21,817	2,255	491,500	5,000	520,572	0	12,848	2,255	491,500	2,000	508,603
1988	0	21,769	-19,974	630,100	5,000	636,895	0	12,800	-19,974	630,100	2,000	624,926
1989	0	21,683	4,417	763,700	5,000	794,800	0	12,714	4,417	763,700	2,000	782,831
1990	0	21,636	-11,981	893,300	5,000	907,955	0	12,667	-11,981	893,300	2,000	895,986
1991	0	21,278	-30,371	930,900	5,000	926,807	0	12,309	-30,371	930,900	2,000	914,838
1992	0	21,517	40,092	968,500	5,000	1,035,109	0	12,548	40,092	968,500	2,000	1,023,140
1993	0	21,485	-22,685	1,006,100	5,000	1,009,900	0	12,516	-22,685	1,006,100	2,000	997,931
1994	0	21,574	12,837	1,043,700	5,000	1,083,111	0	12,605	12,837	1,043,700	2,000	1,071,142
1995	0	21,514	353	1,081,300	5,000	1,108,167	0	12,545	353	1,081,300	2,000	1,096,198
1996	0	21,587	12,254	1,103,700	5,000	1,142,541	0	12,618	12,254	1,103,700	2,000	1,130,572
1997	0	21,480	-18,702	1,126,100	5,000	1,133,878	0	12,511	-18,702	1,126,100	2,000	1,121,909
1998	0	21,496	4,976	1,148,500	5,000	1,179,972	0	12,527	4,976	1,148,500	2,000	1,168,003
1999	0	21,534	3,794	1,170,900	5,000	1,201,228	0	12,565	3,794	1,170,900	2,000	1,189,259
2000	0	21,495	-4,702	1,193,300	5,000	1,215,093	0	12,526	-4,702	1,193,300	2,000	1,203,124
2001	0	21,513	7,982	1,215,900	5,000	1,250,395	0	12,544	7,982	1,215,900	2,000	1,238,426
2002	0	21,396	-18,334	1,238,500	5,000	1,246,562	0	12,427	-18,334	1,238,500	2,000	1,234,593
2003	0	21,498	26,530	1,261,100	5,000	1,314,128	0	12,529	26,530	1,261,100	2,000	1,302,159
2004	0	21,484	-18,495	1,283,700	5,000	1,291,689	0	12,515	-18,495	1,283,700	2,000	1,279,720
2005	0	21,454	8,789	1,306,300	5,000	1,341,543	0	12,485	8,789	1,306,300	2,000	1,329,574
2006	0	21,564	10,466	1,330,700	5,000	1,367,730	0	12,595	10,466	1,330,700	2,000	1,355,761
2007	0	21,635	-3,534	1,355,100	5,000	1,378,201	0	12,666	-3,534	1,355,100	2,000	1,366,232
2008	0	21,520	-17,262	1,379,500	5,000	1,388,758	0	12,551	-17,262	1,379,500	2,000	1,376,789
2009	0	21,535	9,459	1,403,900	5,000	1,439,894	0	12,566	9,459	1,403,900	2,000	1,427,925
2010	0	21,261	-30,208	1,428,300	5,000	1,424,353	0	12,292	-30,208	1,428,300	2,000	1,412,384
2011	0	21,393	8,910	1,452,900	5,000	1,488,203	0	12,424	8,910	1,452,900	2,000	1,476,234
2012	0	21,320	19,048	1,477,500	5,000	1,522,868	0	12,351	19,048	1,477,500	2,000	1,510,899
2013	0	21,333	-4,779	1,502,100	5,000	1,523,654	0	12,364	-4,779	1,502,100	2,000	1,511,685
2014	0	21,298	-25,919	1,503,400	5,000	1,503,779	0	12,329	-25,919	1,503,400	2,000	1,491,810
2015	0	21,275	10,574	1,504,000	5,000	1,540,849	0	12,306	10,574	1,504,000	2,000	1,528,880
2016	0	21,379	14,308	1,504,600	5,000	1,545,287	0	12,410	14,308	1,504,600	2,000	1,533,318
2017	0	21,228	-24,915	1,505,200	5,000	1,506,513	0	12,259	-24,915	1,505,200	2,000	1,494,544
2018	0	20,849	-19,814	1,505,800	5,000	1,511,835	0	11,880	-19,814	1,505,800	2,000	1,499,866
2019	0	21,339	17,671	1,506,400	5,000	1,550,410	0	12,370	17,671	1,506,400	2,000	1,538,441
2020 (e	0	21,297	0	1,516,500	5,000	1,542,797	0	12,328	0	1,516,500	2,000	1,530,828

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
	(88)	(89)	(90)	(91)	(92)	(93)	(94)
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	89,765	96,327	0	0	0
1977	0	1,500	38,164	39,664	0	0	0
1978	0	1,500	102,900	104,400	0	0	0
1979	0	1,500	108,400	109,900	0	0	0
1980	0	1,500	112,700	114,200	0	0	0
1981	0	1,500	112,700	114,200	0	0	0
1982	0	1,500	116,800	118,300	0	0	0
1983	0	1,500	123,200	124,700	0	0	0
1984	0	1,500	123,950	125,450	0	0	0
1985	0	1,500	124,650	126,150	0	0	0
1986	0	3,700	152,479	156,179	2,200	27,829	30,029
1987	0	3,700	158,143	161,843	2,200	33,493	35,693
1988	0	3,700	163,807	167,507	2,200	39,157	41,357
1989	0	3,700	169,471	173,171	2,200	44,821	47,021
1990	0	3,700	175,135	178,835	2,200	50,485	52,685
1991	0	3,700	176,694	180,394	2,200	52,044	54,244
1992	0	3,700	178,253	181,953	2,200	53,603	55,803
1993	0	3,700	179,812	183,512	2,200	55,162	57,362
1994	0	3,700	181,371	185,071	2,200	56,721	58,921
1995	0	3,700	182,930	186,630	2,200	58,280	60,480
1996	0	3,700	184,941	188,641	2,200	60,291	62,491
1997	0	3,700	187,032	190,732	2,200	62,382	64,582
1998	0	3,700	189,083	192,783	2,200	64,433	66,633
1999	0	3,700	191,134	194,834	2,200	66,484	68,684
2000	0	3,700	193,185	196,885	2,200	68,535	70,735
2001	0	3,700	196,017	199,717	2,200	71,367	73,567
2002	0	3,700	198,849	202,549	2,200	74,199	76,399
2003	0	3,700	201,681	205,381	2,200	77,031	79,231
2004	0	3,700	204,513	208,213	2,200	79,863	82,063
2005	0	3,700	207,350	211,050	2,200	82,700	84,900
2006	0	3,700	207,350	211,050	2,200	82,700	84,900
2007	0	3,700	207,350	211,050	2,200	82,700	84,900
2008	0	3,700	207,350	211,050	2,200	82,700	84,900
2009	0	3,700	207,350	211,050	2,200	82,700	84,900
2010	0	3,700	207,350	211,050	2,200	82,700	84,900
2011	0	3,700	207,350	211,050	2,200	82,700	84,900
2012	0	3,700	207,350	211,050	2,200	82,700	84,900
2013	0	3,700	207,350	211,050	2,200	82,700	84,900
2014	0	3,700	207,350	211,050	2,200	82,700	84,900
2015	0	3,700	207,350	211,050	2,200	82,700	84,900
2016	0	3,700	207,350	211,050	2,200	82,700	84,900
2017	0	3,700	207,350	211,050	2,200	82,700	84,900
2018	0	3,700	207,350	211,050	2,200	82,700	84,900
2019	0	3,700	207,350	211,050	2,200	82,700	84,900
2020 [e]	0	3,700	207,350	211,050	2,200	82,700	84,900

TABLE B-7: RECONCILIATION OF CAPITAL COSTS ALLOCATED TO WATER SUPPLY AND POWER GENERATION FOR THE PERIOD, 1952-2000

(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	524	0	697	2,604	3,301
Grizzly Valley Dam and Lake Davis	29	0	0	0	216	0	245	4,780	5,025
Antelope Dam and Lake	0	0	0	0	0	0	0	4,990	4,990
Abbey Bridge Dam and Res.	0	0	0	0	0	0	0	522	522
Dixie Refuge Dam and Res.	0	0	0	0	0	0	0	239	239
Total, Upper Feather Division	202	0	0	0	740	0	942	13,135	14,077
Oroville Division									
Multipurpose Facilities	3,157	217	149	0	338,284	0	341,807	82,033	423,840
Specific Power Facilities	0	54	0	0	109,183	0	109,237	0	109,237
Total, Oroville Division	3,157	271	149	0	447,467	0	451,044	82,033	533,077
California Aqueduct									
North San Joaquin Division	224	854	0	0	54,472	0	55,550	2,195	57,745
San Luis Division	377	15	0	0	83,148	0	83,540	3,639	87,179
Total, California Aqueduct	601	869	0	0	137,620	0	139,090	5,834	144,924
Delta Facilities	132	66,782	0	0	246,799	0	313,713	384,923	698,636
Additional Conservation Fac.				(Program is currently under review)					
TOTAL, CONSERVATION FACILITIES	4,092	67,922	149	0	832,626	0	904,789	485,925	1,390,714
TRANSPORTATION FACILITIES									
Upper Feather Division									
Grizzly Valley Pipeline	0	0	0	0	0	341	341	0	341
North Bay Aqueduct	19	4,051	45	0	0	26,517	30,632	0	30,632
South Bay Aqueduct	1,609	0	308	0	0	47,504	49,421	20,726	70,147
California Aqueduct									
North San Joaquin Division	383	1,910	18	0	0	121,974	124,285	4,246	128,531
San Luis Division	98	6,429	0	0	0	107,543	114,070	4,207	118,277
South San Joaquin Division	300	154	3,238	3,244	0	252,169	259,105	8,040	267,145
Tehachapi Division	23	3,528	4	6,991	0	287,305	297,851	9,203	307,054
Mojave Division	567	11,413	451	0	0	248,908	261,339	8,478	269,817
Santa Ana Division	342	69	2,870	11,127	0	165,166	179,574	10,433	190,007
West Branch	37,762	7,964	2,850	106	0	404,383	453,065	16,980	470,045
Coastal Division	10	41,769	87	0	0	124,216	166,082	105	166,187
Total, California Aqueduct	39,485	73,236	9,518	21,468	0	1,711,664	1,855,371	61,692	1,917,063
TOTAL, TANSPORTATION FACILITIES	41,113	77,287	9,871	21,468	0	1,786,026	1,935,765	82,418	2,018,183
SAN JOAQUIN DRAINAGE FACILITIES	0	0	0	0	0	0	0	11,517	11,517
UNASSIGNED AND DAVIS-GRUNSKY	0	0	0	0	0	0	0	150,122	150,122
TOTAL	45,205	145,209	10,020	21,468	832,626	1,786,026	2,840,554	729,982	3,570,536

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 on this appendix are based on prices prevailing on December 31, 1976.

c) See Table B-8.

d) From Table B-9, less a portion allocated to recreation and fish and wildlife enhancement.

e) See Table B-13. A portion of these costs will be offset by power generation sales and credits.

f) See Table B-10.

TABLE B-8: CAPITAL COSTS OF REQUESTED DELIVERY STRUCTURES TO BE BUILT BY THE STATE[a]

(in dollars)

Project Area and Water Supply Contractor	Calendar Year										Total
	1952-76	1977	1978	1979	1980	1981	1982	1983	1984	1985	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
FEATHER RIVER AREA											
County of Butte	104,924	0	0	0	0	0	0	0	0	0	104,924
Thermalito Irrigation District[b]	43,939	0	0	0	0	0	0	0	0	0	43,939
Subtotal	148,863	0	0	0	0	0	0	0	0	0	148,863
NORTH BAY AREA											
Napa County Flood Control and Water Conservation District	7,496	6,500	0	0	0	0	0	0	0	0	13,996
Solano County Flood Control and Water Conservation District	0	0	0	0	0	0	30,000	0	1,000	0	31,000
Subtotal	7,496	6,500	0	0	0	0	30,000	0	1,000	0	44,996
SOUTH BAY AREA											
Alameda County Flood Control and Water Conservation District, Zone 7	151,644	0	0	0	0	0	0	0	0	0	151,644
Alameda County Water District	143,789	0	0	0	0	0	0	0	0	0	143,789
Santa Clara Valley Water District	12,780	0	0	0	0	0	0	0	0	0	12,780
Subtotal	308,213	0	0	0	0	0	0	0	0	0	308,213
SAN JOAQUIN VALLEY											
Devil's Den Water District	75,841	0	0	0	0	0	0	0	0	0	75,841
Dudley Ridge Water District	283,509	0	0	0	0	0	0	0	0	0	283,509
Empire West Side Irrigation District	6,358	0	0	0	0	0	0	0	0	0	6,358
Green Valley Water District[c]	5,292	0	0	0	0	0	0	0	0	0	5,292
Hacienda Water District	20,659	0	0	0	0	0	0	0	0	0	20,659
Kern County Water Agency	2,628,201	33,000	5,000	0	10,000	0	6,000	0	0	0	2,682,201
Oak Flat Water District	13,333	0	0	0	0	0	0	0	0	0	13,333
Tracy Golf and Country Club[c]	1,028	0	0	3,500	0	0	0	0	0	0	4,528
Tulare Lake Basin Water Storage District	254,984	0	0	0	0	0	0	0	0	0	254,984
Subtotal	3,289,205	33,000	5,000	3,500	10,000	0	6,000	0	0	0	3,346,705
SOUTHERN CALIFORNIA AREA											
Antelope Valley-East Kern Water Agency	286,360	8,000	1,000	0	7,000	0	5,000	10,000	0	0	317,360
Castaic Lake Water Agency	336,532	2,000	8,000	3,000	0	0	0	0	0	0	349,532
Coachella Valley County Water District	14,206	0	0	0	0	0	0	0	0	8,000	22,206
Crestline-Lake Arrowhead Water Agency	12,097	0	0	0	0	0	3,000	0	0	0	15,097
Desert Water Agency	23,438	0	0	0	0	0	0	0	0	12,000	35,438
Littlerock Creek Irrigation District	23,732	0	0	0	0	0	0	0	0	0	23,732
Mojave Water Agency	62,761	0	3,000	7,000	0	0	0	0	4,000	0	76,761
Palmdale Water District	24,232	0	4,000	0	0	0	0	0	0	0	28,232
San Bernardino Valley Municipal Water District	597,588	0	4,000	0	0	80,000	0	0	0	5,000	686,588
San Gabriel Valley Municipal Water District	131,052	0	0	0	0	0	0	0	0	0	131,052
San Gorgonio Pass Water Agency	66,530	0	0	0	0	0	0	0	0	0	66,530
The Metropolitan Water District of Southern California	4,293,933	1,000	1,000	0	10,000	0	0	0	20,000	0	4,325,933
Ventura County Flood Control District	79,699	0	8,000	5,000	0	0	0	0	0	0	92,699
Subtotal	5,952,160	11,000	29,000	15,000	17,000	80,000	8,000	10,000	24,000	25,000	6,171,160
TOTAL	9,705,937	50,500	34,000	18,500	27,000	80,000	44,000	10,000	25,000	25,000	10,019,937

a) Approximate only, not to 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)

Reach Number	Year Reach Becomes Operational	Excess Capacity (cfs)	Total Reach Capacity (cfs)	Ratio of Excess Capacity to Total Capacity (cfs/cfs) (a	Total Reach Cost (b	Total Advance Payments for Excess Capacity (c	Total Incremental Costs for Excess Capacity (d	Reconciliation of Advance Payments (e	Interest Credit (f	Reconciliation of Advance Payments and Interest Credit
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
				TOTAL REQUIRED ADVANCE OF FUNDS						
				THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA						
8C	1968	188.00000	8,257.54768	0.02276705	597,582	13,605	2,000	11,605	1,667	13,272
8D	1968	188.00000	8,058.99281	0.02332798	13,942,413	325,248	113,000	212,248	30,109	242,357
9	1968	188.00000	7,268.54004	0.02586489	9,162,227	236,980	71,000	165,980	32,640	198,620
10A	1968	188.00000	7,117.74784	0.02641285	9,710,336	256,478	92,000	164,478	32,106	196,584
11B	1968	188.00000	6,313.19561	0.02977890	13,692,127	407,736	108,000	299,736	60,463	360,199
12D	1969	188.00000	5,929.95263	0.03170346	11,888,004	376,891	156,000	220,891	46,967	267,858
12E	1969	188.00000	5,907.22734	0.03182542	7,484,322	238,192	118,000	120,192	24,967	145,159
13B	1969	188.00000	5,341.25081	0.03519775	16,313,712	574,206	139,000	435,206	75,150	510,356
14A	1970	188.00000	5,008.96939	0.03753267	55,742,657	2,092,171	559,000	1,533,171	381,330	1,914,501
14B	1970	188.00000	4,888.19779	0.03845998	10,081,251	387,725	175,000	212,725	55,369	268,094
14C	1970	188.00000	4,700.84105	0.03999284	9,083,502	363,275	223,000	140,275	36,501	176,776
15A	1970	188.00000	4,597.94994	0.04088779	38,646,108	1,580,154	593,000	987,154	200,521	1,187,675
16A	1971	188.00000	4,387.78387	0.04284623	62,627,071	2,683,334	995,000	1,688,334	448,974	2,137,308
17E	1971	188.00000	4,136.09906	0.04545346	224,099,973	10,186,119	5,811,000	4,375,119	1,264,021	5,639,140
17F	1971	188.00000	4,126.98262	0.04555386	58,567,574	2,667,979	1,396,000	1,271,979	444,423	1,716,402
25	1971	787.00000	2,019.63064	0.38967521	30,989,289	12,075,758	6,823,844	5,251,914	1,368,192	6,620,106
28J	1973	-	-	-	-	4,378,641	4,378,641	0	0	0
				SAN GABRIEL VALLEY MUNICIPAL WATER DISTRICT						
25	1971	21.00000	2,019.63064	0.01039794	31,022,106	322,566	182,156	140,410	36,579	176,989
				ANTELOPE VALLEY-EAST KERN WATER AGENCY						
29A	1971	19.00000	3,128.83908	0.00607254	29,976,119	182,032	85,000	97,032	22,045	119,077
29F	1971	19.00000	3,128.01611	0.00607414	13,582,587	82,503	24,000	58,503	15,039	73,542

a) Column 1 divided by Column 2.

b) Reach costs are compounded at the project interest rate of 4.342 percent per annum as follows:

Reaches	*Period*	*Year costs compounded to*
8C thru 17F	*1952 - 1965*	*1965*
25 (for MWD)	*1952 - 1966*	*1966*
25 (for SGVMWD)	*1952 - 1967*	*1967*
29A and 29F	*1952 - 1967*	*1967*

c) Column 3 multiplied by Column 4.

d) As shown in Table B-7, except, prior Incremental Costs for Reach 28J have been brought forward with interest at 4.457% to 1966 for purposes of repayment.

e) Column 5 less Column 6.

f) Interest on Advance Payments in excess of Incremental Costs is at 5.5 percent per annum, approximate average rate of interest earnings during the period.

g) Actual payments are shown for 1966 through 1973 with 1974 adjusted to reflect overpayments and underpayments without interest for prior years.

h) Interest for overpayments and underpayments under the provisions of Amendment 2 of the contract.

i) Interest for overpayments and underpayments under the provisions of Amendment 5 of the contract.

j) Reach totals include Reconciliation of Advance Payments and Interest Credit (Column 9)

k) Advance payments in excess of incremental costs under the provisions of the contract reduce the capital cost component of the Transportation Charge.

REQUESTED EXCESS PEAKING CAPACITY

(in dollars)

ANNUAL REQUIRED ADVANCE OF FUNDS

Reach Number	Item	Estimated Costs and Advance Payments by Calendar Year 1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	Reach Totals (j)
		(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
		THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA										
8C	1. Incremental Costs		1,000	1,000								2,000
	2. Advance Payments		6,803	6,802		-13,272						333
8D	1. Incremental Costs	4,000	45,000	64,000								113,000
	2. Advance Payments	11,513	129,524	184,211		-242,357						82,891
9	1. Incremental Costs	4,000	24,000	35,000	8,000							71,000
	2. Advance Payments	13,351	80,106	116,821	26,702		-198,620					38,360
10A	1. Incremental Costs	5,000	30,000	46,000	11,000							92,000
	2. Advance Payments	13,939	83,634	128,239	30,666		-196,584					59,894
11B	1. Incremental Costs	7,000	42,000	48,000	11,000							108,000
	2. Advance Payments	26,427	158,564	181,216	41,529		-360,199					47,537
12D	1. Incremental Costs	16,000	20,000	18,000	84,000	18,000						156,000
	2. Advance Payments	38,655	48,319	43,487	202,941	43,489		-267,858				109,033
12E	1. Incremental Costs	10,000	14,000	14,000	66,000	14,000						118,000
	2. Advance Payments	20,186	28,260	28,260	133,226	28,260		-145,159				93,033
13B	1. Incremental Costs	1,000	2,000	14,000	96,000	26,000						139,000
	2. Advance Payments	4,131	8,262	57,834	396,574	107,405		-510,356				63,850
14A	1. Incremental Costs	51,000	65,000	39,000	194,000	150,000	60,000					559,000
	2. Advance Payments	190,878	243,276	145,965	726,084	561,405	224,563		-1,914,501			177,670
14B	1. Incremental Costs	31,000	14,000	10,000	45,000	63,000	12,000					175,000
	2. Advance Payments	68,683	31,018	22,156	99,701	139,581	26,586		-268,094			119,631
14C	1. Incremental Costs	39,000	18,000	13,000	58,000	80,000	15,000					223,000
	2. Advance Payments	63,532	29,323	21,177	94,484	130,323	24,436		-176,776			186,499
15A	1. Incremental Costs	4,000	10,000	46,000	243,000	162,000	128,000					593,000
	2. Advance Payments	10,659	26,647	122,575	647,517	431,678	341,078		-1,187,675			392,479
16A	1. Incremental Costs	14,000	12,000	56,000	387,000	357,000	119,000	50,000				995,000
	2. Advance Payments	37,755	32,362	151,022	1,043,669	962,764	320,921	134,841		-2,137,308		546,026
17E	1. Incremental Costs	30,000	259,000	1,159,000	1,971,000	1,565,000	551,000	276,000				5,811,000
	2. Advance Payments	52,587	454,002	2,031,615	3,454,972	2,743,293	965,850	483,800		-5,639,140		4,546,979
17F	1. Incremental Costs	78,000	203,000	468,000	349,000	276,000	15,000	7,000				1,396,000
	2. Advance Payments	149,070	387,965	894,423	666,995	527,480	28,667	13,379		-1,716,402		951,577
25	1. Incremental Costs			932,118	2,289,874	1,910,988	1,211,656	479,208				6,823,844
	2. Advance Payments			1,649,515	4,052,256	3,381,764	2,144,197	848,026		-6,620,106		5,455,652
28J	1. 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
	2. Advance Payments		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	1. Incremental Costs	294,000	1,063,612	2,976,824	6,109,542	4,687,954	2,341,825	2,021,794	2,017,134	235,900	4,900	21,753,485
	2. Advance Payments	701,366	2,052,677	5,799,024	11,913,984	8,867,779	3,551,064	1,766,259	-1,529,912	-15,877,056	4,900	17,250,085
Current Adjustments	1. Advance Payments and Adjustments - Amendment 2 (g	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 (k		12,871,444
	2. Interest Credits-Amendment 2 (h									-1,532,433 (k		-1,532,433
	3. Advance Payments and Adjustments-Amendment 5 (g	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
	4. Interest Credits-Amendment 5 (i										-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 (k	12,995,849
		SAN GABRIEL VALLEY MUNICIPAL WATER DISTRICT										
25	1. Incremental Costs	0	0	24,882	61,126	51,012	32,344	12,792				182,156
	2. Advance Payments	0	0	44,062	108,243	90,333	57,275	22,653		-176,989		145,577
Totals Unadjusted for past payments	1. Incremental Costs	0	0	24,882	61,126	51,012	32,344	12,792				182,156
	2. Advance Payments	0	0	44,062	108,243	90,333	57,275	22,653		-176,989		145,577
Current Adjustments	1. Advance Payments and Adjustments (g	0	0	0	184,422	49,052	44,911	61,588	-20,263	-174,133		145,577
	2. Interest Credit									-6,332		-6,332
	3. Net Required Advance of Funds	0	0	0	184,422	49,052	44,911	61,588	-20,263 (k	-180,465 (k		139,245
		ANTELOPE VALLEY-EAST KERN WATER AGENCY										
29A	1. Incremental Costs	0	0	8,000	14,000	26,000	26,000	11,000				85,000
	2. Advance Payments	0	0	17,132	29,982	55,680	55,680	23,558		-119,077		62,955
29F	1. Incremental Costs	0	0	3,000	4,000	14,000	2,000	1,000				24,000
	2. Advance Payments	0	0	10,313	13,751	48,127	6,875	3,437		-73,542		8,961
Totals Unadjusted for past payments	1. Incremental Costs	0	0	11,000	18,000	40,000	28,000	12,000				109,000
	2. Advance Payments	0	0	27,445	43,733	103,807	62,555	26,995		-192,619		71,916
Current Adjustments	1. Advance Payments and Adjustments (g				85,495	52,625	101,648	34,062	-12,794	-189,120		71,916
	2. Interest Credit	0	0	0						-16,234		-16,234
	3. Net Required Advance of Funds	0	0	0	85,495	52,625	101,648	34,062	-12,794	-205,354 (k		55,682

TABLE B-10: CAPITAL COSTS OF EACH AQUEDUCT REACH TO BE REIM-

(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	12,001
1960	28	8,797	4,292	4,838	17,927	1,130,378	67,351	71,779	3,644
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-	1,548,882	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	85,412	447,830
1966	48-	59,640	12,985	439,437	512,062	898,074	149,529	142,096	1,691,663
1967	47	47,334	11,637	1,551,899	1,610,870	607,614	50,423	293,304	3,499,440
1968	51,573	69,294	18,060	826,474	913,828	964,046	19,490	89,052	2,928,348
1969	234,242	62,621	22,155	46,436	131,212	455,203	9,621	3,865	886,791
1970	16,235	58,031	41,091	9,979	109,101	53,746	3,443	10,720	155,038
1971	27,206	17,901	27,965	8,502	54,368	24,586	4,654	5,061	20,465
1972	9	14,132	11,301	10,059	35,492	26,924	826	2,948	26,095
1973	27	17,385	27,796	39,911	85,092	24,573	4,022	6,050	12,798
1974	58	65,668	27,111	135,124	227,903	17,535	1,256	1,952	66,505
1975	28	57,046	62,806	49,671	169,523	57,802	596	1,267	7,754
1976	61	50,810	67,009	14,624	132,443	107,419	3,208	9,909	15,798
1977	0	442,380	217,903	143,000	803,283	256,000	1,000	5,000	30,000
1978	0	814,159	456,497	296,000	1,566,656	10,000	0	0	15,000
1979	0	687,562	228,381	306,000	1,221,943	0	0	0	0
1980	0	3,815,831	1,687,948	713,000	6,216,779	0	0	0	0
1981	0	6,194,639	2,055,081	1,787,000	10,036,720	0	0	0	0
1982	0	1,378,550	383,049	354,000	2,115,599	0	0	0	0
1983	0	75,000	15,000	12,000	102,000	0	0	0	0
1984	0	0	0	0	0	0	0	0	0
1985	0	0	0	0	0	0	0	0	0
TOTAL	340,505	14,093,739	5,426,037	6,997,576	26,517,352	14,053,356	1,191,102	4,249,142	10,469,939

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	18,600	15,596	7,253	41,449
1959	357	3,200	3,568	149,874	838,601	123,610	98,958	44,880	267,448
1960	1,102	2,944	4,498	359,749	1,641,445	192,195	102,457	49,126	343,778
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	3,048,483	614,752	493,223	168,968	1,276,943
1963	265,414	1,250,386	939,832	129,902	5,626,310	2,001,428	1,531,989	686,896	4,220,313
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	1,921,845	4,464,133	5,901,476	6,902,119	2,988,209	15,791,804
1966	17,663	34,915	140,350	777,872	3,852,162	8,590,933	14,173,455	5,701,775	28,466,163
1967	41,567-	137,856	147,183	379,764	5,074,017	9,722,703	10,718,823	6,675,877	27,117,403
1968	84,529	2,067	67,958	252,896	4,408,386	6,414,528	893,391	1,307,285	8,615,204
1969	4,281	11,581	162,311	32,023	1,565,676	3,557,542	788,592	445,804	4,791,938
1970	2,501	6,879	20,203	15,456-	237,074	2,250,628	151,546	117,252	2,519,426
1971	4,352	6,947	17,780	39,146	122,991	98,830	216,655	69,824	385,309
1972	1,084	205	4,802	32,203	95,087	160,292	43,918	7,784	211,994
1973	292	1,021	7,486	9,771	66,013	106,413	25,924	22,665	155,002
1974	553	6,207	30,852	11,888	136,748	178,306	18,799	46,860	243,965
1975	140	779	1,209	3,711	73,258	239,635	15,551	171,091	426,277
1976	841	4,437	9,126	25,483	176,221	639,220	60,528	74,491	774,239
1977	0	3,000	5,000	22,000	322,000	568,235	98,387	16,732	683,354
1978	0	0	0	1,000	26,000	1,359,348	10,709	6,024	1,376,081
1979	0	0	0	0	0	2,691,255	10,708	8,031	2,709,994
1980	0	0	0	0	0	3,947,532	4,685	3,346	3,955,563
1981	0	0	0	0	0	4,484,310	6,024	4,016	4,494,350
1982	0	0	0	0	0	3,247,443	6,024	4,016	3,257,483
1983	0	0	0	0	0	1,515,295	3,346	2,008	1,520,649
1984	0	0	0	0	0	32,126	2,677	2,008	36,811
1985	0	0	0	0	0	1,338	1,338	1,338	4,014
TOTAL	514,301	3,797,732	4,786,574	8,441,573	47,503,719	63,563,712	39,011,392	19,398,010	121,973,114

BURSED THRU CAPITAL COST COMPONENT OF TRANSPORTATION CHARGE

(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	14,760	24,789	28,201	7,050	9,446	84,246	357	17,999	23,554
1959	26,388	46,164	49,308	12,196	24,051	158,107	417	19,497	24,063
1960	207,196	49,826	45,840	13,603	42,421	358,886	1,718	45,741	25,878
1961	185,076	300,799	175,315	39,406	72,018	772,614	4,061	77,866	31,721
1962	497,597	565,671	259,901	23,035	27,732	1,373,936	6,304	163,917	64,118
1963	2,780,050	2,092,500	2,570,159	68,209	31,456	7,542,374	6,028	165,746	83,620
1964	4,364,497	5,073,472	1,083,365	166,043	258,653	10,946,030	4,126	93,176	121,226
1965	3,874,392	5,850,995	2,952,032	1,102,785	686,868	14,467,072	15,479	501,146	589,347
1966	2,320,324	8,771,936	5,930,861	4,351,241	7,928,841	29,303,203	206,968	5,344,791	2,614,891
1967	45,894-	2,122,025	7,140,712	229,378	6,865,811	16,312,032	217,640	5,106,818	3,452,313
1968	117,850	406,091	1,001,084	184,830	473,757	2,183,612	56,875	636,491	971,729
1969	7,323-	130,162	100,998	110,165	164,737	498,739	57,412	122,739	87,589
1970	31,334	25,160-	107,758	841,385-	1,237,613	510,160	14,453	119,500	86,970
1971	100,447	237,386	314,120	27,813	350,948	1,030,714	6,931	36,268	23,804
1972	16,061	88,255	12,342	13,778	285,363	415,799	8,948	15,916	17,081
1973	6,897	77,822	13,874	7,219	20,259	126,071	2,975	13,838	13,699
1974	7,344	87,984	24,322	8,020	48,623	176,293	5,391	25,967	17,445
1975	19,404	95,808	9,575	5,236	145,807	275,830	5,067	17,962	13,988
1976	20,127	84,630	18,288	6,365	48,977	178,387	19,261	87,716	67,971
1977	36,821	41,710	20,370	10,670	12,610	122,181	15,520	85,360	64,020
1978	12,746	11,640	5,820	4,850	5,820	40,876	6,790	39,770	17,460
1979	2,832	11,640	6,790	5,820	6,790	33,872	2,910	3,880	4,850
1980	1,416	4,850	2,910	2,910	2,910	14,996	970	970	1,940
1981	708	52,380	220,190	98,940	124,160	496,378	970	970	1,940
1982	708	150,350	657,660	293,910	366,660	1,469,288	970	970	2,910
1983	708	431,650	1,514,170	653,780	826,440	3,426,748	970	970	1,940
1984	708	1,556,850	3,152,500	1,222,200	1,605,350	7,537,608	970	970	1,940
1985	1,416	1,766,370	3,086,540	1,146,540	1,529,690	7,530,556	1,940	1,940	1,940
TOTAL	14,624,017	30,153,861	30,554,062	8,987,056	23,224,287	107,543,283	672,894	12,770,967	8,458,752

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	23,569	44,252	72,354	36,010	56,543	36,272	13,221	12,713	55,179
1959	24,155	63,536	101,906	50,928	81,603	68,351	23,301	23,050	77,381
1960	48,710	67,893	79,656	40,753	64,919	86,865	23,954	22,974	75,652
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	54,056	94,527	178,935	88,866	69,650	437,617	107,365	80,142	104,869
1964	127,504	343,088	299,208	179,419	88,665	1,124,883	703,521	498,858	587,404
1965	649,529	1,086,113	1,554,641	1,066,779	201,098	3,434,895	1,673,446	1,441,244	487,213
1966	2,879,871	3,793,270	673,531	465,607	428,182	4,993,715	990,899	728,500	1,870,859
1967	3,741,147	4,741,022	1,937,109	1,278,093	1,273,167	2,840,710	531,166	399,211	1,737,986
1968	1,058,359	1,358,846	4,804,568	3,189,220	8,525,759	10,389,959	1,342,794	1,401,737	7,564,446
1969	149,285	235,774	722,039	540,721	3,817,241	15,507,817	1,216,507	1,102,940	9,770,168
1970	76,944	88,116	73,856	75,597	332,088	11,417,594	1,017,291	755,226	9,095,065
1971	16,101	46,373	45,321	43,892	348,883	3,045,679	198,848	37,613	3,422,408
1972	20,303	33,598	45,203	25,459	84,290	1,434,345	104,703	20,745	1,037,294
1973	14,767	17,021	10,358	16,882	25,934	701,124	20,215	13,924	822,902
1974	23,136	15,945	20,721	33,378	31,023	541,460	32,215	17,406	804,423
1975	16,998	14,796	11,997	14,568	27,667	280,046	26,672	22,370	383,648
1976	83,158	61,903	46,263	64,957	112,695	545,414	67,642	49,153	460,485
1977	66,930	50,440	48,500	61,110	76,630	334,650	52,380	37,830	273,540
1978	17,460	14,550	14,550	14,550	24,250	119,310	16,490	12,610	112,520
1979	4,850	6,790	4,850	4,850	6,790	45,590	9,700	2,910	32,980
1980	1,940	2,910	1,940	1,940	2,910	20,370	3,880	970	14,550
1981	1,940	2,910	1,940	1,940	2,910	12,610	3,880	970	7,760
1982	2,910	3,880	1,940	1,940	3,880	14,550	4,850	970	9,700
1983	1,940	1,940	970	970	1,940	8,730	2,910	970	4,850
1984	1,940	1,940	1,940	1,940	1,940	6,790	2,910	970	4,850
1985	1,940	1,940	1,940	1,940	1,940	1,940	1,940	1,940	1,940
TOTAL	9,264,796	12,336,903	10,977,480	7,431,239	15,822,003	57,945,979	8,357,579	6,812,076	39,168,609

TABLE B-10: CAPITAL COSTS OF EACH AQUEDUCT REACH TO BE REIM-

(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	147,291	539,314	168,754	74,157	242,911	39,003	14,570	123	15,832
1959	222,658	780,846	155,722	59,540	215,262	39,725	24,122	1,102	24,281
1960	211,245	795,958	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	495,354	1,966,775	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	1,291,460	13,992,390	2,619,141	2,380,351	4,999,492	124,314	736,115	9,156	111,260
1966	2,965,037	27,956,121	5,491,413	9,648,092	15,139,505	376,638	1,704,068	13,365	163,309
1967	3,502,077	30,758,459	26,296,952	12,554,862	38,851,814	1,341,566	907,357	24,086	646,609
1968	7,550,570	48,851,353	32,920,847	7,543,049	40,463,896	139,921	7,311,843	71,404	1,942,214
1969	13,342,313	46,672,545	40,861,585	7,068,120	47,929,705	210,957	2,522,228	6,951	6,097,477
1970	14,288,457	37,441,157	37,218,347	7,176,786	44,395,133	2,150,342	1,153,699	6,255	3,688,095
1971	8,210,873	15,482,994	21,130,290	7,024,833	28,155,123	1,540,190	292,450	7,001	1,105,366
1972	3,137,235	5,985,120	10,478,106	35,708	10,513,814	132,768	424,080	3,629	485,475
1973	1,520,534	3,194,173	3,197,634	37,698	3,235,332	23,797	75,851	2,573	89,287
1974	1,069,716	2,638,226	4,970,291	159,634	5,129,925	26,136	209,651	2,308	141,494
1975	507,419	1,343,198	2,214,895	425,882	2,640,777	38,381	71,195	4,259	79,366
1976	650,546	2,317,164	1,192,170	197,184	1,389,354	125,277	88,018	8,688	63,083
1977	436,500	1,603,410	1,187,280	17,460	1,204,740	835,170	120,280	4,122	137,740
1978	124,160	534,470	2,112,660	3,880	2,116,540	1,277,490	16,490	3,117	14,550
1979	50,440	181,390	7,170,240	3,880	7,174,120	3,534,680	8,730	3,109	6,790
1980	23,280	78,570	13,168,720	1,940	13,170,660	6,120,700	3,880	1,036	2,910
1981	16,490	57,230	10,144,260	970	10,145,230	5,132,270	3,880	94,116	2,910
1982	18,430	67,900	3,668,540	1,940	3,670,480	1,049,540	4,850	262,836	3,880
1983	9,700	38,800	540,290	970	541,260	62,080	2,910	997,297	1,940
1984	7,760	36,860	307,490	1,940	309,430	1,940	2,910	8,336,683	1,940
1985	1,940	25,220	1,940	1,940	3,880	1,940	1,940	9,954,514	1,940
TOTAL	62,150,133	252,169,410	231,620,947	55,684,381	287,305,328	24,648,515	17,208,726	19,839,852	15,012,664

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	287,098	212,169
1966	1,348,753	164,765	183,349	1,786,444	31,643	1,049,344	6,821,678	427,209	370,240
1967	1,753,447	505,711	371,559	3,168,225	62,660	2,369,273	11,150,493	3,308,174	646,082
1968	2,355,925	1,174,049	1,177,940	4,705,928	104,655	2,671,455	21,655,334	7,864,260	1,299,169
1969	5,779,300	2,422,120	1,553,776	7,925,211	267,637	11,431,880	38,217,537	6,523,255	1,813,812
1970	5,398,362	3,298,941	2,113,814	23,904,826	1,273,711	17,260,990	60,249,035	1,697,866	7,425,935
1971	1,123,235	849,096	444,850	17,258,853	1,977,445	5,540,885	30,139,371	912,616	10,093,708
1972	653,703	498,652	334,167	3,897,378	49,426	811,059	7,290,337	1,382,415	5,678,123
1973	84,839	64,967	36,553	1,664,790	24,989	4,344,382	6,412,028	141,110	1,862,536
1974	120,632	105,555	55,828	5,849,035	131,970	790,982	7,433,591	71,362	1,979,637
1975	175,685	183,004	23,204	4,925,779	18,644	381,675	5,901,192	172,323	3,875,246
1976	104,673	48,322	28,220	3,183,445	85,032	222,487	3,957,245	502,777	1,509,620
1977	254,140	209,520	57,230	1,645,120	62,080	290,030	3,615,432	71,780	811,890
1978	14,550	155,200	10,670	118,340	15,520	26,190	1,652,117	9,700	57,230
1979	11,640	5,820	3,880	95,060	18,430	5,820	3,693,959	2,910	17,460
1980	9,700	6,790	1,940	40,740	970	2,910	6,191,576	970	6,790
1981	3,880	4,850	970	19,400	970	1,940	5,265,186	970	2,910
1982	4,850	2,910	1,940	21,340	970	2,910	1,356,026	970	3,880
1983	2,910	1,940	970	12,610	970	1,940	1,085,567	970	1,940
1984	2,910	1,940	1,940	9,700	970	1,940	8,362,873	970	1,940
1985	1,940	1,940	1,940	1,940	1,940	1,940	9,971,974	1,940	1,940
TOTAL	19,801,293	10,139,653	6,539,538	82,138,741	4,262,729	49,317,402	248,909,113	23,718,759	38,392,009

BURSED THRU CAPITAL COST COMPONENT OF TRANSPORTATION CHARGE

(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	833,324	371,983	79,892	414,427	130,974	606,382
1966	175,122	317,363	606,650	1,896,584	500,644	208,497	1,268,986	355,724	3,324,046
1967	236,476	287,456	1,199,421	5,677,609	1,615,765	891,473	1,208,281	907,515	31,976,908
1968	895,357	273,351	817,785	11,149,922	3,995,086	303,881	405,337	1,131,841	37,189,837
1969	1,148,390	1,485,053	965,144	11,935,654	6,753,187	323,967	707,194	1,210,989	9,936,118
1970	1,884,889	1,029,913	3,972,130	16,010,733	8,110,385	6,237,048	2,679,219	3,069,975	8,706,639
1971	16,558,761	6,588,337	12,492,952	46,646,374	4,366,950	3,878,201	1,155,728	8,480,631	6,014,142
1972	1,505,253	12,382,105	22,215,604	43,163,500	1,927,130	439,242	1,013,871	19,325,671	23,674,675-
1973	214,445	255,013	3,766,709	6,239,813	797,880	171,747	444,985	9,678,032	1,874,066
1974	166,545	111,248	2,039,831	4,368,623	577,458	173,578	175,306	4,120,794	3,548,808-
1975	125,347	158,055	1,641,356	5,972,327	349,469	454,126	993,085	678,415	629,523
1976	170,101	127,842	1,510,367	3,820,707	404,118	666,208	1,339,229	718,613	694,842
1977	231,830	116,400	773,066	2,004,966	711,980	2,217,420	2,665,560	484,030	953,049
1978	156,170	45,590	49,470	318,160	153,260	3,472,600	12,280,200	768,240	17,460
1979	4,850	3,880	13,580	42,680	65,960	2,120,420	20,542,660	56,260	17,460
1980	1,940	1,940	8,730	20,370	28,130	602,370	23,850,360	289,060	7,760
1981	1,940	970	7,760	14,550	11,640	1,940	10,928,020	261,900	2,910
1982	1,940	1,940	8,750	17,480	13,580	2,910	4,959,610	11,640	3,880
1983	1,940	970	970	6,790	7,760	1,940	347,260	1,940	1,940
1984	1,940	970	165,802	171,622	5,820	1,940	1,940	1,940	1,940
1985	1,940	1,940	1,940	9,700	1,940	1,940	1,940	1,940	1,940
TOTAL	23,999,869	23,632,960	55,421,799	165,165,396	31,132,460	22,452,429	87,940,799	52,092,407	75,550,333

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	1,368,489	2,323,496
1959	45,653	138,582	28,046	49,114	7,441	8,236	92,837	2,155,923	3,021,826
1960	87,117	262,688	34,404	70,450	8,507	14,265	127,626	3,013,630	4,673,030
1961	118,530	235,421	13,801	17,868	1,501	3,931	37,101	4,768,384	8,663,364
1962	354,005	684,443	10,121	7,798	524	1,689	20,132	5,947,013	8,994,408
1963	432,675	1,059,082	20,470	14,299	880	2,943	38,592	19,319,926	24,948,717
1964	1,410,463	2,294,105	315,418	26,963	1,687	5,639	349,707	32,142,019	42,322,401
1965	3,478,911	5,082,569	747,023	36,178	2,118	7,060	792,379	58,954,946	63,683,272
1966	9,628,841	15,286,738	2,258,706	35,871	1,737	5,767	2,302,081	127,172,073	131,536,249
1967	18,033,822	54,633,764	6,310,237	38,357	1,895	6,222	6,356,711	190,858,285	197,543,219
1968	16,177,242	59,203,224	2,705,667	30,711	1,320	4,361	2,742,059	194,864,604	200,238,391
1969	16,628,974	35,560,429	423,828	26,592	911	2,914	454,245	186,060,792	187,991,922
1970	22,613,489	51,416,755	270,674	24,456	858	2,802	298,790	212,841,189	213,203,599
1971	17,374,753	41,270,405	164,532	32,221	1,316	3,806	201,875	163,312,165	163,516,730
1972	3,862,654	2,893,893	131,339	17,585	524	1,666	151,114	70,625,571	70,756,159
1973	13,686,085	26,652,795	182,608	16,278	561	1,809	201,256	46,216,470	46,367,602
1974	2,845,885	4,344,213	191,191	17,444	335	1,103	210,073	24,544,909	24,909,618
1975	1,716,055	4,820,673	67,565	30,940	1,843	4,813	105,161	21,485,435	21,728,244
1976	996,345	4,819,355	209,126	68,695	5,063	14,712	297,596	17,554,047	17,862,772
1977	511,717	7,543,756	924,000	68,458	6,204	10,368	1,009,030	17,786,869	18,912,152
1978	208,627	16,900,387	61,000	61,933	3,118	3,116	129,167	23,067,798	24,660,454
1979	1,771,220	24,573,980	16,000	932,244	120,199	305,680	1,374,123	39,784,118	41,006,061
1980	2,512,300	27,289,980	25,000	1,146,805	148,388	463,341	1,783,534	52,505,249	58,722,028
1981	668,330	11,874,740	25,000	1,340,674	206,835	629,712	2,202,221	34,549,885	44,586,605
1982	6,790	4,998,410	101,000	6,723,732	311,498	866,174	8,002,404	22,839,471	24,955,070
1983	1,940	362,780	229,000	24,285,624	1,603,239	5,383,722	31,501,585	38,484,179	38,586,179
1984	1,940	15,520	537,000	24,947,693	2,208,744	7,375,765	35,069,202	51,539,926	51,539,926
1985	1,940	11,640	865,000	20,676,635	1,797,717	5,025,759	28,365,111	45,922,095	45,922,095
TOTAL	135,214,503	404,382,931	16,867,756	80,745,618	6,444,963	20,157,375	124,215,712	1,711,664,287	1,786,025,863

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.

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)
1960	0	0	0	0	0	0	0	0	0
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	271,407	23,846	64,034	0
1967	0	0	0	0	0	438,890	32,833	108,372	0
1968	0	0	0	0	0	402,697	42,978	65,553	706
1969	0	0	0	76,244	76,244	464,699	44,871	71,657	706
1970	0	0	0	88,810	88,810	366,741	42,625	62,348	64,280
1971	58	0	0	34,038	34,038	343,295	23,515	47,944	31,707
1972	40	0	0	32,893	32,893	332,887	28,313	54,226	93,171
1973	1	0	0	29,040	29,040	369,425	33,590	55,285	20,519
1974	144	0	0	41,250	41,250	435,454	54,050	79,556	51,568
1975	1,073	0	0	33,014	33,014	602,543	43,510	78,177	28,696
1976	167	0	0	49,023	49,023	582,304	48,526	109,400	78,926
1977	200	0	0	53,028	53,028	587,763	68,600	89,768	108,076
1978	200	0	0	61,499	61,499	619,078	75,557	100,115	119,809
1979	200	0	0	61,519	61,519	641,214	80,500	109,046	183,281
1980	200	0	0	57,674	57,674	641,000	80,419	108,859	183,087
1981	200	0	0	57,399	57,399	640,256	80,393	108,990	183,065
1982	200	0	0	83,642	83,642	633,706	79,533	107,893	181,133
1983	200	172,031	28,598	97,172	297,801	656,515	87,229	133,858	202,857
1984	200	140,347	27,998	81,692	250,037	657,211	86,810	132,134	200,894
1985	200	139,972	27,800	81,780	249,552	656,818	86,731	131,661	200,311
1986	200	141,916	28,528	81,875	252,319	658,744	87,002	132,362	200,734
1987	200	140,442	27,989	81,779	250,210	656,687	86,553	131,060	199,454
1988	200	141,171	28,261	81,818	251,250	656,832	86,360	130,321	198,601
1989	200	140,018	27,800	81,818	249,636	656,769	86,276	130,039	198,547
1990	200	140,106	27,835	81,818	249,759	655,659	86,129	129,544	197,932
1991	200	142,096	28,161	82,705	252,962	663,044	87,079	130,708	199,807
1992	200	142,110	28,167	82,705	252,982	664,167	87,243	131,260	199,825
1993	200	142,183	28,197	82,705	253,085	664,344	87,478	132,055	200,171
1994	200	141,668	27,990	82,705	252,363	663,228	87,324	131,532	199,602
1995	200	141,725	28,013	82,705	252,443	663,217	87,309	131,484	199,650
1996	200	140,160	27,743	82,031	249,934	657,709	86,726	131,073	198,271
1997	200	140,063	27,705	82,031	249,799	657,720	86,742	131,122	198,223
1998	200	140,286	27,793	82,031	250,110	658,329	86,220	129,361	196,036
1999	200	139,786	27,593	82,031	249,410	657,377	86,284	129,578	196,120
2000	200	140,605	27,921	82,031	250,557	657,370	86,274	129,546	196,028
2001	200	141,920	28,139	82,616	252,675	662,280	86,957	130,503	199,506
2002	200	142,019	28,178	82,616	252,813	662,072	86,677	129,560	199,330
2003	200	141,831	28,103	82,616	252,550	662,019	86,608	129,328	199,095
2004	200	140,734	28,065	82,616	251,415	661,054	86,655	129,485	198,929
2005	200	141,726	28,062	82,616	252,404	662,205	86,855	130,159	199,584
2006	200	141,751	28,072	82,616	252,439	662,243	86,907	130,335	199,685
2007	200	140,497	27,970	82,616	251,083	661,179	86,820	130,042	199,220
2008	200	141,661	28,036	82,616	252,313	662,338	87,033	130,763	199,942
2009	200	140,549	27,990	82,616	251,155	661,142	86,770	129,876	199,042
2010	200	140,488	27,966	82,616	251,070	661,261	86,930	130,413	199,408
2011	200	141,545	27,989	82,616	252,150	662,144	86,774	129,888	199,300
2012	200	140,449	27,951	82,616	251,016	661,295	86,974	130,564	199,576
2013	200	141,556	27,993	82,616	252,165	662,257	86,925	130,397	199,674
2014	200	141,444	27,949	82,616	252,009	662,253	86,920	130,379	199,660
2015	200	140,384	27,925	82,616	250,925	662,277	86,952	130,488	199,520
2016	200	140,237	27,866	82,616	250,719	661,100	86,714	129,687	198,932
2017	200	140,321	27,900	82,616	250,837	662,269	86,941	130,449	199,491
2018	200	140,129	27,822	82,616	250,567	661,307	86,990	130,619	199,615
2019	200	140,261	27,875	82,616	250,752	662,294	86,973	130,560	199,572
2020 (a	200	141,166	27,837	82,616	251,619	662,319	87,008	130,676	199,877

a) And each year thereafter for the remainder of the project repayment period.

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)
1960	0	0	0	0	0	0	0	0	0
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	4,730	10,372	9,296	25,742	409,427	0	0	0	0
1967	2,734	7,733	10,904	34,573	636,039	0	0	0	0
1968	2,531	7,809	9,991	39,425	571,690	979,369	223,053	100,942	1,303,364
1969	2,383	5,549	8,263	35,717	633,845	915,438	295,367	184,125	1,394,930
1970	1,467	2,248	6,559	26,415	568,187	950,909	299,872	148,404	1,399,185
1971	2,152	9,146	9,597	29,363	496,719	1,078,303	249,911	111,521	1,439,735
1972	4,065	9,997	11,695	42,896	577,250	1,085,059	226,402	107,992	1,419,453
1973	2,940	7,177	4,424	41,666	535,026	1,127,379	217,139	98,297	1,442,815
1974	6,481	7,158	4,954	45,464	684,685	1,245,641	226,724	114,892	1,587,257
1975	17,469	14,027	17,655	65,824	867,901	1,404,146	445,270	196,911	2,046,327
1976	11,478	4,179	18,159	52,745	905,717	1,423,622	226,397	391,193	2,041,212
1977	19,776	9,490	14,876	47,896	946,245	1,941,895	386,767	185,076	2,513,738
1978	22,857	9,351	15,685	52,188	1,014,640	1,887,124	379,854	180,281	2,447,259
1979	23,833	10,361	17,716	56,154	1,122,105	1,838,923	383,933	181,496	2,404,352
1980	23,820	10,357	17,707	56,125	1,121,374	1,834,328	378,629	178,726	2,391,683
1981	23,787	10,343	17,683	56,049	1,120,566	1,828,710	381,616	180,287	2,390,613
1982	23,522	10,226	17,487	55,426	1,108,926	1,874,934	374,930	177,014	2,426,878
1983	23,524	10,228	17,487	55,431	1,187,129	1,961,191	416,174	198,275	2,575,640
1984	23,569	10,248	17,521	55,537	1,183,924	1,955,539	410,370	195,258	2,561,167
1985	23,599	10,260	17,543	55,607	1,182,530	1,955,136	412,242	196,196	2,563,574
1986	23,632	10,275	17,567	55,682	1,185,998	1,961,270	412,088	196,096	2,569,454
1987	23,599	10,261	17,543	55,607	1,180,764	1,952,228	416,474	198,369	2,567,071
1988	23,612	10,266	17,553	55,638	1,179,183	1,956,158	404,894	192,388	2,553,440
1989	23,612	10,266	17,553	55,638	1,178,700	1,954,060	411,361	195,724	2,561,145
1990	23,612	10,266	17,553	55,638	1,176,333	1,951,207	416,260	198,250	2,565,717
1991	23,912	10,396	17,775	56,341	1,189,062	1,974,073	420,449	200,206	2,594,728
1992	23,912	10,396	17,775	56,341	1,190,919	1,975,404	421,153	200,569	2,597,126
1993	23,912	10,396	17,775	56,341	1,192,472	1,976,378	416,865	198,356	2,591,599
1994	23,912	10,396	17,775	56,341	1,190,110	1,971,275	426,116	203,129	2,600,520
1995	23,912	10,396	17,775	56,341	1,190,084	1,972,368	423,487	201,773	2,597,628
1996	23,684	10,297	17,607	55,806	1,181,173	1,956,382	426,074	203,265	2,585,721
1997	23,684	10,297	17,607	55,806	1,181,201	1,956,496	427,644	204,073	2,588,213
1998	23,684	10,297	17,607	55,806	1,177,340	1,959,029	418,316	199,263	2,576,608
1999	23,684	10,297	17,607	55,806	1,176,753	1,953,683	424,212	202,304	2,580,199
2000	23,684	10,297	17,607	55,806	1,176,612	1,954,278	423,570	201,972	2,579,820
2001	23,881	10,384	17,752	56,271	1,187,534	1,969,551	431,917	206,143	2,607,611
2002	23,881	10,384	17,752	56,271	1,185,927	1,970,382	425,655	202,912	2,598,949
2003	23,881	10,384	17,752	56,271	1,185,338	1,968,358	424,257	202,191	2,594,806
2004	23,881	10,384	17,752	56,271	1,184,411	1,967,957	427,588	203,909	2,599,454
2005	23,881	10,384	17,752	56,271	1,187,091	1,968,024	428,526	204,393	2,600,943
2006	23,881	10,384	17,752	56,271	1,187,458	1,968,693	428,895	204,583	2,602,171
2007	23,881	10,384	17,752	56,271	1,185,549	1,966,319	431,536	205,946	2,603,801
2008	23,881	10,384	17,752	56,271	1,188,364	1,969,066	434,074	207,255	2,610,395
2009	23,881	10,384	17,752	56,271	1,185,118	1,967,392	428,640	204,450	2,600,482
2010	23,881	10,384	17,752	56,271	1,186,300	1,967,419	429,008	204,641	2,601,068
2011	23,881	10,384	17,752	56,271	1,186,394	1,967,946	427,440	203,833	2,599,219
2012	23,881	10,384	17,752	56,271	1,186,697	1,967,850	434,997	207,730	2,610,577
2013	23,881	10,384	17,752	56,271	1,187,541	1,969,474	430,854	205,593	2,605,921
2014	23,881	10,384	17,752	56,271	1,187,500	1,968,915	431,978	206,174	2,607,067
2015	23,881	10,384	17,752	56,271	1,187,525	1,968,391	433,596	207,008	2,608,995
2016	23,881	10,384	17,752	56,271	1,184,721	1,966,177	429,579	204,936	2,600,692
2017	23,881	10,384	17,752	56,271	1,187,438	1,968,361	433,184	206,796	2,608,341
2018	23,881	10,384	17,752	56,271	1,186,819	1,966,164	438,266	209,416	2,613,846
2019	23,881	10,384	17,752	56,271	1,187,687	1,968,457	434,519	207,484	2,610,460
2020(a	23,881	10,384	17,752	56,271	1,188,168	1,969,656	433,365	206,889	2,609,910

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)
1960	0	0	0	0	0	0	0	0	0
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	117,197	412,310	125,411	42,965	100,130	798,013	0	0	0
1969	88,434	445,650	178,489	34,801	226,515	973,889	21,090	129,116	82,618
1970	88,455	469,000	218,504	64,013	185,546	1,025,518	25,065	150,329	123,134
1971	98,656	524,447	170,379	62,260	152,672	1,008,414	30,812	182,844	113,823
1972	115,133	628,726	169,582	71,416	149,745	1,134,602	33,450	178,870	124,751
1973	115,421	594,158	153,773	56,619	148,984	1,068,955	48,922	216,066	122,025
1974	118,899	652,246	146,547	61,899	145,430	1,125,021	33,154	189,988	125,267
1975	132,556	822,065	173,515	78,782	152,493	1,359,411	74,989	238,991	151,762
1976	157,388	816,586	206,067	87,492	168,092	1,435,625	43,432	138,919	117,949
1977	205,727	1,035,947	192,929	64,915	124,558	1,624,076	56,732	226,406	172,332
1978	199,751	1,005,380	194,635	65,903	128,144	1,593,813	59,272	214,947	155,340
1979	199,047	982,984	203,189	69,772	133,165	1,588,157	59,141	216,294	158,987
1980	195,757	983,028	199,042	68,397	131,391	1,577,615	58,983	214,092	156,906
1981	197,410	982,814	201,064	69,014	132,115	1,582,417	58,938	215,039	157,872
1982	191,932	970,575	196,097	67,350	129,282	1,555,236	58,244	211,699	155,221
1983	217,673	1,165,340	253,065	85,682	152,529	1,874,289	59,048	238,818	181,035
1984	214,295	1,156,989	248,698	84,342	150,982	1,855,306	59,074	236,214	178,466
1985	215,644	1,156,213	251,191	85,176	152,127	1,860,351	59,171	237,258	179,379
1986	215,713	1,162,200	246,660	83,541	149,973	1,858,087	59,256	237,642	179,681
1987	218,277	1,149,719	249,592	84,433	151,020	1,853,041	59,208	239,254	181,279
1988	211,129	1,151,703	240,520	81,539	147,406	1,832,297	59,101	234,661	176,877
1989	215,158	1,151,015	246,483	83,444	149,806	1,845,906	59,192	237,706	179,779
1990	218,212	1,147,747	251,354	85,002	151,767	1,854,082	59,265	240,194	182,149
1991	222,343	1,165,805	254,418	86,064	153,919	1,882,549	59,998	242,657	183,904
1992	222,783	1,168,377	255,494	86,408	154,352	1,887,414	60,015	243,207	184,428
1993	220,109	1,168,956	252,167	85,344	153,013	1,879,589	59,965	241,507	182,808
1994	225,873	1,162,163	258,727	87,441	155,654	1,889,858	60,064	244,858	186,000
1995	224,237	1,163,817	257,021	86,895	154,967	1,886,937	60,037	243,986	185,170
1996	224,688	1,155,679	259,921	87,758	155,437	1,883,483	59,557	244,786	186,380
1997	225,667	1,155,615	261,224	88,174	155,961	1,886,641	59,576	245,451	187,014
1998	219,856	1,158,167	253,871	85,825	153,001	1,870,720	59,466	241,697	183,436
1999	223,529	1,149,796	258,055	87,162	154,685	1,873,227	59,530	243,833	185,472
2000	223,127	1,150,247	257,337	86,932	154,397	1,872,040	59,519	243,466	185,123
2001	229,336	1,164,723	264,594	89,309	157,923	1,905,885	60,082	247,763	188,830
2002	225,435	1,164,100	259,456	87,667	155,855	1,892,513	60,005	245,139	186,331
2003	224,564	1,159,287	257,804	87,138	155,190	1,883,983	59,980	244,295	185,527
2004	226,639	1,160,380	260,849	88,112	156,415	1,892,395	60,025	245,851	187,009
2005	227,224	1,160,900	261,632	88,361	156,731	1,894,848	60,038	246,251	187,389
2006	227,454	1,163,160	262,238	88,556	156,975	1,898,383	60,047	246,561	187,685
2007	229,099	1,159,577	263,840	89,067	157,619	1,899,202	60,072	247,378	188,462
2008	230,681	1,165,139	266,619	89,955	158,738	1,911,132	60,113	248,798	189,816
2009	227,293	1,160,195	261,972	88,470	156,867	1,894,797	60,043	246,424	187,555
2010	227,523	1,159,107	261,730	88,393	156,770	1,893,523	60,040	246,301	187,438
2011	226,546	1,161,453	261,068	88,180	156,503	1,893,750	60,030	245,963	187,115
2012	231,255	1,163,870	267,506	90,238	159,095	1,911,964	60,127	249,251	190,247
2013	228,673	1,165,421	264,245	89,197	157,782	1,905,318	60,077	247,586	188,660
2014	229,374	1,164,097	265,049	89,453	158,106	1,906,079	60,089	247,995	189,052
2015	230,383	1,163,995	266,294	89,851	158,608	1,909,131	60,108	248,632	189,658
2016	227,879	1,158,599	262,365	88,595	157,026	1,894,464	60,048	246,624	187,747
2017	230,125	1,163,806	266,011	89,761	158,493	1,908,196	60,104	248,486	189,520
2018	233,292	1,162,662	269,883	90,999	160,053	1,916,889	60,162	250,464	191,405
2019	230,957	1,164,452	266,985	90,072	158,885	1,911,351	60,119	248,985	189,993
2020(a	230,237	1,165,886	266,347	89,868	158,628	1,910,966	60,110	248,659	189,682

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)
1960	0	0	0	0	0	0	0	0	0
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	80,255	56,755	0	0	0	0	0	0	0
1970	113,214	82,360	90,595	117,814	146,423	0	0	0	0
1971	124,748	77,138	91,739	87,029	160,428	665,290	145,990	107,315	508,752
1972	112,310	80,515	94,630	109,264	139,698	839,645	119,448	97,014	580,814
1973	112,456	88,263	71,125	108,549	212,161	920,415	114,745	95,006	661,167
1974	135,109	93,604	71,425	184,386	134,960	856,402	137,359	110,410	814,531
1975	198,454	118,453	58,925	111,458	103,107	1,103,094	172,465	114,459	944,443
1976	138,390	67,984	30,168	133,891	124,087	1,077,359	169,379	111,237	989,434
1977	185,413	129,022	110,633	164,504	192,346	1,327,647	149,639	109,361	1,235,417
1978	172,953	113,605	93,974	138,302	179,359	1,189,800	146,122	110,160	1,097,344
1979	174,769	115,548	97,523	139,945	181,807	1,170,278	149,361	110,623	1,074,465
1980	172,560	114,229	94,917	138,817	179,822	1,167,703	146,951	109,018	1,074,762
1981	173,582	114,771	96,318	139,218	180,670	1,168,478	148,278	109,918	1,073,901
1982	170,694	112,953	94,065	137,200	177,818	1,157,324	145,959	108,241	1,063,710
1983	198,191	128,212	127,520	150,161	201,732	1,287,147	192,871	140,369	1,124,970
1984	195,465	126,734	124,007	149,009	199,417	1,281,765	190,021	138,430	1,123,947
1985	196,447	127,292	125,060	149,530	200,303	1,281,461	190,473	138,782	1,124,484
1986	196,776	127,500	125,303	149,766	200,629	1,287,984	192,354	140,083	1,127,902
1987	198,474	128,408	127,530	150,474	202,063	1,285,007	194,266	141,372	1,123,090
1988	193,787	125,813	121,765	148,295	198,001	1,280,197	188,620	137,513	1,124,542
1989	196,876	127,531	125,526	149,751	200,692	1,282,548	191,582	139,540	1,124,277
1990	199,401	128,935	128,598	150,943	202,890	1,283,694	194,350	141,435	1,123,054
1991	201,342	130,241	129,512	152,577	204,946	1,296,640	195,868	142,580	1,135,161
1992	201,900	130,551	130,189	152,841	205,431	1,299,682	197,356	143,598	1,135,465
1993	200,175	129,591	128,091	152,028	203,929	1,298,460	195,842	142,561	1,136,096
1994	203,575	131,483	132,228	153,631	206,889	1,299,407	199,123	144,807	1,134,022
1995	202,690	130,990	131,152	153,214	206,120	1,299,223	198,339	144,271	1,133,901
1996	203,926	131,504	133,756	153,249	206,916	1,293,824	199,813	145,197	1,125,859
1997	204,602	131,881	134,577	153,568	207,503	1,294,693	200,425	145,615	1,125,951
1998	200,791	129,761	129,941	151,771	204,187	1,291,469	196,847	143,169	1,127,204
1999	202,958	130,966	132,580	152,793	206,074	1,290,668	198,900	144,574	1,124,589
2000	202,586	130,759	132,126	152,618	205,751	1,290,138	198,527	144,317	1,124,759
2001	206,580	133,131	136,031	154,976	209,469	1,302,990	202,342	146,998	1,132,674
2002	203,918	131,650	132,791	153,720	207,151	1,300,281	199,780	145,247	1,133,156
2003	203,062	131,174	131,749	153,316	206,406	1,295,920	198,019	144,041	1,131,714
2004	204,639	132,052	133,669	154,060	207,779	1,299,583	200,597	145,805	1,132,214
2005	205,045	132,278	134,163	154,251	208,132	1,300,113	200,971	146,061	1,132,274
2006	205,359	132,451	134,545	154,400	208,406	1,301,508	201,298	146,284	1,132,626
2007	206,189	132,913	135,555	154,791	209,127	1,299,008	201,501	146,423	1,131,563
2008	207,630	133,715	137,309	155,472	210,382	1,303,825	203,583	147,848	1,133,049
2009	205,221	132,374	134,377	154,334	208,285	1,299,720	201,348	146,318	1,132,440
2010	205,096	132,306	134,226	154,276	208,177	1,298,269	200,328	145,619	1,131,320
2011	204,752	132,114	133,807	154,114	207,877	1,299,932	200,844	145,972	1,132,340
2012	208,090	133,970	137,867	155,688	210,782	1,303,750	204,183	148,259	1,133,231
2013	206,400	133,031	135,811	154,890	209,311	1,303,346	202,590	147,168	1,133,893
2014	206,815	133,262	136,318	155,087	209,673	1,302,891	202,925	147,398	1,133,005
2015	207,461	133,620	137,104	155,391	210,235	1,303,688	203,488	147,780	1,133,083
2016	205,426	132,488	134,626	154,431	208,462	1,298,973	200,822	145,958	1,131,490
2017	207,314	133,539	136,923	155,322	210,108	1,303,569	203,403	147,724	1,133,086
2018	209,322	134,655	139,367	156,268	211,854	1,304,472	205,345	149,053	1,132,232
2019	207,819	133,820	137,538	155,560	210,546	1,303,999	203,706	147,931	1,133,081
2020(a	207,489	133,636	137,137	155,404	210,259	1,304,906	203,689	147,920	1,134,095

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)
1960	0	0	0	0	0	0	0	0	0
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	369,834	0	0	0	0	0	0	0
1970	0	848,934	0	0	0	0	0	0	0
1971	9,867	2,305,775	3,328	0	3,328	0	0	0	0
1972	1,058,019	3,568,428	1,359,918	27,410	1,387,328	34,889	128,706	0	123,563
1973	1,188,503	3,959,403	1,695,989	50,990	1,746,979	33,249	136,080	0	149,843
1974	1,281,713	4,168,308	2,193,845	18,666	2,212,511	27,421	80,566	0	103,517
1975	1,467,005	4,857,605	2,292,503	38,392	2,330,895	36,530	110,082	0	123,580
1976	1,646,482	4,788,711	2,623,451	106,787	2,730,238	84,974	158,660	0	146,682
1977	1,807,482	5,866,934	3,581,570	55,465	3,637,035	133,985	265,915	0	247,835
1978	1,705,332	5,376,510	3,107,313	61,783	3,169,096	126,926	273,117	0	253,794
1979	1,655,019	5,303,760	2,891,919	62,389	2,954,308	126,524	268,911	0	248,925
1980	1,655,656	5,284,416	2,896,951	62,404	2,959,355	124,510	271,113	0	251,013
1981	1,654,774	5,291,757	2,881,949	62,477	2,944,426	166,158	274,615	0	254,341
1982	1,641,920	5,235,048	2,842,643	61,826	2,904,469	144,820	271,442	0	251,408
1983	1,778,581	5,808,655	2,991,987	71,472	3,063,459	195,145	504,183	0	471,894
1984	1,773,526	5,776,075	2,986,838	71,676	3,058,514	194,328	505,975	0	473,584
1985	1,777,043	5,786,683	2,984,348	71,802	3,056,150	194,864	508,213	0	475,716
1986	1,783,456	5,808,332	2,994,523	71,901	3,066,424	194,910	508,038	43,543	475,541
1987	1,774,463	5,804,888	2,978,758	72,003	3,050,761	195,851	513,000	41,042	480,249
1988	1,777,167	5,766,339	2,987,288	72,461	3,059,749	197,757	521,889	41,065	488,668
1989	1,777,982	5,792,982	2,982,643	72,563	3,055,206	198,382	524,871	41,065	491,493
1990	1,778,109	5,813,017	2,976,140	72,783	3,048,923	199,496	530,164	41,065	496,506
1991	1,794,909	5,870,335	3,004,318	73,503	3,077,821	200,482	531,277	41,586	497,488
1992	1,798,664	5,883,327	3,006,176	73,544	3,079,720	200,834	532,939	41,586	499,063
1993	1,796,844	5,867,897	3,008,963	73,513	3,082,476	200,654	532,084	41,586	498,251
1994	1,794,162	5,890,249	2,997,815	73,583	3,071,398	201,073	534,087	41,586	500,148
1995	1,794,970	5,884,063	3,000,602	73,633	3,074,235	201,356	535,418	41,586	501,409
1996	1,783,939	5,868,706	2,981,304	72,990	3,054,294	200,098	532,159	41,190	498,378
1997	1,786,188	5,877,044	2,980,375	73,069	3,053,444	200,257	532,908	41,190	499,089
1998	1,786,169	5,845,908	2,987,807	73,105	3,060,912	200,480	533,964	41,190	500,091
1999	1,781,589	5,854,526	2,976,659	73,107	3,049,766	200,647	534,768	41,190	500,852
2000	1,782,200	5,851,889	2,977,588	73,155	3,050,743	200,727	535,142	41,190	501,208
2001	1,795,109	5,916,975	2,995,259	73,650	3,068,909	201,444	536,195	41,534	502,156
2002	1,794,883	5,894,052	2,998,046	73,711	3,071,757	201,862	538,181	41,534	504,038
2003	1,793,216	5,878,419	2,994,330	73,810	3,068,140	202,497	541,190	41,534	506,887
2004	1,793,613	5,896,896	2,993,401	73,826	3,067,227	201,795	542,276	41,534	507,919
2005	1,793,653	5,900,619	2,993,401	73,797	3,067,198	202,252	540,028	41,534	505,786
2006	1,795,660	5,906,830	2,995,259	73,846	3,069,105	202,693	542,130	41,534	507,778
2007	1,792,444	5,905,426	2,990,614	73,929	3,064,543	202,226	544,320	41,534	509,852
2008	1,796,926	5,928,466	2,994,330	73,831	3,068,161	202,685	542,080	41,534	507,729
2009	1,794,690	5,903,129	2,992,472	73,975	3,066,447	202,125	543,848	41,534	509,404
2010	1,793,314	5,896,710	2,991,543	73,986	3,065,529	202,517	545,706	41,534	511,166
2011	1,794,385	5,899,245	2,994,330	73,962	3,068,292	202,959	543,383	41,534	508,961
2012	1,796,626	5,932,071	2,992,472	73,960	3,066,432	202,090	543,670	41,534	509,234
2013	1,797,425	5,920,188	2,996,188	74,037	3,070,225	203,622	546,526	41,534	511,945
2014	1,796,148	5,920,658	2,994,330	73,985	3,068,315	203,215	544,590	41,534	510,107
2015	1,796,146	5,926,394	2,993,401	73,931	3,067,332	202,130	543,867	41,534	509,420
2016	1,794,495	5,901,590	2,990,614	74,138	3,064,752	203,225	549,061	41,534	514,344
2017	1,796,288	5,925,386	2,993,401	73,968	3,067,369	202,291	544,624	41,534	510,139
2018	1,794,257	5,938,856	2,989,685	73,874	3,063,559	201,857	542,568	41,534	508,193
2019	1,795,764	5,928,861	2,993,401	73,832	3,067,233	201,654	541,600	41,534	507,274
2020(a	1,797,587	5,930,573	2,995,259	74,010	3,069,269	203,494	545,927	41,534	511,376

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)
1960	0	0	0	0	0	0	0	0	0
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	113,597	72,111	76,361	969,960	48,310	341,858	1,909,355	25	555
1973	137,706	55,790	61,600	1,182,736	60,744	326,929	2,144,677	19,188	630,466
1974	78,714	58,590	70,208	1,341,952	87,598	299,234	2,147,800	21,885	728,537
1975	106,729	122,044	69,596	1,454,831	99,529	374,933	2,497,854	26,335	794,585
1976	123,238	92,856	105,075	1,375,607	99,896	288,965	2,475,953	37,715	914,914
1977	236,001	153,410	107,720	1,900,682	61,922	319,293	3,426,763	9,291	992,089
1978	248,110	158,357	112,843	1,876,734	65,341	172,051	3,287,273	8,084	959,377
1979	251,535	158,720	113,456	1,832,255	68,116	313,942	3,382,384	7,802	933,928
1980	253,445	159,846	113,778	1,843,554	67,475	890,776	3,975,510	7,731	934,015
1981	256,162	161,389	114,304	1,852,648	67,382	477,733	3,624,732	7,718	932,905
1982	253,210	159,453	113,024	1,836,311	66,621	461,478	3,557,767	7,622	925,046
1983	449,194	269,701	155,887	2,717,265	66,626	981,473-	3,848,422	7,622	956,645
1984	450,754	270,611	156,361	2,702,174	66,755	337,148	5,157,690	7,638	956,294
1985	452,663	271,710	156,843	2,710,436	66,841	1,603,115	6,440,401	7,649	956,333
1986	452,551	271,668	156,898	2,723,044	66,935	669,515	5,562,643	7,661	959,263
1987	456,690	273,963	157,705	2,715,327	66,817	1,097,955	5,998,599	7,625	955,383
1988	464,191	278,191	159,378	2,747,753	66,855	593,853	5,559,600	7,630	957,669
1989	466,702	279,604	159,927	2,743,877	66,855	2,573,293	7,546,069	7,630	956,740
1990	471,157	282,109	160,902	2,750,545	66,855	51,399-	4,947,400	7,630	954,882
1991	472,408	283,030	161,907	2,765,536	67,703	1,819,359	6,840,776	7,726	965,728
1992	473,807	283,819	162,213	2,776,447	67,703	207,335	5,245,746	7,726	965,728
1993	473,087	283,414	162,056	2,776,511	67,703	1,025,849	6,061,195	7,726	966,657
1994	474,773	284,363	162,425	2,765,571	67,703	173,494	5,205,223	7,726	964,799
1995	475,894	284,992	162,669	2,774,331	67,703	972,111	6,017,469	7,726	964,799
1996	472,914	283,151	161,461	2,754,235	67,057	946,168	5,956,811	7,654	957,262
1997	473,547	283,505	161,600	2,754,225	67,057	1,927,659	6,941,037	7,654	957,262
1998	474,438	284,005	161,792	2,770,561	67,057	112,245-	4,921,333	7,654	958,191
1999	475,113	284,388	161,943	2,754,697	67,057	764,262	5,784,917	7,654	956,333
2000	475,426	284,561	162,011	2,757,185	67,057	860,957	5,885,464	7,654	956,333
2001	476,521	285,322	162,732	2,767,746	67,617	1,071,398	6,112,665	7,718	962,871
2002	478,194	286,263	163,100	2,778,016	67,617	470,913	5,529,718	7,718	963,800
2003	480,725	287,690	163,653	2,780,805	67,617	718,692	5,791,290	7,718	962,871
2004	481,643	288,204	163,852	2,779,212	67,617	1,671,083	6,745,135	7,718	962,871
2005	479,750	287,139	163,440	2,776,699	67,617	173,536	5,237,781	7,718	962,871
2006	481,519	288,133	163,825	2,783,268	67,617	603,232	5,681,729	7,718	962,871
2007	483,361	289,171	164,230	2,780,668	67,617	1,901,729	6,984,708	7,718	961,942
2008	481,475	288,110	163,817	2,782,446	67,617	719,325	5,796,818	7,718	962,871
2009	482,964	288,948	164,142	2,783,223	67,617	1,589,173	6,672,978	7,718	962,871
2010	484,528	289,826	164,483	2,788,168	67,617	797,702	5,893,247	7,718	962,871
2011	482,571	288,726	164,056	2,784,636	67,617	1,066,453	6,150,896	7,718	962,871
2012	482,814	288,865	164,110	2,785,042	67,617	42,324-	5,042,652	7,718	962,871
2013	485,220	290,216	164,635	2,795,411	67,617	852,847	5,959,573	7,718	963,800
2014	483,591	289,298	164,279	2,785,747	67,617	2,382,268	7,472,246	7,718	962,871
2015	482,979	288,957	164,147	2,785,830	67,617	295,418	5,381,899	7,718	962,871
2016	487,353	291,418	165,104	2,795,518	67,617	624,363	5,739,537	7,718	961,942
2017	483,618	289,315	164,285	2,785,478	67,617	2,118,662	7,207,563	7,718	962,871
2018	481,885	288,340	163,907	2,779,608	67,617	1,810,304-	3,265,205	7,718	961,942
2019	481,070	287,881	163,731	2,777,348	67,617	1,865,636	6,935,345	7,718	962,871
2020 (a	484,715	289,932	164,524	2,793,561	67,617	934,228	6,036,908	7,718	963,800

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)
1960	0	0	0	0	0	0	0	0	0
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	701,709	156,329	198,011	233,425	92,711
1973	126,549	75	0	776,278	783,466	339,778	123,734	267,065	135,567
1974	140,641	31,333	778,708	1,701,104	918,989	168,207	118,590	223,942	41,505
1975	98,314	62,237	640,605	1,622,076	1,095,356	184,422	200,461	224,440	105,237
1976	117,150	80,339	596,462	1,746,580	1,110,368	183,865	181,808	635,426	91,572
1977	117,945	53,372	22,458-	1,150,239	1,334,052	170,008	490,762	1,152,291-	293,293
1978	107,264	41,224	655,152	1,771,101	1,425,058	180,176	464,239	611,100	192,724
1979	106,244	41,620	483,673	1,573,267	1,460,885	182,539	455,157	641,984	168,264
1980	106,086	41,531	1,215,297	2,304,660	1,460,436	177,272	441,691	637,697	169,702
1981	105,939	41,440	649,679	1,737,681	1,459,074	177,774	715,581	634,102	177,771
1982	104,739	40,989	935,769	2,014,165	1,444,841	176,269	971,843	615,095	176,765
1983	104,746	40,972	278,261-	831,724	1,509,021	339,409	1,057,604	999,352	170,225
1984	104,952	41,052	1,334,381	2,444,317	1,509,928	340,725	1,050,982	979,896	176,902
1985	105,063	41,106	1,967,194	3,077,345	1,510,775	341,824	1,050,603	977,904	175,134
1986	105,209	41,163	1,506,671	2,619,967	1,514,480	342,040	1,056,972	998,761	177,115
1987	105,039	41,081	1,123,665	2,232,793	1,510,480	345,056	1,054,621	1,007,189	181,614
1988	105,097	41,104	1,383,003	2,494,503	1,515,046	355,002	1,063,297	1,045,107	187,237
1989	105,097	41,104	1,319,419	2,429,990	1,514,748	358,141	1,068,621	1,081,989	192,811
1990	105,097	41,104	2,178,197	3,286,910	1,513,571	361,560	1,069,539	1,098,377	197,456
1991	106,429	41,625	2,165,065	3,286,573	1,531,419	362,697	1,081,182	1,108,227	198,581
1992	106,429	41,625	1,124,545	2,246,053	1,531,641	363,808	1,082,374	1,115,258	200,439
1993	106,429	41,625	1,338,465	2,460,902	1,532,557	363,741	1,083,388	1,115,765	200,439
1994	106,429	41,625	2,195,087	3,315,666	1,531,087	365,673	1,077,491	1,091,936	204,155
1995	106,429	41,625	744,987	1,865,566	1,531,240	366,448	1,078,194	1,096,068	213,445
1996	105,417	41,228	1,757,527	2,869,088	1,518,008	363,711	1,070,079	1,088,751	211,661
1997	105,417	41,228	1,771,247	2,882,808	1,518,216	364,755	1,071,567	1,097,516	207,945
1998	105,417	41,228	1,296,618	2,409,108	1,519,302	365,524	1,072,725	1,098,874	207,945
1999	105,417	41,228	1,764,744	2,875,376	1,517,800	367,314	1,072,303	1,107,347	207,945
2000	105,417	41,228	1,320,339	2,430,971	1,517,778	367,204	1,071,725	1,103,939	213,519
2001	106,295	41,572	1,801,939	2,920,395	1,529,135	368,964	1,079,370	1,113,875	217,048
2002	106,295	41,572	1,658,108	2,777,493	1,530,141	369,353	1,080,722	1,116,361	214,261
2003	106,295	41,572	1,497,823	2,616,279	1,529,837	372,478	1,082,029	1,129,556	216,119
2004	106,295	41,572	1,778,771	2,897,227	1,529,736	371,964	1,081,666	1,127,421	216,119
2005	106,295	41,572	939,515	2,057,971	1,529,736	371,968	1,081,855	1,128,528	220,764
2006	106,295	41,572	1,615,755	2,734,211	1,529,719	371,890	1,082,010	1,129,444	219,835
2007	106,295	41,572	1,630,121	2,747,648	1,529,111	373,487	1,082,313	1,136,712	220,764
2008	106,295	41,572	1,643,854	2,762,310	1,529,786	372,222	1,083,150	1,136,170	220,764
2009	106,295	41,572	1,617,172	2,735,628	1,530,137	373,974	1,084,022	1,141,317	221,693
2010	106,295	41,572	1,664,823	2,783,279	1,530,060	373,597	1,083,531	1,138,417	220,764
2011	106,295	41,572	1,574,816	2,693,272	1,530,057	373,579	1,083,548	1,138,532	221,693
2012	106,295	41,572	1,605,738	2,724,194	1,530,120	373,897	1,084,790	1,145,845	222,622
2013	106,295	41,572	1,598,924	2,718,309	1,531,347	375,387	1,086,413	1,149,951	221,693
2014	106,295	41,572	1,628,513	2,746,969	1,530,103	373,804	1,084,906	1,146,532	221,693
2015	106,295	41,572	1,600,647	2,719,103	1,530,020	373,391	1,083,948	1,140,884	221,693
2016	106,295	41,572	1,545,216	2,662,743	1,529,558	375,734	1,084,894	1,151,947	221,693
2017	106,295	41,572	1,657,232	2,775,688	1,530,180	374,192	1,084,521	1,144,261	222,622
2018	106,295	41,572	1,499,824	2,617,351	1,528,743	371,657	1,081,948	1,134,558	219,835
2019	106,295	41,572	1,578,756	2,697,212	1,529,534	370,951	1,083,389	1,137,584	221,693
2020 (a	106,295	41,572	1,596,832	2,716,217	1,531,085	374,070	1,085,865	1,146,692	221,693

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 (b	Reach 33A	Reach 34	Reach 35	Subtotal		
	(64)	(65)	(66)	(67)	(68)	(69)	(70)	(71)	(72)
1960	0	0	0	0	0	0	0	0	0
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	409,427
1967	0	0	0	0	0	0	0	0	636,039
1968	0	0	0	0	0	0	0	2,101,377	2,673,067
1969	0	0	509,620	0	0	0	509,620	3,248,273	3,958,362
1970	0	0	609,576	0	0	0	609,576	3,883,213	4,540,210
1971	0	0	697,732	0	0	0	697,732	5,454,984	5,985,799
1972	408,673	1,790,858	695,951	0	0	0	695,951	11,906,689	12,516,872
1973	585,760	2,235,370	639,501	0	0	0	639,501	14,013,978	14,578,045
1974	747,185	2,218,418	666,622	0	0	0	666,622	15,827,041	16,553,120
1975	1,199,599	3,009,515	803,424	0	0	0	803,424	18,527,107	19,429,095
1976	527,884	2,730,923	839,650	0	0	0	839,650	18,788,892	19,743,799
1977	350,546	1,486,370	787,808	0	0	0	787,808	20,492,963	21,492,436
1978	911,704	3,785,001	824,736	0	0	0	824,736	22,254,789	23,331,128
1979	790,447	3,699,276	814,342	0	0	0	814,342	21,719,846	22,903,670
1980	920,032	3,806,830	813,815	0	0	0	813,815	23,113,884	24,293,132
1981	995,503	4,159,805	813,301	0	0	0	813,301	22,544,732	23,722,897
1982	1,122,417	4,507,230	806,690	0	0	0	806,690	23,007,483	24,200,251
1983	183,181	4,258,792	869,942	0	0	0	869,942	23,130,923	24,616,053
1984	2,187,613	6,246,046	867,542	0	0	0	867,542	27,966,657	29,400,818
1985	703,184	4,759,424	868,060	0	0	0	868,060	28,411,988	29,844,270
1986	1,912,500	6,001,868	867,494	285,713	41,432	82,915	1,277,554	28,764,329	30,202,846
1987	1,478,671	5,577,631	862,315	275,721	41,103	82,388	1,261,527	28,346,311	29,777,485
1988	530,198	4,695,887	861,722	268,886	38,311	76,621	1,245,540	27,207,355	28,637,988
1989	1,759,108	5,975,418	862,502	270,635	39,559	79,118	1,251,814	30,458,530	31,887,066
1990	898,511	5,139,014	861,150	265,218	36,404	72,807	1,235,579	27,890,642	29,316,934
1991	109,714-	4,172,392	871,176	266,612	36,257	72,516	1,246,561	28,971,735	30,413,959
1992	3,771,678	8,065,198	871,506	267,059	35,860	71,725	1,246,150	30,250,734	31,694,835
1993	318,583	4,614,473	872,579	269,156	37,359	74,722	1,253,816	27,811,947	29,257,704
1994	2,212,087	6,482,429	871,184	265,544	35,495	70,990	1,243,213	29,698,556	31,141,229
1995	1,566,273	5,851,668	870,922	265,261	35,291	70,586	1,242,060	28,419,626	29,862,353
1996	2,152,982	6,405,192	865,272	268,028	38,135	76,274	1,247,709	29,871,004	31,302,311
1997	537,138	4,797,137	865,458	267,364	37,660	75,322	1,245,804	29,272,128	30,703,328
1998	1,801,398	6,065,768	865,125	268,222	37,560	75,121	1,246,028	27,996,385	29,424,035
1999	1,780,101	6,052,810	863,152	264,141	35,358	70,722	1,233,373	29,304,194	30,730,557
2000	1,297,923	5,572,088	862,937	263,422	34,846	69,693	1,230,898	28,473,913	29,901,282
2001	1,986,220	6,294,612	871,039	269,287	38,283	76,565	1,255,174	30,082,226	31,522,635
2002	548,131	4,858,969	870,163	268,074	37,418	74,834	1,250,489	27,873,940	29,312,880
2003	3,086,921	7,416,940	868,336	266,298	36,148	72,299	1,243,081	30,492,938	31,931,026
2004	526,006	4,852,912	868,832	261,533	35,602	71,204	1,237,171	29,188,417	30,624,443
2005	2,087,366	6,420,217	868,938	264,486	34,853	69,709	1,237,986	28,417,563	29,857,258
2006	2,173,158	6,506,056	870,207	264,759	35,049	70,100	1,240,115	29,638,600	31,078,697
2007	1,391,396	5,733,783	868,206	259,860	34,406	68,816	1,231,288	30,170,399	31,607,231
2008	601,670	4,943,762	870,211	265,188	35,355	70,709	1,241,463	28,262,507	29,703,384
2009	2,156,881	6,508,024	868,922	260,174	34,630	69,262	1,232,988	30,614,473	32,050,946
2010	175,409-	4,170,960	868,821	259,886	34,426	68,852	1,231,985	27,536,301	28,973,871
2011	2,095,915	6,443,324	868,823	264,102	34,580	69,159	1,236,664	29,984,662	31,423,406
2012	2,709,819	7,067,093	870,271	260,655	34,973	69,949	1,235,848	29,590,831	31,028,744
2013	1,322,206	5,686,997	870,717	264,923	35,167	70,335	1,241,142	29,107,673	30,547,579
2014	68,422	4,425,460	869,785	264,931	35,171	70,344	1,240,231	29,387,025	30,826,734
2015	2,205,174	6,555,110	870,026	261,408	34,798	69,597	1,235,829	29,403,793	30,842,443
2016	2,471,784	6,835,610	867,847	259,512	34,157	68,316	1,229,832	29,929,220	31,364,860
2017	129,279	4,485,055	869,970	261,612	34,945	69,889	1,236,416	29,214,014	30,652,489
2018	413,841	4,750,582	869,601	259,942	34,465	68,933	1,232,941	25,399,229	26,836,815
2019	2,616,580	6,959,731	870,207	261,716	35,018	70,035	1,236,976	31,347,169	32,785,808
2020(a	1,601,338	5,960,743	871,215	265,214	35,374	70,747	1,242,550	29,477,136	30,917,123

b) 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
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1960	0	0	0	0	0	0	0	0	0
1961	0	0	0	0	0	0	0	0	0
1962	0	0	0	36,970	0	0	0	0	0
1963	0	0	0	57,711	0	0	0	0	0
1964	0	0	0	74,134	0	0	0	0	0
1965	0	0	0	142,609	0	0	0	0	0
1966	0	0	0	192,605	0	0	0	0	0
1967	0	0	0	223,117	13,881	0	0	0	0
1968	0	6,989	6,989	336,671	450,388	202,095	0	0	0
1969	0	8,551	8,551	257,579	291,499	133,714	0	0	0
1970	0	13,598	13,598	396,358	343,973	209,486	1	0	0
1971	0	10,609	10,609	381,662	571,773	223,477	136,425	16,592	0
1972	0	14,434	14,434	598,702	925,142	496,855	231,676	87,636	163,135
1973	0	14,449	14,449	493,490	682,846	377,643	300,158	272,133	431,162
1974	0	17,473	17,473	565,575	759,068	431,846	332,953	337,315	566,928
1975	0	14,779	14,779	349,758	1,283,705	494,020	506,830	544,310	1,047,515
1976	0	16,991	16,991	585,167	1,867,387	703,440	626,205	547,228	1,106,169
1977	0	15,100	15,100	576,632	1,705,313	387,520	411,033	467,392	1,002,150
1978	0	13,000	13,000	732,597	1,827,991	1,112,811	1,045,174	1,278,795	2,599,701
1979	0	10,000	10,000	611,903	3,349,245	1,010,903	1,040,509	1,178,613	2,442,335
1980	0	14,000	14,000	693,432	2,285,413	1,234,697	1,198,231	1,391,884	2,757,474
1981	7,000	14,000	21,000	684,056	3,481,346	1,129,096	1,333,441	1,613,944	3,169,441
1982	24,709	23,200	47,909	754,103	2,877,296	1,262,041	1,552,938	1,619,328	3,375,709
1983	153,971	134,200	288,171	4,470,956	16,185,442	7,178,494	7,883,821	8,460,215	18,020,388
1984	157,436	224,200	381,636	4,332,060	14,970,644	7,569,513	8,537,059	8,598,413	18,251,355
1985	161,236	221,200	382,436	4,259,930	15,899,967	7,886,224	8,427,279	9,318,942	19,742,421
1986	222,810	233,200	456,010	4,443,117	16,668,173	8,722,999	9,619,960	9,796,824	20,759,079
1987	220,579	220,200	440,779	4,189,452	19,392,453	8,943,695	10,087,896	9,610,700	20,408,916
1988	298,676	232,200	530,876	4,355,226	15,825,196	10,085,600	10,770,868	11,175,969	23,713,291
1989	311,290	229,200	540,490	4,277,148	19,930,233	11,030,302	11,602,434	12,466,467	26,675,179
1990	367,167	223,200	590,367	4,181,735	23,432,767	12,006,143	12,397,020	13,499,526	28,565,104
1991	373,117	231,200	604,317	4,276,122	23,485,516	12,190,238	12,576,311	13,684,581	29,267,479
1992	378,097	237,200	615,297	4,485,999	24,270,564	12,661,098	13,458,226	14,060,898	31,651,046
1993	385,994	245,200	631,194	4,876,062	22,378,188	12,997,899	13,880,099	14,312,709	30,637,089
1994	364,716	234,200	598,916	4,625,013	27,473,586	12,409,856	13,943,709	14,799,892	31,249,387
1995	371,636	241,200	612,836	4,701,415	26,431,263	12,876,079	14,296,595	15,180,205	32,052,292
1996	372,748	245,200	617,948	4,695,343	29,885,802	13,092,348	14,292,277	15,183,340	32,070,328
1997	372,883	326,200	699,083	4,687,308	30,778,227	13,088,689	14,242,168	15,121,173	33,898,568
1998	389,572	344,200	733,772	4,554,307	26,170,937	13,650,987	14,853,570	15,766,085	33,612,967
1999	368,272	327,200	695,472	4,471,796	29,581,223	13,257,868	14,853,054	15,251,279	33,751,993
2000	417,125	334,200	751,325	4,500,837	29,405,517	13,241,056	14,989,801	16,133,517	34,086,973
2001	421,087	338,200	759,287	4,405,857	32,564,454	13,641,556	15,068,723	16,212,135	34,556,541
2002	428,949	346,200	775,149	4,374,308	29,265,077	13,859,672	15,371,522	16,534,790	34,913,745
2003	421,212	341,200	762,412	4,376,912	28,890,298	13,793,265	15,076,369	16,412,579	36,533,415
2004	418,347	339,200	757,547	4,344,336	30,843,578	13,938,023	15,756,526	16,372,182	36,449,497
2005	420,358	342,200	762,558	4,493,504	31,606,205	14,029,503	15,867,147	16,493,516	36,724,365
2006	424,323	347,200	771,523	4,533,885	32,101,006	14,336,887	16,069,518	17,669,072	37,209,956
2007	412,679	339,200	751,879	4,406,171	33,765,725	13,991,469	15,671,018	17,239,674	36,634,362
2008	424,449	350,200	774,649	4,514,968	35,251,699	14,364,676	16,075,749	17,679,192	37,549,549
2009	420,607	348,200	768,807	4,463,474	32,538,858	14,578,780	16,656,343	17,515,288	38,876,563
2010	419,692	349,200	768,892	4,587,926	32,676,302	14,196,420	15,930,349	17,530,362	38,910,208
2011	425,612	355,200	780,812	4,507,581	32,234,081	14,847,113	16,958,019	17,859,313	39,645,111
2012	422,746	432,200	854,946	4,463,595	36,712,009	14,811,890	16,778,752	18,616,324	39,198,599
2013	431,597	443,200	874,797	4,534,951	34,563,167	15,142,425	17,171,030	19,052,958	40,430,299
2014	427,753	440,200	867,953	4,500,739	35,053,128	14,957,133	16,955,042	18,815,514	39,619,411
2015	426,837	440,200	867,037	4,483,144	36,169,107	14,931,561	16,959,829	18,829,798	39,667,351
2016	421,043	435,200	856,243	4,403,968	33,858,514	14,670,821	16,653,409	18,486,381	41,232,615
2017	428,925	445,200	874,125	4,485,099	35,775,032	14,911,049	16,913,682	18,771,517	39,531,787
2018	420,195	437,200	857,395	4,389,306	38,507,975	14,478,072	16,564,916	17,459,979	38,758,553
2019	431,010	450,200	881,210	4,475,325	36,780,559	14,891,340	16,872,071	18,719,252	39,402,205
2020(f	442,143	470,200	912,343	4,532,996	36,197,187	15,164,082	17,211,041	19,103,384	40,214,984

a) Costs for the period 1968 through 1980 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)								
	Reach 17E A.D. Edmonston (Tehachapi) Pumping Plant	Reach 18A Cottonwood Powerplant	Reach 22B Pear-blossom Pumping Plant	Reach 24 Silver-wood 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
	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
1960	0	0	0	0	0	0	0	0	0
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	489,224	0	21,952	4,056	-3,024	0	91,725	0	3,532
1973	1,512,539	0	217,727	47,486	-438,508	0	155,530	0	7,282
1974	1,980,979	0	313,856	97,594	-498,163	52,003	178,254	0	180,708
1975	3,646,819	0	575,535	25,862	-1,034,732	65,523	309,017	0	552,530
1976	3,793,809	0	731,294	113,633	-1,484,852	91,622	222,693	0	57,126
1977	3,389,217	0	1,386,677	219,281	-2,392,157	882,982	-21,083	0	1,843,718
1978	8,951,092	0	2,539,914	353,730	-4,158,895	170,285	246,479	0	0
1979	8,141,273	0	2,323,012	166,346	-4,277,909	340,894	234,089	0	0
1980	9,207,474	0	2,624,698	0	-4,209,807	0	275,279	0	0
1981	10,469,058	-190,397	2,782,938	0	-4,140,998	173,391	325,642	-560,735	0
1982	11,299,515	-378,552	2,916,155	7,912	-4,209,704	0	342,826	-1,280,194	0
1983	53,546,171	-1,304,747	16,830,760	2,012,330	-18,354,442	1,966,515	1,490,286	-7,234,414	0
1984	60,039,903	-1,447,897	16,356,886	585,042	-20,938,737	224,221	1,608,884	-9,171,121	0
1985	58,822,100	-1,432,393	16,962,704	0	-20,389,409	0	1,507,103	-9,122,113	0
1986	61,612,655	-1,662,614	17,737,603	265,444	-20,176,124	83,533	1,697,309	-9,292,703	0
1987	67,253,051	-1,635,588	16,704,721	0	-20,912,127	458,769	1,852,047	-10,340,183	0
1988	78,556,638	-2,076,367	17,314,742	350,232	-21,183,207	229,235	3,093,953	-12,206,256	0
1989	86,634,590	-1,991,827	16,715,492	0	-20,873,120	296,634	4,358,323	-12,357,566	0
1990	94,285,380	-2,020,442	16,295,346	1,057,088	-21,993,765	0	4,992,038	-13,530,858	0
1991	95,590,344	-2,279,567	16,475,113	0	-21,419,786	0	5,070,071	-13,184,080	0
1992	96,890,015	-2,071,075	16,666,244	777,989	-22,569,401	516,894	5,651,857	-13,686,505	0
1993	100,160,131	-2,150,054	16,995,338	0	-22,033,126	294,788	5,898,088	-13,799,166	0
1994	102,621,043	-2,068,987	15,918,171	806,004	-21,459,892	0	6,623,832	-19,003,222	0
1995	105,307,280	-2,028,449	16,195,406	0	-21,718,800	932,865	6,860,445	-19,421,242	0
1996	105,387,500	-1,916,261	16,207,458	0	-21,263,942	0	6,858,990	-19,506,340	0
1997	104,909,402	-2,230,954	16,031,980	0	-20,834,386	0	6,788,253	-18,707,469	0
1998	109,385,093	-2,163,008	16,650,694	1,131,209	-21,390,761	352,653	7,125,144	-19,561,756	0
1999	111,357,929	-1,992,859	15,768,477	170,352	-21,450,215	0	8,154,919	-19,454,889	0
2000	112,482,242	-2,217,596	15,844,118	65,374	-22,420,007	287,343	7,818,008	-20,260,181	0
2001	113,005,990	-2,448,553	15,896,132	0	-21,411,471	0	8,322,454	-20,095,687	0
2002	115,247,390	-2,313,978	16,187,828	494,776	-21,873,518	0	8,040,332	-19,944,342	0
2003	119,913,923	-2,154,863	15,859,797	236,673	-22,208,512	129,461	9,156,511	-19,973,917	0
2004	119,663,953	-1,993,410	15,656,146	0	-21,961,811	0	8,749,193	-20,138,254	0
2005	120,587,358	-2,384,791	15,695,696	827,838	-22,459,193	695,963	9,304,760	-20,592,237	0
2006	122,203,347	-2,159,415	15,900,938	353,290	-22,862,027	0	8,980,990	-20,760,099	0
2007	126,037,590	-2,121,162	15,345,651	0	-22,252,802	0	9,269,809	-20,637,109	0
2008	122,275,577	-2,079,289	15,787,055	227,862	-21,495,833	0	9,510,959	-20,160,320	0
2009	128,112,848	-2,561,932	15,522,183	0	-22,359,772	0	9,468,145	-20,823,906	0
2010	128,233,984	-2,110,474	15,530,852	153,219	-21,904,710	0	9,096,652	-21,077,884	0
2011	130,684,559	-2,583,221	15,715,234	0	-22,279,408	0	9,702,324	-21,869,410	0
2012	129,209,863	-2,475,067	15,500,424	1,058,581	-20,561,671	0	10,074,391	-20,926,241	0
2013	132,193,993	-2,237,618	15,811,696	95,238	-21,956,060	0	10,355,175	-21,304,130	0
2014	130,608,189	-2,406,746	15,528,457	0	-21,420,459	0	9,768,326	-20,723,930	0
2015	130,784,380	-2,234,762	15,589,238	670,944	-22,654,176	0	10,229,091	-22,021,265	0
2016	135,260,046	-2,210,091	15,336,625	336,357	-21,617,721	59,854	9,581,907	-21,211,212	0
2017	130,323,054	-2,282,068	15,497,567	0	-22,423,412	0	10,210,435	-21,483,157	0
2018	127,777,354	-2,162,943	15,108,793	2,936,975	-22,281,109	77,100	9,578,070	-21,967,669	0
2019	129,896,031	-2,197,650	15,503,364	0	-21,610,234	0	9,706,250	-21,170,302	0
2020(f	132,602,051	-2,213,381	15,809,010	0	-21,627,862	0	9,925,276	-21,410,529	0

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 thru each plant, in acre-feet ÷ "Total" annual quantity conveyed thru 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".

f) And each year thereafter for the remainder of the project repayment period.

TABLE B-12: VARIABLE OMP&R COSTS TO BE REIMBURSED THRU VARIABLE OMP&R COMPONENT OF TRANSPORTATION CHARGE

(in dollars)

Calendar Year	CALIFORNIA AQUEDUCT (continued)					GRAND TOTAL
	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	
	(19)	(20)	(21)	(22)	(23)	(24)
1960	0	0	0	0	0	0
1961	0	0	0	0	0	0
1962	0	0	0	0	0	36,970
1963	0	0	0	0	0	57,711
1964	0	0	0	0	0	74,134
1965	0	0	0	0	0	142,609
1966	0	0	0	0	0	192,605
1967	0	0	0	0	13,881	236,998
1968	0	0	118,676	0	771,159	1,114,819
1969	0	0	78,350	0	503,563	769,693
1970	0	0	136,429	0	689,889	1,099,845
1971	0	0	166,296	0	1,114,563	1,506,834
1972	-193,058	71,474	237,638	0	2,627,963	3,241,099
1973	-905,940	0	120,913	0	2,780,971	3,288,910
1974	-1,295,645	0	118,582	0	3,556,278	4,139,326
1975	-2,087,133	0	94,848	0	6,024,649	6,389,186
1976	-1,969,261	947,910	193,018	0	7,547,421	8,149,579
1977	-1,283,726	487,809	155,392	0	8,641,518	9,233,250
1978	-2,663,340	4,688	237,242	0	13,545,667	14,291,264
1979	-2,911,995	155,754	186,124	0	13,379,193	14,001,096
1980	-3,236,752	16,399	222,538	0	13,767,528	14,474,960
1981	-3,231,586	0	215,630	0	16,570,211	17,275,267
1982	-3,068,628	0	244,362	0	16,561,004	17,363,016
1983	-8,263,073	1,311,182	1,487,391	0	101,216,319	105,975,446
1984	-9,960,364	0	1,431,180	0	96,654,981	101,368,677
1985	-9,859,178	665,939	1,524,159	0	99,953,745	104,596,111
1986	-9,586,730	0	1,676,811	1,632,726	109,554,945	114,454,072
1987	-12,047,768	0	1,584,430	1,976,944	113,337,956	117,968,187
1988	-14,609,611	995,082	1,669,784	2,170,834	125,875,983	130,762,085
1989	-17,247,932	0	1,651,445	2,573,483	141,464,137	146,281,775
1990	-21,417,567	682,188	1,643,773	2,558,316	152,452,057	157,224,159
1991	-20,824,114	1,778,965	1,672,478	2,619,086	156,702,635	161,583,074
1992	-22,676,649	0	1,695,310	2,643,312	159,939,823	165,041,119
1993	-23,655,821	1,331,662	1,816,129	2,882,826	161,946,779	167,454,035
1994	-23,757,348	0	1,711,583	2,729,917	163,997,531	169,221,460
1995	-23,946,075	0	1,745,201	2,791,427	167,554,492	172,868,743
1996	-26,399,252	0	1,745,577	3,184,595	168,822,420	174,135,711
1997	-26,488,898	1,065,603	1,748,902	3,227,961	172,639,219	178,025,610
1998	-26,979,848	0	1,825,773	3,378,446	173,808,185	179,096,264
1999	-25,823,110	0	1,719,219	3,192,169	178,337,409	183,504,677
2000	-26,406,285	280,162	1,732,321	3,230,112	178,292,475	183,544,637
2001	-29,369,888	0	1,751,440	3,796,759	181,490,585	186,655,729
2002	-29,172,075	1,082,175	1,826,514	3,862,283	183,382,191	188,531,648
2003	-29,946,015	0	1,795,559	3,856,654	187,371,197	192,510,521
2004	-28,084,798	1,152,018	1,787,167	3,884,785	192,074,795	197,176,678
2005	-30,238,253	0	1,800,374	3,893,232	191,851,483	197,107,545
2006	-31,986,598	0	1,817,076	3,910,765	192,784,706	198,090,114
2007	-33,210,628	216,345	1,763,040	3,804,590	195,517,572	200,675,622
2008	-32,606,706	1,066,417	1,808,233	3,905,895	199,160,715	204,450,332
2009	-33,191,985	0	1,786,619	3,857,190	199,975,222	205,207,503
2010	-32,290,906	1,901,076	1,780,724	3,828,942	202,385,116	207,741,934
2011	-35,297,117	0	1,803,321	3,854,268	201,274,187	206,562,580
2012	-35,562,116	0	1,786,619	3,839,657	208,062,014	213,380,555
2013	-35,581,660	305,306	1,820,023	3,901,998	209,763,840	215,173,588
2014	-34,744,044	1,649,807	1,802,339	3,899,076	209,361,243	214,729,935
2015	-35,579,426	0	1,793,496	3,824,071	206,959,237	212,309,418
2016	-35,323,782	0	1,763,040	3,783,160	210,659,923	215,920,134
2017	-35,047,402	1,573,968	1,795,461	3,851,346	207,918,859	213,278,083
2018	-34,656,290	1,231,748	1,752,233	3,737,378	206,901,135	212,147,836
2019	-35,253,168	0	1,795,461	3,850,372	207,185,551	212,542,086
2020(f	-35,656,119	0	1,818,058	3,908,817	211,045,999	216,491,338

TABLE B-13: CAPITAL AND OPERATING COSTS OF PROJECT CONSERVATION FACILITIES TO BE REIMBURSED THRU DELTA WATER CHARGE

(in dollars)

Calendar Year	INITIAL PROJECT CONSERVATION FACILITIES (Portions of Upper Feather Lakes, Oroville-Thermalito Facilities, Delta Facilities and California Aqueduct)					ADDITIONAL PROJECT CONSERVATION FACILITIES	
	Capital Costs (a	Capital Cost Credits (b	Operating Costs (c	Application of Oroville Power Revenues to: Capital Costs	Application of Oroville Power Revenues to: Operating Costs	Planning and Preoperating Costs (a & (d	
	(1)	(2)	(3)	(4)	(5)	(6)	
1952	171,317	0	0	0	0	0	
1953	312,178	0	0	0	0	0	
1954	308,609	0	0	0	0	0	
1955	194,637	0	0	0	0	0	
1956	1,357,069	0	0	0	0	0	
1957	6,210,718	0	0	0	0	0	
1958	9,510,783	0	0	0	0	0	
1959	11,380,592	0	0	0	0	0	
1960	14,428,558	-4,850,000	0	0	0	0	
1961	18,514,350	-431,527	0	0	0	0	
1962	8,711,650	-479,280	0	0	0	0	
1963	72,407,141	-478,743	-14,000	0	0	0	
1964	62,401,857	-751,330	-14,000	0	0	107,780	
1965	70,729,803	-763,541	-14,000	0	0	551,850	
1966	130,509,278	-748,649	-14,000	0	0	1,081,887	
1967	93,629,899	-812,145	-11,246	0	0	1,190,594	
1968	39,326,274	-409,386	1,276,943	-951,000	0	793,611	
1969	5,053,733	-245,732	2,871,378	-11,007,000	0	603,887	
1970	4,434,777	-192,432	4,789,459	-14,650,000	-1,500,000	519,514	
1971	4,059,657	-187,320	6,000,195	-14,650,000	-1,500,000	410,356	
1972	4,562,992	-196,361	5,338,337	-14,650,000	-1,500,000	289,503	
1973	3,588,274	0	5,989,515	-14,650,000	-1,500,000	205,045	
1974	5,500,514	0	6,869,978	-17,950,000	-1,500,000	208,054	
1975	4,801,136	0	7,069,449	-14,650,000	-1,500,000	151,089	Program for defining
1976	4,396,562	0	6,423,989	-14,650,000	-1,500,000	113,663	
1977	22,172,758	0	9,926,608	-14,650,000	-1,500,000		future Additional
1978	7,486,034	0	9,581,790	-14,650,000	-1,500,000		
1979	10,041,158	0	9,374,149	-14,650,000	-1,500,000		Facilities is
1980	19,494,820	0	9,114,143	-14,650,000	-1,500,000		
1981	36,469,793	0	8,852,317	-16,557,000	-1,500,000		currently under review.
1982	54,256,876	0	8,937,414	-14,727,000	-1,500,000		
1983	53,431,267	0	2,920,997	-14,832,000	-1,500,000		
1984	21,692,074	0	8,813,985	-27,344,000	-1,500,000		
1985	11,317,186	0	8,453,363	-14,712,000	-1,500,000		
1986	14,011,120	0	6,518,273	-14,650,000	-1,500,000	0	
1987	5,750,390	0	10,627,476	-14,650,000	-1,500,000	0	
1988	0	0	12,016,507	-14,650,000	-1,500,000	0	
1989	0	0	4,561,247	-16,496,000	-1,500,000	0	
1990	0	0	9,815,887	-21,576,000	-1,500,000	0	
1991	0	0	4,867,011	-17,789,000	-1,500,000	0	
1992	0	0	7,923,388	-16,222,000	-1,500,000	0	
1993	0	0	9,852,402	-14,650,000	-1,500,000	0	
1994	0	0	7,690,365	-19,378,000	-1,500,000	0	
1995	0	0	8,887,523	-15,090,000	-1,500,000	0	
1996	0	0	8,255,481	-19,874,000	-1,500,000	0	
1997	0	0	6,256,531	-14,650,000	-1,500,000	0	
1998	0	0	8,021,853	-14,650,000	-1,500,000	0	
1999	0	0	4,517,159	-14,650,000	-1,500,000	0	
2000	0	0	7,863,927	-14,650,000	-1,500,000	0	
2001	0	0	9,236,485	-14,940,000	-1,500,000	0	
2002	0	0	7,726,440	-14,650,000	-1,500,000	0	
2003	0	0	6,345,611	-16,760,000	-1,500,000	0	
2004	0	0	3,617,542	-14,650,000	-1,500,000	0	
2005	0	0	8,084,745	-15,095,000	-1,500,000	0	
2006	0	0	9,610,593	-15,070,000	-1,500,000	0	
2007	0	0	7,095,433	-14,650,000	-1,500,000	0	
2008	0	0	6,372,210	-14,650,000	-1,500,000	0	
2009	0	0	5,196,495	-14,650,000	-1,500,000	0	
2010	0	0	6,188,177	-14,650,000	-1,500,000	0	
2011	0	0	11,566,747	-14,650,000	-1,500,000	0	
2012	0	0	6,694,613	-14,650,000	-1,500,000	0	
2013	0	0	8,054,765	-14,650,000	-1,500,000	0	
2014	0	0	6,045,420	-14,650,000	-1,500,000	0	
2015	0	0	10,845,440	-14,650,000	-1,500,000	0	
2016	0	0	6,469,682	-14,650,000	-1,500,000	0	
2017	0	0	8,939,064	-14,650,000	-1,500,000	0	
2018	0	0	8,150,853	-14,650,000	-1,500,000	0	
2019	0	0	8,224,142	-14,650,000	-1,500,000	0	
2020	0	0	6,392,334	-14,650,000	-1,500,000	0	
2021	0	0	6,392,334	-14,650,000	-1,500,000	0	
2022	0	0	6,392,334	-14,650,000	-1,500,000	0	
2023	0	0	6,392,334	-14,650,000	-1,500,000	0	
2024	0	0	6,392,334	-14,650,000	-1,500,000	0	
2025	0	0	6,392,334	-14,650,000	-1,500,000	0	
2026	0	0	6,392,334	-14,650,000	-1,500,000	0	
2027	0	0	6,392,334	-14,650,000	-1,500,000	0	
2028	0	0	6,392,334	-14,650,000	-1,500,000	0	
2029	0	0	6,392,334	-14,936,000	-1,500,000	0	
2030	0	0	6,392,334	-21,576,000	-1,500,000	0	
2031	0	0	6,392,334	-17,789,000	-1,500,000	0	
2032	0	0	6,392,334	-16,222,000	-1,500,000	0	
2033	0	0	6,392,334	-14,650,000	-1,500,000	0	
2034	0	0	6,392,334	-19,378,000	-1,500,000	0	
2035	0	0	6,392,334	-26,745,000	-1,500,000	0	
TOTAL 1952-2035	832,625,834	-10,546,446	486,953,594	-1,052,966,000	-99,000,000	6,226,833	

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 thru project power revenues shown in column 4.

b) Negotiated settlements as to the magnitude of project planning costs from 1952 thru 1972 to be reimbursed thru water charges. Credits are applied to the reimbursable capital costs of the Initial Conservation Facilities.

c) Reimbursed thru payments of the minimum OMP&R component of the Delta Water Charge, except for $1,500,000 annually from 1970 thru 2035 that will be reimbursed thru 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 preoperating costs of Additional Project Conservation Facilities which are incurred thru the previous year (1976) 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	67,955	733,415	869,135	798	1,863	2,661
1959	21,488	5,800	27,288	153,520	142,298	491,334	787,152	22,873	59,917	82,790
1960	10,049	7,878	17,927	287,204	266,292	996,970	1,550,466	32,730	86,323	119,053
1961	7,250	7,145	14,395	853,511	797,754	1,914,724	3,565,989	14,608	36,570	51,178
1962	-197	-923	-1,120	545,146	576,593	1,686,094	2,807,833	19,302	46,084	65,386
1963	1,559	871	2,430	657,505	1,077,966	3,244,012	4,979,483	72,896	171,950	244,846
1964	42,604	31,255	73,859	712,837	1,244,232	7,247,341	9,204,410	145,883	343,964	489,847
1965	206,465	54,589	261,054	361,011	468,336	3,414,966	4,244,313	260,524	612,463	872,987
1966	468,348	43,714	512,062	593,290	562,750	2,246,487	3,402,527	599,875	1,403,936	2,003,811
1967	1,575,375	35,495	1,610,870	797,877	772,901	2,403,859	3,974,637	945,838	2,211,892	3,157,730
1968	861,248	52,580	913,828	735,979	680,871	1,996,401	3,413,251	357,187	836,510	1,193,697
1969	80,185	51,027	131,212	268,414	257,007	761,968	1,287,389	82,727	194,901	277,628
1970	49,438	59,663	109,101	59,251	57,408	137,240	253,899	53,443	126,464	179,907
1971	26,761	27,607	54,368	12,128	14,434	84,284	110,846	35,893	86,143	122,036
1972	20,184	15,308	35,492	12,302	11,733	63,638	87,673	23,035	54,788	77,823
1973	57,897	27,195	85,092	10,549	10,586	39,628	60,763	26,108	62,052	88,160
1974	172,059	55,844	227,903	16,012	18,108	74,519	108,639	28,050	66,150	94,200
1975	97,382	72,141	169,523	16,872	15,739	42,123	74,734	21,451	53,099	74,550
1976	61,527	70,916	132,443	35,441	34,482	113,315	183,238	51,561	129,431	180,992
1977	405,852	397,431	803,283	68,813	64,100	178,441	311,354	125,472	300,138	425,610
1978	801,834	764,822	1,566,656	17,404	15,879	39,260	72,543	33,895	81,694	115,589
1979	670,627	551,316	1,221,943	25,696	23,494	55,985	105,175	365,735	1,046,772	1,412,507
1980	2,903,992	3,312,787	6,216,779	37,691	34,461	82,119	154,271	466,587	1,371,100	1,837,687
1981	5,071,120	4,965,600	10,036,720	42,816	39,147	93,285	175,248	566,847	1,707,984	2,274,831
1982	1,055,272	1,060,327	2,115,599	31,007	28,349	67,555	126,911	2,244,428	5,777,366	8,021,794
1983	47,828	54,172	102,000	14,468	13,228	31,522	59,218	8,458,912	22,984,470	31,443,382
1984	0	0	0	307	280	668	1,255	9,123,516	25,737,420	34,860,936
1985	0	0	0	13	12	28	53	7,445,393	20,497,867	27,943,260
TOTAL	14,768,178	11,749,174	26,517,352	6,467,441	7,340,696	28,968,264	42,776,401	31,627,192	86,093,110	117,720,302

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)
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	567	2,567	116	378	14,332	121,913	120	58	4,540	144,591
1959	3,805	7,865	390	1,159	26,609	262,818	400	379	14,609	318,034
1960	5,469	13,266	646	1,955	34,958	365,220	660	500	24,389	447,063
1961	5,929	22,215	1,081	3,273	52,524	556,484	1,103	601	40,816	684,026
1962	11,799	49,967	2,439	7,362	96,470	1,047,045	2,495	1,887	92,020	1,311,484
1963	48,333	211,668	10,834	31,183	369,619	4,050,144	11,083	6,015	400,034	5,138,913
1964	96,781	332,482	17,177	48,979	609,266	6,821,812	17,570	11,993	631,598	8,587,658
1965	175,603	545,110	27,828	80,301	1,116,673	12,332,109	28,472	21,895	1,028,780	15,356,771
1966	415,526	1,126,390	53,412	165,932	2,259,764	25,636,203	54,633	39,064	2,042,542	31,793,466
1967	656,132	865,197	40,076	127,452	2,049,847	24,279,238	40,996	34,933	1,549,552	29,643,423
1968	243,623	200,516	9,807	29,538	1,121,065	11,783,407	10,031	12,278	369,694	13,779,959
1969	52,220	94,959	4,813	13,989	628,870	6,576,094	4,925	7,321	178,530	7,561,721
1970	32,058	54,804	2,733	8,074	428,506	4,280,479	2,794	4,026	102,095	4,915,569
1971	17,870	26,008	1,316	3,831	198,455	1,687,221	1,345	543	48,851	1,985,440
1972	12,227	11,546	584	1,700	85,611	743,174	597	345	21,689	877,473
1973	14,610	5,243	259	773	38,795	443,618	267	223	9,722	513,510
1974	15,837	7,939	387	1,169	44,219	467,708	396	331	14,624	552,610
1975	7,803	12,778	647	1,881	36,321	383,973	660	428	23,993	468,484
1976	19,487	18,463	876	2,720	56,923	703,979	894	1,174	33,480	837,996
1977	71,541	15,779	739	2,325	46,729	997,784	755	1,121	28,411	1,165,184
1978	10,044	25,096	1,266	3,697	50,458	542,747	1,295	2,291	47,036	683,930
1979	11,582	47,027	2,438	6,927	92,775	872,697	2,494	4,517	89,513	1,129,970
1980	16,856	67,867	3,524	10,000	137,918	1,240,235	3,603	6,606	129,272	1,615,881
1981	20,795	85,679	4,449	12,623	159,905	1,557,873	4,550	7,506	163,204	2,016,584
1982	25,568	81,952	4,256	12,074	140,224	1,536,371	4,351	5,439	156,103	1,966,338
1983	36,174	87,286	4,533	12,859	141,683	1,702,120	4,632	2,539	166,263	2,158,089
1984	69,511	135,441	7,031	19,952	218,465	2,743,106	7,187	59	258,001	3,458,753
1985	93,522	134,784	6,996	19,855	216,677	2,918,971	7,150	4	256,733	3,654,692
TOTAL	2,192,430	4,295,133	210,904	632,732	10,491,540	116,817,893	215,714	174,243	7,935,642	142,966,231

FACILITIES ALLOCATED TO EACH CONTRACTOR

(in dollars)

Calendar Year	SOUTHERN CALIFORNIA AREA									
	Antelope Valley-East Kern Water Agency	Castaic Lake Water Agency	Coachella Valley County 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	50,790	13,897	11,946	3,394	19,699	1,023	24,099	6,620	74,939	19,480
1959	72,567	21,775	16,383	4,764	27,022	1,392	32,795	9,329	101,692	26,324
1960	86,925	28,360	22,717	6,995	37,471	1,595	44,537	11,094	151,463	38,564
1961	129,438	40,986	35,226	12,770	58,097	2,291	64,811	16,788	240,692	58,799
1962	202,848	65,139	44,594	14,147	73,544	3,413	86,379	25,473	258,703	65,655
1963	585,416	185,685	114,825	32,328	189,372	9,843	231,546	73,512	595,572	157,193
1964	1,118,242	362,717	214,129	56,689	353,137	18,850	439,131	140,803	1,049,362	282,360
1965	1,945,204	682,093	393,409	105,921	648,815	33,470	802,950	249,414	1,953,564	523,626
1966	4,044,603	1,532,174	830,468	220,667	1,369,601	70,828	1,700,853	528,463	4,031,681	1,086,001
1967	5,051,225	2,879,245	1,093,008	300,393	1,802,596	89,643	2,213,746	663,164	5,917,967	1,575,840
1968	5,989,597	3,028,612	1,370,315	373,828	2,259,922	108,703	2,777,000	793,477	8,029,324	2,134,507
1969	5,950,393	2,458,070	1,729,617	552,833	2,852,538	124,098	3,331,464	885,202	11,093,972	2,817,899
1970	5,213,515	2,682,816	2,105,286	713,096	3,472,133	109,780	3,976,806	761,024	14,071,237	3,525,763
1971	2,691,652	1,806,298	1,109,757	350,197	1,830,239	50,403	2,162,579	362,094	8,375,268	2,043,172
1972	1,016,763	323,338	344,079	95,427	567,461	19,942	693,522	140,162	2,813,875	731,244
1973	364,237	809,616	162,821	84,475	268,555	6,475	244,334	47,355	1,809,158	414,694
1974	464,754	238,314	266,315	76,171	439,207	8,383	532,672	60,914	1,662,989	437,883
1975	260,231	198,553	199,591	54,401	329,161	5,141	404,254	35,107	1,573,865	419,162
1976	255,073	193,886	142,268	38,812	234,623	4,520	288,831	33,007	996,120	264,946
1977	312,868	254,441	119,634	33,589	197,297	6,313	240,785	43,387	738,288	193,313
1978	358,808	515,940	72,511	18,711	119,590	6,333	149,339	44,568	348,946	93,056
1979	946,438	814,118	174,339	44,282	287,516	15,827	360,250	118,703	786,390	215,639
1980	1,638,169	994,300	298,359	75,490	492,053	27,432	616,796	205,780	1,336,214	366,635
1981	1,467,785	534,181	249,710	63,178	411,820	23,008	516,399	172,604	1,117,896	306,772
1982	743,491	239,993	87,867	22,258	144,910	8,063	181,924	60,472	394,425	108,234
1983	1,186,939	64,712	34,700	8,803	57,226	3,185	72,127	23,875	156,199	42,898
1984	8,588,607	76,495	45,808	11,612	75,545	4,226	95,341	31,695	205,880	56,583
1985	10,188,143	70,888	42,251	10,721	69,680	3,922	87,981	29,380	190,242	52,292
TOTAL	60,994,148	21,134,887	11,349,329	3,391,013	18,717,520	769,569	22,408,143	5,582,601	70,191,983	18,088,418

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(a	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	89,103	0	0	0	0	75	101,903
1953	3,098	223,994	1,224	280,970	0	0	0	0	336	319,930
1954	4,017	288,144	1,538	361,494	0	0	0	0	984	412,484
1955	1,515	114,821	690	143,836	0	0	0	0	1,218	173,419
1956	2,192	184,790	1,342	230,981	0	0	0	0	11,563	358,361
1957	6,721	532,115	3,476	665,942	0	0	0	0	29,099	1,484,177
1958	12,064	975,890	6,605	1,220,446	0	0	2	2	36,650	2,323,496
1959	16,315	1,409,251	10,237	1,749,846	0	0	14	14	56,702	3,021,826
1960	23,991	1,972,431	13,202	2,439,345	0	0	28	28	99,148	4,673,030
1961	36,839	3,310,688	19,192	4,026,617	0	0	10	10	321,149	8,663,364
1962	40,836	3,633,554	29,727	4,544,012	0	0	32	32	266,781	8,994,408
1963	97,099	11,491,381	87,323	13,851,095	0	0	51	51	731,899	24,948,717
1964	173,862	18,487,223	168,508	22,865,013	0	0	7,791	7,791	1,093,823	42,322,401
1965	322,726	34,499,102	314,049	42,474,343	0	0	3,139	3,139	470,665	63,683,272
1966	668,730	76,227,747	697,817	93,009,633	0	0	-48	-48	814,798	131,536,249
1967	974,270	133,772,074	1,310,691	157,643,862	0	0	47	47	1,512,650	197,543,219
1968	1,321,829	150,041,761	1,389,420	179,618,295	0	0	51,573	51,573	1,267,788	200,238,391
1969	1,756,911	143,404,905	1,112,327	178,070,229	0	0	234,242	234,242	429,501	187,991,922
1970	2,202,794	167,626,422	1,189,377	207,650,049	0	0	16,235	16,235	78,839	213,203,599
1971	1,272,329	138,378,115	768,384	161,200,487	0	0	27,206	27,206	16,347	163,516,730
1972	455,277	45,972,315	68,841	53,242,246	0	0	9	9	14,226	54,334,942
1973	263,786	40,836,085	298,686	45,610,277	0	0	27	27	9,773	46,367,602
1974	271,775	19,343,089	88,054	23,890,520	0	0	58	58	35,688	24,909,618
1975	260,821	17,105,740	86,188	20,932,215	0	0	28	28	8,710	21,728,244
1976	164,463	13,804,614	86,727	16,507,890	0	0	61	61	20,152	17,862,772
1977	119,845	13,793,409	118,752	16,171,921	0	0	0	0	34,800	18,912,152
1978	57,245	20,180,490	244,962	22,210,499	0	0	0	0	11,237	24,660,454
1979	132,494	32,846,337	384,915	37,127,248	0	0	0	0	9,218	41,006,061
1980	225,248	42,139,546	467,867	48,883,889	0	0	0	0	13,521	58,722,028
1981	188,446	24,762,318	253,745	30,067,862	0	0	0	0	15,360	44,586,605
1982	66,460	10,539,621	115,587	12,713,305	0	0	0	0	11,123	24,955,070
1983	26,300	3,110,162	31,174	4,818,300	0	0	0	0	5,190	38,586,179
1984	34,678	3,955,551	36,851	13,218,872	0	0	0	0	110	51,539,926
1985	32,042	3,512,394	34,149	14,324,085	0	0	0	0	5	45,922,095
TOTAL	11,238,004	1,178,547,104	9,442,008	1,431,854,727	0	0	340,505	340,505	7,429,128	1,769,604,646

a) 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	101,832	99,477	355,094	556,403	0	0	0
1964	0	0	0	118,857	153,096	516,454	788,407	8,177	20,314	28,491
1965	0	0	0	150,317	214,985	876,944	1,242,246	13,783	33,569	47,352
1966	18,560	0	18,560	166,249	238,281	1,046,807	1,451,337	22,831	54,905	77,736
1967	41,856	0	41,856	192,433	266,272	1,158,550	1,617,255	40,847	97,138	137,985
1968	120,217	0	120,217	227,646	304,717	1,278,120	1,810,483	54,866	130,052	184,918
1969	163,056	0	163,056	260,127	338,584	1,377,423	1,976,134	58,471	138,598	197,069
1970	167,044	0	167,044	271,973	351,368	1,415,324	2,038,665	60,367	143,114	203,481
1971	169,503	0	169,503	274,588	354,224	1,422,150	2,050,962	61,609	146,097	207,706
1972	170,835	0	170,835	323,674	354,942	1,426,342	2,104,958	62,533	148,371	210,904
1973	171,839	26,389	198,228	324,286	355,525	1,429,508	2,109,319	62,991	149,492	212,483
1974	174,718	27,742	202,460	324,811	356,052	1,431,479	2,112,342	63,334	150,347	213,681
1975	183,277	30,519	213,796	325,607	356,952	1,435,186	2,117,745	63,729	151,301	215,030
1976	188,121	34,108	222,229	326,447	357,735	1,437,281	2,121,463	166,674	391,786	558,460
1977	191,181	37,635	228,816	328,209	359,450	1,442,917	2,130,576	169,239	398,224	567,463
1978	211,369	57,404	268,773	331,632	362,639	1,451,793	2,146,064	175,480	413,153	588,633
1979	251,253	95,447	346,700	332,498	363,429	1,453,746	2,149,673	177,166	417,217	594,383
1980	284,610	122,870	407,480	333,776	364,597	1,456,531	2,154,904	195,358	469,284	664,642
1981	429,057	287,651	716,708	335,651	366,311	1,460,615	2,162,577	218,566	537,484	756,050
1982	681,300	534,644	1,215,944	337,781	368,259	1,465,255	2,171,295	246,762	622,441	869,203
1983	733,790	587,386	1,321,176	339,323	369,669	1,468,616	2,177,608	358,402	909,812	1,268,214
1984	736,169	590,080	1,326,249	340,043	370,327	1,470,184	2,180,554	779,156	2,053,081	2,832,237
1985	736,169	590,080	1,326,249	340,058	370,341	1,470,217	2,180,616	1,232,968	3,333,284	4,566,252
1986	736,169	590,080	1,326,249	340,059	370,341	1,470,218	2,180,618	1,603,309	4,352,867	5,956,176
1987	736,169	590,080	1,326,249	340,059	370,341	1,470,218	2,180,618	1,603,309	4,352,867	5,956,176
1988	736,169	590,080	1,326,249	340,059	370,341	1,470,218	2,180,618	1,603,309	4,352,867	5,956,176
1989	736,169	590,080	1,326,249	340,059	370,341	1,470,218	2,180,618	1,603,309	4,352,867	5,956,176
1990	736,169	590,080	1,326,249	340,059	370,341	1,470,218	2,180,618	1,603,309	4,352,867	5,956,176
1991	736,169	590,080	1,326,249	340,059	370,341	1,470,218	2,180,618	1,603,309	4,352,867	5,956,176
1992	736,169	590,080	1,326,249	340,059	370,341	1,470,218	2,180,618	1,603,309	4,352,867	5,956,176
1993	736,169	590,080	1,326,249	340,059	370,341	1,470,218	2,180,618	1,603,309	4,352,867	5,956,176
1994	736,169	590,080	1,326,249	340,059	370,341	1,470,218	2,180,618	1,603,309	4,352,867	5,956,176
1995	736,169	590,080	1,326,249	340,059	370,341	1,470,218	2,180,618	1,603,309	4,352,867	5,956,176
1996	736,169	590,080	1,326,249	340,059	370,341	1,470,218	2,180,618	1,603,309	4,352,867	5,956,176
1997	736,169	590,080	1,326,249	340,059	370,341	1,470,218	2,180,618	1,603,309	4,352,867	5,956,176
1998	736,169	590,080	1,326,249	340,059	370,341	1,470,218	2,180,618	1,603,309	4,352,867	5,956,176
1999	736,169	590,080	1,326,249	340,059	370,341	1,470,218	2,180,618	1,603,309	4,352,867	5,956,176
2000	736,169	590,080	1,326,249	340,059	370,341	1,470,218	2,180,618	1,603,309	4,352,867	5,956,176
2001	736,169	590,080	1,326,249	340,059	370,341	1,470,218	2,180,618	1,603,309	4,352,867	5,956,176
2002	736,169	590,080	1,326,249	340,059	370,341	1,470,218	2,180,618	1,603,309	4,352,867	5,956,176
2003	736,169	590,080	1,326,249	340,059	370,341	1,470,218	2,180,618	1,603,309	4,352,867	5,956,176
2004	736,169	590,080	1,326,249	340,059	370,341	1,470,218	2,180,618	1,603,309	4,352,867	5,956,176
2005	736,169	590,080	1,326,249	340,059	370,341	1,470,218	2,180,618	1,603,309	4,352,867	5,956,176
2006	736,169	590,080	1,326,249	340,059	370,341	1,470,218	2,180,618	1,603,309	4,352,867	5,956,176
2007	736,169	590,080	1,326,249	340,059	370,341	1,470,218	2,180,618	1,603,309	4,352,867	5,956,176
2008	736,169	590,080	1,326,249	340,059	370,341	1,470,218	2,180,618	1,603,309	4,352,867	5,956,176
2009	736,169	590,080	1,326,249	340,059	370,341	1,470,218	2,180,618	1,603,309	4,352,867	5,956,176
2010	736,169	590,080	1,326,249	340,059	370,341	1,470,218	2,180,618	1,603,309	4,352,867	5,956,176
2011	736,169	590,080	1,326,249	340,059	370,341	1,470,218	2,180,618	1,603,309	4,352,867	5,956,176
2012	736,169	590,080	1,326,249	340,059	370,341	1,470,218	2,180,618	1,603,309	4,352,867	5,956,176
2013	736,169	590,080	1,326,249	232,209	270,864	1,115,124	1,618,197	1,603,309	4,352,867	5,956,176
2014	736,169	590,080	1,326,249	197,669	217,245	953,764	1,368,678	1,595,132	4,332,553	5,927,685
2015	736,169	590,080	1,326,249	160,525	155,356	593,275	909,156	1,589,526	4,319,298	5,908,824
2016	717,609	590,080	1,307,689	141,858	132,061	423,411	697,330	1,580,477	4,297,962	5,878,439
2017	694,313	590,080	1,284,393	111,403	104,069	311,669	527,141	1,562,461	4,255,729	5,818,190
2018	615,952	590,080	1,206,032	70,730	65,624	192,098	328,452	1,548,443	4,222,815	5,771,258
2019	573,113	590,080	1,163,193	33,459	31,757	92,796	158,012	1,544,838	4,214,269	5,759,107
2020	569,124	590,080	1,159,204	19,951	18,973	54,895	93,819	1,542,942	4,209,753	5,752,695
2021	566,665	590,080	1,156,745	16,987	16,118	48,068	81,173	1,541,700	4,206,770	5,748,470
2022	565,334	590,080	1,155,414	16,384	15,400	43,876	75,660	1,540,776	4,204,496	5,745,272
2023	564,330	563,692	1,128,022	15,772	14,816	40,710	71,298	1,540,317	4,203,375	5,743,692
2024	561,450	562,339	1,123,789	15,248	14,290	38,739	68,277	1,539,975	4,202,520	5,742,495
2025	552,892	559,561	1,112,453	14,451	13,389	35,033	62,873	1,539,580	4,201,566	5,741,146
2026	548,048	555,973	1,104,021	13,612	12,606	32,937	59,155	1,436,635	3,961,081	5,397,716
2027	544,988	552,445	1,097,433	11,849	10,891	27,301	50,041	1,434,070	3,954,643	5,388,713
2028	524,800	532,677	1,057,477	8,426	7,702	18,425	34,553	1,427,829	3,939,714	5,367,543
2029	484,916	494,634	979,550	7,561	6,913	16,472	30,946	1,426,143	3,935,650	5,361,793
2030	451,559	467,211	918,770	6,282	5,744	13,688	25,714	1,407,951	3,883,583	5,291,534
2031	307,111	302,430	609,541	4,408	4,030	9,603	18,041	1,384,742	3,815,383	5,200,125
2032	54,869	55,436	110,305	2,278	2,083	4,963	9,324	1,356,547	3,730,426	5,086,973
2033	2,379	2,695	5,074	736	672	1,603	3,011	1,244,907	3,443,055	4,687,962
2034	0	0	0	16	15	35	66	824,153	2,299,786	3,123,939
2035	0	0	0	1	1	1	3	370,341	1,019,583	1,389,924
TOTAL	36,808,446	29,504,008	66,312,454	16,691,226	18,517,058	73,510,908	108,719,192	80,165,446	217,643,350	297,808,796

a) Unadjusted for prior overpayments or underpayments of charges.

b) Determined at the current project interest rate of 4.462 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	63,680	0	0	0	0	63,680
1966	0	0	0	0	119,224	0	0	0	0	119,224
1967	0	0	0	0	231,627	0	0	0	0	231,627
1968	32,379	67,878	3,239	0	333,588	378,840	8,405	3,966	54,890	883,185
1969	43,755	67,996	9,718	11,981	389,351	778,004	8,904	4,310	196,933	1,510,952
1970	49,881	74,523	9,718	12,481	420,632	946,287	9,149	4,483	142,490	1,669,644
1971	58,632	84,966	9,718	11,482	441,946	1,256,838	9,288	4,828	153,244	2,030,942
1972	67,383	94,934	9,718	12,980	481,817	1,882,005	9,355	9,252	492,891	3,030,335
1973	76,134	104,427	9,718	14,477	456,076	2,170,606	9,385	5,345	182,155	3,028,323
1974	84,885	158,492	9,718	16,474	458,005	2,430,754	9,398	5,985	309,128	3,482,839
1975	93,636	192,502	9,718	18,761	460,205	2,911,376	9,418	6,166	369,669	4,071,451
1976	102,387	134,331	9,718	19,470	462,012	3,062,425	9,451	6,035	227,626	4,033,455
1977	111,138	144,299	9,718	20,967	464,843	3,438,826	9,495	6,379	245,550	4,451,215
1978	111,138	154,267	9,718	22,964	467,167	3,822,543	9,533	6,724	263,025	4,867,079
1979	111,138	164,236	9,718	24,462	469,677	4,197,318	9,597	6,897	280,500	5,273,543
1980	111,138	174,204	9,718	25,960	474,292	4,580,223	9,721	7,242	297,975	5,690,473
1981	111,138	184,172	9,718	27,956	481,152	5,012,718	9,900	7,414	315,451	6,159,619
1982	111,138	194,614	9,718	29,454	489,106	5,411,882	10,127	7,759	332,926	6,596,724
1983	111,138	203,633	9,718	30,952	496,081	5,866,327	10,343	7,931	350,401	7,086,524
1984	111,138	214,076	9,718	32,449	503,128	6,276,060	10,573	8,276	367,876	7,533,294
1985	111,138	224,044	9,718	34,446	513,995	6,675,224	10,931	8,449	385,352	7,973,297
1986	111,138	234,012	9,718	35,944	524,773	7,071,136	11,287	8,793	403,275	8,410,076
1987	111,138	243,980	9,718	37,442	524,773	7,474,365	11,287	8,966	420,750	8,842,419
1988	111,138	253,948	9,718	38,939	524,773	7,850,766	11,287	9,311	438,225	9,248,105
1989	111,138	263,916	9,718	40,936	524,773	8,122,295	11,287	9,655	455,701	9,549,419
1990	111,138	273,884	9,718	42,434	524,773	8,404,392	11,287	9,828	492,891	9,880,345
1991	111,138	273,884	9,718	42,434	524,773	8,404,392	11,287	9,828	492,891	9,880,345
1992	111,138	273,884	9,718	42,434	524,773	8,404,392	11,287	9,828	492,891	9,880,345
1993	111,138	273,884	9,718	42,434	524,773	8,404,392	11,287	9,828	492,891	9,880,345
1994	111,138	273,884	9,718	42,434	524,773	8,404,392	11,287	9,828	492,891	9,880,345
1995	111,138	273,884	9,718	42,434	524,773	8,404,392	11,287	9,828	492,891	9,880,345
1996	111,138	273,884	9,718	42,434	524,773	8,404,392	11,287	9,828	492,891	9,880,345
1997	111,138	273,884	9,718	42,434	524,773	8,404,392	11,287	9,828	492,891	9,880,345
1998	111,138	273,884	9,718	42,434	524,773	8,404,392	11,287	9,828	492,891	9,880,345
1999	111,138	273,884	9,718	42,434	524,773	8,404,392	11,287	9,828	492,891	9,880,345
2000	111,138	273,884	9,718	42,434	524,773	8,404,392	11,287	9,828	492,891	9,880,345
2001	111,138	273,884	9,718	42,434	524,773	8,404,392	11,287	9,828	492,891	9,880,345
2002	111,138	273,884	9,718	42,434	524,773	8,404,392	11,287	9,828	492,891	9,880,345
2003	111,138	273,884	9,718	42,434	524,773	8,404,392	11,287	9,828	492,891	9,880,345
2004	111,138	273,884	9,718	42,434	524,773	8,404,392	11,287	9,828	492,891	9,880,345
2005	111,138	273,884	9,718	42,434	524,773	8,404,392	11,287	9,828	492,891	9,880,345
2006	111,138	273,884	9,718	42,434	524,773	8,404,392	11,287	9,828	492,891	9,880,345
2007	111,138	273,884	9,718	42,434	524,773	8,404,392	11,287	9,828	492,891	9,880,345
2008	111,138	273,884	9,718	42,434	524,773	8,404,392	11,287	9,828	492,891	9,880,345
2009	111,138	273,884	9,718	42,434	524,773	8,404,392	11,287	9,828	492,891	9,880,345
2010	111,138	273,884	9,718	42,434	524,773	8,404,392	11,287	9,828	492,891	9,880,345
2011	111,138	273,884	9,718	42,434	524,773	8,404,392	11,287	9,828	492,891	9,880,345
2012	111,138	273,884	9,718	42,434	524,773	8,404,392	11,287	9,828	492,891	9,880,345
2013	111,138	273,884	9,718	42,434	524,773	8,404,392	11,287	9,828	492,891	9,880,345
2014	111,138	273,884	9,718	42,434	524,773	8,404,392	11,287	9,828	492,891	9,880,345
2015	111,138	273,884	9,718	42,434	461,093	8,404,392	11,287	9,828	492,891	9,816,665
2016	111,138	273,884	9,718	42,434	405,548	8,404,392	11,287	9,828	492,891	9,761,120
2017	111,138	273,884	9,718	42,434	293,145	8,404,392	11,287	9,828	492,891	9,648,717
2018	111,138	273,884	9,718	42,434	191,184	8,404,392	2,881	9,828	492,891	9,538,350
2019	111,138	273,884	9,718	42,434	135,421	8,404,392	2,382	9,828	492,891	9,482,088
2020	111,138	273,884	9,718	42,434	104,141	8,404,392	2,137	9,828	492,891	9,450,563
2021	111,138	273,884	9,718	42,434	82,827	8,404,392	1,998	9,828	492,891	9,429,110
2022	111,138	273,884	9,718	42,434	72,955	8,404,392	1,931	9,828	492,891	9,419,171
2023	111,138	273,884	9,718	42,434	68,697	8,404,392	1,902	9,828	492,891	9,414,884
2024	111,138	273,884	9,718	42,434	66,767	8,404,392	1,889	9,828	492,891	9,412,941
2025	111,138	273,884	9,718	42,434	64,568	8,404,392	1,869	9,828	492,891	9,410,722
2026	111,138	273,884	9,718	42,434	62,761	8,404,392	1,836	9,828	492,891	9,408,882
2027	111,138	273,884	9,718	42,434	59,930	8,404,392	1,792	9,828	492,891	9,406,007
2028	111,138	273,884	9,718	42,434	57,605	8,404,392	1,754	9,828	492,891	9,403,644
2029	111,138	273,884	9,718	42,434	55,095	8,404,392	1,690	9,828	492,891	9,401,070
2030	111,138	273,884	9,718	42,434	50,481	8,404,392	1,565	9,828	492,891	9,396,331
2031	111,138	273,884	9,718	42,434	43,621	8,404,392	1,386	9,828	492,891	9,389,292
2032	111,138	273,884	9,718	42,434	35,667	8,404,392	1,160	9,828	492,891	9,381,112
2033	111,138	273,884	9,718	42,434	28,692	8,404,392	944	9,828	492,891	9,373,921
2034	111,138	273,884	9,718	42,434	21,644	8,404,392	713	9,828	492,891	9,366,642
2035	111,138	273,884	9,718	42,434	10,778	8,404,392	356	9,828	492,891	9,355,419
TOTAL	7,166,214	16,232,114	654,345	2,472,941	26,238,641	478,218,850	564,342	606,254	29,359,019	561,512,720

(in dollars)

Calendar Year	SOUTHERN CALIFORNIA AREA									
	Antelope Valley East Kern Water Agency	Castaic Lake Water Agency	Coachella Valley County 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	33,296	0	0	0	0	0	0	0	51,618	0
1964	62,415	19,873	14,157	4,280	36,683	1,130	27,927	8,121	81,242	34,546
1965	118,037	37,915	24,808	7,100	40,319	2,068	49,769	15,124	133,438	34,936
1966	214,794	71,843	44,377	12,369	72,592	3,733	89,709	27,530	230,610	60,981
1967	415,976	148,055	85,685	23,345	140,717	7,256	174,311	53,817	431,150	115,000
1968	667,228	291,271	140,052	38,287	230,380	11,715	284,425	86,803	725,515	193,384
1969	965,157	441,917	208,213	56,881	342,791	17,122	422,555	126,271	1,124,901	299,556
1970	1,261,135	564,184	294,246	84,380	484,678	23,294	588,265	170,302	1,676,725	439,721
1971	1,520,460	697,629	398,965	119,850	657,386	28,755	786,075	208,156	2,376,642	615,096
1972	1,654,345	787,476	454,165	137,269	748,423	31,262	893,644	226,167	2,793,235	716,725
1973	1,704,920	803,560	471,280	142,015	776,649	32,254	928,140	233,139	2,933,200	753,098
1974	1,723,037	843,831	479,379	146,217	790,008	32,576	940,294	235,494	3,023,189	773,725
1975	1,746,154	855,685	492,626	150,006	811,854	32,993	966,789	238,524	3,105,908	795,506
1976	1,759,099	865,561	502,553	152,712	828,227	33,249	986,897	240,270	3,184,193	816,355
1977	1,771,786	875,205	509,630	154,643	839,897	33,474	1,001,264	241,912	3,233,741	829,534
1978	1,787,348	887,861	515,581	156,313	849,711	33,788	1,013,241	244,070	3,270,464	839,150
1979	1,805,196	913,524	519,187	157,244	855,660	34,103	1,020,669	246,287	3,287,821	843,778
1980	1,852,273	954,019	527,859	159,447	869,961	34,890	1,038,588	252,191	3,326,937	854,504
1981	1,933,757	1,003,477	542,700	163,202	894,436	36,254	1,069,268	262,427	3,393,402	872,741
1982	2,006,766	1,030,047	555,121	166,344	914,920	37,399	1,094,955	271,013	3,449,007	888,000
1983	2,043,748	1,041,985	559,491	167,451	922,128	37,800	1,104,004	274,021	3,468,626	893,384
1984	2,102,787	1,045,204	561,217	167,889	924,975	37,958	1,107,591	275,208	3,476,395	895,518
1985	2,529,992	1,049,009	563,496	168,467	928,732	38,168	1,112,334	276,785	3,486,636	898,332
1986	3,036,760	1,052,535	565,597	169,000	932,198	38,364	1,116,710	278,246	3,496,099	900,933
1987	3,036,760	1,052,535	565,597	169,000	932,198	38,364	1,116,710	278,246	3,496,099	900,933
1988	3,036,760	1,052,535	565,597	169,000	932,198	38,364	1,116,710	278,246	3,496,099	900,933
1989	3,036,760	1,052,535	565,597	169,000	932,198	38,364	1,116,710	278,246	3,496,099	900,933
1990	3,036,760	1,052,535	565,597	169,000	932,198	38,364	1,116,710	278,246	3,496,099	900,933
1991	3,036,760	1,052,535	565,597	169,000	932,198	38,364	1,116,710	278,246	3,496,099	900,933
1992	3,036,760	1,052,535	565,597	169,000	932,198	38,364	1,116,710	278,246	3,496,099	900,933
1993	3,036,760	1,052,535	565,597	169,000	932,198	38,364	1,116,710	278,246	3,496,099	900,933
1994	3,036,760	1,052,535	565,597	169,000	932,198	38,364	1,116,710	278,246	3,496,099	900,933
1995	3,036,760	1,052,535	565,597	169,000	932,198	38,364	1,116,710	278,246	3,496,099	900,933
1996	3,036,760	1,052,535	565,597	169,000	932,198	38,364	1,116,710	278,246	3,496,099	900,933
1997	3,036,760	1,052,535	565,597	169,000	932,198	38,364	1,116,710	278,246	3,496,099	900,933
1998	3,036,760	1,052,535	565,597	169,000	932,198	38,364	1,116,710	278,246	3,496,099	900,933
1999	3,036,760	1,052,535	565,597	169,000	932,198	38,364	1,116,710	278,246	3,496,099	900,933
2000	3,036,760	1,052,535	565,597	169,000	932,198	38,364	1,116,710	278,246	3,496,099	900,933
2001	3,036,760	1,052,535	565,597	169,000	932,198	38,364	1,116,710	278,246	3,496,099	900,933
2002	3,036,760	1,052,535	565,597	169,000	932,198	38,364	1,116,710	278,246	3,496,099	900,933
2003	3,036,760	1,052,535	565,597	169,000	932,198	38,364	1,116,710	278,246	3,496,099	900,933
2004	3,036,760	1,052,535	565,597	169,000	932,198	38,364	1,116,710	278,246	3,496,099	900,933
2005	3,036,760	1,052,535	565,597	169,000	932,198	38,364	1,116,710	278,246	3,496,099	900,933
2006	3,036,760	1,052,535	565,597	169,000	932,198	38,364	1,116,710	278,246	3,496,099	900,933
2007	3,036,760	1,052,535	565,597	169,000	932,198	38,364	1,116,710	278,246	3,496,099	900,933
2008	3,036,760	1,052,535	565,597	169,000	932,198	38,364	1,116,710	278,246	3,496,099	900,933
2009	3,036,760	1,052,535	565,597	169,000	932,198	38,364	1,116,710	278,246	3,496,099	900,933
2010	3,036,760	1,052,535	565,597	169,000	932,198	38,364	1,116,710	278,246	3,496,099	900,933
2011	3,036,760	1,052,535	565,597	169,000	932,198	38,364	1,116,710	278,246	3,496,099	900,933
2012	3,036,760	1,052,535	565,597	169,000	932,198	38,364	1,116,710	278,246	3,496,099	900,933
2013	3,003,464	1,052,535	565,597	169,000	918,864	38,364	1,116,710	278,246	3,444,481	887,861
2014	2,974,345	1,032,661	551,440	164,720	909,444	37,233	1,088,783	270,126	3,414,857	880,042
2015	2,918,723	1,014,620	540,789	161,900	891,879	36,296	1,066,941	263,122	3,362,661	865,997
2016	2,821,966	980,692	521,220	156,631	859,606	34,631	1,027,001	250,716	3,265,489	839,952
2017	2,620,784	904,480	479,912	145,655	791,481	31,108	942,399	224,430	3,064,949	785,933
2018	2,369,532	761,264	425,545	130,713	701,818	26,649	832,285	191,443	2,770,584	707,549
2019	2,071,603	610,618	357,384	112,119	589,408	21,242	694,155	151,975	2,371,198	601,377
2020	1,775,625	488,351	271,351	84,620	447,520	15,069	528,445	107,944	1,819,373	461,212
2021	1,516,300	354,905	166,633	49,150	274,813	9,609	330,635	70,090	1,119,457	285,837
2022	1,382,415	265,058	111,432	31,731	183,775	7,102	223,066	52,079	702,864	184,208
2023	1,331,840	248,975	94,317	26,985	155,549	6,110	188,569	45,107	562,899	147,835
2024	1,313,723	208,704	86,219	22,783	142,191	5,788	176,416	42,752	472,910	127,208
2025	1,290,606	196,850	72,972	18,994	120,344	5,371	149,920	39,722	390,191	105,427
2026	1,277,661	186,974	63,044	16,288	103,971	5,115	129,813	37,976	311,905	84,578
2027	1,264,974	177,330	55,967	14,357	92,301	4,890	115,446	36,334	262,358	71,399
2028	1,249,411	164,674	50,017	12,687	82,487	4,576	103,469	34,176	225,634	61,784
2029	1,231,564	139,010	46,410	11,756	76,539	4,261	96,041	31,959	208,277	57,155
2030	1,184,487	98,515	37,738	9,553	62,238	3,474	78,122	26,055	169,162	46,429
2031	1,103,003	49,058	22,898	5,798	37,762	2,109	47,442	15,819	102,697	28,192
2032	1,029,994	22,487	10,477	2,656	17,278	965	21,755	7,233	47,092	12,933
2033	993,012	10,550	6,106	1,549	10,070	564	12,706	4,225	27,473	7,549
2034	933,973	7,331	4,380	1,111	7,224	405	9,119	3,038	19,703	5,416
2035	506,768	3,526	2,102	533	3,466	195	4,376	1,461	9,463	2,601
TOTAL	151,837,999	52,626,744	28,279,857	8,450,000	46,610,501	1,918,195	55,835,498	13,912,302	174,804,945	45,047,235

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	692,444	0	777,358	0	0	0	0	43,615	1,377,376
1964	21,462	1,264,036	9,296	1,585,168	0	0	0	0	80,020	2,482,086
1965	21,612	2,183,607	17,677	2,686,410	0	0	395	395	134,428	4,174,511
1966	37,665	3,899,625	33,298	4,799,126	0	0	551	551	157,839	6,624,373
1967	70,928	7,691,263	68,008	9,425,511	0	0	549	549	198,368	11,653,151
1968	119,389	14,345,210	133,203	17,266,862	0	0	551	551	273,608	20,539,824
1969	185,138	21,808,426	202,314	26,201,242	0	0	3,116	3,116	336,669	30,388,238
1970	272,529	28,941,519	257,643	35,058,621	0	0	14,768	14,768	358,033	39,510,256
1971	382,098	37,279,413	316,803	45,387,328	0	0	15,575	15,575	361,955	50,223,971
1972	445,385	44,162,469	355,023	53,405,588	0	0	16,929	16,929	362,768	59,302,317
1973	468,031	46,449,174	358,448	56,053,908	0	0	16,929	16,929	363,475	61,982,665
1974	481,151	48,480,399	373,305	58,322,605	0	0	16,930	16,930	363,961	64,714,818
1975	494,670	49,442,542	377,684	59,510,941	0	0	16,933	16,933	365,737	66,511,633
1976	507,643	50,293,397	381,972	60,552,128	0	0	16,935	16,935	366,170	67,870,840
1977	515,824	50,980,052	386,285	61,373,247	0	0	16,938	16,938	367,172	69,135,427
1978	521,785	51,666,149	392,192	62,177,653	0	0	16,938	16,938	368,903	70,434,043
1979	524,632	52,669,945	404,377	63,282,423	0	0	16,938	16,938	369,462	72,033,122
1980	531,223	54,303,752	423,523	65,129,167	0	0	16,938	16,938	369,921	74,433,525
1981	542,427	56,399,812	446,795	67,560,698	0	0	16,938	16,938	370,593	77,743,183
1982	551,800	57,631,513	459,417	69,056,302	0	0	16,938	16,938	371,357	80,297,763
1983	555,106	58,155,763	465,166	69,688,673	0	0	16,938	16,938	371,911	81,931,044
1984	556,414	58,310,466	466,717	69,928,339	0	0	16,938	16,938	372,169	84,189,780
1985	558,139	58,507,218	468,550	70,585,858	0	0	16,938	16,938	372,174	87,021,384
1986	559,733	58,681,928	470,248	71,298,351	0	0	16,938	16,938	372,174	89,560,582
1987	559,733	58,681,928	470,248	71,298,351	0	0	16,938	16,938	372,174	89,992,925
1988	559,733	58,681,928	470,248	71,298,351	0	0	16,938	16,938	372,174	90,398,611
1989	559,733	58,681,928	470,248	71,298,351	0	0	16,938	16,938	372,174	90,699,925
1990	559,733	58,681,928	470,248	71,298,351	0	0	16,938	16,938	372,174	91,030,851
1991	559,733	58,681,928	470,248	71,298,351	0	0	16,938	16,938	372,174	91,030,851
1992	559,733	58,681,928	470,248	71,298,351	0	0	16,938	16,938	372,174	91,030,851
1993	559,733	58,681,928	470,248	71,298,351	0	0	16,938	16,938	372,174	91,030,851
1994	559,733	58,681,928	470,248	71,298,351	0	0	16,938	16,938	372,174	91,030,851
1995	559,733	58,681,928	470,248	71,298,351	0	0	16,938	16,938	372,174	91,030,851
1996	559,733	58,681,928	470,248	71,298,351	0	0	16,938	16,938	372,174	91,030,851
1997	559,733	58,681,928	470,248	71,298,351	0	0	16,938	16,938	372,174	91,030,851
1998	559,733	58,681,928	470,248	71,298,351	0	0	16,938	16,938	372,174	91,030,851
1999	559,733	58,681,928	470,248	71,298,351	0	0	16,938	16,938	372,174	91,030,851
2000	559,733	58,681,928	470,248	71,298,351	0	0	16,938	16,938	372,174	91,030,851
2001	559,733	58,681,928	470,248	71,298,351	0	0	16,938	16,938	372,174	91,030,851
2002	559,733	58,681,928	470,248	71,298,351	0	0	16,938	16,938	372,174	91,030,851
2003	559,733	58,681,928	470,248	71,298,351	0	0	16,938	16,938	372,174	91,030,851
2004	559,733	58,681,928	470,248	71,298,351	0	0	16,938	16,938	372,174	91,030,851
2005	559,733	58,681,928	470,248	71,298,351	0	0	16,938	16,938	372,174	91,030,851
2006	559,733	58,681,928	470,248	71,298,351	0	0	16,938	16,938	372,174	91,030,851
2007	559,733	58,681,928	470,248	71,298,351	0	0	16,938	16,938	372,174	91,030,851
2008	559,733	58,681,928	470,248	71,298,351	0	0	16,938	16,938	372,174	91,030,851
2009	559,733	58,681,928	470,248	71,298,351	0	0	16,938	16,938	372,174	91,030,851
2010	559,733	58,681,928	470,248	71,298,351	0	0	16,938	16,938	372,174	91,030,851
2011	559,733	58,681,928	470,248	71,298,351	0	0	16,938	16,938	372,174	91,030,851
2012	559,733	58,681,928	470,248	71,298,351	0	0	16,938	16,938	372,174	91,030,851
2013	551,599	57,989,484	470,248	70,486,453	0	0	16,938	16,938	328,560	89,612,918
2014	546,769	57,417,892	460,953	69,749,265	0	0	16,938	16,938	292,155	88,561,315
2015	538,121	56,498,321	452,571	68,611,941	0	0	16,543	16,543	237,747	86,827,125
2016	522,068	54,782,304	436,950	66,499,226	0	0	16,387	16,387	214,335	84,374,526
2017	488,805	50,990,665	402,240	61,872,841	0	0	16,389	16,389	173,807	79,341,478
2018	440,344	44,336,718	337,045	54,031,489	0	0	16,387	16,387	98,566	70,990,534
2019	374,595	36,873,502	267,934	45,097,110	0	0	13,821	13,821	35,505	61,708,836
2020	287,204	29,740,409	212,606	36,239,729	0	0	2,170	2,170	14,141	52,712,321
2021	177,635	21,402,515	153,445	25,911,024	0	0	1,362	1,362	10,220	42,338,104
2022	114,348	14,519,460	115,225	17,892,763	0	0	9	9	9,407	34,297,696
2023	91,703	12,232,754	111,801	15,244,444	0	0	9	9	8,699	31,611,048
2024	78,582	10,201,529	96,944	12,975,749	0	0	7	7	8,213	29,331,471
2025	65,063	9,239,386	92,564	11,787,410	0	0	4	4	6,438	28,121,046
2026	52,090	8,388,531	88,277	10,746,223	0	0	3	3	6,005	26,722,005
2027	43,909	7,701,877	83,963	9,925,105	0	0	0	0	5,002	25,872,301
2028	37,948	7,015,780	78,056	9,120,699	0	0	0	0	3,271	24,987,187
2029	35,101	6,011,983	65,871	8,015,927	0	0	0	0	2,712	23,791,998
2030	28,510	4,378,176	46,725	6,169,184	0	0	0	0	2,254	21,803,787
2031	17,306	2,282,116	23,453	3,737,653	0	0	0	0	1,581	18,956,233
2032	7,933	1,050,415	10,832	2,242,050	0	0	0	0	817	16,830,581
2033	4,627	526,165	5,082	1,609,678	0	0	0	0	264	15,679,910
2034	3,319	371,463	3,532	1,370,014	0	0	0	0	6	13,860,667
2035	1,594	174,710	1,699	712,494	0	0	0	0	0	11,457,840
TOTAL	27,987,015	2,934,096,405	23,512,408	3,564,919,104	0	0	846,896	846,896	18,608,711	4,618,727,873

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	79,907	78,939	219,185	378,031	0	0	0
1967	0	0	0	128,144	123,929	336,130	588,203	0	0	0
1968	0	0	0	123,330	117,923	326,165	567,418	11,436	26,696	38,132
1969	76,244	0	76,244	138,329	131,168	353,026	622,523	62,513	145,941	208,454
1970	88,810	0	88,810	123,249	114,759	305,413	543,421	73,491	171,569	245,060
1971	34,038	0	34,038	107,435	102,966	281,113	491,514	73,284	171,090	244,374
1972	32,893	0	32,893	116,611	111,936	318,950	547,497	78,518	183,308	261,826
1973	29,040	0	29,040	116,018	110,345	307,727	534,090	75,002	175,104	250,106
1974	41,250	0	41,250	146,427	139,259	381,607	667,293	75,900	177,194	253,094
1975	33,014	0	33,014	181,353	174,581	492,774	848,708	91,892	214,531	306,423
1976	49,023	0	49,023	190,566	181,103	496,903	868,572	94,111	219,709	313,820
1977	53,028	0	53,028	202,874	193,359	520,231	916,464	100,797	235,321	336,118
1978	61,499	0	61,499	215,163	205,197	553,529	973,889	103,851	242,449	346,300
1979	61,519	0	61,519	231,871	221,110	598,354	1,051,335	102,608	239,552	342,160
1980	57,674	0	57,674	231,694	220,941	597,905	1,050,540	102,413	239,090	341,503
1981	57,399	0	57,399	231,484	220,745	597,353	1,049,582	102,395	239,050	341,445
1982	83,642	0	83,642	229,718	219,035	592,486	1,041,239	101,781	237,614	339,395
1983	177,041	120,760	297,801	245,636	234,479	629,904	1,110,019	111,160	259,510	370,670
1984	148,709	101,328	250,037	245,033	233,879	628,544	1,107,456	110,692	258,418	369,110
1985	148,568	100,984	249,552	244,750	233,610	627,977	1,106,337	110,794	258,656	369,450
1986	149,727	102,592	252,319	245,508	234,336	629,801	1,109,645	223,507	576,906	800,413
1987	148,829	101,381	250,210	244,412	233,280	627,167	1,104,859	219,791	567,859	787,650
1988	149,267	101,983	251,250	244,173	233,043	626,605	1,103,821	216,032	555,283	771,315
1989	148,625	101,011	249,636	244,056	232,925	626,330	1,103,311	217,402	560,138	777,540
1990	148,674	101,085	249,759	243,559	232,456	625,191	1,101,206	214,140	548,329	762,469
1991	150,483	102,479	252,962	246,203	234,979	632,091	1,113,273	215,872	552,178	768,050
1992	150,490	102,492	252,982	246,617	235,378	633,041	1,115,036	215,886	551,682	767,568
1993	150,531	102,554	253,085	246,924	235,687	633,786	1,116,397	217,293	556,962	774,255
1994	150,244	102,119	252,363	246,405	235,195	632,595	1,114,195	215,255	549,727	764,982
1995	150,276	102,167	252,443	246,408	235,194	632,595	1,114,197	215,003	548,870	763,873
1996	148,871	101,063	249,934	244,567	233,445	627,758	1,105,770	216,585	556,340	772,925
1997	148,818	100,981	249,799	244,575	233,457	627,782	1,105,814	216,202	554,816	771,018
1998	148,941	101,169	250,110	243,960	232,835	626,241	1,103,036	216,200	554,674	770,874
1999	148,662	100,748	249,410	243,764	232,662	625,831	1,102,257	213,713	545,945	759,658
2000	149,119	101,438	250,557	243,745	232,644	625,788	1,102,177	213,207	544,077	757,284
2001	150,315	102,360	252,675	245,872	234,663	631,244	1,111,779	217,905	559,618	777,523
2002	150,369	102,444	252,813	245,561	234,345	630,478	1,110,384	216,879	556,068	772,947
2003	150,264	102,286	252,550	245,435	234,221	630,179	1,109,835	215,444	551,034	766,478
2004	149,813	101,602	251,415	245,231	234,042	629,740	1,109,013	213,873	546,642	760,515
2005	150,207	102,197	252,404	245,763	234,550	630,973	1,111,286	214,419	546,922	761,341
2006	150,220	102,219	252,439	245,838	234,625	631,156	1,111,619	214,763	547,979	762,742
2007	149,681	101,402	251,083	245,430	234,243	630,235	1,109,908	212,779	542,496	755,275
2008	150,171	102,142	252,313	246,012	234,799	631,579	1,112,390	215,171	549,346	764,517
2009	149,710	101,445	251,155	245,364	234,175	630,070	1,109,609	213,012	543,337	756,349
2010	149,676	101,394	251,070	245,584	234,396	630,606	1,110,586	212,808	542,587	755,395
2011	150,105	102,045	252,150	245,636	234,425	630,667	1,110,728	214,139	545,898	760,037
2012	149,654	101,362	251,016	245,660	234,470	630,785	1,110,915	213,637	545,255	758,892
2013	150,112	102,053	252,165	245,865	234,649	631,216	1,111,730	214,989	548,665	763,654
2014	150,049	101,960	252,009	245,851	234,636	631,187	1,111,674	214,908	548,483	763,391
2015	149,618	101,307	250,925	245,858	234,650	631,213	1,111,721	213,721	545,217	758,938
2016	149,536	101,183	250,719	245,277	234,090	629,862	1,109,229	212,462	541,432	753,894
2017	149,583	101,254	250,837	245,842	234,633	631,173	1,111,648	213,840	545,689	759,529
2018	149,476	101,091	250,567	245,666	234,479	630,804	1,110,949	213,152	543,446	756,598
2019	149,549	101,203	250,752	245,890	234,680	631,286	1,111,856	213,963	546,079	760,042
2020	149,895	101,724	251,619	245,982	234,769	631,501	1,112,252	215,292	549,645	764,937
2021	149,895	101,724	251,619	245,982	234,769	631,501	1,112,252	215,292	549,645	764,937
2022	149,895	101,724	251,619	245,982	234,769	631,501	1,112,252	215,292	549,645	764,937
2023	149,895	101,724	251,619	245,982	234,769	631,501	1,112,252	215,292	549,645	764,937
2024	149,895	101,724	251,619	245,982	234,769	631,501	1,112,252	215,292	549,645	764,937
2025	149,895	101,724	251,619	245,982	234,769	631,501	1,112,252	215,292	549,645	764,937
2026	149,895	101,724	251,619	245,982	234,769	631,501	1,112,252	215,292	549,645	764,937
2027	149,895	101,724	251,619	245,982	234,769	631,501	1,112,252	215,292	549,645	764,937
2028	149,895	101,724	251,619	245,982	234,769	631,501	1,112,252	215,292	549,645	764,937
2029	149,895	101,724	251,619	245,982	234,769	631,501	1,112,252	215,292	549,645	764,937
2030	149,895	101,724	251,619	245,982	234,769	631,501	1,112,252	215,292	549,645	764,937
2031	149,895	101,724	251,619	245,982	234,769	631,501	1,112,252	215,292	549,645	764,937
2032	149,895	101,724	251,619	245,982	234,769	631,501	1,112,252	215,292	549,645	764,937
2033	149,895	101,724	251,619	245,982	234,769	631,501	1,112,252	215,292	549,645	764,937
2034	149,895	101,724	251,619	245,982	234,769	631,501	1,112,252	215,292	549,645	764,937
2035	149,895	101,724	251,619	245,982	234,769	631,501	1,112,252	215,292	549,645	764,937
TOTAL	8,721,376	5,408,867	14,130,243	15,975,239	15,245,449	41,056,355	72,277,043	12,345,262	31,209,101	43,554,363

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	8,133	36,767	1,910	5,415	59,032	659,444	1,952	2,026	70,044	844,723
1969	43,908	44,293	2,179	6,525	78,347	1,173,016	2,229	2,045	81,925	1,434,467
1970	51,598	45,716	2,232	6,734	93,795	1,351,967	2,284	2,112	84,231	1,640,669
1971	51,457	46,727	2,255	6,884	103,443	1,606,740	2,308	2,238	85,532	1,907,584
1972	55,128	48,590	2,354	7,158	118,358	1,687,123	2,409	2,209	89,157	2,012,486
1973	52,668	48,745	2,329	7,181	121,493	1,676,583	2,383	2,262	88,745	2,002,389
1974	53,304	51,484	2,495	7,584	131,170	1,775,561	2,553	2,477	94,460	2,121,088
1975	64,545	65,360	3,171	9,629	157,626	2,179,363	3,244	3,123	119,960	2,606,021
1976	66,095	64,266	3,207	9,468	153,119	2,152,132	3,280	2,774	119,782	2,574,123
1977	70,819	77,469	3,811	11,411	190,957	2,462,282	3,897	3,920	143,273	2,967,839
1978	72,950	75,625	3,725	11,142	181,275	2,394,977	3,813	3,816	139,973	2,887,296
1979	72,081	74,817	3,683	11,022	179,414	2,371,975	3,766	3,743	138,407	2,858,908
1980	71,941	74,362	3,662	10,953	178,313	2,360,063	3,746	3,726	137,587	2,844,353
1981	71,927	74,449	3,665	10,967	178,591	2,362,797	3,748	3,721	137,735	2,847,600
1982	71,497	74,505	3,671	10,974	177,906	2,353,034	3,755	3,788	137,899	2,837,029
1983	78,095	83,298	4,102	12,270	199,276	2,616,266	4,195	4,003	154,135	3,155,640
1984	77,765	82,657	4,071	12,177	197,705	2,598,635	4,163	3,983	152,967	3,134,123
1985	77,834	82,813	4,077	12,200	198,128	2,603,119	4,171	3,987	153,239	3,139,568
1986	82,224	82,880	4,080	12,210	198,436	2,580,659	4,174	3,996	153,362	3,122,021
1987	81,820	82,783	4,073	12,194	198,424	2,577,267	4,168	3,989	153,144	3,117,862
1988	81,621	82,080	4,042	12,091	196,516	2,557,131	4,134	3,976	151,897	3,093,488
1989	81,775	82,520	4,063	12,155	197,745	2,570,119	4,155	3,983	152,674	3,109,189
1990	81,736	82,794	4,073	12,196	198,601	2,577,962	4,167	3,987	153,152	3,118,668
1991	82,713	83,861	4,128	12,354	200,951	2,608,719	4,221	4,032	155,139	3,156,118
1992	82,766	84,000	4,134	12,375	201,326	2,612,917	4,227	4,036	155,391	3,161,172
1993	82,786	83,729	4,122	12,334	200,597	2,606,095	4,215	4,030	154,908	3,152,816
1994	82,774	84,138	4,139	12,392	201,774	2,617,270	4,234	4,038	155,621	3,166,380
1995	82,726	84,017	4,135	12,376	201,440	2,613,721	4,227	4,035	155,409	3,162,086
1996	82,254	83,761	4,120	12,339	201,053	2,605,969	4,214	4,013	154,906	3,152,629
1997	82,293	83,874	4,125	12,356	201,364	2,609,258	4,221	4,015	155,108	3,156,614
1998	82,145	83,311	4,100	12,274	199,826	2,593,295	4,193	4,003	154,110	3,137,257
1999	82,032	83,462	4,107	12,296	200,359	2,597,462	4,200	4,004	154,358	3,142,280
2000	82,009	83,428	4,104	12,290	200,243	2,596,151	4,198	4,004	154,297	3,140,724
2001	82,864	84,604	4,162	12,462	203,045	2,630,258	4,256	4,045	156,456	3,182,152
2002	82,704	84,162	4,140	12,398	201,879	2,617,742	4,235	4,035	155,662	3,166,957
2003	82,516	83,922	4,129	12,363	201,285	2,610,268	4,223	4,030	155,221	3,157,957
2004	82,611	84,183	4,140	12,400	202,008	2,618,193	4,236	4,034	155,691	3,167,496
2005	82,636	84,260	4,145	12,413	202,204	2,620,294	4,240	4,036	155,832	3,170,060
2006	82,747	84,351	4,149	12,426	202,431	2,623,377	4,244	4,038	155,999	3,173,762
2007	82,614	84,413	4,152	12,435	202,607	2,623,845	4,245	4,038	156,097	3,174,446
2008	82,841	84,768	4,167	12,486	203,503	2,634,432	4,264	4,048	156,747	3,187,256
2009	82,633	84,257	4,145	12,411	202,231	2,620,472	4,239	4,035	155,818	3,170,241
2010	82,621	84,243	4,145	12,409	202,148	2,619,490	4,238	4,036	155,794	3,169,124
2011	82,612	84,206	4,141	12,404	202,074	2,618,854	4,236	4,034	155,731	3,168,292
2012	82,852	84,795	4,170	12,491	203,622	2,635,621	4,264	4,047	156,791	3,188,653
2013	82,832	84,561	4,160	12,458	202,976	2,629,340	4,254	4,043	156,377	3,181,001
2014	82,775	84,603	4,161	12,464	203,094	2,629,954	4,256	4,044	156,451	3,181,802
2015	82,815	84,706	4,165	12,477	203,368	2,632,915	4,260	4,046	156,631	3,185,383
2016	82,556	84,260	4,144	12,412	202,245	2,619,880	4,237	4,035	155,820	3,169,589
2017	82,802	84,673	4,164	12,475	203,295	2,632,120	4,256	4,045	156,575	3,184,405
2018	82,839	84,966	4,178	12,517	204,077	2,639,944	4,271	4,050	157,092	3,193,934
2019	82,843	84,777	4,170	12,488	203,541	2,634,824	4,263	4,047	156,762	3,187,715
2020	82,913	84;752	4,168	12,484	203,479	2,634,834	4,262	4,047	156,722	3,187,661
2021	82,913	84,752	4,168	12,484	203,479	2,634,834	4,262	4,047	156,722	3,187,661
2022	82,913	84,752	4,168	12,484	203,479	2,634,834	4,262	4,047	156,722	3,187,661
2023	82,913	84,752	4,168	12,484	203,479	2,634,834	4,262	4,047	156,722	3,187,661
2024	82,913	84,752	4,168	12,484	203,479	2,634,834	4,262	4,047	156,722	3,187,661
2025	82,913	84,752	4,168	12,484	203,479	2,634,834	4,262	4,047	156,722	3,187,661
2026	82,913	84,752	4,168	12,484	203,479	2,634,834	4,262	4,047	156,722	3,187,661
2027	82,913	84,752	4,168	12,484	203,479	2,634,834	4,262	4,047	156,722	3,187,661
2028	82,913	84,752	4,168	12,484	203,479	2,634,834	4,262	4,047	156,722	3,187,661
2029	82,913	84,752	4,168	12,484	203,479	2,634,834	4,262	4,047	156,722	3,187,661
2030	82,913	84,752	4,168	12,484	203,479	2,634,834	4,262	4,047	156,722	3,187,661
2031	82,913	84,752	4,168	12,484	203,479	2,634,834	4,262	4,047	156,722	3,187,661
2032	82,913	84,752	4,168	12,484	203,479	2,634,834	4,262	4,047	156,722	3,187,661
2033	82,913	84,752	4,168	12,484	203,479	2,634,834	4,262	4,047	156,722	3,187,661
2034	82,913	84,752	4,168	12,484	203,479	2,634,834	4,262	4,047	156,722	3,187,661
2035	82,913	84,752	4,168	12,484	203,479	2,634,834	4,262	4,047	156,722	3,187,661
TOTAL	5,243,740	5,363,323	263,759	790,059	12,803,900	167,358,239	269,753	257,612	9,917,626	202,268,011

(in dollars)

Calendar Year	SOUTHERN CALIFORNIA AREA									
	Antelope Valley East Kern Water Agency	Castaic Lake Water Agency	Coachella Valley County 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	63,285	19,179	11,375	2,876	18,760	1,059	23,711	7,948	50,876	14,003
1969	83,975	25,450	15,096	3,817	24,896	1,405	31,462	10,547	67,518	18,584
1970	104,558	31,688	18,808	4,757	31,016	1,748	39,171	13,133	84,112	23,145
1971	172,860	52,389	31,157	7,878	51,378	2,893	64,764	21,711	139,330	38,313
1972	348,726	142,523	101,525	29,422	167,435	6,322	202,687	46,094	520,785	136,964
1973	387,328	165,135	114,408	32,627	188,685	7,011	229,569	51,534	680,302	178,661
1974	415,570	176,925	122,159	34,509	201,466	7,305	246,017	53,711	729,268	192,305
1975	482,641	215,656	140,543	39,996	231,787	8,636	282,432	62,505	834,627	220,451
1976	521,451	215,668	145,373	40,369	239,754	9,277	294,234	67,884	861,408	228,979
1977	667,374	217,831	192,095	52,205	316,804	12,205	390,531	88,677	1,078,977	287,949
1978	618,860	263,516	181,692	48,137	299,647	11,431	372,091	82,770	1,001,319	269,403
1979	601,727	256,287	178,813	48,838	294,900	11,140	363,105	80,610	1,009,970	269,313
1980	600,745	258,742	184,970	56,120	305,065	11,138	363,628	80,534	1,139,306	294,629
1981	606,671	268,213	182,230	51,322	300,534	11,247	366,701	81,347	1,053,897	278,486
1982	598,673	276,288	179,970	50,587	296,811	11,104	362,384	80,281	1,039,590	274,870
1983	707,586	284,643	220,789	46,586	364,116	13,827	477,362	98,640	972,019	281,764
1984	705,245	336,247	233,548	62,899	385,160	13,795	475,790	98,379	1,261,911	338,045
1985	706,394	297,209	247,064	78,884	407,467	13,823	476,928	98,571	1,545,987	393,660
1986	751,565	330,489	238,142	67,367	392,749	13,851	478,264	98,768	1,341,669	354,062
1987	748,994	318,898	242,536	72,725	399,991	13,866	478,264	98,859	1,436,365	372,491
1988	749,259	295,043	238,755	66,762	393,750	13,908	481,114	99,070	1,330,767	352,409
1989	751,513	329,249	259,475	91,649	427,936	13,958	482,024	99,410	1,772,872	438,804
1990	753,738	307,460	233,419	59,013	384,949	14,014	483,768	99,797	1,192,544	325,864
1991	760,571	283,773	254,235	82,850	419,290	14,124	487,173	100,609	1,617,834	409,535
1992	761,910	386,710	238,344	62,833	393,078	14,154	488,471	100,809	1,262,082	340,352
1993	760,801	295,444	246,491	73,015	406,522	14,131	487,977	100,651	1,443,214	375,617
1994	762,160	344,958	237,790	62,356	392,162	14,163	488,042	100,869	1,253,485	338,593
1995	762,241	328,252	246,300	72,433	406,198	14,168	488,715	100,902	1,432,580	373,649
1996	758,554	342,122	244,693	71,765	403,551	14,099	485,947	100,427	1,419,540	370,551
1997	759,233	299,863	254,907	84,091	420,405	14,114	486,274	100,527	1,638,560	413,338
1998	757,835	332,808	234,264	58,624	386,348	14,095	486,806	100,369	1,186,123	325,172
1999	757,907	332,433	242,848	69,494	400,511	14,099	485,987	100,396	1,379,028	362,644
2000	757,909	319,730	243,925	70,726	402,289	14,098	486,168	100,405	1,400,933	366,948
2001	764,296	340,521	247,542	73,733	408,252	14,208	489,190	101,182	1,455,368	378,153
2002	763,373	302,223	241,607	66,273	398,462	14,200	489,637	101,106	1,322,920	352,404
2003	762,900	369,303	244,288	69,409	402,878	14,203	489,917	101,105	1,378,503	363,285
2004	764,175	302,028	254,279	81,387	419,363	14,229	490,409	101,288	1,591,402	404,906
2005	763,989	343,448	238,722	62,591	393,700	14,217	489,969	101,223	1,257,349	339,657
2006	765,052	345,866	243,600	68,093	401,753	14,243	490,960	101,397	1,355,068	358,893
2007	765,208	325,420	256,969	84,355	423,803	14,253	491,082	101,459	1,644,020	415,275
2008	766,514	305,116	245,031	69,603	404,106	14,268	491,451	101,580	1,381,951	364,224
2009	764,915	345,790	253,760	80,444	418,510	14,249	491,071	101,412	1,574,615	401,743
2010	765,022	284,044	245,899	70,602	405,543	14,258	491,587	101,466	1,399,684	367,704
2011	764,784	344,042	248,399	73,900	409,665	14,242	491,059	101,389	1,458,326	379,055
2012	766,890	361,144	237,444	60,124	391,588	14,279	491,903	101,659	1,213,508	331,435
2013	767,154	324,570	247,092	71,449	407,507	14,295	492,886	101,750	1,414,891	370,902
2014	766,601	291,280	262,298	90,474	432,596	14,277	491,922	101,643	1,752,861	436,662
2015	766,618	347,544	240,889	64,346	397,269	14,278	491,867	101,629	1,288,556	346,072
2016	766,084	354,378	244,685	68,573	403,532	14,287	492,743	101,664	1,363,488	360,830
2017	766,731	292,930	259,613	87,180	428,168	14,278	491,960	101,658	1,694,304	425,250
2018	766,929	300,150	219,131	37,946	361,376	14,275	491,494	101,642	819,230	254,437
2019	766,225	358,272	256,557	83,894	423,126	14,259	491,001	101,536	1,635,949	413,695
2020	767,660	331,990	247,937	72,473	408,900	14,303	492,910	101,801	1,433,045	374,450
2021	767,660	331,990	247,937	72,473	408,900	14,303	492,910	101,801	1,433,045	374,450
2022	767,660	331,990	247,937	72,473	408,900	14,303	492,910	101,801	1,433,045	374,450
2023	767,660	331,990	247,937	72,473	408,900	14,303	492,910	101,801	1,433,045	374,450
2024	767,660	331,990	247,937	72,473	408,900	14,303	492,910	101,801	1,433,045	374,450
2025	767,660	331,990	247,937	72,473	408,900	14,303	492,910	101,801	1,433,045	374,450
2026	767,660	331,990	247,937	72,473	408,900	14,303	492,910	101,801	1,433,045	374,450
2027	767,660	331,990	247,937	72,473	408,900	14,303	492,910	101,801	1,433,045	374,450
2028	767,660	331,990	247,937	72,473	408,900	14,303	492,910	101,801	1,433,045	374,450
2029	767,660	331,990	247,937	72,473	408,900	14,303	492,910	101,801	1,433,045	374,450
2030	767,660	331,990	247,937	72,473	408,900	14,303	492,910	101,801	1,433,045	374,450
2031	767,660	331,990	247,937	72,473	408,900	14,303	492,910	101,801	1,433,045	374,450
2032	767,660	331,990	247,937	72,473	408,900	14,303	492,910	101,801	1,433,045	374,450
2033	767,660	331,990	247,937	72,473	408,900	14,303	492,910	101,801	1,433,045	374,450
2034	767,660	331,990	247,937	72,473	408,900	14,303	492,910	101,801	1,433,045	374,450
2035	767,660	331,990	247,937	72,473	408,900	14,303	492,910	101,801	1,433,045	374,450
TOTAL	46,573,879	19,900,730	14,812,536	4,281,476	24,429,007	865,854	29,556,229	6,183,348	85,109,511	22,315,335

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	31,396	409,427
1967	0	0	0	0	0	0	0	0	47,836	636,039
1968	8,579	945,999	9,243	1,176,893	0	0	0	0	45,901	2,673,067
1969	11,386	1,260,039	12,265	1,566,440	0	0	0	0	50,234	3,958,362
1970	14,183	1,575,474	15,273	1,957,066	0	0	0	0	65,184	4,540,210
1971	23,491	2,625,782	25,246	3,257,192	0	0	58	58	51,039	5,985,799
1972	84,705	7,732,911	66,157	9,586,256	0	0	40	40	75,874	12,516,872
1973	110,646	9,491,446	76,212	11,713,564	0	0	1	1	48,855	14,578,045
1974	119,031	11,020,253	81,393	13,399,912	0	0	144	144	70,339	16,553,120
1975	136,471	12,801,025	98,209	15,554,979	0	0	1,073	1,073	78,877	19,429,095
1976	141,609	12,974,989	99,442	15,840,437	0	0	167	167	97,657	19,743,799
1977	178,005	13,516,021	107,792	17,106,466	0	0	200	200	112,321	21,492,436
1978	166,340	15,504,751	121,023	18,940,980	0	0	200	200	120,964	23,331,128
1979	166,524	15,041,464	117,923	18,440,614	0	0	200	200	148,934	22,903,670
1980	183,099	16,253,491	118,592	19,850,059	0	0	200	200	148,803	24,293,132
1981	172,445	15,782,000	122,863	19,277,956	0	0	200	200	148,715	23,722,897
1982	170,191	16,284,309	126,305	19,751,363	0	0	200	200	147,383	24,200,251
1983	171,882	15,749,290	132,748	19,521,252	0	0	200	200	160,471	24,616,053
1984	208,802	20,110,967	149,515	24,380,303	0	0	200	200	159,589	29,400,818
1985	245,217	20,171,899	136,762	24,819,865	0	0	200	200	159,298	29,844,270
1986	219,234	20,324,580	147,790	24,758,530	0	0	200	200	159,718	30,202,846
1987	231,314	19,799,571	143,945	24,357,819	0	0	200	200	158,885	29,777,485
1988	218,078	18,884,315	136,175	23,259,405	0	0	200	200	158,509	28,637,988
1989	274,673	21,399,668	147,512	26,488,743	0	0	200	200	158,447	31,887,066
1990	200,627	19,730,914	140,461	23,926,568	0	0	200	200	158,064	29,316,934
1991	255,356	20,145,187	133,121	24,963,658	0	0	200	200	159,698	30,413,959
1992	209,991	21,812,423	166,871	26,238,028	0	0	200	200	159,849	31,694,835
1993	233,110	19,226,929	136,968	23,800,870	0	0	200	200	160,081	29,257,704
1994	208,848	21,326,780	153,197	25,683,403	0	0	200	200	159,706	31,141,229
1995	231,804	19,804,823	147,766	24,409,831	0	0	200	200	159,723	29,862,353
1996	229,850	21,269,110	152,083	25,862,292	0	0	200	200	158,561	31,302,311
1997	257,883	20,393,864	138,275	25,261,334	0	0	200	200	158,549	30,703,328
1998	200,094	19,773,453	148,993	24,004,984	0	0	200	200	157,574	29,424,035
1999	224,671	20,800,331	148,864	25,319,213	0	0	200	200	157,539	30,730,557
2000	227,484	19,957,500	144,723	24,492,838	0	0	200	200	157,502	29,901,282
2001	234,745	21,379,746	151,898	26,038,834	0	0	200	200	159,472	31,522,635
2002	217,861	19,440,916	139,302	23,850,284	0	0	200	200	159,295	29,312,880
2003	224,985	21,902,836	161,225	26,484,837	0	0	200	200	159,169	31,931,026
2004	252,242	20,361,793	139,255	25,176,756	0	0	200	200	159,048	30,624,443
2005	209,500	20,035,303	152,842	24,402,510	0	0	200	200	159,457	29,857,258
2006	222,079	21,097,754	153,658	25,618,416	0	0	200	200	159,519	31,078,697
2007	259,029	21,229,263	146,963	26,157,099	0	0	200	200	159,220	31,607,231
2008	225,561	19,717,229	140,404	24,227,038	0	0	200	200	159,670	29,703,384
2009	250,160	21,753,945	153,643	26,604,257	0	0	200	200	159,135	32,050,946
2010	227,840	19,021,097	133,410	23,528,156	0	0	200	200	159,340	28,973,871
2011	235,289	21,299,476	153,058	25,972,684	0	0	200	200	159,315	31,423,406
2012	204,067	21,226,831	158,770	25,559,642	0	0	200	200	159,426	31,028,744
2013	229,905	20,490,114	146,789	25,079,304	0	0	200	200	159,525	30,547,579
2014	273,021	20,308,633	135,874	25,358,142	0	0	200	200	159,516	30,826,734
2015	213,657	20,948,789	154,290	25,375,804	0	0	200	200	159,472	30,842,443
2016	223,309	21,372,133	156,457	25,922,163	0	0	200	200	159,066	31,364,860
2017	265,537	20,222,379	136,426	25,186,414	0	0	200	200	159,456	30,652,489
2018	153,622	17,706,115	138,778	21,365,125	0	0	200	200	159,442	26,836,815
2019	257,994	22,355,438	157,796	27,315,742	0	0	200	200	159,501	32,785,808
2020	232,228	20,813,884	149,236	25,440,817	0	0	200	200	159,637	30,917,123
2021	232,228	20,813,884	149,236	25,440,817	0	0	200	200	159,637	30,917,123
2022	232,228	20,813,884	149,236	25,440,817	0	0	200	200	159,637	30,917,123
2023	232,228	20,813,884	149,236	25,440,817	0	0	200	200	159,637	30,917,123
2024	232,228	20,813,884	149,236	25,440,817	0	0	200	200	159,637	30,917,123
2025	232,228	20,813,884	149,236	25,440,817	0	0	200	200	159,637	30,917,123
2026	232,228	20,813,884	149,236	25,440,817	0	0	200	200	159,637	30,917,123
2027	232,228	20,813,884	149,236	25,440,817	0	0	200	200	159,637	30,917,123
2028	232,228	20,813,884	149,236	25,440,817	0	0	200	200	159,637	30,917,123
2029	232,228	20,813,884	149,236	25,440,817	0	0	200	200	159,637	30,917,123
2030	232,228	20,813,884	149,236	25,440,817	0	0	200	200	159,637	30,917,123
2031	232,228	20,813,884	149,236	25,440,817	0	0	200	200	159,637	30,917,123
2032	232,228	20,813,884	149,236	25,440,817	0	0	200	200	159,637	30,917,123
2033	232,228	20,813,884	149,236	25,440,817	0	0	200	200	159,637	30,917,123
2034	232,228	20,813,884	149,236	25,440,817	0	0	200	200	159,637	30,917,123
2035	232,228	20,813,884	149,236	25,440,817	0	0	200	200	159,637	30,917,123
TOTAL	13,831,674	1,238,383,492	9,002,321	1,515,245,392	0	0	13,283	13,283	9,989,812	1,857,478,147

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 Calhoun and Travis Pumping Plants		Reach 3 Cordelia Pumping Plant(c		Reach 1 South Bay and Del Valle Pumping Plant (d		Reach 1 Delta Pumping Plant		Reach 4 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 8674486	1.5358866	1 5358866	1.0686976	2.6045842
1969	0	0	3.1823595	3.1823595	3 6949019	4.7931699	1.0982680	1 0982680	.6939369	1 7922049
1970	0	0	3.7584301	3.7584301	4.4256141	5 3660194	9404053	9404053	7750129	1 7154182
1971	0	0	4.2082507	4.2082507	3.8714396	4 7488429	8774033	.8774033	.4093968	1 2868001
1972	0	0	3 9577735	3 9577735	4 3250690	5 2259991	9009301	9009301	5535632	1 4544933
1973	0	0	3 8103903	3.8103903	5 2455409	6 1812087	9356678	.9356678	5970606	1 5327284
1974	0	0	3.5878850	3.5878850	6 3321503	7 2268245	.8946742	.8946742	.5714974	1 4661716
1975	0	0	2.1606725	2.1606725	3.7365711	4 8309404	1.0943693	1 0943693	4587400	1 5531093
1976	0	0	2.3857063	2.3857063	4 6283506	6.1582731	1 5299225	1 5299225	6438895	2 1738120
1977	0	0	2.0544218	2.0544218	5.1350663	7 2748276	2.1397613	2.1397613	.5671610	2 7069223
1978	0	0	2.3657871	2.3657871	5.6051798	6.6258208	1 0206410	1 0206410	.6718154	1 6924564
1979	0	0	1 8018018	1.8018018	4.6111756	6 4510841	1.8399085	1.8399085	6004301	2 4403386
1980	0	0	2.4977698	2 4977698	5 1441543	6 2874879	1.1433336	1 1433336	6638502	1 8071838
1981	1 2378426	1.2378426	2.4756852	3.7135278	4.9931095	6 6253941	1.6322846	1.6322846	5669558	2 1992404
1982	1 6363576	1.6363576	4.0701754	5.7065330	5.4174066	6.6947570	1.2773504	1.2773504	5984497	1.8758001
1983	9.3061952	9.3061952	23.3594430	32.6656382	31.6192079	38 7396190	7.1204111	7.1204111	3 3747719	10 4951830
1984	8 2600210	8.2600210	28.3797468	36.6397678	30.1675487	36.3679490	6 2004003	6 2004003	3.3403790	9 5407793
1985	7.6888889	7.6888889	27 3086420	34 9975309	29 2176269	35 6240681	6 4064412	6.4064412	3.3829440	9.7893852
1986	9.4211416	9.4211416	27.7288942	37.1500358	30.0007900	36 3142288	6.3134388	6.3134388	3 5075653	9 8210041
1987	8.1575074	8.1575074	25 2522936	33.4098010	27 8739321	34.8813645	7 0074324	7.0074324	3.4241947	10 4316271
1988	8.8027115	8.8027115	25 7142857	34.5169972	28 5588590	33 8987814	5 3399224	5 3399224	3.5947293	8.9346517
1989	7.6502826	7.6502826	24.5396146	32.1898972	27.2951372	33.5504578	6 2553206	6 2553206	3.6477977	9 9031183
1990	7.7379768	7.7379768	23.1295337	30.8675105	25.9896520	32.9384817	6.9488297	6.9488297	3 7453779	10 6942076
1991	7.7732708	7.7732708	22.6666667	30.4399375	25 8845157	32.7686691	6 8841534	6 8841534	3 7616842	10 6458376
1992	7.7877858	7 7877858	22.0651163	29.8529021	26.4660708	33 4499674	6.9838966	6.9838966	3.8366754	10 8205720
1993	7.8613849	7.8613849	21.6991150	29.5604999	28.0555926	34.4322550	6.3766624	6.3766624	3.9034033	10 2800657
1994	7 3457402	7.3457402	19.7637131	27.1094533	26.1005248	33 7868651	7.6863403	7.6863403	3 6591711	11.3455114
1995	7.4031076	7.4031076	19.4516129	26.8547205	26.4124438	33.7268050	7.3143612	7.3143612	3 7540552	11 0684164
1996	7.3231434	7 3231434	18 7175573	26.0407007	26 2603076	34.4405987	8 1802911	8 1802911	3.7742172	11.9545083
1997	7 2264147	7.2264147	23.6376812	30.8640959	26 0985969	34 5011072	8.4025103	8 4025103	3 7636265	12 1661368
1998	7.4487954	7.4487954	23.7379310	31.1867264	25.2456042	32 3276752	7.0820710	7.0820710	3 8899692	10.9720402
1999	6.9485283	6 9485283	21.5263158	28.4748441	24.6787859	32 5953542	7.9165683	7 9165683	3 7349032	11 6514715
2000	7.7676909	7 7676909	21 0188679	28.7865588	24.7298736	32 5556101	7.8257365	7.8257365	3 7091453	11 5348818
2001	7.7950204	7.7950204	20 8508015	28.6458219	24.1020624	32 6761524	8 5740900	8.5740900	3 7793405	12 3534305
2002	7.8937983	7.8937983	20.9310762	28 8248745	23.8252070	31 5129237	7.6877167	7 6877167	3 8313565	11 5190732
2003	7.7060373	7.7060373	20.2372479	27.9432852	23 7359653	31 2255337	7.4895684	7 4895684	3 7611448	11 2507132
2004	7.6090760	7.6090760	19.7438882	27 3529642	23 4575378	31 4186747	7.9611369	7 9611369	3.7840431	11 7451800
2005	7.6014105	7.6014105	19.5542857	27 1556962	24 1586237	32.2526821	8.0940584	8 0940584	3 7783139	11.8723723
2006	7 6262221	7 6262221	19 4618834	27.0881055	24 3234174	32.4696259	8.1462085	8.1462085	3 8246925	11 9709010
2007	7 3719007	7 3719007	18.6578658	26.0297665	23 5876392	32 1077408	8 5201016	8 5201016	3 7107080	12 2308096
2008	7.5363814	7 5363814	18 9092873	26.4456687	24 1184188	32.9977676	8.8793488	8.8793488	3 8030191	12 6823679
2009	7.4233498	7 4233498	18.4623542	25.8857040	23 7925053	31 9024844	8 1099791	8 1099791	3.8175338	11.9275129
2010	7.3630175	7.3630175	18 1875000	25 5505175	24 4038617	32 5659668	8 1621051	8 1621051	3.7263721	11.8884772
2011	7 4200139	7 4200139	18.1595092	25.5795231	23.9764947	31 9167058	7 9402111	7.9402111	3 8405321	11 7807432
2012	7.3240818	7.3240818	21.6967871	29.0208689	23.7425266	32 7523670	9 0098404	9.0098404	3.8165560	12.8263964
2013	7.4310778	7.4310778	21.8540434	29 2851212	24 1220798	32.5456076	8 4235278	8 4235278	3 8732679	12 2967957
2014	7.3195243	7.3195243	21.3275194	28.6470437	23 9401011	32.5227589	8 5826578	8 5826578	3 8445460	12.4272038
2015	7.2591327	7.2591327	20 9619048	28.2210375	23.8465106	32 6582373	8.8117267	8.8117267	3.8178800	12 6296067
2016	7.1122128	7.1122128	20 3364486	27.4486614	23 4253617	31 6683267	8 2429650	8 2429650	3.7484228	11 9913878
2017	7.1967282	7.1967282	20.4220183	27 6187465	23 8569096	32.6103139	8 7534043	8.7534043	3 8299403	12.5833446
2018	7.0032500	7.0032500	19.6936937	26 6969437	23 3473723	32.8200957	9.4727234	9.4727234	3.7397096	13 2124330
2019	7.1359272	7.1359272	19.9203540	27.0562812	23.8049202	32.7472165	8 9422963	8 9422963	3 7993928	12 7416891
2020 (e	7 0404936	7 0404936	18.8080000	25.8484936	24 1116809	32.8905873	8 7789064	8 7789064	3.8590360	12.6379424

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 power plants. Excludes extra peaking service costs.

b) Metric conversion is dollars per acre-foot times .0008107 equals dollars per cubic metre.

c) For the period 1968 through 1980, rates are for an interim facility.

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.

e) And each year thereafter for the remainder of the project repayment period.

OF TRANSPORTATION CHARGE [a]

(in dollars per acre-foot) [b]

Calendar Year	CALIFORNIA AQUEDUCT (Continued)											
	Reach 14A Buena Vista Pumping Plant		Reach 15A Wheeler Ridge Pumping Plant		Reach 16A Wind Gap Pumping Plant		Reach 17E A.D. Edmonston (Tehachapi) Pumping Plant		Reach 18A Cottonwood Powerplant		Reach 22B 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 0487515	0	0	0	0	0	0	0	0	0	0
1971	1 3439298	2 6307299	4 6711712	7 3019011	0	0	0	0	0	0	0	0
1972	1 0672954	2 5217887	1 1178389	3 6396276	2 2553270	5 8949546	7 2408159	13 1357705	0	0	13 3773690	26 5131395
1973	9749081	2 5076365	1 2016196	3 7092561	2 0873866	5 7966427	7 3928434	13 1894861	0	0	4 3984406	17 5879267
1974	9145153	2 3806869	1 0834811	3 4641680	1 9327647	5 3969327	6 8602694	12 2572021	0	0	3 4230870	15 6802891
1975	8145662	2 3676755	9526191	3 3202946	1 9544540	5 2747486	6 9742716	12 2490202	0	0	3 1630777	15 4120979
1976	9894453	3 1632573	9301621	4 0934194	2 0157461	6 1091655	7 1098812	13 2190467	0	0	3 3141526	16 5331993
1977	9067666	3 6136889	1 0978844	4 7115733	2 3869300	7 0985033	8 1686001	15 2671034	0	0	3 4556332	18 7227366
1978	9503104	2 6427668	1 1847022	3 8274690	2 5253972	6 3528662	8 9410502	15 2939164	0	0	3 7566240	19 0505404
1979	9564757	3 3968143	1 1116557	4 5084700	2 4175983	6 9260683	8 3540333	15 2801016	0	0	3 4800851	18 7601867
1980	9754339	2 7826177	1 1744833	3 9571010	2 4292723	6 3863733	8 4017238	14 7880971	0	0	3 6094944	18 3975915
1981	1 0138916	3 2131320	1 2848787	4 4980107	2 6278292	7 1258399	8 9762535	16 1020934	- 2359899	15 8661035	3 8068258	19 6729293
1982	1 1177767	2 9935768	1 2305389	4 2241157	2 6665422	6 8906579	9 2207064	16 1113643	- 4490669	15 6622974	3 8775042	19 5398016
1983	5 7965009	16 2916839	6 6733346	22 9590185	14 7840795	37 7430980	45 4704004	83 2134984	-1 6152629	81 5982355	23 5117053	105 1099408
1984	5 8678221	15 4086014	6 3707801	21 7793815	14 0431339	35 8225154	47 8610013	83 6835167	-1 6964947	81 9870220	21 5419475	103 5289695
1985	5 7112724	15 5006576	6 8634075	22 3640651	15 0962256	37 4602907	46 7371749	84 1974656	-1 6416077	82 5558579	21 8549301	104 4107880
1986	6 1594905	15 9804946	6 8457510	22 8262456	15 0419280	37 8681736	46 4411981	84 3093717	-1 8877659	82 4216058	22 7043945	105 1260003
1987	6 1504097	16 5820368	6 4332138	23 0152506	14 1539965	37 1692471	48 5855567	85 7548038	-1 8366686	83 9181352	21 1999874	105 1181226
1988	6 0267197	14 9613714	6 8551356	21 8165070	15 0340460	36 8505530	51 8523610	88 7029140	-2 3006075	86 4023065	21 7273493	108 1296558
1989	5 8973918	15 8005101	6 9115923	22 7121024	15 2455384	37 9576408	51 4608754	89 4185162	-2 1713920	87 2471242	20 6717817	107 9189059
1990	5 8902049	16 5844125	6 9837034	23 5681159	15 2103532	38 7784691	52 1546472	90 9331163	-2 1867798	88 7463365	20 0635892	108 8099257
1991	5 8818136	16 5276512	6 9588900	23 4865412	15 3113510	38 7978922	51 9149055	90 7127977	-2 4298275	88 2829702	20 0183633	108 3013335
1992	6 1285323	16 9491043	6 9460033	23 8951076	16 0721093	39 9672169	51 0185087	90 9857256	-2 2318468	88 7538788	20 5909903	109 3448691
1993	6 2401904	16 5202561	6 9728742	23 4931303	15 3367415	38 8298718	51 9657193	90 7955911	-2 2841034	88 5114877	20 7429198	109 2544075
1994	6 1041550	17 4496664	7 0054749	24 4551413	15 1871664	39 6423077	51 6353597	91 2776674	-2 1987853	89 0788821	19 5176561	108 5965382
1995	6 1591080	17 2275244	7 0620975	24 2896219	15 3028417	39 5924636	52 0207554	91 6132190	-2 1573923	89 4558267	19 9590425	109 4148692
1996	6 0607235	18 0152318	6 9441299	24 9593617	15 0458963	40 0052580	51 1267162	91 1319742	-2 0071866	89 1247876	19 6931446	108 8179322
1997	6 0223689	18 1885057	6 8945771	25 0830828	15 8538022	40 9368850	50 7299339	91 6668189	-2 3297348	89 3370841	19 4799271	108 8170112
1998	6 2033948	17 1754350	7 0930662	24 2685012	15 5059529	39 7744541	52 1490796	91 9235337	-2 2866080	89 6369257	20 5959259	110 2328516
1999	6 1052876	17 7567591	6 7449574	24 5017165	15 2991303	39 8008468	52 1353750	91 9362218	-2 0719275	89 8642943	19 1961859	109 0604802
2000	6 1160766	17 6509584	7 0785717	24 7295301	15 3254637	40 0549938	52 2200472	92 2750410	-2 3049364	89 9701046	19 3502467	109 3203513
2001	6 0572424	18 4106729	6 9999374	25 4106103	15 2834718	40 6940821	51 5811241	92 2752062	-2 5202802	89 7549260	19 2680388	109 0229648
2002	6 1663359	17 6854091	7 1235859	24 8089950	15 4067502	40 2157452	52 4821980	92 6979432	-2 3799819	90 3179613	19 6812019	109 9991632
2003	5 9359196	17 1866328	6 9304787	24 1171115	15 7936303	39 9107418	53 4620210	93 3727628	-2 2027199	91 1700429	19 2177310	110 3877739
2004	6 1715634	17 9167434	6 8750094	24 7917528	15 6677351	40 4594879	53 0377131	93 4972010	-2 0191542	91 4780468	18 8401276	110 3181744
2005	6 1499499	18 0223222	6 8484290	24 8707512	15 6050441	40 4757953	52 8158753	93 2916706	-2 4506778	90 8409928	19 2145534	110 0555462
2006	6 1442221	18 1151231	7 2304381	25 3455612	15 5774468	40 9230080	52 7077758	93 6307838	-2 1944006	91 4363832	19 2085090	110 6448922
2007	5 9417398	18 1725494	6 9916098	25 1641592	15 1961500	40 3603092	53 8491929	94 2095021	-2 1529175	92 0565846	18 5110386	110 5676232
2008	6 0799555	18 7623234	7 1506863	25 9130097	15 5331789	41 4461886	52 0947403	93 5409289	-2 1191528	91 4217761	19 1372394	110 5590155
2009	6 2016781	18 1291910	6 9668223	25 0960133	15 8092648	40 9052781	53 6283846	94 5336627	-2 6108861	91 9227766	18 8147673	110 7375439
2010	5 9517200	17 8401972	6 9983832	24 8385804	15 8822619	40 7208423	53 8862551	94 6070974	-2 1582272	92 4488702	18 9026270	111 3514972
2011	6 2054095	17 9861527	6 9732978	24 9594505	15 8194450	40 7788955	53 6493941	94 4282896	-2 6379586	91 7903310	19 0950595	110 8853905
2012	6 1061671	18 9325635	7 2263932	26 1589567	15 5478611	41 7068178	52 7181272	94 4249450	-2 5523860	91 8725590	19 0550012	110 9275602
2013	6 1847497	18 4815454	7 3149220	25 7964674	15 8570712	41 6535386	53 3154231	94 9689617	-2 2870197	92 6819420	19 2321543	111 9140963
2014	6 1490105	18 5762143	7 2768119	25 8530262	15 6556321	41 5086583	53 0823806	94 5910389	-2 4577442	92 1332947	18 8681130	111 0014077
2015	6 1054104	18 7350171	7 2251233	25 9601404	15 5487752	41 5089156	52 7153160	94 2242316	-2 2962890	91 9279426	19 0821021	111 0100447
2016	5 9888299	17 9802177	7 0854428	25 0656605	16 1439178	41 2095783	54 4554740	95 6650523	-2 2655634	93 3994889	18 7199806	112 1194695
2017	6 1277795	18 7111241	7 2519320	25 9630561	15 6037187	41 5667748	52 9062021	94 4729769	-2 3304243	92 1425526	18 8305796	110 9731322
2018	6 0492921	19 2617251	6 8026519	26 0643770	15 4315537	41 4959307	52 3368165	93 8327472	-2 2726975	91 5600497	18 9938530	110 5539027
2019	6 0554112	18 7971003	7 1595089	25 9566092	15 3938916	41 3505008	52 1796541	93 5301549	-2 2442175	91 2859374	18 8376233	110 1235607
2020(e	6 1547576	18 7927000	7 2783114	26 0710114	15 6496805	41 7206919	53 0514307	94 7721226	-2 2602818	92 5118408	19 2090036	111 7208444

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 1060708	0	0
1969	0	0	0	0	0	0	0	0	1 2624065	3 0546114	0	0
1970	0	0	0	0	0	0	0	0	1 6309699	3 3463881	0	0
1971	0	0	0	0	0	0	0	0	1 4985537	2 7853538	0	0
1972	-2 3717647	24 1413748	1 3985359	14 5343064	0	0	-2 9350830	11 3992234	1 7489056	3 2033989	0	0
1973	-8 4634448	9 1244819	1 0046872	14 1941733	0	0	-5 8335963	8 3605770	1 4609575	2 9936859	0	0
1974	-5 1213844	10 5589047	9120198	13 1692219	0	0	-6 1952270	6 9739949	1 4255635	2 8917351	0	0
1975	-5 6602419	9 7518560	.9297099	13 1787301	0	0	-5 5763947	7 6023354	1 0379624	2 5910717	0	0
1976	-6 5547980	9 9784013	7824976	14 0015443	0	0	-6 8223631	7 1791812	2 0655355	4 2393475	0	0
1977	-5 8123156	12 9104210	2 0961680	17 3632714	0	0	-13 3573956	4 0058758	4 0716906	6 7786129	0	0
1978	-6 1138910	12 9366494	9262217	16 2201381	0	0	-10 0092826	6 2108555	2 3055588	3 9980152	0	0
1979	-6 4704059	12 2897808	9481819	16 2282835	0	0	-11 7962837	4 4319998	1 7170111	4 1573497	0	0
1980	-5 9510984	12 4464931	9277634	15 7158605	0	0	-10 9096168	4 8062437	1 9746051	3 7817889	0	0
1981	-5 9182985	13 7546308	9087971	17 0108905	-1 5654243	15 4454662	-9 0217365	6 4237297	1 9133097	4 1125501	0	0
1982	-5 8704560	13 6693456	8993927	17 0107570	-3 3609714	13 6497856	-8 0562562	5 5935294	2 0921404	3 9679405	0	0
1983	-26 3359080	78 7740328	4 0448104	87 2583088	-19 6497105	67 6085983	-22 4436959	45 1649024	12 0729789	22 5681619	0	0
1984	-28 9131202	74 6158493	4 0272441	87 7107608	-22 9737500	64 7370108	-24 9508116	39 7861992	11 5464300	21 0872093	0	0
1985	-27 6239752	76 5868128	3 9204905	88 1179561	-23 7498131	64 3681430	-25 6687939	38 6993491	12 2275090	22 0168942	0	0
1986	-27 3490755	77 7769248	3 8206168	88 1299885	-20 9342262	67 1957623	-21 5965983	45 5991640	10 9969963	20 8180004	58 6699486	79 4879490
1987	-28 2852784	76 8328442	3 7650884	89 5198922	-21 0380122	68 4818800	-24 5122442	43 9696358	10 0189702	20 4505973	59 0255874	79 4761847
1988	-28 2846661	79 8449897	5 0672698	93 7701838	-20 0061228	73 7640610	-23 9452357	49 8188253	10 1936059	19 1282576	55 4392318	74 5674894
1989	-27 6610247	80 2578812	5 7031183	95 1216345	-16 1811785	78 9404560	-22 5846956	56 3557604	9 7447056	19 6478239	57 4169028	77 0647267
1990	-28.7387495	80 0711762	5 6607473	96 5938636	-15 3529632	81 2409004	-24 3017195	56 9391809	9 3857481	20 0799557	50 6747747	70 7547304
1991	-27 9485725	80 3527610	5 6263543	96 3391520	-14 6403728	81 6987792	-23 1243130	58 5744662	9 4653921	20 1112297	50 3244562	70 4356859
1992	-29 7000979	79 6447712	5 8317670	96 8174926	-14 1316520	82 6858406	-23 4141962	59 2716444	9 5106955	20 3312675	49 3127623	69 6440298
1993	-28 8871138	80 3672937	5 9932916	96 7888827	-14 0318845	82 7569982	-24 0547689	58 7022293	10 1001546	20 3802203	52 2610855	72 6413058
1994	-28 0009029	80 5956353	6 3419331	97 6196005	-18 2075520	79 4120485	-22 7626214	56 6494271	9 4369166	20 7824280	48 1288588	68 9112868
1995	-28 7730245	80 6418447	6 3399362	97 9531552	-17 9610117	79 9921435	-22 1456349	57 8465086	9 5402668	20 6086832	47 8968257	68 5055089
1996	-27 7452270	81 0727052	6 2094785	97 3414527	-17 6735888	79 6678639	-23 9188656	55 7489983	9 4385615	21 3930698	52 8204044	74 2134742
1997	-27 1847416	81 6322696	6 1243820	97 7912009	-16 8931756	80 8980253	-23 9199441	56 9780812	9 3508170	21 5169538	51 7450707	73 2620245
1998	-28 0678862	82 1649654	6 1979332	98 1214669	-17 0324388	81 0890281	-23 4913783	57 5976498	9 6559342	20 6279744	52 4334735	73 0614479
1999	-27 9882764	81 0722038	6 9575284	98 8937502	-16 6153292	82 2784210	-22 0540695	60 2243515	8 9948361	20 6463076	48 0140936	68 6604012
2000	-29 3915318	79 9288195	6 5703181	98 8453591	-17 0454446	81 7999145	-22 2163295	59 5835850	8 9671610	20 5020428	47 1308383	67 6328811
2001	-27 8650065	81 1579583	6 8368143	99 1120205	-16 5274176	82 5846029	-24 1548548	58 4297481	8 9351434	21 2885739	53 2004848	74 4890587
2002	-28 3924169	81 6067463	6 5814484	99 2793916	-16 3455971	82 9337945	-23 9082834	59 0255111	9 1854322	20 7045054	52 0530331	72 7575385
2003	-28 8118022	81 5759717	7 2515332	100 6242960	-15 8384878	84 7858082	-23 7459480	61 0398602	8 9029656	20 1536788	50 0662590	70 2199378
2004	-28 3597766	81 9583978	6 9056859	100 4028869	-15 9169892	84 4858977	-22 1978243	62 2880734	8 7386474	20 4838274	48 6431138	69 1269412
2005	-29 2518534	80 8036928	7 1134590	100 4051296	-15 7637886	84 6413410	-23 1480158	61 4933252	8 6827779	20 5551502	47 0765659	67 6317161
2006	-29 5222456	81 1226466	6 7402079	100 3709917	-15 6008860	84 7701057	-24 0374224	60 7326833	8 7633277	20 7342287	47 2885732	68 0228019
2007	-28 8099456	81 7576776	6 8497004	101 0592025	-15 2690355	85 7901670	-24 5719615	61 2182055	8 5027249	20 7335345	46 0047158	66 7382503
2008	-27 9021716	82 5568439	6 9729050	100 5138339	-14 7994107	85 7144232	-23 9361298	61 7782934	8 7206800	21 4030479	47 2296856	68 6327335
2009	-29 0991307	81 6384132	6 7357770	101 2694397	-14 8328984	86 4365413	-23 6426989	62 7938424	8 6164408	20 5439537	46 6407497	67 1847034
2010	-28 5813022	82 7701950	6 4983420	101 1054394	-15 0761780	86 0292614	-23 0964097	62 9328517	8 5880106	20 4764878	46 2991778	66 7756656
2011	-31 5930346	79 2923559	6 6698684	101 0981580	-15 0522472	86 0459108	-24 2942508	61 7516600	8 6969906	20 4777338	46 6054172	67 0831510
2012	-29 1572192	81 7703410	6 8104722	101 2354172	-14 1632765	87 0721407	-24 0691140	63 0030267	8 6164408	21 4428372	46 4287424	67 8715796
2013	-31 1345150	80 7795813	6 9077282	101 8766899	-14 2281646	87 6485253	-23 7635484	63 8849769	8 7775404	21 0743361	47 1825635	68 2568996
2014	-30 3750128	80 6263949	6 6036515	101 1946904	-14 0265292	87 1681612	-23 5157297	63 6524315	8 6922546	21 1194584	47 1472310	68 2666894
2015	-32 1244697	78 8855750	6 7933528	101 0175844	-14 6417985	86 3757859	-23 6565332	62 7192527	8 6496069	21 2792136	46 2402781	67 5194917
2016	-30 6867215	81 4327480	6 3610097	102 0260620	-14 0975754	87 9284866	-23 4771913	64 4512953	8 5027249	20 4941127	45 7455865	66 2396992
2017	-31 7972377	79 1758945	6 8894695	101 3624464	-14 5128521	86 8495943	-23 6761175	63 1734768	8 6590837	21 2424283	46 5700846	67 8125129
2018	-31 6392811	78 9146216	6 4380173	100 2707645	-14 7832275	85 4875370	-23 3220839	62 1654531	8 4506053	21 6630383	45 1919952	66 8550335
2019	-30 6441208	79 4794399	6 4358651	99 9660200	-14 0535728	85 9124472	-23 4022623	62 5101849	8 6590837	21 4007728	46 5583071	67 9590799
2020 (e	-30 6691180	81 0517264	6 5373134	101 3094360	-14 1183838	87 1910522	-23 5121128	63 6789394	8 7680637	21 4060061	47 2650181	68 6710242

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	29,852	120,795	341,233	491,880	0	0	0
1969	8,551	0	8,551	31,803	3,897	298,442	334,142	0	0	0
1970	13,598	0	13,598	49,631	0	430,950	480,581	0	0	0
1971	10,609	0	10,609	23,825	28,308	416,027	468,160	0	0	0
1972	14,434	0	14,434	54,816	144,609	523,990	723,415	0	0	0
1973	14,449	0	14,449	18,389	15,583	547,544	581,516	0	0	0
1974	17,473	0	17,473	9,496	29	635,961	645,486	0	0	0
1975	14,779	0	14,779	22,309	4,763	425,123	452,195	0	0	0
1976	16,991	0	16,991	105,497	131,171	541,928	778,596	0	0	0
1977	15,100	0	15,100	116,623	145,351	554,938	816,912	0	0	0
1978	13,000	0	13,000	129,867	153,057	583,071	865,995	0	0	0
1979	10,000	0	10,000	134,182	154,181	567,696	856,059	0	0	0
1980	14,000	0	14,000	138,324	155,930	553,299	847,553	0	0	0
1981	21,000	0	21,000	152,385	172,260	583,034	907,679	0	0	0
1982	32,527	15,382	47,909	160,674	182,097	589,139	931,910	0	0	0
1983	187,664	100,507	288,171	968,490	1,100,206	3,409,086	5,477,782	0	0	0
1984	289,454	92,182	381,636	945,566	1,076,491	3,200,380	5,222,437	0	0	0
1985	283,480	98,956	382,436	961,850	1,097,221	3,134,918	5,193,989	0	0	0
1986	312,432	143,578	456,010	1,016,798	1,165,686	3,195,653	5,378,137	442,669	1,769,401	2,212,070
1987	291,333	149,446	440,779	1,011,560	1,161,550	3,069,560	5,242,670	498,555	2,163,341	2,661,896
1988	311,688	219,188	530,876	1,016,964	1,169,508	2,983,092	5,169,564	520,258	2,399,581	2,919,839
1989	300,654	239,836	540,490	1,040,064	1,197,751	3,019,542	5,257,357	591,934	2,862,184	3,454,118
1990	297,871	292,496	590,367	1,054,032	1,215,430	3,030,340	5,299,802	593,278	2,978,774	3,572,052
1991	310,487	293,830	604,317	1,074,812	1,258,316	3,080,255	5,413,383	662,378	3,003,377	3,665,755
1992	320,919	294,378	615,297	1,123,919	1,334,653	3,211,197	5,669,769	725,900	3,007,230	3,733,130
1993	334,034	297,160	631,194	1,184,469	1,425,496	3,374,361	5,984,326	831,162	3,175,879	4,007,041
1994	321,247	277,669	598,916	1,189,297	1,419,048	3,378,687	5,987,032	858,703	3,050,013	3,908,716
1995	332,999	279,837	612,836	1,214,165	1,416,526	3,372,680	6,003,371	923,455	3,069,047	3,992,502
1996	341,133	276,815	617,948	1,267,414	1,446,505	3,444,060	6,157,979	1,075,427	3,398,977	4,474,404
1997	425,925	273,158	699,083	1,297,241	1,449,046	3,450,111	6,196,398	1,135,708	3,434,524	4,570,232
1998	452,208	281,564	733,772	1,241,383	1,357,762	3,232,768	5,831,913	1,206,463	3,501,104	4,707,567
1999	432,818	262,654	695,472	1,277,737	1,369,005	3,259,536	5,906,278	1,203,205	3,361,613	4,564,818
2000	457,706	293,619	751,325	1,302,224	1,367,336	3,255,561	5,925,121	1,253,575	3,381,644	4,635,219
2001	464,635	294,652	759,287	1,333,187	1,372,399	3,267,615	5,973,201	1,476,894	3,839,166	5,316,060
2002	476,763	298,386	775,149	1,310,938	1,323,543	3,151,292	5,785,773	1,536,566	3,861,970	5,398,536
2003	471,124	291,288	762,412	1,323,963	1,311,473	3,122,553	5,757,989	1,573,699	3,835,413	5,409,112
2004	469,924	287,623	757,547	1,357,287	1,319,585	3,141,867	5,818,739	1,638,516	3,882,168	5,520,684
2005	475,225	287,333	762,558	1,419,118	1,354,612	3,225,269	5,998,999	1,690,792	3,902,350	5,593,142
2006	483,252	288,271	771,523	1,441,652	1,363,725	3,246,962	6,052,339	1,700,569	3,924,916	5,625,485
2007	473,221	278,658	751,879	1,438,427	1,348,525	3,210,774	5,997,726	1,668,457	3,850,797	5,519,254
2008	489,774	284,875	774,649	1,491,500	1,385,907	3,299,776	6,177,183	1,715,818	3,960,108	5,675,926
2009	488,204	280,603	768,807	1,454,753	1,339,904	3,190,249	5,984,906	1,679,617	3,876,558	5,556,175
2010	490,570	278,322	768,892	1,498,035	1,367,770	3,256,597	6,122,402	1,669,391	3,852,956	5,522,347
2011	500,335	280,477	780,812	1,468,169	1,340,502	3,191,670	6,000,341	1,677,078	3,870,698	5,547,776
2012	578,096	276,850	854,946	1,506,609	1,375,599	3,275,237	6,157,445	1,696,790	3,916,190	5,612,980
2013	593,902	280,895	874,797	1,497,098	1,366,915	3,254,561	6,118,574	1,706,423	3,938,424	5,644,847
2014	591,275	276,678	867,953	1,496,047	1,365,956	3,252,276	6,114,279	1,706,667	3,938,987	5,645,654
2015	592,642	274,395	867,037	1,502,278	1,371,646	3,265,825	6,139,749	1,687,987	3,895,875	5,583,862
2016	587,401	268,842	856,243	1,456,743	1,330,070	3,166,833	5,953,646	1,655,993	3,822,030	5,478,023
2017	602,089	272,036	874,125	1,500,075	1,369,633	3,261,031	6,130,739	1,695,313	3,912,782	5,608,095
2018	592,672	264,723	857,395	1,509,724	1,378,444	3,282,009	6,170,177	1,671,376	3,857,535	5,528,911
2019	611,472	269,738	881,210	1,506,372	1,375,383	3,274,722	6,156,477	1,698,977	3,921,238	5,620,215
2020	646,212	266,131	912,343	1,512,967	1,381,405	3,289,059	6,183,431	1,716,776	3,962,318	5,679,094
2021	646,212	266,131	912,343	1,512,967	1,381,405	3,289,059	6,183,431	1,716,776	3,962,318	5,679,094
2022	646,212	266,131	912,343	1,512,967	1,381,405	3,289,059	6,183,431	1,716,776	3,962,318	5,679,094
2023	646,212	266,131	912,343	1,512,967	1,381,405	3,289,059	6,183,431	1,716,776	3,962,318	5,679,094
2024	646,212	266,131	912,343	1,512,967	1,381,405	3,289,059	6,183,431	1,716,776	3,962,318	5,679,094
2025	646,212	266,131	912,343	1,512,967	1,381,405	3,289,059	6,183,431	1,716,776	3,962,318	5,679,094
2026	646,212	266,131	912,343	1,512,967	1,381,405	3,289,059	6,183,431	1,716,776	3,962,318	5,679,094
2027	646,212	266,131	912,343	1,512,967	1,381,405	3,289,059	6,183,431	1,716,776	3,962,318	5,679,094
2028	646,212	266,131	912,343	1,512,967	1,381,405	3,289,059	6,183,431	1,716,776	3,962,318	5,679,094
2029	646,212	266,131	912,343	1,512,967	1,381,405	3,289,059	6,183,431	1,716,776	3,962,318	5,679,094
2030	646,212	266,131	912,343	1,512,967	1,381,405	3,289,059	6,183,431	1,716,776	3,962,318	5,679,094
2031	646,212	266,131	912,343	1,512,967	1,381,405	3,289,059	6,183,431	1,716,776	3,962,318	5,679,094
2032	646,212	266,131	912,343	1,512,967	1,381,405	3,289,059	6,183,431	1,716,776	3,962,318	5,679,094
2033	646,212	266,131	912,343	1,512,967	1,381,405	3,289,059	6,183,431	1,716,776	3,962,318	5,679,094
2034	646,212	266,131	912,343	1,512,967	1,381,405	3,289,059	6,183,431	1,716,776	3,962,318	5,679,094
2035	646,212	266,131	912,343	1,512,967	1,381,405	3,289,059	6,183,431	1,716,776	3,962,318	5,679,094
TOTAL	26,599,520	13,774,996	40,374,516	73,150,634	72,634,420	180,000,940	325,785,994	71,538,009	181,813,938	253,351,947

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(b	Kern County Water Agency(b		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	30,311	68,657	5,152	0	0	439,374	2,344	4,737	65,375	615,950
1969	30,455	56,230	101	5,093	0	318,939	179	3,312	12,691	427,000
1970	39,283	69,315	6,762	16,430	0	468,317	0	5,559	0	605,666
1971	34,789	52,827	7,708	8,569	0	764,038	4,761	6,328	149,045	1,028,065
1972	44,543	61,733	8,429	8,520	0	1,119,134	2,036	7,357	367,321	1,619,073
1973	28,194	33,807	4,598	4,444	0	761,611	2,300	3,007	72,903	910,864
1974	28,050	48,955	4,398	4,838	46,552	669,109	2,199	3,105	101,150	908,356
1975	27,725	62,986	4,659	5,837	34,474	840,436	2,485	3,913	128,131	1,110,646
1976	49,601	90,042	6,522	8,478	115,332	1,191,075	3,478	6,291	119,367	1,590,186
1977	34,435	32,916	3,249	4,548	84,941	708,880	4,142	3,011	67,175	943,297
1978	50,775	69,390	5,077	7,785	110,415	1,272,094	3,215	3,980	99,348	1,622,079
1979	52,798	100,054	7,321	11,958	152,293	1,738,756	4,881	7,360	152,765	2,228,186
1980	48,028	74,095	5,422	9,397	135,175	1,552,464	3,975	4,802	120,178	1,953,536
1981	52,229	90,169	6,598	12,316	165,940	1,933,242	5,058	7,019	154,827	2,427,398
1982	50,392	76,907	5,627	11,067	158,740	1,878,111	4,689	5,748	139,372	2,330,653
1983	286,616	450,244	31,485	65,071	911,917	11,250,767	29,386	32,754	820,723	13,878,963
1984	267,808	430,289	28,622	62,015	915,694	11,108,191	29,576	29,762	783,298	13,655,255
1985	279,614	462,059	29,368	67,546	1,003,532	12,104,494	33,284	31,392	841,887	14,853,176
1986	264,389	484,176	29,463	70,711	1,080,073	12,752,582	36,338	32,199	883,890	15,633,821
1987	259,722	536,186	31,295	78,237	1,177,771	13,852,996	41,727	36,439	979,530	16,993,903
1988	242,929	478,004	26,804	69,690	1,177,425	13,083,856	35,739	28,836	873,809	16,017,092
1989	249,528	550,614	29,709	81,206	1,311,896	14,467,472	39,612	35,030	1,007,147	17,772,214
1990	255,015	617,055	32,082	90,901	1,436,426	15,800,296	42,777	39,608	1,176,363	19,490,523
1991	255,412	614,265	31,937	90,489	1,433,495	15,757,501	42,584	39,240	1,171,042	19,435,965
1992	258,207	624,347	32,462	91,975	1,464,740	16,058,101	43,283	39,808	1,190,263	19,803,186
1993	258,829	593,159	30,840	87,381	1,419,177	15,531,825	41,121	36,347	1,130,807	19,129,486
1994	263,937	654,636	34,037	96,437	1,488,971	16,568,695	45,382	43,812	1,248,006	20,443,913
1995	261,730	638,648	33,205	94,081	1,474,445	16,307,939	44,273	41,692	1,217,526	20,113,539
1996	271,693	689,775	35,864	101,613	1,526,994	17,201,272	47,818	46,628	1,314,996	21,236,653
1997	273,265	701,986	36,499	103,412	1,553,127	17,449,182	48,665	47,894	1,338,275	21,552,305
1998	261,975	633,086	32,916	93,263	1,473,131	16,243,141	43,888	40,368	1,206,925	20,028,693
1999	262,207	672,290	34,955	99,038	1,509,510	16,827,843	46,606	45,124	1,281,662	20,779,235
2000	260,376	665,563	34,604	98,047	1,507,742	16,739,771	46,140	44,607	1,268,837	20,665,687
2001	270,365	712,793	37,060	105,004	1,561,503	17,594,643	49,413	48,872	1,358,877	21,738,530
2002	262,947	664,650	34,557	97,913	1,510,854	16,770,002	46,076	43,820	1,267,098	20,697,917
2003	255,953	649,166	33,752	95,631	1,489,554	16,386,613	45,003	42,691	1,237,579	20,235,942
2004	260,144	677,697	35,235	99,834	1,528,618	16,952,907	46,981	45,378	1,291,970	20,938,764
2005	261,051	685,036	35,617	100,915	1,535,137	17,072,029	47,489	46,136	1,305,961	21,089,371
2006	263,325	690,721	35,913	101,753	1,547,861	17,226,636	47,884	46,433	1,316,799	21,277,325
2007	263,316	705,718	36,692	103,962	1,551,960	17,376,995	48,923	48,565	1,345,389	21,481,520
2008	271,819	731,772	38,047	107,800	1,593,734	17,962,818	50,729	50,612	1,395,060	22,202,391
2009	260,909	688,218	35,783	101,384	1,547,840	17,162,386	47,710	46,227	1,312,027	21,202,484
2010	260,052	685,965	35,665	101,052	1,539,480	17,057,635	47,553	46,524	1,307,733	21,081,659
2011	260,068	679,749	35,343	100,137	1,537,715	17,014,960	47,123	45,259	1,295,882	21,016,236
2012	272,324	740,083	38,480	109,025	1,607,712	18,123,066	51,305	51,356	1,410,903	22,404,254
2013	267,645	709,526	36,891	104,523	1,580,001	17,616,235	49,187	48,014	1,352,647	21,764,669
2014	268,218	717,049	37,282	105,632	1,583,731	17,722,832	49,709	48,921	1,366,992	21,900,366
2015	270,246	728,729	37,889	107,352	1,593,506	17,913,678	50,519	50,227	1,389,257	22,141,403
2016	260,276	691,903	35,974	101,927	1,555,119	17,193,338	47,966	46,985	1,319,053	21,252,541
2017	269,778	726,059	37,750	106,958	1,592,649	17,876,682	50,334	49,894	1,384,167	22,094,271
2018	275,121	762,357	39,637	112,306	1,623,777	18,453,630	52,850	53,995	1,453,368	22,827,041
2019	271,789	735,195	38,225	108,305	1,595,187	18,006,790	50,967	50,971	1,401,586	22,259,015
2020	271,856	729,209	37,914	107,423	1,598,947	17,960,586	50,552	50,040	1,390,174	22,196,701
2021	271,856	729,209	37,914	107,423	1,598,947	17,960,586	50,552	50,040	1,390,174	22,196,701
2022	271,856	729,209	37,914	107,423	1,598,947	17,960,586	50,552	50,040	1,390,174	22,196,701
2023	271,856	729,209	37,914	107,423	1,598,947	17,960,586	50,552	50,040	1,390,174	22,196,701
2024	271,856	729,209	37,914	107,423	1,598,947	17,960,586	50,552	50,040	1,390,174	22,196,701
2025	271,856	729,209	37,914	107,423	1,598,947	17,960,586	50,552	50,040	1,390,174	22,196,701
2026	271,856	729,209	37,914	107,423	1,598,947	17,960,586	50,552	50,040	1,390,174	22,196,701
2027	271,856	729,209	37,914	107,423	1,598,947	17,960,586	50,552	50,040	1,390,174	22,196,701
2028	271,856	729,209	37,914	107,423	1,598,947	17,960,586	50,552	50,040	1,390,174	22,196,701
2029	271,856	729,209	37,914	107,423	1,598,947	17,960,586	50,552	50,040	1,390,174	22,196,701
2030	271,856	729,209	37,914	107,423	1,598,947	17,960,586	50,552	50,040	1,390,174	22,196,701
2031	271,856	729,209	37,914	107,423	1,598,947	17,960,586	50,552	50,040	1,390,174	22,196,701
2032	271,856	729,209	37,914	107,423	1,598,947	17,960,586	50,552	50,040	1,390,174	22,196,701
2033	271,856	729,209	37,914	107,423	1,598,947	17,960,586	50,552	50,040	1,390,174	22,196,701
2034	271,856	729,209	37,914	107,423	1,598,947	17,960,586	50,552	50,040	1,390,174	22,196,701
2035	271,856	729,209	37,914	107,423	1,598,947	17,960,586	50,552	50,040	1,390,174	22,196,701
TOTAL	14,729,902	36,534,195	1,960,186	5,350,574	80,129,018	903,614,755	2,520,494	2,478,589	69,239,766	1,116,557,479

b) Includes extra peaking service costs.

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 County 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	771	0	0	12,302	0	4,440	1,458	0	30,781	0
1973	284	0	102,009	6,841	158,292	3,824	0	0	295,870	0
1974	15,464	0	100,355	9,830	156,804	4,903	220	0	175,331	6,463
1975	98,849	0	107,885	12,715	169,533	6,370	0	0	135,209	53,148
1976	367,271	0	125,653	16,566	198,399	7,786	0	0	122,465	60,579
1977	357,524	18,026	141,900	25,518	219,056	4,459	1,160	0	524,058	116,193
1978	871,777	31,055	176,066	35,185	266,708	14,070	240,036	1,529	776,199	203,106
1979	885,765	22,160	188,784	41,273	281,403	14,624	244,502	4,583	768,111	204,008
1980	1,023,359	33,643	200,239	47,190	312,758	17,007	316,437	8,873	815,245	216,569
1981	1,168,123	52,675	238,141	58,428	373,786	20,150	558,219	15,866	942,192	251,708
1982	1,373,954	52,578	260,387	67,900	410,335	21,615	623,320	32,890	977,360	261,083
1983	7,157,721	478,748	1,529,036	394,687	2,417,529	121,580	3,605,271	244,794	5,868,666	1,567,602
1984	7,286,264	469,476	1,632,444	420,327	2,588,225	131,999	3,799,514	327,949	5,820,036	1,544,548
1985	7,431,836	503,091	1,773,835	454,188	2,819,091	142,821	4,072,021	412,779	6,241,826	1,669,591
1986	7,584,784	620,148	1,914,345	487,784	3,048,654	151,656	4,352,216	494,530	6,611,040	1,804,425
1987	7,890,546	624,370	2,042,551	518,233	3,311,221	164,480	4,593,662	587,426	6,838,122	1,890,088
1988	8,297,937	737,319	2,233,093	564,436	3,676,408	178,852	4,973,964	691,218	7,425,585	2,075,970
1989	8,554,155	867,879	2,360,511	594,634	3,939,040	191,071	5,234,066	785,224	7,785,014	2,199,068
1990	8,878,949	911,026	2,513,509	631,097	4,145,658	204,116	5,527,544	887,463	8,127,225	2,306,050
1991	9,009,697	972,335	2,501,760	628,149	4,126,281	203,050	5,501,709	1,011,723	8,244,193	2,314,160
1992	9,235,644	1,019,472	2,525,867	634,200	4,166,039	204,135	5,554,718	1,146,701	8,171,554	2,293,770
1993	9,388,012	1,044,900	2,523,776	633,676	4,162,594	203,577	5,550,124	1,272,795	8,245,686	2,314,578
1994	9,626,924	1,042,351	2,508,580	629,860	4,137,528	204,882	5,516,704	1,411,010	8,269,113	2,321,154
1995	9,846,940	1,099,084	2,527,483	634,605	4,168,707	205,749	5,558,275	1,547,585	8,273,854	2,322,485
1996	10,078,497	1,081,530	2,513,694	631,143	4,145,964	204,987	5,527,952	1,541,859	8,318,061	2,334,893
1997	10,371,556	1,128,167	2,513,673	631,141	4,145,927	205,476	5,527,904	1,545,532	8,375,472	2,351,009
1998	10,676,126	1,163,472	2,546,379	639,352	4,199,872	206,166	5,599,827	1,550,719	8,430,126	2,366,351
1999	10,974,279	1,240,621	2,519,297	632,551	4,155,205	206,687	5,540,273	1,554,653	8,318,009	2,334,879
2000	11,257,800	1,251,256	2,525,300	634,057	4,165,106	206,932	5,553,474	1,556,483	8,200,697	2,301,949
2001	11,532,248	1,262,082	2,518,431	632,334	4,153,775	206,436	5,538,366	1,552,760	8,326,806	2,337,350
2002	11,905,158	1,310,367	2,540,980	637,996	4,190,969	207,732	5,587,958	1,562,500	8,372,853	2,350,273
2003	12,323,537	1,391,708	2,549,958	640,249	4,205,775	209,692	5,607,699	1,577,242	8,369,693	2,349,389
2004	12,676,180	1,457,541	2,548,350	639,846	4,203,123	210,401	5,604,162	1,582,571	8,408,932	2,360,401
2005	12,589,132	1,475,840	2,542,284	638,322	4,193,116	208,934	5,590,820	1,571,549	8,290,459	2,327,146
2006	12,670,430	1,481,877	2,555,897	641,739	4,215,571	210,304	5,620,758	1,581,850	8,323,183	2,336,332
2007	12,756,386	1,518,213	2,554,111	641,292	4,212,626	211,730	5,616,835	1,592,579	8,388,339	2,354,621
2008	12,668,686	1,556,813	2,553,914	641,242	4,212,298	210,271	5,616,398	1,581,597	8,480,591	2,380,517
2009	12,738,468	1,607,523	2,558,039	642,280	4,219,100	211,422	5,625,468	1,590,264	8,376,101	2,351,184
2010	12,810,072	1,636,255	2,572,220	645,838	4,242,492	212,632	5,656,656	1,599,365	8,492,222	2,383,782
2011	12,720,070	1,642,594	2,561,452	643,134	4,224,734	211,118	5,632,979	1,587,973	8,135,396	2,283,621
2012	12,731,547	1,713,683	2,562,427	643,380	4,226,342	211,308	5,635,120	1,589,396	8,389,638	2,354,985
2013	12,843,272	1,776,003	2,585,215	649,101	4,263,928	213,168	5,685,234	1,603,398	8,287,985	2,326,453
2014	12,767,104	1,807,729	2,564,131	643,808	4,229,154	211,906	5,638,872	1,593,906	8,272,267	2,322,042
2015	12,738,734	1,818,859	2,564,333	643,859	4,229,482	211,434	5,639,311	1,590,354	8,093,659	2,271,906
2016	12,941,586	1,907,758	2,589,960	650,294	4,271,751	214,819	5,695,669	1,615,812	8,354,999	2,345,263
2017	12,768,665	1,907,838	2,563,480	643,645	4,228,077	211,928	5,637,434	1,594,066	8,123,445	2,280,267
2018	12,687,155	1,914,697	2,553,795	641,212	4,212,104	210,588	5,616,138	1,583,989	8,096,638	2,272,741
2019	12,649,165	1,962,820	2,543,855	638,716	4,195,706	209,957	5,594,277	1,579,247	8,154,591	2,289,009
2020	12,819,034	2,642,676	2,580,752	647,980	4,256,564	212,776	5,675,419	1,600,454	8,315,907	2,334,289
2021	12,819,034	2,642,676	2,580,752	647,980	4,256,564	212,776	5,675,419	1,600,454	8,315,907	2,334,289
2022	12,819,034	2,642,676	2,580,752	647,980	4,256,564	212,776	5,675,419	1,600,454	8,315,907	2,334,289
2023	12,819,034	2,642,676	2,580,752	647,980	4,256,564	212,776	5,675,419	1,600,454	8,315,907	2,334,289
2024	12,819,034	2,642,676	2,580,752	647,980	4,256,564	212,776	5,675,419	1,600,454	8,315,907	2,334,289
2025	12,819,034	2,642,676	2,580,752	647,980	4,256,564	212,776	5,675,419	1,600,454	8,315,907	2,334,289
2026	12,819,034	2,642,676	2,580,752	647,980	4,256,564	212,776	5,675,419	1,600,454	8,315,907	2,334,289
2027	12,819,034	2,642,676	2,580,752	647,980	4,256,564	212,776	5,675,419	1,600,454	8,315,907	2,334,289
2028	12,819,034	2,642,676	2,580,752	647,980	4,256,564	212,776	5,675,419	1,600,454	8,315,907	2,334,289
2029	12,819,034	2,642,676	2,580,752	647,980	4,256,564	212,776	5,675,419	1,600,454	8,315,907	2,334,289
2030	12,819,034	2,642,676	2,580,752	647,980	4,256,564	212,776	5,675,419	1,600,454	8,315,907	2,334,289
2031	12,819,034	2,642,676	2,580,752	647,980	4,256,564	212,776	5,675,419	1,600,454	8,315,907	2,334,289
2032	12,819,034	2,642,676	2,580,752	647,980	4,256,564	212,776	5,675,419	1,600,454	8,315,907	2,334,289
2033	12,819,034	2,642,676	2,580,752	647,980	4,256,564	212,776	5,675,419	1,600,454	8,315,907	2,334,289
2034	12,819,034	2,642,676	2,580,752	647,980	4,256,564	212,776	5,675,419	1,600,454	8,315,907	2,334,289
2035	12,819,034	2,642,676	2,580,752	647,980	4,256,564	212,776	5,675,419	1,600,454	8,315,907	2,334,289
TOTAL	614,332,947	89,898,398	132,721,416	33,293,835	218,301,270	10,867,660	291,221,428	74,371,866	433,919,409	121,311,333

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	1,114,819
1969	0	0	0	0	0	0	0	0	0	769,693
1970	0	0	0	0	0	0	0	0	0	1,099,845
1971	0	0	0	0	0	0	0	0	0	1,506,834
1972	0	834,425	0	884,177	0	0	0	0	0	3,241,099
1973	0	1,214,961	0	1,782,081	0	0	0	0	0	3,288,910
1974	0	2,098,641	0	2,568,011	0	0	0	0	0	4,139,326
1975	0	4,227,857	0	4,811,566	0	0	0	0	0	6,389,186
1976	0	4,865,087	0	5,763,806	0	0	0	0	0	8,149,579
1977	0	6,050,047	0	7,457,941	0	0	0	0	0	9,233,250
1978	0	9,174,459	0	11,790,190	0	0	0	0	0	14,291,264
1979	0	8,251,638	0	10,906,851	0	0	0	0	0	14,001,096
1980	84,637	8,579,109	4,805	11,659,871	0	0	0	0	0	14,474,960
1981	107,285	10,119,767	12,850	13,919,190	0	0	0	0	0	17,275,267
1982	120,290	9,834,052	16,780	14,052,544	0	0	0	0	0	17,363,016
1983	771,986	61,992,251	180,659	86,330,530	0	0	0	0	0	105,975,446
1984	805,850	57,083,786	198,931	82,109,349	0	0	0	0	0	101,368,677
1985	903,724	57,509,511	232,196	84,166,510	0	0	0	0	0	104,596,111
1986	1,003,322	62,336,336	364,794	90,774,034	0	0	0	0	0	114,454,072
1987	1,075,661	62,652,882	439,697	92,628,939	0	0	0	0	0	117,968,187
1988	1,205,660	73,416,627	647,645	106,124,714	0	0	0	0	0	130,762,085
1989	1,300,177	84,545,065	901,692	119,257,596	0	0	0	0	0	146,281,775
1990	1,385,232	91,614,761	1,138,785	128,271,415	0	0	0	0	0	157,224,159
1991	1,390,103	95,389,004	1,171,490	132,463,654	0	0	0	0	0	161,583,074
1992	1,377,853	97,704,351	1,185,433	135,219,737	0	0	0	0	0	165,041,119
1993	1,390,355	99,797,871	1,174,044	137,701,988	0	0	0	0	0	167,454,035
1994	1,394,305	100,087,484	1,132,988	138,282,883	0	0	0	0	0	169,221,460
1995	1,395,103	103,409,695	1,156,930	142,146,495	0	0	0	0	0	172,868,743
1996	1,402,558	102,752,609	1,114,980	141,648,727	0	0	0	0	0	174,135,711
1997	1,412,239	105,659,934	1,139,562	145,007,592	0	0	0	0	0	178,025,610
1998	1,421,455	107,842,522	1,151,952	147,794,319	0	0	0	0	0	179,096,264
1999	1,402,550	111,475,383	1,204,487	151,558,874	0	0	0	0	0	183,504,677
2000	1,382,768	111,339,792	1,191,671	151,567,285	0	0	0	0	0	183,544,637
2001	1,404,032	112,235,436	1,168,595	152,868,651	0	0	0	0	0	186,655,729
2002	1,411,796	114,615,181	1,180,510	155,874,273	0	0	0	0	0	188,531,648
2003	1,411,265	118,488,062	1,220,797	160,345,066	0	0	0	0	0	192,510,521
2004	1,417,881	121,785,794	1,245,762	164,140,944	0	0	0	0	0	197,176,678
2005	1,397,904	121,608,102	1,229,867	163,663,475	0	0	0	0	0	197,107,545
2006	1,403,422	122,107,425	1,214,654	164,363,442	0	0	0	0	0	198,090,114
2007	1,414,408	124,439,739	1,224,364	166,925,243	0	0	0	0	0	200,675,622
2008	1,429,963	127,052,327	1,235,566	169,620,183	0	0	0	0	0	204,450,332
2009	1,412,344	129,107,060	1,255,878	171,695,131	0	0	0	0	0	205,207,503
2010	1,431,923	131,304,521	1,258,656	174,246,634	0	0	0	0	0	207,741,934
2011	1,371,759	130,967,552	1,235,033	173,217,415	0	0	0	0	0	206,562,580
2012	1,414,628	135,618,416	1,260,060	178,350,930	0	0	0	0	0	213,380,555
2013	1,397,487	137,861,758	1,277,699	180,770,701	0	0	0	0	0	215,173,588
2014	1,394,836	137,482,880	1,273,048	180,201,683	0	0	0	0	0	214,729,935
2015	1,364,721	135,156,330	1,254,385	177,577,367	0	0	0	0	0	212,309,418
2016	1,408,788	139,093,958	1,289,024	182,379,681	0	0	0	0	0	215,920,134
2017	1,369,743	135,978,795	1,263,470	178,570,853	0	0	0	0	0	213,278,083
2018	1,365,223	134,366,725	1,243,307	176,764,312	0	0	0	0	0	212,147,836
2019	1,374,995	135,182,627	1,250,204	177,625,169	0	0	0	0	0	212,542,086
2020	1,402,194	137,758,145	1,273,579	181,519,769	0	0	0	0	0	216,491,338
2021	1,402,194	137,758,145	1,273,579	181,519,769	0	0	0	0	0	216,491,338
2022	1,402,194	137,758,145	1,273,579	181,519,769	0	0	0	0	0	216,491,338
2023	1,402,194	137,758,145	1,273,579	181,519,769	0	0	0	0	0	216,491,338
2024	1,402,194	137,758,145	1,273,579	181,519,769	0	0	0	0	0	216,491,338
2025	1,402,194	137,758,145	1,273,579	181,519,769	0	0	0	0	0	216,491,338
2026	1,402,194	137,758,145	1,273,579	181,519,769	0	0	0	0	0	216,491,338
2027	1,402,194	137,758,145	1,273,579	181,519,769	0	0	0	0	0	216,491,338
2028	1,402,194	137,758,145	1,273,579	181,519,769	0	0	0	0	0	216,491,338
2029	1,402,194	137,758,145	1,273,579	181,519,769	0	0	0	0	0	216,491,338
2030	1,402,194	137,758,145	1,273,579	181,519,769	0	0	0	0	0	216,491,338
2031	1,402,194	137,758,145	1,273,579	181,519,769	0	0	0	0	0	216,491,338
2032	1,402,194	137,758,145	1,273,579	181,519,769	0	0	0	0	0	216,491,338
2033	1,402,194	137,758,145	1,273,579	181,519,769	0	0	0	0	0	216,491,338
2034	1,402,194	137,758,145	1,273,579	181,519,769	0	0	0	0	0	216,491,338
2035	1,402,194	137,758,145	1,273,579	181,519,769	0	0	0	0	0	216,491,338
TOTAL	71,765,335	6,300,442,915	59,720,514	8,452,168,326	0	0	0	0	0	10,188,238,262

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	147,780	184,076	437,990	769,846	0	0	0
1964	0	0	0	165,936	259,622	607,774	1,033,332	8,177	20,314	28,491
1965	0	0	0	239,764	359,366	1,135,662	1,734,792	13,783	33,569	47,352
1966	18,560	0	18,560	265,486	369,355	1,387,132	2,021,973	22,831	54,905	77,736
1967	41,856	0	41,856	339,976	447,150	1,655,330	2,442,456	40,847	97,138	137,985
1968	127,206	0	127,206	380,828	543,435	1,945,518	2,869,781	66,302	156,748	223,050
1969	247,851	0	247,851	430,259	473,649	2,028,891	2,932,799	120,984	284,539	405,523
1970	269,452	0	269,452	444,853	466,127	2,151,687	3,062,667	133,858	314,683	448,541
1971	214,150	0	214,150	405,848	485,498	2,119,290	3,010,636	134,893	317,187	452,080
1972	218,162	0	218,162	495,101	611,487	2,269,282	3,375,870	141,051	331,679	472,730
1973	215,328	26,389	241,717	458,693	481,453	2,284,779	3,224,925	137,993	324,596	462,589
1974	233,441	27,742	261,183	480,734	495,340	2,449,047	3,425,121	139,234	327,541	466,775
1975	231,070	30,519	261,589	529,269	536,296	2,353,083	3,418,648	155,621	365,832	521,453
1976	254,135	34,108	288,243	622,510	670,009	2,476,112	3,768,631	260,785	611,495	872,280
1977	259,309	37,635	296,944	647,706	698,160	2,518,086	3,863,952	270,036	633,545	903,581
1978	285,868	57,404	343,272	676,662	720,893	2,588,393	3,985,948	279,331	655,602	934,933
1979	322,772	95,447	418,219	698,551	738,720	2,619,796	4,057,067	279,774	656,769	936,543
1980	356,284	122,870	479,154	703,794	741,468	2,607,735	4,052,997	297,771	708,374	1,006,145
1981	507,456	287,651	795,107	719,520	759,316	2,641,002	4,119,838	320,961	776,534	1,097,495
1982	797,469	550,026	1,347,495	728,173	769,391	2,646,880	4,144,444	348,543	860,055	1,208,598
1983	1,098,495	808,653	1,907,148	1,553,449	1,704,354	5,507,606	8,765,409	469,562	1,169,322	1,638,884
1984	1,174,332	783,590	1,957,922	1,530,642	1,680,697	5,299,108	8,510,447	889,848	2,311,499	3,201,347
1985	1,168,217	790,020	1,958,237	1,546,658	1,701,172	5,233,112	8,480,942	1,343,762	3,591,940	4,935,702
1986	1,198,328	836,250	2,034,578	1,602,365	1,770,363	5,295,672	8,668,400	2,269,485	6,699,174	8,968,659
1987	1,176,331	840,907	2,017,238	1,596,031	1,765,171	5,166,945	8,528,147	2,321,655	7,084,067	9,405,722
1988	1,197,124	911,251	2,108,375	1,601,196	1,772,892	5,079,915	8,454,003	2,339,599	7,307,731	9,647,330
1989	1,185,448	930,927	2,116,375	1,624,179	1,801,017	5,116,090	8,541,286	2,412,645	7,775,189	10,187,834
1990	1,182,714	983,661	2,166,375	1,637,650	1,818,227	5,125,749	8,581,626	2,410,727	7,879,970	10,290,697
1991	1,197,139	986,389	2,183,528	1,661,074	1,863,636	5,182,564	8,707,274	2,481,559	7,908,422	10,389,981
1992	1,207,578	986,950	2,194,528	1,710,595	1,940,372	5,314,456	8,965,423	2,545,095	7,911,779	10,456,874
1993	1,220,734	989,794	2,210,528	1,771,452	2,031,524	5,478,365	9,281,341	2,651,764	8,085,708	10,737,472
1994	1,207,660	969,868	2,177,528	1,775,761	2,024,584	5,481,500	9,281,845	2,677,267	7,952,607	10,629,874
1995	1,219,444	972,084	2,191,528	1,800,632	2,022,061	5,475,493	9,298,186	2,741,767	7,970,784	10,712,551
1996	1,226,173	967,958	2,194,131	1,852,040	2,050,291	5,542,036	9,444,367	2,895,321	8,308,184	11,203,505
1997	1,310,912	964,219	2,275,131	1,881,875	2,052,844	5,548,111	9,482,830	2,955,219	8,342,207	11,297,426
1998	1,337,318	972,813	2,310,131	1,825,402	1,960,938	5,329,227	9,115,567	3,025,972	8,408,645	11,434,617
1999	1,317,649	953,482	2,271,131	1,861,560	1,972,008	5,355,585	9,189,153	3,020,227	8,260,425	11,280,652
2000	1,342,994	985,137	2,328,131	1,886,028	1,970,321	5,351,567	9,207,916	3,070,091	8,278,588	11,348,679
2001	1,351,119	987,092	2,338,211	1,919,118	1,977,403	5,369,077	9,265,598	3,298,108	8,751,651	12,049,759
2002	1,363,301	990,910	2,354,211	1,896,558	1,928,229	5,251,988	9,076,775	3,356,754	8,770,905	12,127,659
2003	1,357,557	983,654	2,341,211	1,909,457	1,916,035	5,222,950	9,048,442	3,392,452	8,739,314	12,131,766
2004	1,355,906	979,305	2,335,211	1,942,577	1,923,968	5,241,825	9,108,370	3,455,698	8,781,677	12,237,375
2005	1,361,601	979,610	2,341,211	2,004,940	1,959,503	5,326,460	9,290,903	3,508,520	8,802,139	12,310,659
2006	1,369,641	980,570	2,350,211	2,027,549	1,968,691	5,348,336	9,344,576	3,518,641	8,825,762	12,344,403
2007	1,359,071	970,140	2,329,211	2,023,916	1,953,109	5,311,227	9,288,252	3,484,545	8,746,160	12,230,705
2008	1,376,114	977,097	2,353,211	2,077,571	1,991,047	5,401,573	9,470,191	3,534,298	8,862,321	12,396,619
2009	1,374,083	972,128	2,346,211	2,040,176	1,944,420	5,290,537	9,275,133	3,495,938	8,772,762	12,268,700
2010	1,376,415	969,796	2,346,211	2,083,678	1,972,507	5,357,421	9,413,606	3,485,508	8,748,410	12,233,918
2011	1,386,609	972,602	2,359,211	2,053,864	1,945,268	5,292,555	9,291,687	3,494,526	8,769,463	12,263,989
2012	1,463,919	968,292	2,432,211	2,092,328	1,980,410	5,376,240	9,448,978	3,513,736	8,814,312	12,328,048
2013	1,480,183	973,028	2,453,211	1,975,172	1,872,428	5,000,901	8,848,501	3,524,721	8,839,956	12,364,677
2014	1,477,493	968,718	2,446,211	1,939,567	1,817,837	4,837,227	8,594,631	3,516,707	8,820,023	12,336,730
2015	1,478,429	965,782	2,444,211	1,908,661	1,761,652	4,490,313	8,160,626	3,491,234	8,760,390	12,251,624
2016	1,454,546	960,105	2,414,651	1,843,878	1,696,221	4,220,106	7,760,205	3,448,932	8,661,424	12,110,356
2017	1,445,985	963,370	2,409,355	1,857,320	1,708,335	4,203,873	7,769,528	3,471,614	8,714,200	12,185,814
2018	1,358,100	955,894	2,313,994	1,826,120	1,678,547	4,104,911	7,609,578	3,432,971	8,623,796	12,056,767
2019	1,334,134	961,021	2,295,155	1,785,721	1,641,820	3,998,804	7,426,345	3,457,778	8,681,586	12,139,364
2020	1,365,231	957,935	2,323,166	1,778,900	1,635,147	3,975,455	7,389,502	3,475,010	8,721,716	12,196,726
2021	1,362,772	957,935	2,320,707	1,775,936	1,632,292	3,968,628	7,376,856	3,473,768	8,718,733	12,192,501
2022	1,361,441	957,935	2,319,376	1,775,333	1,631,574	3,964,436	7,371,343	3,472,844	8,716,459	12,189,303
2023	1,360,437	931,547	2,291,984	1,774,721	1,630,990	3,961,270	7,366,981	3,472,385	8,715,338	12,187,723
2024	1,357,557	930,194	2,287,751	1,774,197	1,630,464	3,959,299	7,363,960	3,472,043	8,714,483	12,186,526
2025	1,348,999	927,416	2,276,415	1,773,400	1,629,563	3,955,593	7,358,556	3,471,648	8,713,529	12,185,177
2026	1,344,155	923,828	2,267,983	1,772,561	1,628,780	3,953,497	7,354,838	3,368,703	8,473,044	11,841,747
2027	1,341,095	920,300	2,261,395	1,770,798	1,627,065	3,947,861	7,345,724	3,366,138	8,466,606	11,832,744
2028	1,320,907	900,532	2,221,439	1,767,375	1,623,876	3,938,985	7,330,236	3,359,897	8,451,677	11,811,574
2029	1,281,023	862,489	2,143,512	1,766,510	1,623,087	3,937,032	7,326,629	3,358,211	8,447,613	11,805,824
2030	1,247,666	835,066	2,082,732	1,765,231	1,621,918	3,934,248	7,321,397	3,340,019	8,395,546	11,735,565
2031	1,103,218	670,285	1,773,503	1,763,357	1,620,204	3,930,163	7,313,724	3,316,810	8,327,346	11,644,156
2032	850,976	423,291	1,274,267	1,761,227	1,618,257	3,925,523	7,305,007	3,288,615	8,242,389	11,531,004
2033	798,486	370,550	1,169,036	1,759,685	1,616,846	3,922,163	7,298,694	3,176,975	7,955,018	11,131,993
2034	796,107	367,855	1,163,962	1,758,965	1,616,189	3,920,595	7,295,749	2,756,221	6,811,749	9,567,970
2035	796,107	367,855	1,163,962	1,758,950	1,616,175	3,920,561	7,295,686	2,302,409	5,531,546	7,833,955
TOTAL	72,129,342	48,687,871	120,817,213	105,817,099	106,396,927	294,568,203	506,782,229	164,048,717	430,666,389	594,715,106

a) Unadjusted for prior overpayments or underpayments of charges.

TABLE B-19: TOTAL TRANSPORTATION

(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	63,680	0	0	0	0	63,680
1966	0	0	0	0	119,224	0	0	0	0	119,224
1967	0	0	0	0	231,627	0	0	0	0	231,627
1968	70,823	173,302	10,301	5,415	392,620	1,477,658	12,701	10,729	190,309	2,343,858
1969	118,118	168,519	11,998	23,599	467,698	2,269,959	11,312	9,667	291,549	3,372,419
1970	140,762	189,554	18,712	35,645	514,427	2,766,571	11,433	12,154	226,721	3,915,979
1971	144,878	184,520	19,681	26,935	545,389	3,627,616	16,357	13,394	387,821	4,966,591
1972	167,054	205,257	20,501	28,658	570,175	4,688,262	13,800	18,818	949,369	6,661,894
1973	156,996	186,979	16,645	26,102	577,569	4,608,800	14,068	10,614	343,803	5,941,576
1974	166,239	258,931	16,611	28,896	635,727	4,875,424	14,150	11,567	504,738	6,512,283
1975	185,906	320,848	17,548	34,227	652,305	5,931,175	15,147	13,202	617,760	7,788,118
1976	218,083	288,639	19,447	37,416	730,463	6,405,632	16,209	15,100	466,775	8,197,764
1977	216,392	254,684	16,778	36,926	740,741	6,609,988	17,534	13,310	455,998	8,362,351
1978	234,863	299,282	18,520	41,891	758,857	7,489,614	16,561	14,520	502,346	9,376,454
1979	236,017	339,107	20,722	47,442	801,384	8,308,049	18,244	18,000	571,672	10,360,637
1980	231,107	322,661	18,802	46,310	787,780	8,492,750	17,442	15,770	555,740	10,488,362
1981	235,294	348,790	19,981	51,239	825,683	9,308,757	18,706	18,154	608,013	11,434,617
1982	233,027	346,026	19,016	51,495	825,752	9,643,027	18,571	17,295	610,197	11,764,406
1983	475,849	737,175	45,305	108,293	1,607,274	19,733,360	43,924	44,688	1,325,259	24,121,127
1984	456,711	727,022	42,411	106,641	1,616,527	19,982,886	44,312	42,021	1,304,141	24,322,672
1985	468,586	768,916	43,163	114,192	1,715,655	21,382,837	48,386	43,828	1,380,478	25,966,041
1986	457,751	801,068	43,261	118,865	1,803,282	22,404,377	51,799	44,988	1,440,527	27,165,918
1987	452,680	862,949	45,086	127,873	1,900,968	23,904,628	57,182	49,394	1,553,424	28,954,184
1988	435,688	814,032	40,564	120,720	1,898,714	23,491,753	51,160	42,123	1,463,931	28,358,685
1989	442,441	897,050	43,490	134,297	2,034,414	25,159,886	55,054	48,668	1,615,522	30,430,822
1990	447,889	973,733	45,873	145,531	2,159,800	26,782,650	58,231	53,423	1,822,406	32,489,536
1991	449,263	972,010	45,783	145,277	2,159,219	26,770,612	58,092	53,100	1,819,072	32,472,428
1992	452,111	982,231	46,314	146,784	2,190,839	27,075,410	58,797	53,672	1,838,545	32,844,703
1993	452,753	950,772	44,680	142,149	2,144,547	26,542,312	56,623	50,205	1,778,606	32,162,647
1994	457,849	1,012,658	47,894	151,263	2,215,518	27,590,357	60,903	57,678	1,896,518	33,490,638
1995	455,594	996,549	47,058	148,891	2,200,658	27,326,052	59,787	55,555	1,865,826	33,155,970
1996	465,085	1,047,420	49,702	156,386	2,252,820	28,211,633	63,319	60,469	1,962,793	34,269,627
1997	466,696	1,059,744	50,342	158,202	2,279,264	28,462,832	64,173	61,737	1,986,274	34,589,264
1998	455,258	990,281	46,734	147,971	2,197,730	27,240,828	59,368	54,199	1,853,926	33,046,295
1999	455,377	1,029,636	48,780	153,768	2,234,642	27,829,697	62,093	58,956	1,928,911	33,801,860
2000	453,523	1,022,875	48,426	152,771	2,232,758	27,740,314	61,625	58,439	1,916,025	33,686,756
2001	464,367	1,071,281	50,940	159,900	2,289,321	28,629,293	64,956	62,745	2,008,224	34,801,027
2002	456,789	1,022,696	48,415	152,745	2,237,506	27,792,136	61,598	57,683	1,915,651	33,745,219
2003	449,607	1,006,972	47,599	150,428	2,215,612	27,401,273	60,513	56,549	1,885,691	33,274,244
2004	453,893	1,035,764	49,093	154,668	2,255,399	27,975,492	62,504	59,240	1,940,552	33,986,605
2005	454,825	1,043,180	49,480	155,762	2,262,114	28,096,715	63,016	60,000	1,954,684	34,139,776
2006	457,210	1,048,956	49,780	156,613	2,275,065	28,254,405	63,415	60,299	1,965,689	34,331,432
2007	457,068	1,064,015	50,562	158,831	2,279,340	28,405,232	64,455	62,431	1,994,377	34,536,311
2008	465,798	1,090,424	51,932	162,720	2,322,010	29,001,642	66,280	64,488	2,044,698	35,269,992
2009	454,680	1,046,359	49,646	156,229	2,274,844	28,187,250	63,236	60,090	1,960,736	34,253,070
2010	453,811	1,044,092	49,528	155,895	2,266,401	28,081,517	63,078	60,388	1,956,418	34,131,128
2011	453,818	1,037,839	49,202	154,975	2,264,562	28,038,206	62,646	59,121	1,944,504	34,064,873
2012	466,314	1,098,762	52,368	163,950	2,336,107	29,163,079	66,856	65,231	2,060,585	35,473,252
2013	461,615	1,067,971	50,769	159,415	2,307,750	28,649,967	64,728	61,885	2,001,915	34,826,015
2014	462,131	1,075,536	51,161	160,530	2,311,598	28,757,178	65,252	62,793	2,016,334	34,962,513
2015	464,199	1,087,319	51,772	162,263	2,257,967	28,950,985	66,066	64,101	2,038,779	35,143,451
2016	453,970	1,050,047	49,836	156,773	2,162,912	28,217,610	63,490	60,848	1,967,764	34,183,250
2017	463,718	1,084,616	51,632	161,867	2,089,089	28,913,194	65,877	63,767	2,033,633	34,927,393
2018	469,098	1,121,207	53,533	167,257	2,019,038	29,497,966	60,002	67,873	2,103,351	35,559,325
2019	465,770	1,093,856	52,113	163,227	1,934,149	29,046,006	57,612	64,846	2,051,239	34,928,818
2020	465,907	1,087,845	51,800	162,341	1,906,567	28,999,812	56,951	63,915	2,039,787	34,834,925
2021	465,907	1,087,845	51,800	162,341	1,885,253	28,999,812	56,812	63,915	2,039,787	34,813,472
2022	465,907	1,087,845	51,800	162,341	1,875,381	28,999,812	56,745	63,915	2,039,787	34,803,533
2023	465,907	1,087,845	51,800	162,341	1,871,123	28,999,812	56,716	63,915	2,039,787	34,799,246
2024	465,907	1,087,845	51,800	162,341	1,869,193	28,999,812	56,703	63,915	2,039,787	34,797,303
2025	465,907	1,087,845	51,800	162,341	1,866,994	28,999,812	56,683	63,915	2,039,787	34,795,084
2026	465,907	1,087,845	51,800	162,341	1,865,187	28,999,812	56,650	63,915	2,039,787	34,793,244
2027	465,907	1,087,845	51,800	162,341	1,862,356	28,999,812	56,606	63,915	2,039,787	34,790,369
2028	465,907	1,087,845	51,800	162,341	1,860,031	28,999,812	56,568	63,915	2,039,787	34,788,006
2029	465,907	1,087,845	51,800	162,341	1,857,521	28,999,812	56,504	63,915	2,039,787	34,785,432
2030	465,907	1,087,845	51,800	162,341	1,852,907	28,999,812	56,379	63,915	2,039,787	34,780,693
2031	465,907	1,087,845	51,800	162,341	1,846,047	28,999,812	56,200	63,915	2,039,787	34,773,654
2032	465,907	1,087,845	51,800	162,341	1,838,093	28,999,812	55,974	63,915	2,039,787	34,765,474
2033	465,907	1,087,845	51,800	162,341	1,831,118	28,999,812	55,758	63,915	2,039,787	34,758,283
2034	465,907	1,087,845	51,800	162,341	1,824,070	28,999,812	55,527	63,915	2,039,787	34,751,004
2035	465,907	1,087,845	51,800	162,341	1,813,204	28,999,812	55,170	63,915	2,039,787	34,739,781
TOTAL	27,139,856	58,129,632	2,878,290	8,613,574	119,171,559	1,549,191,844	3,354,589	3,342,455	108,516,411	1,880,338,210

CHARGE FOR EACH CONTRACTOR [a]

(in dollars)

Calendar Year	SOUTHERN CALIFORNIA AREA									
	Antelope Valley East Kern Water Agency	Castaic Lake Water Agency	Coachella Valley County 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	33,296	0	0	0	0	0	0	0	51,618	0
1964	62,415	19,873	14,157	4,280	36,683	1,130	27,927	8,121	81,242	34,546
1965	118,037	37,915	24,808	7,100	40,319	2,068	49,769	15,124	133,438	34,936
1966	214,794	71,843	44,377	12,369	72,592	3,733	89,709	27,530	230,610	60,981
1967	415,976	148,055	85,685	23,345	140,717	7,256	174,311	53,817	431,150	115,000
1968	730,513	310,450	151,427	41,163	249,140	12,774	308,136	94,751	776,391	207,387
1969	1,049,132	467,367	223,309	60,698	367,687	18,527	454,017	136,818	1,192,419	318,140
1970	1,365,693	595,872	313,054	89,137	515,694	25,042	627,436	183,435	1,760,837	462,866
1971	1,693,320	750,018	430,122	127,728	708,764	31,648	850,839	229,867	2,515,972	653,409
1972	2,003,842	929,999	555,690	178,993	915,858	42,024	1,097,789	272,261	3,344,801	853,689
1973	2,092,532	968,695	687,697	181,483	1,123,626	43,089	1,157,709	284,673	3,909,372	931,759
1974	2,154,071	1,020,756	701,893	190,556	1,148,278	44,784	1,186,531	289,205	3,927,788	972,493
1975	2,327,644	1,071,341	741,054	202,717	1,213,174	47,999	1,249,221	301,029	4,075,744	1,069,105
1976	2,647,821	1,081,229	773,579	209,647	1,266,380	50,312	1,281,131	308,154	4,168,066	1,105,913
1977	2,796,684	1,111,062	843,625	232,366	1,375,757	50,138	1,392,955	330,589	4,836,776	1,233,676
1978	3,277,985	1,182,432	873,339	239,635	1,416,066	59,289	1,625,368	328,369	5,047,982	1,311,659
1979	3,292,688	1,191,971	886,784	247,355	1,431,963	59,867	1,628,276	331,480	5,065,902	1,317,099
1980	3,476,377	1,246,404	913,068	262,757	1,487,784	63,035	1,718,653	341,598	5,281,488	1,365,702
1981	3,708,551	1,324,365	963,071	272,952	1,568,756	67,651	1,994,188	359,640	5,389,491	1,402,935
1982	3,979,393	1,358,913	995,478	284,831	1,622,066	70,118	2,080,659	384,184	5,465,957	1,423,953
1983	9,909,055	1,805,376	2,309,316	608,724	3,703,773	173,207	5,186,637	617,455	10,309,311	2,742,750
1984	10,094,296	1,850,927	2,427,209	651,115	3,898,360	183,752	5,382,895	701,536	10,558,342	2,778,111
1985	10,668,222	1,849,309	2,584,395	701,539	4,155,290	194,812	5,661,283	788,135	11,274,449	2,961,583
1986	11,373,109	2,003,172	2,718,084	724,151	4,373,601	203,871	5,947,190	871,544	11,448,808	3,059,420
1987	11,676,300	1,995,803	2,850,684	759,958	4,643,410	216,710	6,188,636	964,531	11,770,586	3,163,512
1988	12,083,956	2,084,897	3,037,445	800,198	5,002,356	231,124	6,571,788	1,068,534	12,252,451	3,329,312
1989	12,342,428	2,249,663	3,185,583	855,283	5,299,174	243,393	6,832,800	1,162,880	13,053,985	3,538,805
1990	12,669,447	2,271,021	3,312,525	859,110	5,462,805	256,494	7,128,022	1,265,506	12,815,868	3,532,847
1991	12,807,028	2,308,643	3,321,592	879,999	5,477,769	255,538	7,105,592	1,390,578	13,358,126	3,624,628
1992	13,034,314	2,458,717	3,329,808	866,033	5,491,315	256,653	7,159,899	1,525,756	12,929,735	3,535,055
1993	13,185,573	2,392,879	3,335,864	875,691	5,501,314	256,072	7,154,811	1,651,692	13,184,999	3,591,128
1994	13,425,844	2,439,844	3,311,967	861,216	5,461,888	257,409	7,121,456	1,790,125	13,018,697	3,560,680
1995	13,645,941	2,479,871	3,339,380	876,038	5,507,103	258,281	7,163,700	1,926,733	13,202,533	3,597,067
1996	13,873,811	2,476,187	3,323,984	871,908	5,481,713	257,450	7,130,609	1,920,532	13,233,700	3,606,377
1997	14,167,549	2,480,565	3,334,177	884,232	5,498,530	257,954	7,130,888	1,924,305	13,510,131	3,665,280
1998	14,470,721	2,548,815	3,346,240	866,976	5,518,418	258,625	7,203,343	1,929,334	13,112,348	3,592,456
1999	14,768,946	2,625,589	3,327,742	871,045	5,487,914	259,150	7,142,970	1,933,295	13,193,136	3,598,456
2000	15,052,469	2,623,521	3,334,822	873,783	5,499,593	259,394	7,156,352	1,935,134	13,097,729	3,569,830
2001	15,333,304	2,655,138	3,331,570	875,067	5,494,225	259,008	7,144,266	1,932,188	13,278,273	3,616,436
2002	15,705,291	2,665,125	3,348,184	873,269	5,521,629	260,296	7,194,305	1,941,852	13,191,872	3,603,610
2003	16,123,197	2,813,546	3,359,843	878,658	5,540,851	262,259	7,214,326	1,956,593	13,244,295	3,613,607
2004	16,477,115	2,812,104	3,368,226	890,233	5,554,684	262,994	7,211,281	1,962,105	13,496,433	3,666,240
2005	16,389,881	2,871,823	3,346,603	869,913	5,519,014	261,515	7,197,499	1,951,018	13,043,907	3,567,736
2006	16,472,242	2,880,278	3,365,094	878,832	5,549,522	262,911	7,228,428	1,961,493	13,174,350	3,596,158
2007	16,558,354	2,896,168	3,376,677	894,647	5,568,627	264,347	7,224,627	1,972,284	13,528,458	3,670,829
2008	16,471,960	2,914,464	3,364,542	879,845	5,548,602	262,903	7,224,559	1,961,423	13,358,641	3,645,674
2009	16,540,143	3,005,848	3,377,396	891,724	5,569,808	264,035	7,233,249	1,969,922	13,446,815	3,653,860
2010	16,611,854	2,972,834	3,383,716	885,440	5,580,233	265,254	7,264,953	1,979,077	13,388,005	3,652,419
2011	16,521,614	3,039,171	3,375,448	886,034	5,566,597	263,724	7,240,748	1,967,608	13,089,821	3,563,609
2012	16,535,197	3,127,362	3,365,468	872,504	5,550,128	263,951	7,243,733	1,969,301	13,099,245	3,587,353
2013	16,613,890	3,153,108	3,397,904	889,550	5,590,299	265,827	7,294,830	1,983,394	13,147,357	3,585,216
2014	16,508,050	3,131,670	3,377,869	899,002	5,571,194	263,416	7,219,577	1,965,675	13,439,985	3,638,746
2015	16,424,075	3,181,023	3,346,011	870,105	5,518,630	262,008	7,198,119	1,955,105	12,744,876	3,483,975
2016	16,529,636	3,242,828	3,355,865	875,498	5,534,889	263,737	7,215,413	1,968,192	12,983,976	3,546,045
2017	16,156,180	3,105,248	3,303,005	876,480	5,447,726	257,314	7,071,793	1,920,154	12,882,698	3,491,450
2018	15,823,616	2,976,111	3,198,471	809,871	5,275,298	251,512	6,939,917	1,877,074	11,686,452	3,234,727
2019	15,486,993	2,931,710	3,157,796	834,729	5,208,240	245,458	6,779,433	1,832,758	12,161,738	3,304,081
2020	15,362,319	3,463,017	3,100,040	805,073	5,112,984	242,148	6,696,774	1,810,199	11,568,325	3,169,951
2021	15,102,994	3,329,571	2,995,322	769,603	4,940,277	236,688	6,498,964	1,772,345	10,868,409	2,994,576
2022	14,969,109	3,239,724	2,940,121	752,184	4,849,239	234,181	6,391,395	1,754,334	10,451,816	2,892,947
2023	14,918,534	3,223,641	2,923,006	747,438	4,821,013	233,189	6,356,898	1,747,362	10,311,851	2,856,574
2024	14,900,417	3,183,370	2,914,908	743,236	4,807,655	232,867	6,344,745	1,745,007	10,221,862	2,835,947
2025	14,877,300	3,171,516	2,901,661	739,447	4,785,808	232,450	6,318,249	1,741,977	10,139,143	2,814,166
2026	14,864,355	3,161,640	2,891,733	736,741	4,769,435	232,194	6,298,142	1,740,231	10,060,857	2,793,317
2027	14,851,668	3,151,996	2,884,656	734,810	4,757,765	231,969	6,283,775	1,738,589	10,011,310	2,780,138
2028	14,836,105	3,139,340	2,878,706	733,140	4,747,951	231,655	6,271,798	1,736,431	9,974,586	2,770,523
2029	14,818,258	3,113,676	2,875,099	732,209	4,742,003	231,340	6,264,370	1,734,214	9,957,229	2,765,894
2030	14,771,181	3,073,181	2,866,427	730,006	4,727,702	230,553	6,246,451	1,728,310	9,918,114	2,755,168
2031	14,689,697	3,023,724	2,851,587	726,251	4,703,226	229,188	6,215,771	1,718,074	9,851,649	2,736,931
2032	14,616,688	2,997,153	2,839,166	723,109	4,682,742	228,044	6,190,084	1,709,488	9,796,044	2,721,672
2033	14,579,706	2,985,216	2,834,795	722,002	4,675,534	227,643	6,181,035	1,706,480	9,776,425	2,716,288
2034	14,520,667	2,981,997	2,833,069	721,564	4,672,688	227,484	6,177,448	1,705,293	9,768,655	2,714,155
2035	14,093,462	2,978,192	2,830,791	720,986	4,668,930	227,274	6,172,705	1,703,716	9,758,415	2,711,340
TOTAL	812,744,825	162,425,872	175,813,809	46,025,311	289,340,778	13,651,709	376,613,155	94,467,516	693,833,865	188,673,903

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	692,444	0	777,358	0	0	0	0	56,241	1,603,445
1964	21,462	1,264,036	9,296	1,585,168	0	0	0	0	93,958	2,740,949
1965	21,612	2,183,607	17,677	2,686,410	0	0	395	395	163,365	4,695,994
1966	37,665	3,899,625	33,298	4,799,126	0	0	551	551	189,235	7,226,405
1967	70,928	7,691,263	68,008	9,425,511	0	0	549	549	246,204	12,526,188
1968	127,968	15,291,209	142,446	18,443,755	0	0	551	551	319,509	24,327,710
1969	196,524	23,068,465	214,579	27,767,682	0	0	3,116	3,116	386,903	35,116,293
1970	286,712	30,516,993	272,916	37,015,687	0	0	14,768	14,768	423,217	45,150,311
1971	405,589	39,905,195	342,049	48,644,520	0	0	15,633	15,633	412,994	57,716,604
1972	530,090	52,729,805	421,180	63,876,021	0	0	16,969	16,969	438,642	75,060,288
1973	578,677	57,155,581	434,660	69,549,553	0	0	16,930	16,930	412,330	79,849,620
1974	600,182	61,599,293	454,698	74,290,528	0	0	17,074	17,074	434,300	85,407,264
1975	631,141	66,471,424	475,893	79,877,486	0	0	18,006	18,006	444,614	92,329,914
1976	649,252	68,133,473	481,414	82,156,371	0	0	17,102	17,102	463,827	95,764,218
1977	693,829	70,546,120	494,077	85,937,654	0	0	17,138	17,138	479,493	99,861,113
1978	688,125	76,345,359	513,215	92,908,823	0	0	17,138	17,138	489,867	108,056,435
1979	691,156	75,963,047	522,300	92,629,888	0	0	17,138	17,138	518,396	108,937,888
1980	798,959	79,136,352	546,920	96,639,097	0	0	17,138	17,138	518,724	113,201,617
1981	822,157	82,301,579	582,508	100,757,844	0	0	17,138	17,138	519,308	118,741,347
1982	842,281	83,749,874	602,502	102,860,209	0	0	17,138	17,138	518,740	121,861,030
1983	1,498,974	135,897,304	778,573	175,540,455	0	0	17,138	17,138	532,382	212,522,543
1984	1,571,066	135,505,219	815,163	176,417,991	0	0	17,138	17,138	531,758	214,959,275
1985	1,707,080	136,188,628	837,508	179,572,233	0	0	17,138	17,138	531,472	221,461,765
1986	1,782,289	141,342,844	982,832	186,830,915	0	0	17,138	17,138	531,892	234,217,500
1987	1,866,708	141,134,381	1,053,890	188,285,109	0	0	17,138	17,138	531,059	237,738,597
1988	1,983,471	150,982,870	1,254,068	200,682,470	0	0	17,138	17,138	530,683	249,798,684
1989	2,134,583	164,626,661	1,519,452	217,044,690	0	0	17,138	17,138	530,621	268,868,766
1990	2,145,592	170,027,603	1,749,494	223,496,334	0	0	17,138	17,138	530,238	277,571,944
1991	2,205,192	174,216,119	1,774,859	228,725,663	0	0	17,138	17,138	531,872	283,027,884
1992	2,147,577	178,198,702	1,822,552	232,756,116	0	0	17,138	17,138	532,023	287,766,805
1993	2,183,198	177,706,728	1,781,260	232,801,209	0	0	17,138	17,138	532,255	287,742,590
1994	2,162,886	180,096,192	1,756,433	235,264,637	0	0	17,138	17,138	531,880	291,393,540
1995	2,186,640	181,896,446	1,774,944	237,854,677	0	0	17,138	17,138	531,897	293,761,947
1996	2,192,141	182,703,647	1,737,311	238,809,370	0	0	17,138	17,138	530,735	296,468,873
1997	2,229,855	184,735,726	1,748,085	241,567,277	0	0	17,138	17,138	530,723	299,759,789
1998	2,181,282	186,297,903	1,771,193	243,097,654	0	0	17,138	17,138	529,748	299,551,150
1999	2,186,954	190,957,642	1,823,599	248,176,438	0	0	17,138	17,138	529,713	305,266,085
2000	2,169,985	189,979,220	1,806,642	247,358,474	0	0	17,138	17,138	529,676	304,476,770
2001	2,198,510	192,297,110	1,790,741	250,205,836	0	0	17,138	17,138	531,646	309,209,215
2002	2,189,390	192,738,025	1,790,060	251,022,908	0	0	17,138	17,138	531,469	308,875,379
2003	2,195,983	199,072,826	1,852,270	258,128,254	0	0	17,138	17,138	531,343	315,472,398
2004	2,229,856	200,829,515	1,855,265	260,616,051	0	0	17,138	17,138	531,222	318,831,972
2005	2,167,137	200,325,333	1,852,957	259,364,336	0	0	17,138	17,138	531,631	317,995,654
2006	2,185,234	201,887,107	1,838,560	261,280,209	0	0	17,138	17,138	531,693	320,199,662
2007	2,233,170	204,350,930	1,841,575	264,380,693	0	0	17,138	17,138	531,394	323,313,704
2008	2,215,257	205,451,484	1,846,218	265,145,572	0	0	17,138	17,138	531,844	325,184,567
2009	2,222,237	209,542,933	1,879,769	269,597,739	0	0	17,138	17,138	531,309	328,289,300
2010	2,219,496	209,007,546	1,862,314	269,073,141	0	0	17,138	17,138	531,514	327,746,656
2011	2,166,781	210,948,956	1,858,339	270,488,450	0	0	17,138	17,138	531,489	329,016,837
2012	2,178,428	215,527,175	1,889,078	275,208,923	0	0	17,138	17,138	531,600	335,440,150
2013	2,178,991	216,341,356	1,894,736	276,336,458	0	0	17,138	17,138	488,085	335,334,085
2014	2,214,626	215,209,405	1,869,875	275,309,090	0	0	17,138	17,138	451,671	334,117,984
2015	2,116,499	212,603,440	1,861,246	271,565,112	0	0	16,743	16,743	397,219	329,978,986
2016	2,154,165	215,248,395	1,882,431	274,801,070	0	0	16,587	16,587	373,401	331,659,520
2017	2,124,085	207,191,839	1,802,136	265,630,108	0	0	16,589	16,589	333,263	323,272,050
2018	1,959,189	196,409,558	1,719,130	252,160,926	0	0	16,587	16,587	258,008	309,975,185
2019	2,007,584	194,411,567	1,675,934	250,038,021	0	0	14,021	14,021	195,006	307,036,730
2020	1,921,626	188,312,438	1,635,421	243,200,315	0	0	2,370	2,370	173,778	300,120,782
2021	1,812,057	179,974,544	1,576,260	232,871,610	0	0	1,562	1,562	169,857	289,746,565
2022	1,748,770	173,091,489	1,538,040	224,853,349	0	0	209	209	169,044	281,706,157
2023	1,726,125	170,804,783	1,534,616	222,205,030	0	0	209	209	168,336	279,019,509
2024	1,713,004	168,773,558	1,519,759	219,936,335	0	0	207	207	167,850	276,739,932
2025	1,699,485	167,811,415	1,515,379	218,747,996	0	0	204	204	166,075	275,529,507
2026	1,686,512	166,960,560	1,511,092	217,706,809	0	0	203	203	165,642	274,130,466
2027	1,678,331	166,273,906	1,506,778	216,885,691	0	0	200	200	164,639	273,280,762
2028	1,672,370	165,587,809	1,500,871	216,081,285	0	0	200	200	162,908	272,395,648
2029	1,669,523	164,584,012	1,488,686	214,976,513	0	0	200	200	162,349	271,200,459
2030	1,662,932	162,950,205	1,469,540	213,129,770	0	0	200	200	161,891	269,212,248
2031	1,651,728	160,854,145	1,446,268	210,698,239	0	0	200	200	161,218	266,364,694
2032	1,642,355	159,622,444	1,433,647	209,202,636	0	0	200	200	160,454	264,239,042
2033	1,639,049	159,098,194	1,427,897	208,570,264	0	0	200	200	159,901	263,088,371
2034	1,637,741	158,943,492	1,426,347	208,330,600	0	0	200	200	159,643	261,269,128
2035	1,636,016	158,746,739	1,424,514	207,673,080	0	0	200	200	159,637	258,866,301
TOTAL	113,584,024	10,472,922,812	92,235,243	13,532,332,822	0	0	860,179	860,179	28,598,523	16,664,444,282

TABLE B-20: CALCULATION OF DELTA WATER RATES

[values in millions of dollars ($) or millions of acre-feet (AF)[a] discounted to 1977 at 4.462 percent per annum]

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)						
Commencing in 1978:						
Total costs of "initial conservation facilities" to be reimbursed, and project water entitlements to be delivered, during the project repayment period	$1,166.19[d]	84.11 AF	$227.89[e]	84.11 AF	$1,394.08	84.11 AF
less, project power revenues to be realized during the project repayment period[f]	$ 482.25		$ 45.00		$ 527.25	
less, Delta Water Charges paid, and project water entitlements, prior to 1978[g]	$ 67.34	9.79 AF	$ 16.96	9.79 AF	$ 84.30	9.79 AF
Subtotal	$ 616.60	74.32 AF	$165.93	74.32 AF	$ 782.53	74.32 AF
Rate applicable in 1978:	$ 8.30 per acre-foot		$ 2.23 per acre-foot		$ 10.53 per acre-foot	

Program for defining future Additional Facilities is currently under review. Future costs of these Additional Facilities are not reflected in the above rates. There will be substantial increase in the rates when these facilities are constructed.

a) *Metric conversion is acre-feet times 1233.5 equals cubic metres.*

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 .0008107 equals dollars per cubic metre.*

d) *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 $5,696,446 for settlement as to the magnitude of project capital costs incurred during the 1961 through 1972 period.*

e) *Includes conservation power costs and credits at San Luis.*

f) *Applying all conservation power revenues at Oroville to reimbursement of capital costs, except that portion equal to specific operating costs of power facilities under the Oroville Revenue Bond Resolution ($1,500,000 annually beginning in 1970).*

g) *Applying all Delta Water Charges paid prior to 1970 to reimburse capital costs (the Charge is not divided into components until 1970).*

TABLE B-21: TOTAL DELTA WATER CHARGE FOR EACH CONTRACTOR

Data Not Available

TABLE B-22: TOTAL TRANSPORTATION AND DELTA WATER CHARGE FOR EACH CONTRACTOR

Data Not Available

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	24.65	24.65
County of Butte	0	0	0	0	27.09	27.09
Plumas County Flood Control and Water Conservation District	15.03	0.19	0	15.22	24.44	39.66
Feather River Area	0.82	0.01	0	0.83	26.32	27.15
NORTH BAY AREA						
Napa County Flood Control and Water Conservation District	49.75	10.77	22.85	83.37	35.47	118.84
Solano County Flood Control and Water Conservation District	19.86	3.18	7.50	30.54	28.30	58.84
North Bay Area	30.82	5.96	13.13	49.91	30.93	80.84
SOUTH BAY AREA						
Alameda County Flood Control and Water Conservation District, Zone 7	13.39	8.96	26.09	48.44	24.04	72.48
Alameda County Water District	12.49	6.97	22.91	42.37	19.91	62.28
Santa Clara Valley Water District	16.24	6.09	19.74	42.07	17.50	59.57
South Bay Area	15.00	6.75	21.45	43.20	19.08	62.28
SAN JOAQUIN VALLEY AREA						
County of Kings	3.58	1.32	8.49	13.39	21.75	35.14
Devil's Den Water District	8.09	5.83	12.76	26.68	17.86	44.54
Dudley Ridge Water District	4.27	1.56	7.52	13.35	19.06	32.41
Empire West Side Irrigation District	3.11	1.14	6.37	10.62	17.13	27.75
Hacienda Water District	4.57	1.67	7.88	14.12	19.97	34.09
Kern County Water Agency	7.72	3.22	12.15	23.09	22.27	45.36
Oak Flat Water District	1.57	0.69	4.69	6.95	18.13	25.08
Tulare Lake Basin Water Storage District	4.18	1.53	7.48	13.19	19.38	32.57
San Joaquin Valley Area	7.14	2.97	11.38	21.49	21.72	43.21
CENTRAL COASTAL AREA						
San Luis Obispo County Flood Control and Water Conservation District	107.82	19.23	69.81	196.86	39.34	236.20
Santa Barbara County Flood Control and Water Conservation District	103.63	17.06	70.34	191.03	32.43	223.46
Central Coastal Area	104.73	17.63	70.20	192.56	34.25	226.81
SOUTHERN CALIFORNIA AREA						
Antelope Valley-East Kern Water Agency	31.71	8.29	77.18	117.18	27.78	144.96
Castaic Lake Water Agency	73.69	20.38	53.58	147.65	47.31	194.96
Coachella Valley County Water District	35.46	13.18	91.14	139.78	24.03	163.81
Crestline-Lake Arrowhead Water Agency	44.15	15.69	94.89	154.73	25.02	179.75
Desert Water Agency	36.03	13.39	91.94	141.36	24.20	165.56
Littlerock Creek Irrigation District	24.87	8.05	75.63	108.55	24.28	132.83
Mojave Water Agency	35.27	13.30	99.80	148.37	26.89	175.26
Palmdale Water District	35.32	11.31	88.73	135.36	37.13	172.49
San Bernardino Valley Municipal Water District	47.81	16.48	66.02	130.31	24.42	154.73
San Gabriel Valley Municipal Water District	45.63	16.06	67.82	129.51	25.02	154.53
San Gorgonio Pass Water Agency	54.78	19.22	75.48	149.48	26.18	175.66
The Metropolitan Water District of Southern California	50.03	15.20	54.34	119.57	29.07	148.64
Ventura County Flood Control District	46.01	12.97	57.51	116.49	27.64	144.13
Southern California Area	48.21	14.82	58.95	121.98	28.69	150.67
ALL AREAS	30.35	9.56	37.38	77.29	25.46	102.75

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; 4.462 percent per annum.

b) Metric conversion is dollars per acre-foot times 0.0008107 giving dollars per cubic matre.

TABLE B-24: EQUIVALENT UNIT 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	15 11	2.78	6.85	24.74	15.11	2.78	6.85	24 74
2	5 88	.54	.00	6.42	20 99	3 32	6.85	31.16
3	26.93	7.02	16 73	50.68	47.92	10.34	23 58	81 84
SOUTH BAY AQUEDUCT								
1	5.17	4.28	16 67	26 12	6.34	5.00	22.78	34 12
2	.47	.52	.00	.99	6.81	5 52	22 78	35 11
4	1 70	84	.00	2 54	8 51	6 36	22 78	37.65
5	3.64	1 01	.00	4.65	12 15	7.37	22.78	42 30
6	.20	.13	.00	33	12.35	7.50	22.78	42.63
7	1 69	08	.00	1.77	14.04	7 58	22.78	44 40
8	2 53	.16	.00	2.69	16.57	7.74	22.78	47 09
9	4 94	57	.00	5 51	21.51	8.31	22.78	52 60
CALIFORNIA AQUEDUCT								
1	1.17	72	6 11	8.00	1.17	72	6.11	8 00
2A	.90	17	00	1.07	2 07	89	6 11	9 07
2B	.44	.08	00	.52	2.51	97	6 11	9 59
3	36	08	00	44	2.87	1 05	6.11	10 03
4	.66	43	3 00	4.09	3 53	1.48	9 11	14 12
5	.60	.10	00	70	4 13	1.58	9 11	14 82
6	.16	.03	00	19	4 29	1.61	9 11	15 01
7	.46	.07	.00	53	4.75	1.68	9 11	15.54
8C	.01	02	.00	.03	4 76	1.70	9.11	15 57
8D	.29	.10	00	39	5.05	1.80	9.11	15.96
9	.21	.08	00	.29	5.26	1 88	9.11	16.25
10A	.25	.09	.00	.34	5.51	1.97	9.11	16 59
11B	.36	.06	.00	.42	5 87	2 03	9.11	17 01
12D	.34	06	.00	.40	6 21	2 09	9.11	17 41
12E	23	08	.00	.31	6 44	2.17	9.11	17 72
13B	50	12	.00	.62	6 94	2.29	9.11	18 34
14A	1 84	.74	5 06	7 64	8 78	3.03	14 17	25.98
14B	.28	.11	.00	39	9 06	3.14	14 17	26.37
14C	.24	.08	00	32	9 30	3.22	14 17	26.69
15A	1.30	.69	5.85	7.84	10.60	3.91	20.02	34 53
16A	2.14	1.11	12 88	16.13	12.74	5 02	32 90	50 66
17E	7.72	1 92	43 30	52.94	20.46	6 94	76 20	103.60
17F	2.08	.04	00	2.12	22.54	6.98	76 20	105.72
18A	1.27	.21	-1 67	-.19	23 81	7 19	74 53	105.53
19	1.29	.54	00	1.83	25.10	7.73	74.53	107 36
19C	15.11	.60	.00	15.71	40.21	8.33	74 53	123.07
20A	1.14	55	.00	1.69	26.24	8 28	74.53	109 05
20B	1.57	54	.00	2 11	27.81	8.82	74.53	111 16
21	.80	33	.00	1.13	28.61	9 15	74.53	112 29
22A	.52	20	00	.72	29.13	9 35	74.53	113 01
22B	6 20	3.54	16.09	25.83	35.33	12 89	90.62	138 84
23	34	11	.00	45	35.67	13.00	90.62	139.29
24	4 15	1 07	.00	5 22	39 82	14.07	90.62	144 51
25	2.09	.01	.00	2.10	41.91	14.08	90.62	146 61
26A	3.02	1 47	-22.92	-18.43	44 93	15.55	67.70	128 18
28G	4.40	.39	00	4.79	49.33	15.94	67.70	132 97
28H	4.36	.15	.00	4 51	53 69	16.09	67 70	137.48
28J	12.54	5 16	00	17.70	66.23	21 25	67.70	155 18
WEST BRANCH								
29A	2.15	1 90	5.43	9 48	24 69	8 88	81 63	115.20
29F	1.35	.40	00	1.75	26 04	9.28	81.63	116.95
29G	4.28	1.08	-13 72	-8 36	30 32	10 36	67 91	108.59
29H	3.29	1 06	.00	4 35	33 61	11 42	67.91	112.94
29J	5.95	.24	-21 21	-15 02	39 56	11.66	46.70	97 92
30	9.48	1 59	00	11 07	49 04	13.25	46 70	108.99
COASTAL BRANCH								
31A	5 37	5.64	6.84	17.85	10 42	7 44	15 95	33 81
33A	67.25	4.12	49.41	120.78	77 67	11.56	65.36	154 59
34	5.99	63	.00	6.62	83.66	12.19	65 36	161 21
35	19.88	1.34	00	21 22	103 54	13.53	65.36	182 43

a) Representative of water transportation costs only; does not include conservation costs. The Delta Water Rate should be added to these values in order to approximate total water costs at canalside. Includes surplus water prior to May 1, 1973.

b) Metric conversion is dollars per acre-foot times .0008107 equals dollars per cubic metre.

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 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; 4.462 percent per annum.

TABLE B-25: ANNUAL SURPLUS WATER DELIVERIES

(in acre-feet)[a]

Area/Agency	Calendar Year			
	1973[b]	1974	1975	1976
SOUTH BAY AREA				
Alameda County Flood Control and Water Conservation District, Zone 7	0	0	0	3,636
Alameda County Water District	0	0	0	4,147
Santa Clara Valley Water District	2,499	2,934	18,470	24,705
Total	2,499	2,934	18,470	32,488
SAN JOAQUIN VALLEY AREA				
Devil's Den Water District	4,104	4,128	7,495	5,727
Dudley Ridge Water District	13,192	33,391	40,555	30,922
Empire West Side Irrigation District	2,814	1,539	3,448	3,457
Hacienda Water District	5,600	1,972	3,759	3,720
Kern County Water Agency	163,774	299,433	410,820	442,150
Oak Flat Water District	1,013	3,471	3,576	3,840
Tulare Lake Basin Water Storage District	63,988	68,989	132,206	57,806
Total	254,485	412,923	601,859	547,622
SOUTHERN CALIFORNIA AREA				
Littlerock Creek Irrigation District	80	67	356	0
Total	80	67	356	0
GRAND TOTAL	257,064	415,924	620,685	580,110

a) Metric conversion is acre-feet times 1233.5 equals cubic metres.
b) May through December only.

TABLE B-26: POWER COSTS FOR PUMPING SURPLUS WATER

(in dollars)

Area/Pumping Plant	Calendar Year							
	1973[a]		1974		1975		1976	
	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
CALIFORNIA AQUEDUCT								
Reach 1								
Delta Pumping Plant	0	231,691	0	374,506	299,555	619,600	60,502	597,636
Reach 4								
Dos Amigos Pumping Plant	37,033	102,725	81,328	181,827	127,278	264,977	63,788	225,126
Reach 14A								
Buena Vista Pumping Plant	25,622	53,375	69,381	95,596	99,676	99,745	85,415	103,213
Reach 15A								
Wheeler Ridge Pumping Plant	29,816	12,819	62,301	22,550	30,049	313	8,579	4,885
Reach 16A								
Wind Gap Pumping Plant	0	1,697	0	5,599	0	661	0	5,385
Reach 17E								
A. D. Edmonston (Tehachapi) P.P.	0	526	0	450	0	2,391	0	0
Reach 31A								
Las Perillas & Badger Hill Pumping Plants	15,588	24,245	31,511	33,406	32,481	50,013	30,449	45,101
TOTAL	113,349	433,380	266,294	721,495	621,327	1,085,297	290,630	1,065,068
COMBINED TOTAL	546,729		987,789		1,706,624		1,355,698	

a) May through December only.

TABLE B-27: POWER, REPLACEMENT, AND ADMINISTRATIVE CHARGE FOR SURPLUS WATER DELIVERIES

(in dollars)

Area/Agency	Calendar Year			
	1973	1974	1975	1976
SOUTH BAY AREA				
Alameda County FC&WCD, Zone 7				
Capacity	0	0	0	5,873
Energy	0	0	0	13,116
Replacement	0	0	0	252
Administrative	0	0	0	1,640
Total	0	0	0	20,881
Alameda County Water District				
Capacity	0	0	0	6,126
Energy	0	0	0	14,959
Replacement	0	0	0	286
Administrative	0	0	0	1,758
Total	0	0	0	23,129
Santa Clara Valley Water District				
Capacity	5,290	21,773	42,153	32,954
Energy	8,554	10,203	65,969	89,116
Replacement	-	-	1,216	1,703
Administrative	1,916	3,451	5,023	7,675
Total	15,760	35,427	114,361	131,448
SAN JOAQUIN VALLEY AREA				
Devil's Den Water District				
Capacity	2,722	3,308	7,972	4,473
Energy	8,712	9,105	17,011	13,047
Replacement	-	0	259	288
Administrative	1,573	1,187	2,038	1,779
Total	13,007	13,600	27,280	19,587
Dudley Ridge Water District				
Capacity	2,603	6,394	23,216	6,629
Energy	17,235	44,892	58,225	44,658
Replacement	-	-	1,052	1,316
Admnistrative	5,056	10,006	11,029	10,804
Total	24,894	61,292	93,522	63,407
Empire West Side Irrigation District				
Capacity	342	324	2,333	685
Energy	3,676	2,069	4,950	4,993
Replacement	-	-	89	143
Administrative	1,078	460	938	1,074
Total	5,096	2,853	8,310	6,895
Hacienda Water District				
Capacity	244	654	2,665	1,588
Energy	7,316	2,652	5,397	5,373
Replacement	-	-	97	153
Administrative	2,146	953	1,022	2,197
Total	9,706	4,259	9,181	9,311
Kern County Water Agency				
Capacity	90,152	216,862	441,640	220,439
Energy	302,474	555,925	732,538	792,366
Replacement	-	-	15,889	24,127
Administrative	62,767	95,360	111,724	162,001
Total	455,393	868,147	1,301,791	1,198,933
Oak Flat Water District				
Capacity	0	0	1,644	424
Energy	913	3,125	3,557	3,956
Replacement	-	-	58	119
Administrative	728	998	972	1,216
Total	1,641	4,123	6,231	5,715
Tulare Lake Basin Water Storage District				
Capacity	11,808	16,713	97,316	11,425
Energy	83,596	92,750	189,808	83,484
Replacement	-	-	3,428	2,378
Administrative	24,523	40,687	35,954	19,750
Total	119,927	150,150	326,506	117,037
SOUTHERN CALIFORNIA AREA				
Littlerock Creek Irrigation District				
Capacity	188	266	820	14
Energy	904	774	4,149	0
Replacement	-	-	138	0
Administrative	63	47	97	6
Total	1,155	1,087	5,204	20
TOTAL, ALL CONTRACTORS				
Capacity	113,349	266,294	619,759	290,630
Energy	433,380	721,495	1,081,604	1,065,068
Replacement	-	-	22,226	30,722
Administrative	99,850	153,149	168,797	209,900
Total	646,579	1,140,938	1,892,386	1,596,320

TABLE B-28: PROJECTED ANNUAL SURPLUS WATER DELIVERIES

Data Not Available

TABLE B-29: PROJECTED POWER COSTS FOR PUMPING SURPLUS WATER

Data Not Available

TABLE B-30: PROJECTED UNIT POWER RATES FOR PUMPING SURPLUS WATER

Data Not Available

TABLE B-31: COMMITMENT FOR THE COST OF POWER FOR PUMPING SURPLUS WATER[a]

(in dollars)

Contractor	Year of Obligation				
	1978	1979	1980	1981	1982
Antelope Valley-East Kern Water Agency					
Surplus Water Requested (acre-feet)	0	0	0	0	43,216
Obligation Incurred (dollars)	0	0	0	0	668,300
Devil's Den Water District					
Surplus Water Requested (acre-feet)	0	0	0	0	4,000
Obligation Incurred (dollars)	0	0	0	0	18,100
Dudley Ridge Water District					
Surplus Water Requested (acre-feet)	43,300	23,100	39,100	37,000	42,805
Obligation Incurred (dollars)	15,800	29,000	27,100	48,000	126,400
Empire Westside Irrigation District					
Surplus Water Requested (acre-feet)	0	0	0	0	3,000
Obligation Incurred (dollars)	0	0	0	0	8,900
Hacienda Water District					
Surplus Water Requested (acre-feet)	4,600	4,900[b]	5,200	5,600	5,900
Obligation Incurred (dollars)	2,000	0	3,600	6,700	17,800
Kern County Water Agency					
Surplus Water Requested (acre-feet)	584,790	462,100	554,900	509,617	777,073
Obligation Incurred (dollars)	278,200	873,000	655,500	802,500	2,863,200
Santa Clara Valley Water District					
Surplus Water Requested (acre-feet)	12,000	12,000	12,000	12,000	12,000
Obligation Incurred (dollars)	13,300	10,800	22,800	65,000	95,700
Tulare Lake Basin Water Storage District					
Surplus Water Requested (acre-feet)	170,400	140,000	203,500	158,700	154,800
Obligation Incurred (dollars)	30,800	173,000	141,200	98,000	452,600
Totals					
Surplus Water Requested (acre-feet)	815,090	642,100	814,700	722,917	1,042,794
Obligation Incurred (dollars)	340,100	1,085,800	850,200	1,020,200	4,251,000

a) Metric conversion is acre-feet times 1233.5 equals cubic metres.
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.

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INDEX TO TABULAR MATERIAL IN BULLETIN

SUBJECT MATTER	BULLETIN 132-77 TABLE NO.	TABLE TITLE	CORRESPONDING TABLE NOS. IN PREVIOUS BULLETINS 132 1976	1975	1974	1973	1972	1971	1970	1969	1968	1967	1966	1965	1964	1963
		MAIN TEXT (with allowance for future capital price escalation, for financial planning purposes)														
PROJECTED ANNUAL OPERATIONS	1	Annual Water Requirements	1	1	1	1	1	1	1	1	3	4	5	7	8	6,9
	4	Annual Project Energy Requirements for Pumping	4	4	3	3	3	3	3	3	4,5	6,7	6,7	8,9	9,10	10,11
ACTUAL OPERATIONS FOR PRIOR YEAR	2	Entitlement and Surplus Water	2	2	none	none	none	none	none	none	none	none	none	none	none	none
	3	Water Deliveries in 1976	3	3	2	2	2	2	2	none	none	none	none	none	none	none
	5	Water Quality Measurements at Selective Stations	5	5	4	4	none	none	none	none	none	none	none	none	none	none
	6	Monthly Power Operations in 1976	6	6	5	5	7	7	7	7	none	none	none	none	none	none
PROJECTED ANNUAL FINANCING OF CAPITAL AND OPERATING EXPENDITURES	*	Project Financial Analysis, December 31, 1975	7	7	6	6	8	14-16	13-15	14-16	21-24	23-26	23,24 26	24-27	24,25 27-31	40,42
	7	Project Capital Expenditures	8	8	7	7	9	9,11	8,10	8,11	10,13	19,15	19,15	20,16	22,17	12
	*	Bond Sales and Project Interest Rates	9	9	8	8	10	8	none	none	none	none	none	none	none	none
	8	Project Operating Costs	10	10	9	9	11	12,13	11,12	12,13	18,19	14,16	14,16	15,17	15,20 21	15
	*	Annual Service on Bonds Sold as of January 31, 1976	11	11	10	10	12,13	none	none	none	none	none	none	none	none	none
	*	Annual Service on Assumed Future Bond Sales	12	12	11	11	12,13	18	17	18	26	28	28	29	34	43
		APPENDIX B (No allowance for future price escalation, for billing purposes)														
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	B-2	Factors for Distributing Reach Minimum OMP&R Costs Among Contractors	B-2	B-2	B-2	B-2	B-2	B-2	B-2	B-2	B-2	B-3	B-3	B-3	C-3	26-29
VARIABLE COSTS	B-3	Power Costs and Credits and Annual Replacement Deposits for Each Aqueduct Pumping and Power Recovery Plant	B-3	B-3	B-3	B-3	B-3	B-3	B-3	B-3	B-4	B-8	B-8	B-9	C-7	none
ANNUAL WATER DELIVERY QUANTITIES	B-4	Annual Entitlements to Project Water	B-4	B-4	B-4	B-4	B-4	B-4	B-4	B-4	B-6	5	4	6	7	6
	B-5A	Annual Water Quantities Delivered from Each Aqueduct Reach to Each Contractor	B-5A	B-5	B-5	B-5	B-5	B-5	B-5	B-5	B-7	B-4	B-4	B-5	C-4	5
	B-5B	Annual Water Quantities Delivered to Each Contractor	B-5B	B-5	none	none	none	none	none	none	none	none	none	none	none	none
	B-6	Annual Water Quantities Conveyed thru Each Pumping and Power Recovery Plant of Project Transportation Facilities	B-6	B-6	B-6	B-6	B-6	B-6	B-6	B-6	B-3	B-5	B-5	B-6	C-5	8
RECONCILIATION OF CAPITAL EXPENDITURES	B-7	Reconciliation of Capital Costs Allocated to Water Supply and Power Generation for the Period 1952-1999	B-7	B-7	B-7	B-7	B-7	B-7	B-7	B-7	B-8	none	none	none	none	none
	B-8	Capital Costs of Requested Delivery Structures to be Built by the State	B-8	B-8	B-8	B-8	B-8	B-8	B-8	B-8	B-9	none	none	none	none	none
	B-9	Capital Costs of Requested Excess Peaking Capacity	B-9	B-9	B-9	B-9	B-9	B-9	B-9	B-9	B-10	B-6	B-6	B-7	none	none
COSTS PAID THRU — TRANSPORTATION CHARGE	B-10	Capital Costs of Each Aqueduct Reach to be Reimbursed thru Capital Cost Component of Transportation Charge	B-10	B-10	B-10	B-10	B-10	B-10	B-10	B-10	B-11	B-7	B-7	B-8	C-6	17-19
	B-11	Minimum OMP&R Costs of Each Aqueduct Reach to be Reimbursed thru Minimum OMP&R Component of Transportation Charge	B-11	B-11	B-11	B-11	B-11	B-11	B-11	B-11	B-13	B-9	B-9	B-11	C-8	20-22
	B-12	Variable OMP&R Costs to be Reimbursed thru Variable OMP&R Component of Transportation Charge	B-12	B-12	B-12	B-12	B-12	B-12	B-12	B-12	B-14	B-10	B-10	B-12	C-9	23-25
COSTS PAID THRU — DELTA WATER CHARGE	B-13	Capital and Operating Costs of Project Conservation Facilities to be Reimbursed thru Delta Water Charge	B-13	B-13	B-13	B-13	B-13	B-13	B-13	B-13	B-12	none	none	none	none	16
RE-DETERMINED ANNUAL TRANSPORTATION CHARGE FOR EACH WATER CONTRACTOR	B-14	Capital Costs of Transportation Facilities Allocated to Each Contractor	B-14	B-14	B-14	B -14	B-14	B-14	B-14	B-14	B-17	B-11	B-11	B-13	C-10	33
	B-15	Capital Cost Component of Transportation Charge for Each Contractor	B-15	B-15	B-15	B-15	B-15	B-15	B -15	B-15	B-18	B-12	B-12	B-14	C-11	34
	B-16	Minimum OMP&R Component of Transportation Charge for Each Contractor	B-16	B-16	B-16	B-16	B-16	B-16	B-16	B-16	B-19	B-13	B-13	B-15	C-12	35
	B-17	Unit Variable OMP&R Component of Transportation Charge	B-17	B-17	B-17	B-17	B-17	B-17	B-17	B-17	B-5	B-14	B-14	B-16	C-13	none
	B-18	Variable OMP&R Component of Transportation Charge for Each Contractor	B-18	B-18	B-18	B-18	B-18	B-18	B-18	B-18	B-20	B-15	B-15	B-17	C-14	36
	B-19	Total Transportation Charge for Each Contractor	B-19	B-19	B-19	B-19	B-19	B-19	B-19	B-19	B-21	B-16	B-16	B-18	C-15	37
FUTURE DELTA WATER RATES	B-20	Calculation of Delta Water Rates	B-20	B-20	B-20	B-20	B-20	B-20	B-20	B-20	none	none	none	none	none	30
TOTAL CHARGES	B-21*	Total Delta Water Charge for Each Contractor	B-21	none	none	none	none	none	none	none	none	none	none	none	none	none
	B-22*	Total Transportation and Delta Water Charge for Each Contractor	B-22	none	none	none	none	none	none	none	none	none	none	none	none	none
EQUIVALENT COSTS OF WATER	B-23	Equivalent Unit Charges for Water Supply for Each Contractor	B-23	B-21	B-21	B-21	B-21	B-21	B-21	B-23	B-23	none	none	none	none	39
	B-24	Equivalent Unit Costs of Water Delivered From or Thru Each Aqueduct Reach	B-24	B-22	B-21	B-22	B-22	B-22	none	none	none	none	none	none	none	none
SURPLUS WATER SERVICE AND CHARGES	B-25	Annual Surplus Water Deliveries	B-25	none	none	none	none	none	none	none	none	none	none	none	none	none
	B-26	Power Costs for Pumping Surplus Water	B-26	none	none	none	none	none	none	none	none	none	none	none	none	none
	B-27	Power, Replacement and Administrative Charge for Surplus Water Deliveries	B-27	none	none	none	none	none	none	none	none	none	none	none	none	none
	B-28*	Projected Annual Surplus Water Deliveries	B-28	none	none	none	none	none	none	none	none	none	none	none	none	none
	B-29*	Projected Power Costs for Pumping Surplus Water	B-29	none	none	none	none	none	none	none	none	none	none	none	none	none
	B-30*	Projected Unit Power Rates for Pumping Surplus Water	B-30	none	none	none	none	none	none	none	none	none	none	none	none	none
	B-31	Commitment for the Cost of Power for Pumping Surplus Water	B-31	none	none	none	none	none	none	none	none	none	none	none	none	none

* Table not included in this Bulletin.

PROJECT
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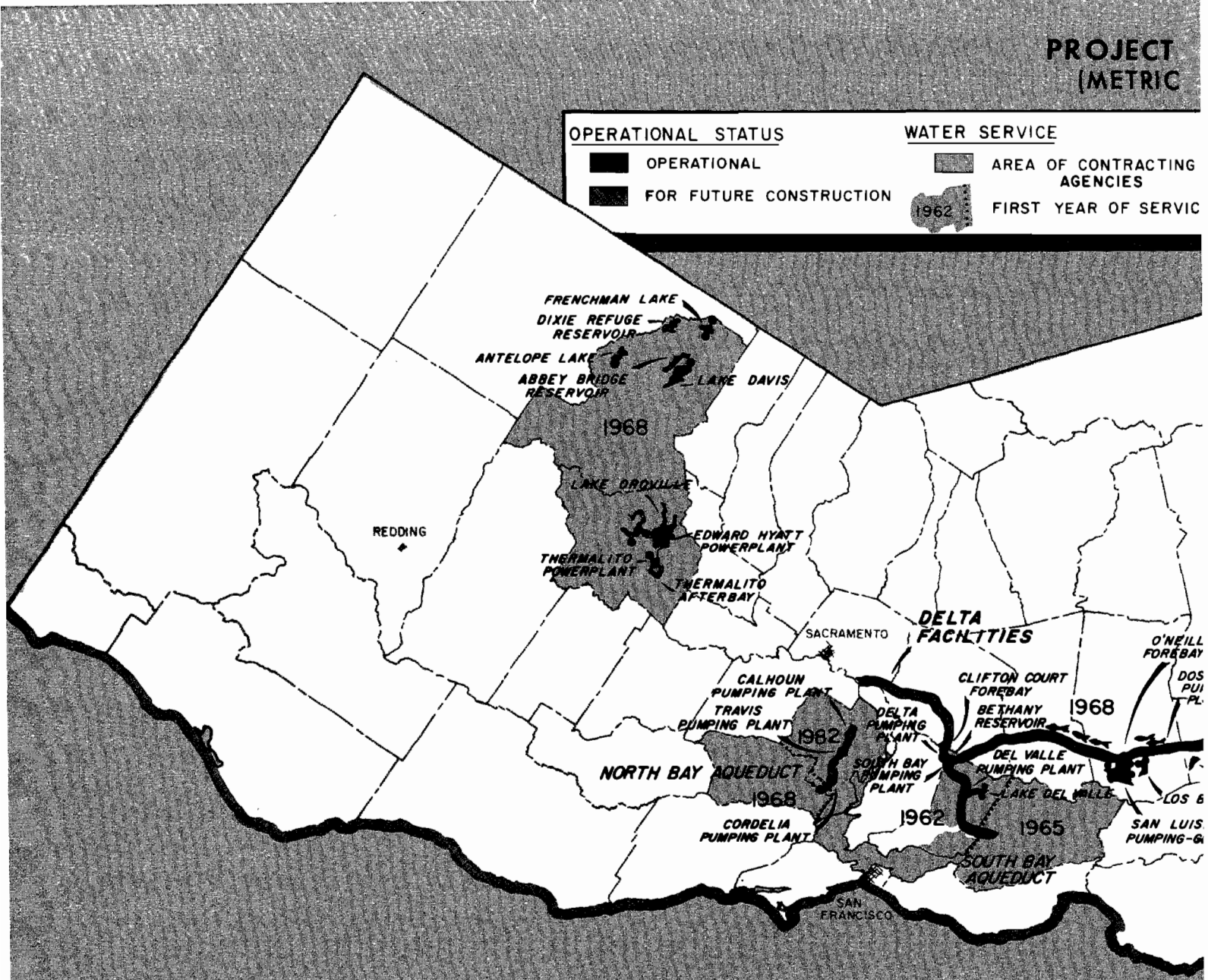


25 DAMS AND RESERVORS

	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
Abbey Bridge	55.51	789	33.8	1 669	36	351	382 300
Dixie Refuge	19.74	364	24.1	1 754	30	320	305 800
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	1 070 300
Lake Del Valle	95.11	429	25.8	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	8 460.96	23 669	867.5			52 695	206 909 700

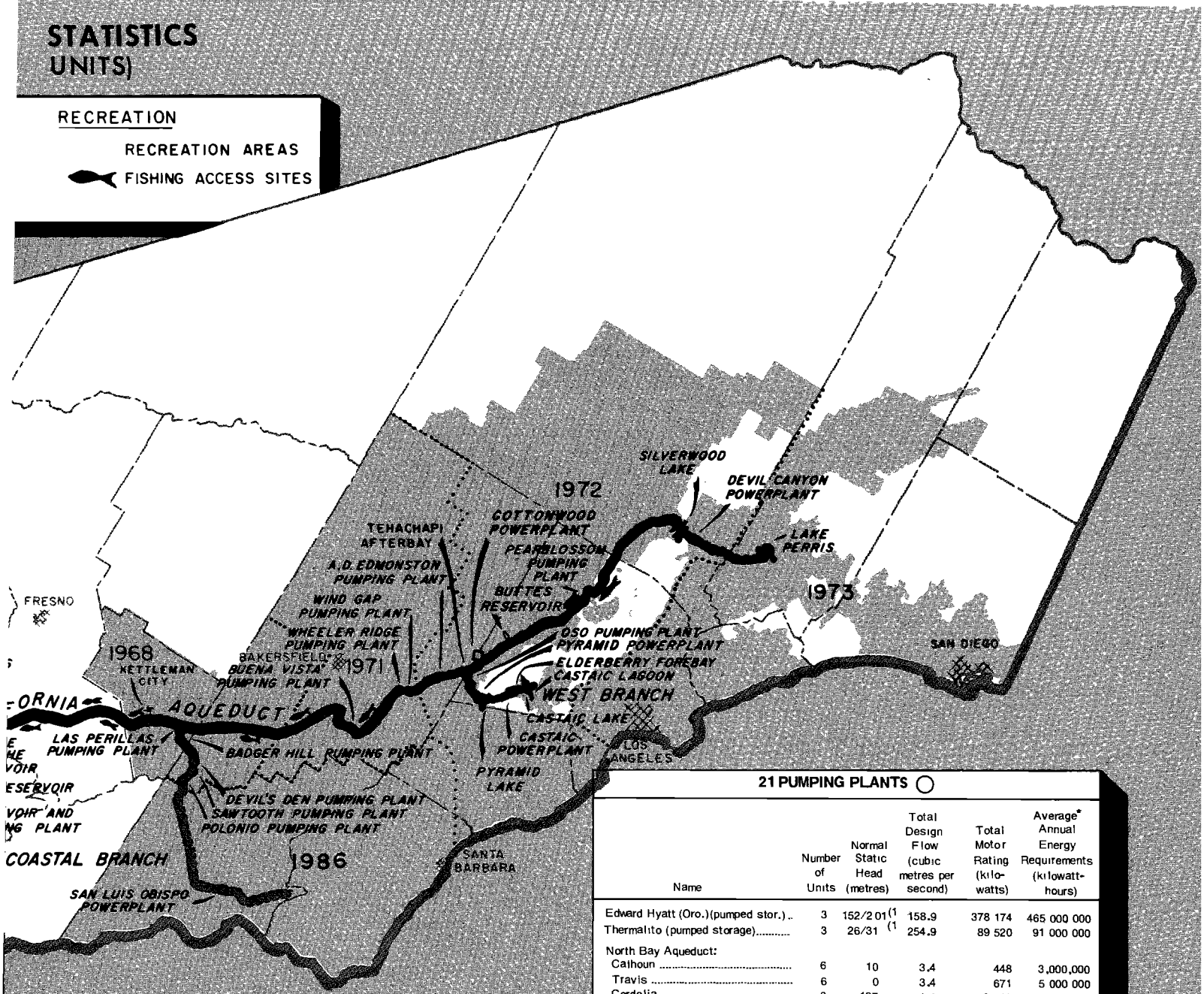
1) Above sea level.

AQUEDUCTS

	Length (kilometres)				
Name	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
Subtotal	111 7	36.5	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	1 032.3	694.5	279.5	33.0	25.3

1) Does not include Delta Facilities

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	170 000 000
Cottonwood	1	43	46.4	15 000	115 000 000
Devil Canyon	2	432	34.0	119 700	1 003 000 000
Pyramid	2	226	87.8	157 000	1 001 000 000
Castaic					
Total	7	324	521.0	1 250 000	
State Share (2			87.6	214 000	1 457 000 000
San Luis Obispo	1	223	3.1	5 900	41 000 000
Total, State Share					6 645 000 000

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.

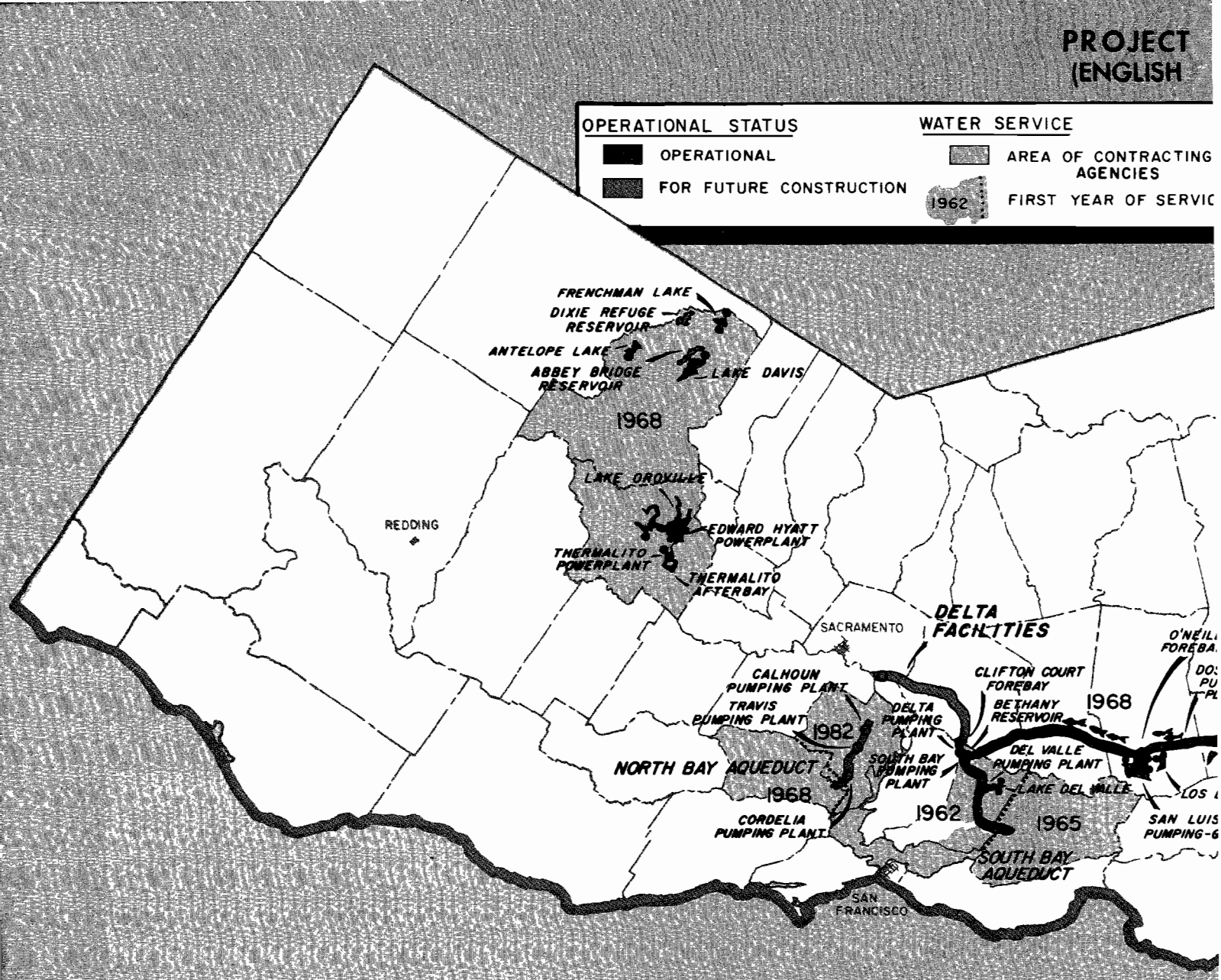
* Under full development

21 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	378 174	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	3,000,000
Travis	6	0	3.4	671	5 000 000
Cordelia	3	137	1.4	2 313	14 000 000
South Bay Aqueduct:					
South Bay	9	166	9.3	20 702	166 000 000
Del Valle	4	0/12(2	3.4	746	2 000 000
California Aqueduct (main line):					
Delta	11	74	291.8	248 418	1 355 000 000
San Luis					
Total	8	30/100(2	311.5	375 984	
State Share			163.2	196 944	313 000 000
Dos Amigos					
Total	6	34	373.8	179 040	
State Share			201.1	96 980	607 000 000
Buena Vista	10(3	62	143.0	101 456	746 000 000
Wheeler Ridge	9(3	71	130.2	104 440	797 000 000
Wind Gap	9(3	158	124.9	229 268	1 761 000 000
A. D. Edmonston (Tehachapi)	14(3	587	116.0	757 840	5 916 000 000
Pearblossom	6	165	39.1	84 447	647 000 000
California Aqueduct (branches):					
Oso	8	70	88.6	69 975	446 000 000
Las Perillas	6	70	12.7	3 021	20 000 000
Badger Hill	6	46	12.7	7 833	56 000 000
Devil's Den	4	125	7.6	5 968	51 000 000
Sawtooth	4	101	3.6	4 849	41 000 000
Polonio	4	247	3.6	11 936	101 000 000
Total, State Share(4					13 603 000 000

1) Minimum and maximum total pumping heads.
2) Minimum and maximum static heads.
3) Includes one spare unit.
4) Does not include Delta Facilities.

* Under full development.



25 DAMS AND RESERVOIRS

Name of Reservoir	Reservoirs: Capacity (Acre-feet)	Surface Area (acres)	Shore-line (miles)	Dams: Crest Elevation (1 (feet)	Structural Height (feet)	Crest Length (feet)	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
Abbey Bridge	45,000	1,950	21	5,475	117	1,150	500,000
Dixie Refuge	16,000	900	15	5,754	100	1,050	400,000
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	6,859,299	58,491	539			172,880	270,629,500

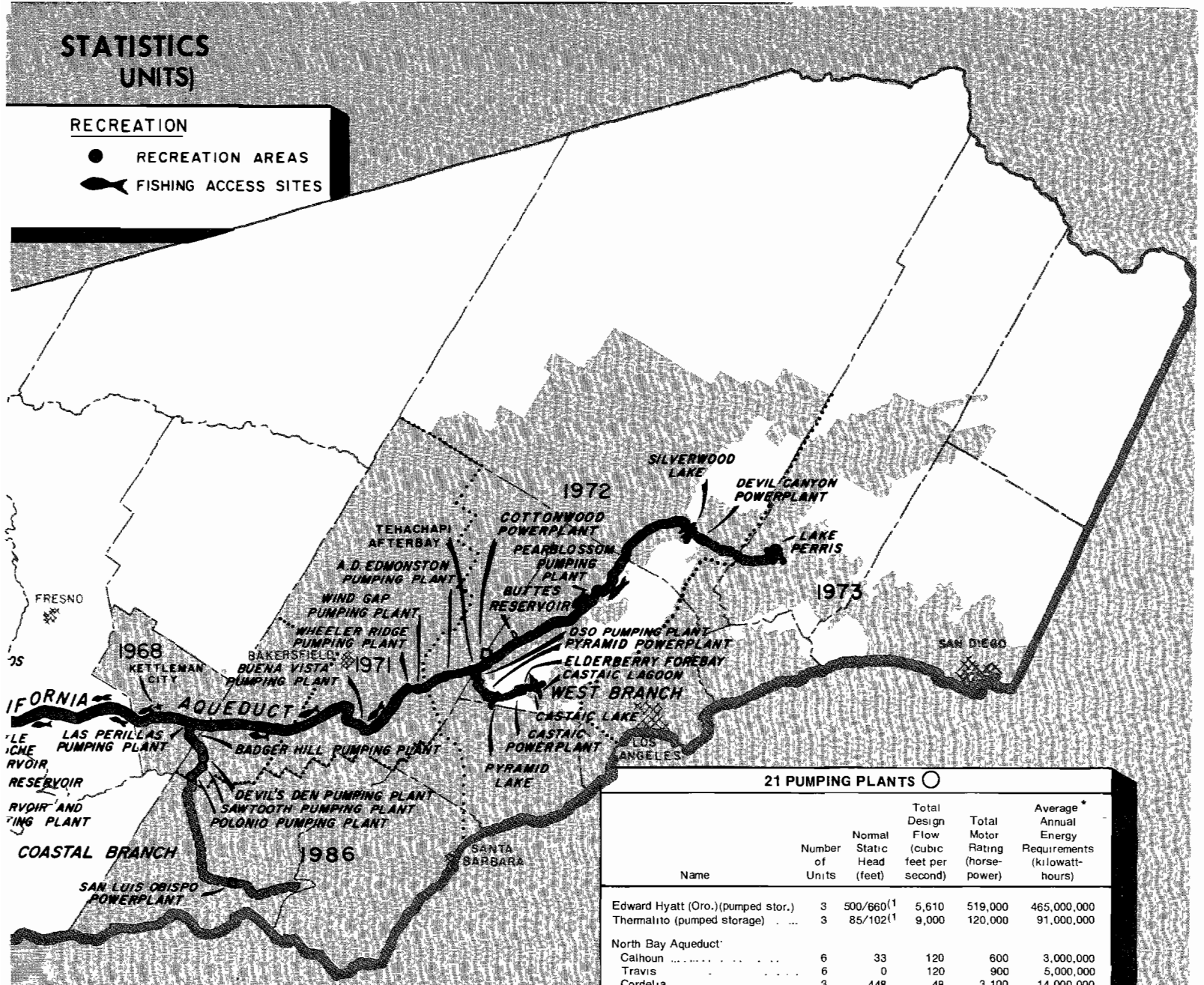
1) Above sea level.

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
Subtotal	69.4	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	641.5	431 6	173.7	20.5	15.7

1) Does not include Delta Facilities

STATISTICS
UNITS)



8 POWERPLANTS □

Name	Number of Units	Normal Static Head (feet)	Total Design Flow (cubic feet per second)	Power Generator Output (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	170,000,000
Cottonwood	1	140	1,637	15,000	115,000,000
Devil Canyon . .	2	1,418	1,200	119,700	1,003,000,000
Pyramid	2	740	3,100	157,000	1,001,000,000
Castaic					
Total	7	1,063	18,400	1,250,000	
State Share(2 . .			3,092	214,000	1,457,000,000
San Luis Obispo . .	1	730	111	5,900	41,000,000
Total, State Share					6,645,000,000

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

21 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	3,000,000
Travis	6	0	120	900	5,000,000
Cordelia	3	448	48	3,100	14,000,000
South Bay Aqueduct					
South Bay	9	545	330	27,750	166,000,000
Del Valle	4	0/38(2	120	1,000	2,000,000
California Aqueduct (main line)					
Delta	11	244	10,303	333,000	1,355,000,000
San Luis					
Total	8	99/327(2	11,000	504,000	
State Share			5,762	264,000	313,000,000
Dos Amigos					
Total	6	113	13,200	240,000	
State Share			7,100	130,000	607,000,000
Buena Vista	10(3	205	5,049	136,000	746,000,000
Wheeler Ridge	9(3	233	4,598	140,000	797,000,000
Wind Gap	9(3	518	4,410	308,000	1,761,000,000
A. D. Edmonston (Tehachapi) . .	14(3	1,926	4,095	1,040,000	5,916,000,000
Pearblossom	6	540	1,380	113,200	647,000,000
California Aqueduct (branches)					
Oso	8	231	3,128	93,800	446,000,000
Las Perillas	6	55	450	4,050	20,000,000
Badger Hill	6	151	450	10,500	56,000,000
Devil's Den	4	409	126	8,000	51,000,000
Sawtooth	4	331	126	6,500	41,000,000
Polonio	4	810	126	16,000	101,000,000
Total, State Share(4					13,603,000,000

1) Minimum and maximum total pumping heads.
2) Minimum and maximum static heads.
3) Includes one spare unit.
4) Does not include Delta Facilities

* Under full development.

CONVERSION FACTORS

English to Metric System of Measurement

Quantity	English unit	Multiply by	To get metric equivalent
Length	inches (in)	25.4	millimetres (mm)
		.0254	metres (m)
	feet (ft)	.3048	metres (m)
	miles (mi)	1.6093	kilometres (km)
Area	square inches (in^2)	6.4516×10^{-4}	square metres (m^2)
	square feet (ft^2)	.092903	square metres (m^2)
	acres	4046.9	square metres (m^2)
		.40469	hectares (ha)
		.40469	square hectometres (hm^2)
		.0040469	square kilometres (km^2)
	square miles (mi^2)	2.590	square kilometres (km^2)
Volume	gallons (gal)	3.7854	litres (l)
		.0037854	cubic metres (m^3)
	million gallons (10^6 gal)	3785.4	cubic metres (m^3)
	cubic feet (ft^3)	.028317	cubic metres (m^3)
	cubic yards (yd^3)	.76455	cubic metres (m^3)
	acre-feet (ac-ft)	1233.5	cubic metres (m^3)
		.0012335	cubic hectometres (hm^3)
		1.233×10^{-6}	cubic kilometres (km^3)
Volume/Time (Flow)	cubic feet per second (ft^3/s)	28.317	litres per second (l/s)
		.028317	cubic metres per second (m^3/s)
	gallons per minute (gal/min)	.06309	litres per second (l/s)
		6.309×10^{-5}	cubic metres per second (m^3/s)
	million gallons per day (mgd)	.043813	cubic metres per second (m^3/s)
Mass	pounds (lb)	.45359	kilograms (kg)
	tons (short, 2,000 lb)	.90718	tonne (t)
		907.18	kilograms (kg)
Power	horsepower (hp)	0.7460	kilowatts (kW)
Pressure	pounds per square inch (psi)	6894.8	pascal (Pa)
Temperature	Degrees Fahrenheit (°F)	$\frac{tF - 32}{1.8} = tC$	Degrees Celsius (°C)

CALIFORNIA DEPARTMENT OF WATER RESOURCES

THE RESOURCES AGENCY