

BULLETIN 132-01 DECEMBER 2002

MANAGEMENT OF THE CALIFORNIA STATE WATER PROJECT



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Cover photo shows a houseboat on Lake Oroville with Bidwell Bar Bridge in the background.

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Management of the California State Water Project

Covers Activities during Calendar Year 2000



Gray Davis, Governor
State of California

Mary D. Nichols, Secretary for Resources
The Resources Agency

Thomas M. Hannigan, Director
Department of Water Resources



Foreword



Bulletin 132-01, *Management of the California State Water Project*, continues the Bulletin 132 annual series begun in 1963. Bulletin 132-01 updates water supply planning, construction, financing, management, and operation activities of the State Water Project. Appendix B contains data and computations used to determine the State Water Project contractors' Statement of Charges for 2002. Appendix B was previously published as an individual document.

The Bulletin discusses significant events and issues that affect SWP management and operations. The Bulletin covers the period from January 1, 2000, to December 31, 2000.

Bulletin 132-01 also discusses water supply and delivery; the continuation of construction of the East Branch Extension; Delta resources and environmental issues, including the CALFED Bay-Delta Program; Oroville facilities relicensing; financial analysis of the SWP; and the update of business systems in the Department.

Thomas M. Hannigan
Director

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California Water Commission



The California Water Commission serves as a policy advisory body to the Director of Water Resources on all California water resources matters. The citizen commission provides a water re-

sources forum for the people of the State, acts as a liaison between the legislative and executive branches of State government, and coordinates federal, State, and local water resources efforts.

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Abbreviations and Acronyms

A

AB Assembly Bill

ADA Americans with Disabilities Act

AEWSD Arvin-Edison Water Storage District

AFRP Anadromous Fish Restoration Plan

AWMP Agricultural Water Management Plan

B

BBID Byron-Bethany Irrigation District

BDAC Bay-Delta Advisory Council

BMWD Berrenda Mesa Water District

Bureau Bureau of Reclamation

BWSD Belridge Water Storage District

C

CALFED State (CAL) and federal (FED) agencies participating in the Bay-Delta Accord

CalPX California Power Exchange

CCSG Cantua Creek Stream Group

CCWA Central Coast Water Authority or Contra Costa Water Agency

CCWD Contra Costa Water District

CD Conservation District

CDEC California Date Exchange Center

CEA Capacity Exchange Agreement

CEQA California Environmental Quality Act

CESA California Endangered Species Act

cfs cubic feet per second

CIMIS California Irrigation Management Information System

COA Coordinated Operation Agreement

Corps U.S. Army Corps of Engineers

CVC Cross Valley Canal

CVHJV Central Valley Habitat Joint Venture

CVP Central Valley Project

CVPIA Central Valley Project Improvement Act

CVRWQCB Central Valley Regional Water Quality Control Board

D

D-1485 State Water Resources Control Board Water Right Decision 1485

DBW Department of Boating and Waterways

DCVCW Direct Cross Valley Canal Wheeling

DEIR draft environmental impact report

DFG California Department of Fish and Game

DHS California Department of Health Services

DLRD Delta Lands Reclamation District

DO dissolved oxygen

DOC dissolved organic carbon

DOE Department of Energy or Division of Engineering

DOI U.S. Department of the Interior or Delta Outflow Index

DSM2 Delta Simulation Model 2

DSOD Division of Safety of Dams

E

EA/IS Environmental Assessment/Initial Study

EBRPD East Bay Regional Park District

ECAT Environmental Coordination Advisory Team

ECCID East Contra Costa Irrigation District

EHV Extra-High Voltage

EIR environmental impact report

EIS environmental impact statement

EPA U.S. Environmental Protection Agency

ESO Environmental Services Office

ESU Evolutionarily Significant Unit

Et_o Reference Evapotranspiration

EWA Environmental Water Account

F

FERC Federal Energy Regulatory Commission

FLIMS Field and Laboratory Information Management System

G

gpm gallons per minute

H

HMP Hazard Mitigation Plan

I

ICR Information Collection Rule

IEP Interagency Ecological Program

IFDM Integrated on-Farm Drainage Management

INDP Interim North Delta Plan

ISDP Interim South Delta Program

ISI Integrated Storage Investigation

ISO California Independent System Operator

K

kV kilovolt

KWB Kern Water Bank

kWh kilowatt hour

L

LADWP Los Angeles Department of Water and Power

LHWD Lost Hills Water District

LTRID Lower Tule River Irrigation District

M

MCL maximum contaminant level

MCWA Mokelumne-Cosumnes Watershed Alliance

mg/L milligrams per liter

MIDS Morrow Island Distribution System

MOP Musco Olive Products

MTBE methyl tertiary butyl ether

MW megawatt

MWQI Municipal Water Quality Investigations

N

NDOI Net Delta Outflow Index

NEPA National Environmental Policy Act

NMFS National Marine Fisheries Service

NPC Nevada Power Company

NPDES National Pollutant Discharge Elimination System

O

O&M Division of Operations and Maintenance

OM&P operations, maintenance, and power

OMP&R operations, maintenance, power, and replacement

OM&R operations, maintenance, and replacement

P

PCL Planning and Conservation League

PG&E Pacific Gas and Electric Company

pH [p(otential) of H(ydrogen)]

PID Pixley Irrigation District

ppt parts per thousand

PSA Public Service Announcement

PX California Power Exchange Corporation

Q

QA/QC Quality Assurance/Quality Control

R

RD reclamation district

RMR Reliability Must-Run

RMS Reliability Management System

ROD Record of Decision

S

SAP System Application Products

SB Senate Bill

SCE Southern California Edison

SDIP South Delta Improvements Program

SDTBP South Delta Temporary Barriers Project

SDWA South Delta Water Agency

SEW Suisun Ecological Workgroup

SJVDIP San Joaquin Valley Drainage
Implementation Program

SJRA San Joaquin River Agreement

SLFD San Luis Field Division

SMPA Suisun Marsh Preservation Agreement

SMSCG Suisun Marsh Salinity Control Gates

SPPC Sierra Pacific Power Company

SRB State Reclamation Board

SRCD Suisun Resource Conservation District

SVUR Sacramento Valley Unimpaired Runoff

SWP State Water Project

SWRCB State Water Resources Control Board

SWSD Semitropic Water Storage District

T

TOC total organic carbon

U

UCLA University of California at Los Angeles

USFWS U.S. Fish and Wildlife Service

USGS U.S. Geological Survey

V

VAMP Vernalis Adaptive Management Plan

W

WAM Water Awareness Month

WQA water quality assessment

WQCP Water Quality Control Plan

WR 95-6 SWRCB Order Water Right 95-6

WRMWSD Wheeler Ridge-Maricopa Water Storage
District

WWD Westlands Water District

WSCC Western Systems Coordinating Council

Y

YCWA Yuba County Water Agency

The State Water Contractors are listed below, followed by shortened forms of their names that are used in Bulletin 132 instead of acronyms.

Alameda County Flood Control and Water Conservation District, Zone 7	Alameda-Zone 7
Alameda County Water District	Alameda County
Antelope Valley-East Kern Water Agency	AVEK
Castaic Lake Water Agency	Castaic Lake
City of Yuba City	Yuba City
Coachella Valley Water District	Coachella
County of Butte	Butte
County of Kings	Kings
Crestline-Lake Arrowhead Water Agency	Crestline
Desert Water Agency	Desert
Dudley Ridge Water District	Dudley Ridge
Empire-West Side Irrigation District	Empire
Kern County Water Agency	Kern
Littlerock Creek Irrigation District	Littlerock
Metropolitan Water District of Southern California	Metropolitan
Mojave Water Agency	Mojave
Napa County Flood Control and Water Conservation District	Napa
Oak Flat Water District	Oak Flat
Palmdale Water District	Palmdale
Plumas County Flood Control and Water Conservation District	Plumas
San Bernardino Valley Municipal Water District	San Bernardino
San Gabriel Valley Municipal Water District	San Gabriel
San Geronio Pass Water Agency	San Geronio
San Luis Obispo County Flood Control and Water Conservation District	San Luis Obispo
Santa Barbara County Flood Control and Water Conservation District	Santa Barbara
Santa Clara Valley Water District	Santa Clara
Solano County Water Agency	Solano
Tulare Lake Basin Water Storage District	Tulare
Ventura County Flood Control District	Ventura

Executive Summary



An example of flood irrigation. The State Water Project provides water for crops throughout California.



The Bulletin 132 series began in 1963 and reported the first deliveries of water by the new State Water Project, which was still under construction. Bulletin 132-01, *Management of the California State Water Project*, continues the series with the thirty-eighth edition. It reports planning, construction, financing, managing, and operating activities of the SWP in 2000. The SWP is operated and maintained by the California Department of Water Resources.

40 Years Since the Burns-Porter Act Passed

The year 2000 commemorated the fortieth year since voters approved Proposition 1, the \$1.75 billion general obligation bond that provided funds to construct SWP's initial facilities. The Burns-Porter Act, formally known as the California Water Resources Development Bond Act, was placed on the November 1960 ballot.

On November 8, the Burns-Porter Act was approved by a slim margin of 173,944 votes from about 5.8 million ballots counted.

The SWP made its initial deliveries in 1962 to water agencies in Alameda County. In 1965, service began to the Santa Clara Valley Water District. In 1968, service was extended into the central and southern San Joaquin Valley, and in the early 1970s deliveries began to Southern California.

As of November 15, 2000, the SWP had provided more than 60 million acre-feet of water since deliveries began.

The bond issue and interest are being repaid by the 29 water agencies with long-term SWP water contracts.

2000 Highlights

The SWP is one of the largest water and power systems in the world. It has conveyed an aver-

age annual 2.4 million acre-feet of water to the long-term water contractors through its 17 pumping plants, 8 hydroelectric power plants (including 3 pumping-generating plants), 28 dams and reservoirs, and more than 660 miles of aqueducts and pipelines.

In 2000, the SWP delivered 4,932,032 acre-feet of water to 27 of its 29 long-term water contractors and 17 other agencies. The project provides water for approximately 23 million people throughout the State, irrigation for 600,000 acres of farmland, and environmental benefits to wildlife refuges, as well as environmental mitigation programs.

The SWP facilitated the transfer or exchange of 303,802 acre-feet of approved Table A water among SWP long-term contractors and non-SWP agencies, delivered 301,146 acre-feet of CVP water conveyed through SWP facilities, and provided 1,101,481 acre-feet to water rights holders within the SWP service area.

Construction of Phase I of the East Branch Extension for San Bernardino and Riverside Counties continued with work on the Crafton Hills Reservoir and Dam, pipeline Reach 3, and Greenspot, Crafton Hills, and Cherry Valley Pump Stations. The project, when completed, will convey water to the San Geronio Pass Water Agency service area.

The Department continued to be its own energy scheduling coordinator with the California

Independent Systems Operator and to schedule the purchase and sale of energy to operate the SWP in 2000.

The project continued to pay bondholders as scheduled and remained financially viable. The long-term water contractors continued to repay project construction bonds and operating expenses. In 2000, the SWP handled approximately \$660 million in income and approximately \$660 million in expenses, with general fund contributions limited to recreation facilities.

2000 Precipitation and Water Storage

The water stored and delivered by the SWP conservation and transportation facilities originates from rainfall and snowmelt in Northern and Central California watersheds, where most of the State's precipitation occurs.

The Department monitors and records annual precipitation and runoff during water years, which run from October 1 to September 30.

Precipitation in Water Year 1999-00

Water year 1999-00 was the second La Niña year in a row, with its typical wetter north—drier south pattern. Considering the total seasonal amounts, statewide precipitation was close to average. The total precipitation, however, masked some strong monthly variations. Most of the rainy season was dry, especially in the south, where drought prevailed until January. Most of the rain and snow in the State fell between mid-January and mid-March.

October and November statewide precipitation was about 70 percent of average, with a strong north-to-south gradient. This downward trend did not improve in December. In fact, northern Sierra precipitation dropped from 90 percent to about 60 percent of average by the end of December, and the statewide snowpack was at a very low 20 percent of average.

Conditions began to change dramatically in mid-January, with storms sweeping through the State. By the end of February, northern Sierra precipitation had risen to approximately 110 percent of average, and statewide snowpack was monitored at 125 percent of average. Storms across Central California produced great amounts of rain in February, raising February precipitation in Central California to 250 percent of average, and twice average statewide.

The wet weather stopped in mid-March with a precipitation average of 55 percent in the northern Sierra. Statewide snowpack peaked on March 13 and dropped to average by April 1, due to northeasterly winds and fair and warmer weather causing snowmelt and hence some losses to the snowpack, especially at lower elevations. However, brief storm activity from mid-March to mid-April slowed the snowpack melt.

Although precipitation during the spring and summer months was slightly below average in the northern part of the State, and despite the lack of precipitation from October through December in the north and near drought conditions for those months in the south, the water year closed with a statewide estimate of 95 percent of average precipitation.

Precipitation in the First Quarter of Water Year 2000-01

Substantial rains in October 2000 brought statewide precipitation levels to twice average. However, this trend was quickly reversed in November and December, which were very dry. Snowpack for the first quarter of water year 2000-01 was also low, with the highest monitored amount (in the northern State) at only 45 percent of average, and reservoir storage dropped to 105 percent statewide.

Runoff

The statewide 1999-00 water year runoff totaled 95 percent of average. Statewide runoff during October through December was 45 percent of

average, but climbed to 180 percent of average in February and gradually receded to 95 percent of average by the end of the water year. Unimpaired inflow to Lake Oroville from the Feather River was 4.2 million acre-feet.

The very dry November and December of water year 2000-01 contributed to a statewide unimpaired runoff of 35 percent of average for the 3 months ending December 2000.

Storage

Reservoir storage in the SWP at the end of the 1999-00 water year was 87 percent of average, compared to 107 percent of average at the end of water year 1998-99. Total storage was approximately 2.95 million acre-feet at the end of calendar year 2000, compared to 3.53 million acre-feet in calendar year 1999.

2000 Water Supplies, Contracts, and Deliveries

Water Deliveries

In March 2000, the Department announced projected deliveries of 3.62 million acre-feet of approved Table A water in 2000, 100 percent of the amount requested by the 29 long-term water contractors. Unusually dry conditions beginning in mid-March caused a reduction in approved Table A amounts to 3.42 million acre-feet or 90 percent of contractors' requests. The SWP met all contractors' demands for annual Table A water. Table ES-1 shows SWP water deliveries by category for the years 1962-00.

In 2000, 4,932,032 acre-feet of water were conveyed to 27 long-term contractors and 17 other agencies. The SWP delivered 3,199,907 acre-feet of approved Table A water. In addition, a total of 308,785 acre-feet of Article 21 and unscheduled water was delivered to the SWP long-term contractors.

Nonproject Water. The long-term water contractors received 78,605 acre-feet of nonproject water.

The SWP also delivered 4,030 acre-feet of recreation / fish and wildlife water and 1,408,540 acre-feet of water to satisfy water rights settlement holders and agreements made with SWP contractors and other agencies, including the Bureau of Reclamation.

Water rights water is transported through SWP facilities to long-term SWP contractors and other agencies, according to terms of various local water right agreements. Water may pass through SWP transportation facilities or a portion may be stored in SWP reservoirs for release at a later time.

Two South Bay Aqueduct contractors holding water rights to runoff from the Lake Del Valle watershed received 15,331 acre-feet of local water; 264 acre-feet of local runoff were delivered to a contractor in Southern California under local water rights; and nine nonproject agencies in the Feather River area received 1,085,886 acre-feet.

The Feather River water rights settlement contractors are agencies that held water rights for Feather River water before the SWP was built. The Department negotiated settlements with these water rights holders and agreed to deliver a regulated water supply from Oroville in exchange for the agencies' agreement concerning their Feather River water rights.

In addition, the Department conveyed 301,146 acre-feet of CVP water through SWP facilities for the Bureau.

Specific information regarding delivery amounts and locations can be found in Chapter 9.

Delta Resources and Environmental Issues

The 738,000-acre Delta is the heart of California's water environment. The Delta, at the convergence of the Sacramento and San Joaquin Rivers, is a network of islands, sloughs, marshes, and reclaimed farmland that stretches

Table ES-1. SWP Water Delivered by Category, 1962-00 (Acre-feet)

Table A Water				Other SWP Water Deliveries					
Year	Municipal and Industrial	Agricultural	Total	Article 21		Other Water ^a	Feather River Diversions ^b	Fish and Wildlife/ Recreation Water	Total Deliveries
				Municipal and Industrial	Agricultural				
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	
1962						18,289			18,289
1963						22,456			22,456
1964						32,507			32,507
1965						44,105			44,105
1966						67,928			67,928
1967	5,747	5,791	11,538	0	0	53,605			65,143
1968	46,472	125,237	171,709	10,000	111,534	14,777	866,926		1,174,946
1969	34,434	158,586	193,020	0	72,397	18,829	794,374		1,078,620
1970	47,996	185,997	233,993	0	133,024	38,080	759,759		1,164,856
1971	85,286	272,054	357,340	2,400	293,619	44,119	778,362	8	1,475,848
1972	181,066	430,735	611,801	22,205	401,759	66,638	817,398	6,489	1,926,290
1973	293,824	400,564	694,388	3,161	293,255	42,511	800,743	1,155	1,835,213
1974	418,521	455,556	874,077	4,753	412,923	46,224	911,613	2,118	2,251,708
1975	641,621	582,369	1,223,990	21,043	601,859	63,793	862,218	3,377	2,776,280
1976	818,588	554,414	1,373,002	32,488	547,622	115,217	946,440	1,745	3,016,514
1977	280,919	293,236	574,155	0	0	389,065	581,994	1,111	1,546,325
1978	742,385	710,314	1,452,699	3,566	13,348	121,225	786,517	1,691	2,379,046
1979	690,659	969,237	1,659,896	66,081	582,308	187,630	882,549	1,766	3,380,230
1980	730,545	799,204	1,529,749	19,722	384,835	46,459	875,045	2,131	2,857,941
1981	1,057,273	852,289	1,909,562	12,000	896,428	279,161	838,557	4,688	3,940,396
1982	928,721	821,303	1,750,024	0	215,873	154,882	776,330	4,646	2,901,755
1983	483,499	701,370	1,184,869	0	13,019	181,453	602,905	7,849	1,990,095
1984	725,925	862,694	1,588,619	3,663	259,254	381,024	832,332	7,040	3,071,932
1985	992,538	1,002,915	1,995,453	9,638	298,034	404,842	870,008	4,033	3,582,008
1986	998,611	997,025	1,995,636	2,595	34,025	193,606	791,737	3,865	3,021,464
1987	1,096,368	1,033,718	2,130,086	6,949	107,958	377,592	831,947	7,672	3,462,204
1988	1,316,820	1,068,302	2,385,122	0	0	507,076	794,834	4,889	3,691,921
1989	1,602,454	1,251,293	2,853,747	0	0	474,559	830,500	8,135	4,166,941
1990	1,876,072	706,079	2,582,151	0	90	424,697	875,099	9,262	3,891,299
1991	536,669	12,444	549,113	3,521	0	551,051	565,395	4,879	1,673,959
1992	961,649	509,805	1,471,454	1,156	0	144,789	613,978	2,605	2,233,982
1993	1,064,866	1,250,369	2,315,235	0	0	254,854	822,589	2,609	3,395,287
1994	1,134,992	614,359	1,749,351	48,150	64,475	236,739	874,018	8,200	2,980,933
1995	801,570	1,165,523	1,967,093	17,984	46,346	78,425	860,077	2,575	2,972,500
1996	1,145,638	1,369,187	2,514,825	12,091	16,556	251,391	934,997	3,907	3,733,767
1997	1,258,456	1,067,319	2,325,775	2,814	18,618	322,000	993,211	4,146	3,666,564
1998	864,795	860,724	1,725,519	9,982	10,306	134,682	872,738	2,108	2,755,335
1999	1,405,299	1,333,592	2,738,891	61,191	96,879	85,312	1,108,672	4,324	4,095,269
2000	2,022,703	1,177,204	3,199,907	170,302	138,483	333,424	1,085,886	4,030	4,932,032
Total	27,292,981	24,600,808	51,893,789	547,455	6,064,827	7,205,016	27,439,748	123,053	93,273,888

^aIncludes water conveyed for SWP and non-SWP water contractors.^bIncludes amounts of water diverted according to various water right agreements.

from Sacramento to San Francisco Bay. A source of drinking water for about two-thirds of California's population, the Delta also provides irrigation for the Central Valley, which produces 55 percent of the country's fruits and vegetables.

The State Water Resources Control Board has adopted water quality control plans and policies to protect the Delta's water quality and ecosystem while at the same time maintaining SWP water supply reliability.

Bay-Delta Water Right Hearings

Implementation of the Bay-Delta Plan.

SWRCB addressed implementation of the 1995 *Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary* through a water right hearing process staged in eight phases. Phases 1 through 7 of the hearing process were concluded in 1999, and on December 29, 1999, SWRCB certified both the *Final Environmental Impact Report for Implementation of the Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary* and the *Final Environmental Impact Report for Consolidated and Conformed Place of Use*. Approval of these EIRs signified implementation of the 1995 Bay-Delta Plan and approval of the Department and the Bureau's request to be allowed to divert or redivert water from each others' points of diversion in the southern Delta.

In early 2000, SWRCB received a number of communications from water rights holders, including the Department and the Bureau, requesting an extension of time before the start of the Phase 8 proceedings. The Department, the Bureau, State Water Contractors, and Northern California water associations began negotiating to determine, among other things, how CALFED negotiations might interface with Phase 8.

Throughout the remainder of 2000, SWRCB convened workshops to receive comments to assist in developing key issues for Phase 8, and also monitored the ongoing negotiations among the parties. In June 2000, the Department requested

that SWRCB postpone Phase 8 until early 2001 to provide parties an opportunity to resolve certain Phase 8 issues. The Bureau, federal export water users, and upstream Sacramento River users supported this request.

CALFED Bay-Delta Program

The CALFED Bay-Delta Program is a cooperative effort among State and federal agencies and California's environmental, urban, and agricultural communities. CALFED was started in 1995 to address environmental and water management problems associated with the Bay-Delta system, the intricate web of waterways created at the junction of the San Francisco Bay and the San Joaquin River system and the watershed that feeds them.

CALFED released the *Draft Programmatic Environmental Impact Statement/Environmental Impact Report for the Bay-Delta Program* on June 25, 1999, followed by a 90-day public comment period that ended September 23, 1999.

The Final EIS / EIR, released in July 2000, was the result of unprecedented collaboration among State and federal agencies and stakeholders.

In 2000, the CALFED Bay-Delta Program published a plan to fix Delta water problems (ecosystem health, water quality, levee system integrity, and water supply reliability) and address its major water challenges over the next 30 years. The Department has vigorously supported CALFED, seeing it as a means of developing and managing the State's water resources to benefit the public and the environment, as well as meet the water requirements of the SWP.

Agreement on the plan was jointly announced by State and federal authorities on June 9, 2000, and the plan was formalized in a Record of Decision issued on August 28, 2000. The Department assumed a leading role in implementation of the plan, including programs related to water storage, Delta conveyance, Delta levee system integrity, watershed

management, water use efficiency, and water quality.

CALFED actions in 2000 included developing a contingency plan to reduce critical water shortages, continuing Integrated Storage Investigation operations, establishing operating principles and a financial plan for the Environmental Water Account, and identifying south Delta improvements.

Critical Water Storage Contingency Plan.

The Governor's Advisory Drought Planning Panel developed a contingency plan to reduce the impacts of critical water shortages for both agricultural and urban water users. The report, released in December 2000, recommended a number of actions to improve the State's ability to respond to water shortages when they occur.

Integrated Storage Investigation. CALFED started the ISI Program in 1999. It is a coordinated series of investigations designed to look at storage as a tool for improving water supply reliability. A partnership, composed of CALFED agencies, including the Department and the Bureau, is executing the program.

There are seven ISI elements that collectively provide a comprehensive assessment of alternate storage options. They include

- comprehensive planning and storage strategy
- north of Delta offstream storage study
- in-Delta and off-aqueduct storage facilities
- onstream storage enlargement
- surface and groundwater conjunctive management
- hydroelectric facilities reoperation
- fish passage improvement

Environmental Water Account. The Environmental Water Account is a cooperative management program intended to provide protection for the fish of the Bay-Delta estuary through environmentally beneficial changes and increased flexibility in the operations of the

SWP and CVP, at no uncompensated water cost to the projects' water users. Responsibility for implementing EWA rests with the National Marine Fisheries Service, U.S. Fish and Wildlife Service, and the Department of Fish and Game (management agencies) as well as with the Bureau and the Department (project agencies). Management of EWA is guided by the EWA Operating Principles Agreement dated August 28, 2000, and subsequent agreements between the participating agencies.

South Delta Improvements Program. In 1999, CALFED included the Interim South Delta Program as a component. The program was renamed the *South Delta Improvements Program*. The purpose of SDIP, slightly revised from that of the former ISDP, is to

- improve the reliability of existing SWP facilities;
- ensure that water of adequate quantity and quality is available for diversion to the South Delta Water Agency's service area for beneficial use; and
- reduce the effects of SWP exports on both aquatic resources and direct losses of fish in the south Delta.

A Draft Environmental Impact Statement / Environmental Impact Report for SDIP is scheduled for release in early 2001 and a Final EIR / EIS is scheduled for release in late 2002. Once the Final EIR / EIS is completed, a Notice of Determination and Record of Decision will be filed. State and federal regulatory agencies may then act on permits required to construct and operate the proposed facilities.

Status of Threatened Listings

Northern California Steelhead Trout. The NMFS listed the steelhead, Northern California Evolutionarily Significant Unit, as a threatened species under the Federal Endangered Species Act.

Previously Listed Steelhead Trout. Critical habitat designations were issued by NMFS

under FESA for previously listed steelhead, including Central Valley, Central California Coast, South-central California Coast, and Southern California ESU.

Chinook Salmon. Critical habitat designations were issued by NMFS under FESA for the previously listed Central Valley spring-run Chinook salmon ESU and the California Coastal Chinook salmon ESU.

Although proposed as a candidate species for listing in 1999, NMFS determined that listing for Central Valley fall-run and late fall-run Chinook salmon ESUs was not warranted.

Splittail. USFWS previously listed the Sacramento splittail as a threatened species under FESA. On June 29, 2000, a federal district court judge invalidated the listing. The judge remanded the decision to USFWS for further scientific analysis and review.

Consultation/Actions on Listed Species. The Department and the Bureau consulted with NMFS and DFG about the potential impact of SWP and CVP operations on steelhead and spring-run chinook salmon. A 1-year biological opinion and take authorization for these species was provided in 1999 and again in 2000.

The Department and the Bureau prepared a Biological Assessment in 2000 on the effects of the SWP and CVP on the two species. The Department and the Bureau, through the CALFED

Operations Group, continued the Spring-Run Chinook Salmon Protection Plan to provide greater and more immediate protection for the species during fall 2000.

Power Resources

In 2000, SWP pumping plants consumed 9.19 billion kWh of energy and power plants generated 6.37 billion kWh of energy. The Department sold 2.92 billion kWh of energy in 2000 to 24 utilities and 16 power marketers for total revenues of \$167.02 million. The Department also received \$190.24 million in revenues for capacity, exchanges, transmission arrangements, and ancillary services. The combined revenue was \$357.26 million. The sidebar below documents 2000 SWP power generation and consumption.

Oroville Facilities Relicensing. The existing 50-year term hydroelectric license for the Oroville facilities will expire January 31, 2007. To obtain a new license the Department must file a new application to FERC by January 31, 2005.

On June 29 and November 15, 2000, the Department hosted public meetings in Oroville to present information about the alternative licensing procedure to interested parties. The alternative procedure allows for more FERC involvement and stakeholder interaction.

State Water Project Power Generation and Consumption in 2000

Power Generation and Consumption

Millions of Kilowatt Hours

Energy generation by SWP facilities	6,371
Energy purchased under long-term agreements	3,430
Short-term energy purchases	2,311
Total energy available to the SWP	12,112
Energy sales	(2,922)
Net power consumption of the SWP	9,190

On November 16, the Department, as licensee, submitted a request to FERC to use the alternative licensing procedure in relicensing the Oroville facilities. In December, initial meetings with participants were held to establish a framework for a 3-tiered process to accomplish the work required for relicensing. The three tiers consist of a plenary group, work groups, and task forces.

Deregulation of Electric Utilities

On September 23, 1996, Assembly Bill 1890 was signed into law by the Governor. AB 1890 called for restructuring the electric utility industry in California and creating ISO and the separate California Power Exchange. In March 1998, ISO and CalPX began operation and the Department became a scheduling coordinator with ISO. The Department continued to participate in “stakeholder” processes to resolve ongoing issues of concern.

The Department sold spinning, nonspinning, and replacement reserves to ISO; bid pump loads into nonspinning reserves to provide ISO additional resources in case of system emergencies; and bought and sold energy not purchased or sold through bilateral agreements in the CalPX’s day-ahead market.

In the summer, due to a variety of factors in California’s energy market, there was a temporary shortage of electricity and, in some instances, rolling blackouts.

Energy prices in California started to escalate in midyear, developing into a financial crisis for the investor-owned utilities, CalPX, and ISO by year’s end, as all entities ran short of cash.

During the second half of the year, the energy market became increasingly unstable, with numerous price spikes.

Monterey Amendment

The Monterey Amendment, based on the Principles of Agreement released on December 16, 1994, was designed to increase the reliability of

existing water supplies, provide stronger financial management for the SWP, and increase water management flexibility by providing more tools for local water agencies. An Environmental Impact Report was prepared by the Central Coast Water Authority.

On December 27, 1995, the Planning and Conservation League filed a lawsuit against the Department and CCWA, challenging the California Environmental Quality Act compliance. PCL amended the complaint February 13, 1996, alleging that the Department could not legally transfer the Kern Water Bank to the Kern County Water Agency as part of the Monterey Amendment.

After a hearing held May 17, 1996, a Sacramento County Superior Court judge ruled in favor of the Department and CCWA and dismissed the lawsuit. PCL appealed the decision to the Third District Court of Appeal. On September 15, the Court of Appeal reversed the Superior Court ruling and ordered a new EIR to be prepared by the Department. The Department filed a petition on October 25, 2000, asking the California Supreme Court to review the Court of Appeal’s decision. On December 13, 2000, the California Supreme Court denied review. The case is expected to become active in the trial court in early 2001.

The Safe Drinking Water, Clean Water, Watershed Protection, and Flood Protection Bond Act (Proposition 13)

Passed by the Legislature in 1999, the Act was placed on the ballot as Proposition 13 and approved by California voters on March 7, 2000. It authorized the State of California to sell \$1.97 billion in general obligations bonds to support safe drinking water, water quality, flood protection, and water reliability projects throughout the State. The Act provides funding for studies and projects that

- promote effective management of the State’s water resources;

- enhance local water supply reliability;
- increase the beneficial use of existing supplies, including water conservation projects that increase water use efficiency and groundwater recharge; and
- facilitate conjunctive management of surface water and groundwater with storage projects.

Passage of the proposition ensured the provision of \$560 million to authorize several new programs, including the Groundwater Storage Grant Program and Infrastructure Rehabilitation Grant Program.

Financial Analysis

In 2000, the Department continued to pay bondholders as scheduled. The SWP was financially viable and was indirectly paid for by the approximately 23 million water users who were served by the project. Direct payment was through the 29 long-term water contractors. In 2000, the SWP handled approximately \$660 million in income and \$660 million in expenses. The

sidebar below shows a 2000 income statement for the SWP.

Project Development

East Branch Extension

Work continued on the East Branch Extension of the California Aqueduct. Construction began in 1999; the project is anticipated to start operating in fall 2002. The project is being constructed to convey 8,650 acre-feet of SWP water annually to the San Geronio Pass Water Agency service area. Work began on the Crafton Hills Reservoir and Dam and on pipeline Reach 3 in March 2000, and on Greenspot, Crafton Hills, and Cherry Valley Pump Stations in June 2000.

Phase I of the pipeline will bring SWP water to Yucaipa, Calimesa, Beaumont, Banning, and other nearby communities.

The Department is working with two regional water agencies—San Geronio and San Bernardino Valley Municipal Water District—to build the pipeline. San Geronio is the last original contractor to receive SWP water.

2000 Income Statement for the State Water Project	
Revenues	Thousands of Dollars
Water contractor payments	714,977
Revenue bond cover adjustments	(40,937)
Rate management adjustments	(33,000)
Other revenue	27,728
Total operating revenues	668,768
Expenses	Thousands of Dollars
Project operations, maintenance, and power	343,884
Deposits to reserves	57,959
Water bond principal	91,190
Water bond interest	175,735
Total operating expenses and debt service	668,768
Net system revenues	0

The Phase I pipeline, consisting of about 13 miles of buried pipe in three contract reaches, is about 75 percent installed.

The pipeline will convey water from the Crafton Hills Pumping Station through Crafton Hills Reservoir and Cherry Valley Pumping Station to the Noble Creek Spreading Grounds. A map of the East Branch Extension, Phase I area, is shown in Figure ES-1.

Financing

The balance of the project costs will be financed, as needed, through the sale of short-term commercial paper notes and SWP revenue bonds.

Environmental Mitigation

An extensive environmental mitigation plan for the project addressed the fact that the pipeline crosses habitat associated with two sensitive species—Plummer’s mariposa lily and the coastal California gnatcatcher—although neither species has been documented in the area.

Planning

Arroyo Pasajero

Since the demise of the two candidate plans presented in the March 1999 draft feasibility report, the investigation has focused on a new alternative made possible by the availability of relatively low productivity farmland in the Western Tulare Lakebed. The U.S. Army Corps of Engineers and the Department jointly authored the *Arroyo Pasajero Feasibility Investigation Information Paper*, which described the Tulare Lakebed Plan in detail. The paper also presented a second alternative plan involving a significant enlargement of the existing detention basin, which could also be a viable option.

Business Systems Update

SAP Enterprise Resource Planning System

The Department selected the SAP Enterprise Resource Planning system to integrate the

Department’s disparate budgeting, accounting, controlling, purchasing, human resources, material management, and maintenance systems in order to manage the SWP with greater cost efficiency. Planning for implementation of the SAP Enterprise Resource Planning system began in August 1998.

On July 1, 2000, the Department celebrated the first anniversary of installation of the new Business Information System (SAP Phase I) and also went “live” with SAP Phase 2A, which included maintenance and SWP operational systems.

Phase 2 focused primarily on SWP issues, implemented in a phased approach—Phase 2A, 2B, and 2C. These phases are expected to extend through 2002.

The SAP Production Planning Module is the planning and scheduling module. In Phase 2A, the Department uses this module to plan, schedule, and track the movements and delivery of water through the SWP.

The new Cost Allocation Repayment Analysis system went “live” on February 27, 2000. This system is used to allocate SWP cost to water contractors and to produce the information used to prepare the annual Statements of Charges to the long-term water supply contractors.

Department management and staff worked closely with consultants on development and implementation of the SAP system.

Y2K Update

To address concerns about a potential year 2000 systems failure, the Department was directed to develop a plan to provide for the continuous delivery of essential public services.

The Division of Operations and Maintenance was directed to manage the Year 2000 Computer Retrofit Program for the SWP. Since SWP operations require telecommunications, dispatch systems, control systems, plant systems, and embedded systems, its purpose was to provide

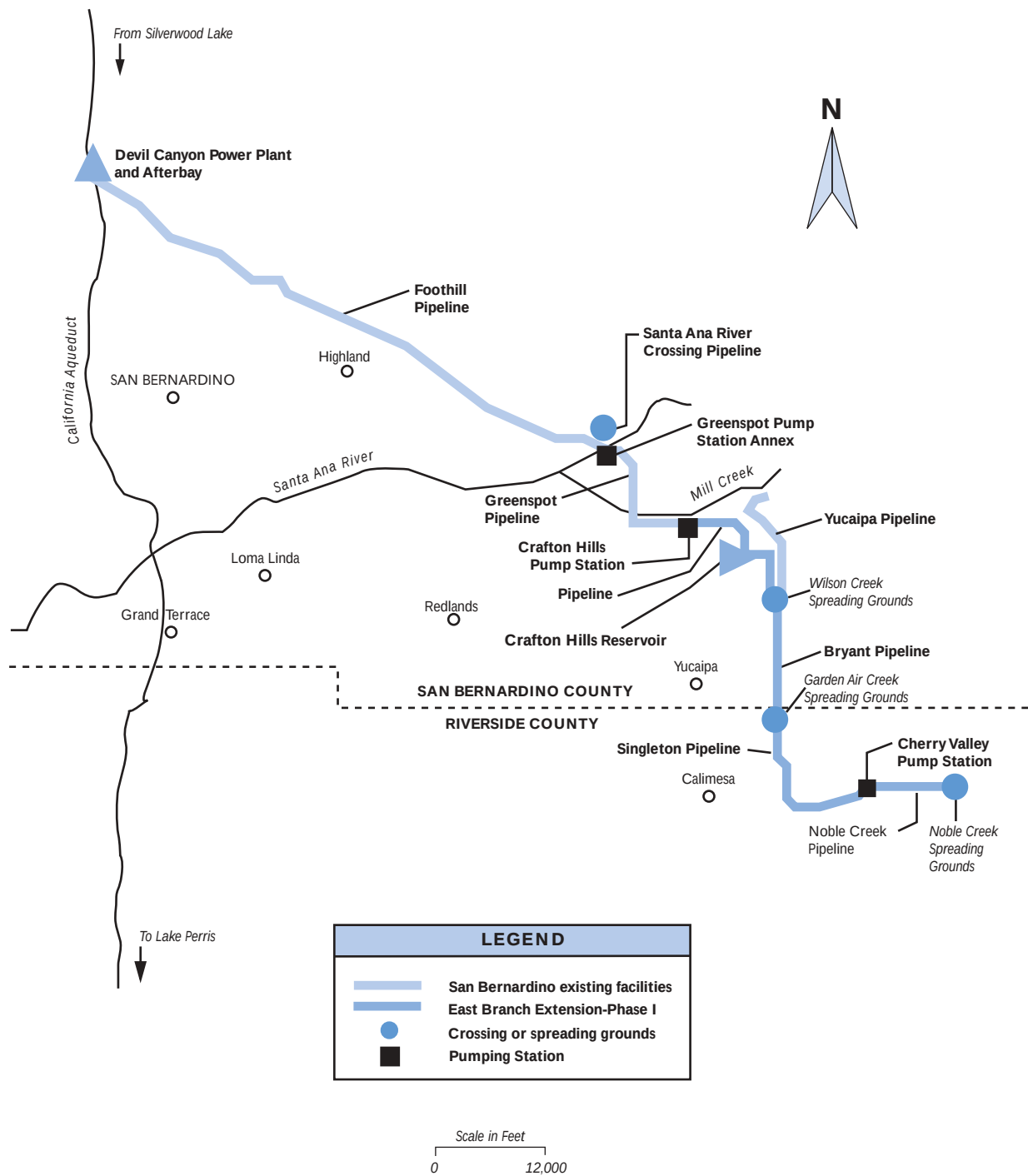


Figure ES-1. East Branch Extension, Phase I

an alternative plan of action in the event of an unexpected failure to a major component of the SWP. The *SWP Millennium Transition Operations Plan* provided the strategy for operating SWP facilities during the transition period from December 31, 1999, into year 2000.

Joint contingency plans were developed with the State Water Contractors. The Department also worked with other water industry organizations to ensure that deliveries of the State's water supply were not interrupted.

The Department transitioned smoothly into year 2000, and there were no Y2K-related problems in the SWP control system.

Community Service

In addition to water supply, the Department provided education and outreach, recreation opportunities on the SWP, and local assistance to users of the SWP. The Department managed several programs—including the Water Use Efficiency Program, Agricultural Drainage Program, and Environmental Impact Document Review—that benefited local agencies and the 29 long-term water contractors.

Chapter 1

The State Water Project



Thermalito Afterbay Feather
River Outlet



California's diverse geography contains both the highest and lowest elevations in the coterminous United States, with a resulting diversity of climate that ranges from desert to alpine to subtropical. In a typical year, some areas receive as little as 2 inches of rain, while others receive more than 100. This diversity of geography and climate creates an intricate and constantly changing pattern of water supplies, which, in turn, creates enormous challenges in managing this vital resource.

Like present-day Californians, the earliest settlers faced the problem of how best to conserve, control, and deliver water. Remains of aqueducts, canals, and dams are still found near some of California's original missions. The first recorded aqueduct was 6 miles long; it was built in 1770 to serve the San Diego mission. In the early twentieth century, several cities—San Francisco and Los Angeles among them—built aqueducts to convey water from the Sierra Nevada to other parts of the State.

In 1951, after many years of discussion and study, the Legislature authorized construction of a water storage and supply system to capture and store runoff in Northern California and deliver it to areas of need throughout the State. Eight years later, the Legislature passed the Burns-Porter Act, which provided the mechanism for obtaining funds necessary to construct the initial facilities. In 1960, California voters approved an issue of \$1.75 billion in general obligation bonds, as authorized in the act, thereby obtaining funds to build the State Water Project. In 1962, the first water was delivered through a portion of the South Bay Aqueduct to two long-term contracting agencies in Alameda County.

Today the SWP, managed by the Department of Water Resources, is the largest state-built, multi-purpose water project in the country. The SWP was designed and built to deliver water, control floods, generate power, provide recreational opportunities, and enhance habitats for fish and

wildlife. About 23 million of California's estimated 34 million residents benefit from SWP water; it irrigates about 600,000 acres of farmland, mainly in the south San Joaquin Valley.

Precipitation and Runoff

The water stored and delivered by the SWP originates from rainfall and snowmelt runoff in Northern and Central California's watersheds, where most of the State's precipitation occurs.

Since 1968, the Department has monitored and recorded annual precipitation and runoff, because precipitation, snowpack, and the rate and amount of snowmelt help determine how much water the SWP can deliver in any given year. The water year as designated by the Department is October 1 through September 30.

Water Delivery Facilities

The SWP depends on a complex system of dams, reservoirs, power plants, pumping plants, canals, and aqueducts to deliver water. Although initial transportation facilities were essentially completed in 1973, other facilities have since been built, and still others are either under construction or are planned to be built as needed (Figure 1-1). The SWP facilities include 28 dams and reservoirs, 26 pumping and generating plants, and approximately 660 miles of aqueducts.



Figure 1-1. Names and Locations of Primary Water Delivery Facilities Current and Projected, December 31, 2000

Existing long-term SWP water supply contracts call for the annual delivery of 4,086,021 acre-feet of Table A water by 1998 through SWP facilities, gradually increasing to a maximum of 4,172,686 acre-feet by 2020. However, because of changes that have occurred since the long-term water contracts were signed in the 1960s, actual demand has not developed as projected. These changes include population growth variations, differences in local use, local water conservation programs, and conjunctive-use programs. The SWP delivered 2,932,314 acre-feet of approved Table A water to long-term contractors' service areas in 2000. Nevertheless, demands for SWP water are expected to increase as the population of California continues to increase.

Project Design

Water from rainfall and snowmelt runoff is stored in SWP conservation facilities and delivered via SWP transportation facilities to water agencies and districts in Southern California, Central Coastal, San Joaquin Valley, South Bay, North Bay, and Upper Feather River areas.

Three small reservoirs—Lake Davis, Frenchman Lake, and Antelope Lake—are the northernmost SWP facilities. Situated on Feather River tributaries in Plumas County, these lakes are used primarily for recreation; they also provide water to the City of Portola and local agencies that have water rights agreements with the Department.

Downstream from these three lakes is Lake Oroville, the keystone of the SWP. Lake Oroville conserves water from the Feather River watershed. Created by Oroville Dam, the tallest earth-fill dam in the Western Hemisphere, Lake Oroville is the project's largest storage facility, with a capacity of about 3.5 million acre-feet (an acre-foot is about 326,000 gallons).

Releases from Lake Oroville flow down the Feather River into the Sacramento River, which drains the northern portion of California's great Central Valley. The Sacramento River flows into the Sacramento-San Joaquin Delta, comprised of

738,000 acres of land interlaced with channels that receive runoff from 40 percent of the State's land area. The SWP, along with the federal Central Valley Project and local agencies, diverts water from the Delta.

From the northern Delta, Barker Slough Pumping Plant diverts water for delivery to Napa and Solano Counties through the North Bay Aqueduct, completed in 1988. Near Byron, in the southern Delta, the SWP diverts water into Clifton Court Forebay for delivery south of the Delta. Banks Pumping Plant lifts water from Clifton Court Forebay into Bethany Reservoir; from Bethany Reservoir, the South Bay Pumping Plant lifts water into the South Bay Aqueduct to supply Alameda and Santa Clara Counties. The South Bay Aqueduct provided initial deliveries in 1962 and has been fully operational since 1965.

Most of the water delivered to Bethany Reservoir from Banks Pumping Plant flows into the California Aqueduct. This 444-mile-long main aqueduct conveys water to the primarily agricultural lands of the San Joaquin Valley and the mainly urban regions of Southern California.

The California Aqueduct winds along the west side of the San Joaquin Valley. It transports water to O'Neill Forebay, Gianelli Pumping-Generating Plant, and San Luis Reservoir. San Luis Reservoir has a storage capacity of more than 2 million acre-feet and is jointly owned by the Department and the Bureau of Reclamation. The Department's share of gross storage in the reservoir is about 1,062,000 acre-feet. Generally, water is pumped into San Luis Reservoir during late fall through early spring, and is temporarily stored for release back to the California Aqueduct to meet summertime peaking demands of SWP and CVP contractors.

SWP water not stored in San Luis Reservoir, and water eventually released from San Luis, continue to flow south through the San Luis Canal, a portion of the California Aqueduct jointly owned by the Department and the Bureau.

As the water flows through the San Joaquin Valley, numerous turnouts convey the water to farmlands within the service areas of the SWP and CVP. Along its journey, the water is lifted more than 1,000 feet by four pumping plants—Dos Amigos, Buena Vista, Teerink, and Chrisman—before reaching the foot of the Tehachapi Mountains.

In the San Joaquin Valley near Kettleman City, Phase I of the Coastal Branch Aqueduct serves agricultural areas west of the California Aqueduct. This branch was extended in Phase II to serve municipal and industrial water users in San Luis Obispo and Santa Barbara Counties, beginning in August 1997.

The remaining water conveyed by the California Aqueduct is delivered to Southern California, home to about two-thirds of California's population. Before this water can be delivered, it must first cross the Tehachapi Mountains. Pumps at Edmonston Pumping Plant, situated at the foot of the mountains, raise the water 1,926 feet—the highest single lift of any pumping plant in the world. Then the water enters 8.5 miles of tunnels and siphons as it flows into Antelope Valley, where the California Aqueduct divides into two branches: the East Branch and the West Branch.

The East Branch carries water through Alamo Power Plant, Pearblossom Pumping Plant, and Mojave Siphon Power Plant into Silverwood Lake in the San Bernardino Mountains. From Silverwood Lake, water flows through the San Bernardino Tunnel into Devil Canyon Power Plant. Water continues down the East Branch to Lake Perris, the southernmost SWP reservoir.

The East Branch Extension, Phases I and II, will carry water from Devil Canyon Power Plant Afterbay to Cherry Valley, bringing water to Yucaipa, Calimesa, Beaumont, Banning, and other communities. When completed, the East Branch Extension will be a nearly 33-mile pipeline linking parts of service areas for San Bernardino Valley Municipal Water District and San Geronio Pass Water Agency to the Califor-

nia Aqueduct. Phase I is planned for completion in 2001; planning for Phase II is underway.

Water in the West Branch flows through Warner Power Plant into Pyramid Lake in Los Angeles County. From there it flows through the Angeles Tunnel, Castaic Power Plant, Elderberry Forebay, and Castaic Lake, terminus of the West Branch. Castaic Power Plant is operated by the Los Angeles Department of Water and Power.

The energy needed to operate the SWP, the single largest user of electrical power in California, comes from a combination of its own hydroelectric and coal-fired generation plants and power purchased from other utilities. The coal-fired plant and the project's eight hydroelectric power plants, including three pumping-generating plants, produce enough electricity in a normal year to supply about two-thirds of the necessary operating power.

Tables 1-1 through 1-5 present statistical information about primary reservoirs, primary dams, pumping plants, power plants, and aqueducts. Additional information regarding operation of the plants under full development can be found in Chapter 10.

Table 1-1. Physical Characteristics of Primary Storage Facilities

Facility	Gross Capacity (Acre-feet)	Surface Area (Acres)	Shoreline (Miles)
Antelope Lake	22,600	930	15
Frenchman Lake	55,500	1,580	21
Lake Davis	84,400	4,030	32
Lake Oroville	3,537,600	15,800	167
Thermalito Forebay	11,800	630	10
Thermalito Afterbay	57,000	4,300	26
Thermalito Diversion Pool	13,400	320	10
Clifton Court Forebay	31,300	2,180	8
Bethany Reservoir	5,100	180	6
Lake Del Valle	77,100	1,060	16
San Luis Reservoir	2,027,800	12,520	65
SWP storage, 1,062,183 AF			
O'Neill Forebay	56,400	2,700	12
SWP storage, 29,500 AF			
Los Banos Reservoir	34,600	620	12
Little Panoche Reservoir	5,580	190	6
Quail Lake	7,600	290	3
Pyramid Lake	171,200	1,300	21
Elderberry Forebay	32,500	500	7
Castaic Lake	323,700	2,240	29
Silverwood Lake	75,000	980	13
Lake Perris	131,500	2,320	10

Table 1-2. Physical Characteristics of Primary Dams

Facility	Crest Elevation (Feet)	Structural Height (Feet)	Crest Length (Feet)	Structural Volume (Thousand Cubic Yards)
Antelope	5,025	120	1,320	380
Frenchman	5,607	139	720	537
Grizzly Valley	5,785	132	800	253
Oroville	922	770	6,920	80,000
Thermalito Diversion	233	143	1,300	154
Thermalito Forebay	231	91	15,900	1,840
Thermalito Afterbay	142	39	42,000	5,020
Clifton Court Forebay	14	30	36,500	2,440
Bethany	250	121	3,940	1,400
Del Valle	773	235	880	4,150
Sisk	554	385	18,600	77,645
O'Neill	233	88	14,350	3,000
Los Banos Detention	384	167	1,370	2,100
Little Panoche Detention	676	151	1,440	1,160
Pyramid	2,606	400	1,090	6,000
Elderberry Forebay	1,550	200	1,990	6,000
Castaic	1,535	425	4,900	46,000
Cedar Springs	3,378	249	2,230	7,600
Perris	1,600	128	11,600	20,000

Table 1-3. Pumping Plant Characteristics

Facility	Number of Units	Normal Static Head (Feet)	Total Flow at Design Head (cfs)	Total Motor Rating (hp)
Thermalito	3 (p-g) ^a	85-102	9,120	120,000
Hyatt	3 (p-g) ^a	410-660	5,610	519,000
Barker Slough	9	95-120	228	4,800
Cordelia	11	104-439	138	5,600
Banks	11	236-252	10,670	333,000
South Bay	9	566	330	27,750
Del Valle	4	0-38	120	1,000
Gianelli	8 (p-g) ^a	99-327	11,000	504,000
Dos Amigos	6	107-125	15,450	240,000
Las Perillas	6	55	461	4,050
Badger Hill	6	151	454	11,750
Devil's Den ^b	6	521	134	10,500
Bluestone ^b	6	484	134	10,500
Polonio Pass ^b	6	533	134	10,500
Buena Vista ^b	10	205	5,405	144,500
Teerink ^b	9	233	5,445	150,000
Chrisman ^b	9	518	4,995	330,000
Edmonston ^b	14	1,926	4,480	1,120,000
Oso	8	231	3,252	93,800
Pearblossom	9	539-546	2,575	203,200

^aThe p-g indicates pumping-generating units.^bThese plants have one unit in reserve.

Table 1-4. Power Plant Characteristics, by Type and Facility

Type and Facility	Number of Units	Normal Static Head (Feet)	Total Flow at Design Head (cfs)	Total Generator Rating (kW)
Hydro				
Thermalito Diversion Dam	1	63-77	615	3,300
Thermalito	4 (3 p-g) ^a	85-101	17,400	120,000
Hyatt	6 (3 p-g) ^a	410-676	16,950	819,000
Gianelli (total)	8 p-g ^a	99-327	16,960	424,000
SWP share				222,100
Alamo	1	115-141	1,740	18,000
Warne	2	719-739	1,600	78,200
Mojave Siphon	3	81-136	2,880	34,500
Devil Canyon	4	1,406	2,940	291,000
Castaic (total)	7 (6 p-g) ^a	900-1,050	20,820	1,260,000
SWP share ^b	n/a	n/a	n/a	n/a
Geo-thermal				
Reid Gardner, Unit 4 (total)	1 ^c			275,000
SWP share of generation ^d				250,000

^aThe p-g indicates pumping-generating units.^bBased on the amount of water that SWP releases.^cLife of the plant is expected to extend through 2013.^dSWP ownership share in Reid Gardner, Unit 4, is 67.8 percent.**Table 1-5. Total Miles of Aqueducts**

Facility	Channel and Reservoir	Canal	Pipeline	Tunnel	Total
North Bay Aqueduct	0.0	0.0	27.4	0.0	27.4
South Bay Aqueduct	0.0	8.4	32.9	1.6	42.9
<i>Subtotal</i>	<i>0.0</i>	<i>8.4</i>	<i>60.3</i>	<i>1.6</i>	<i>70.3</i>
California Aqueduct, Main Line					
Delta to O'Neill Forebay	1.4	67.0	0.0	0.0	68.4
O'Neill Forebay to Kettleman City	2.2	103.5	0.0	0.0	105.7
Kettleman City to Edmonston Pumping Plant	0.0	120.9	0.0	0.0	120.9
Edmonston Pumping Plant to Tehachapi Afterbay	0.0	0.2	2.5	7.9	10.6
Tehachapi Afterbay to Lake Perris	2.9	93.4	38.3	3.8	138.4
<i>Subtotal</i>	<i>6.5</i>	<i>385.0</i>	<i>40.8</i>	<i>11.7</i>	<i>444.0</i>
California Aqueduct Branches					
West Branch	9.2	9.1	6.4	7.2	31.9
Coastal Branch	0.0	15.0	97.9	2.7	115.6
<i>Subtotal</i>	<i>9.2</i>	<i>24.1</i>	<i>104.3</i>	<i>9.9</i>	<i>147.5</i>
Total	15.7	417.5	205.4	23.2	661.8

Additional Construction

SWP aqueduct facilities were initially designed and constructed to provide service to all agencies to meet their water delivery needs up to 1990. Project water conservation reservoirs were planned to be constructed in stages as water demands increased. Oroville and San Luis were the first SWP conservation reservoir facilities constructed. Additional SWP facilities were scheduled to meet increased demands. It was anticipated that population growth in delivery service areas and water supply areas of origin would influence the final schedule for the additional SWP facilities. However, increased costs, environmental issues, and increased non-SWP demands for limited water supplies delayed the construction schedule for some of the planned additional facilities.

In response to changes in water management policy, the Department continues to reassess plans for the additional facilities that will incorporate increased environmental safeguards while also increasing the SWP delivery yield. Developing these plans involves the time-consuming process of finding technically suitable projects and satisfying the many complex and dynamic environmental procedures, laws, and regulations.

In the mid-1980s, the Department began planning an offstream storage complex, Los Banos Grandes, in Merced County. Initial plans for Los Banos Grandes were completed, but additional planning has been suspended until environmental concerns have been addressed. The Department also developed alternative methods of storing water, including the Kern Water Bank, a conjunctive-use groundwater storage facility located in Kern County.

The signing of the Monterey Agreement in December 1994 set the principles for permanently transferring the State-owned Kern Fan Element of the Kern Water Bank from the Department to two agricultural contractors, Kern County Water Agency and Dudley Ridge

Water District. The transfer occurred August 9, 1996.

The Department continues to plan, design, and construct transportation and power-producing facilities for the SWP. Mojave Siphon Power Plant was completed in 1996. The enlarged Devil Canyon Power Plant and the new Devil Canyon Power Plant Second Afterbay became operational in 1995. Phase II of the Coastal Branch of the California Aqueduct began operation in August 1997. The Coastal Branch can transport about 50,000 acre-feet of water annually to San Luis Obispo and Santa Barbara Counties.

Methods of Financing

Project facilities have been constructed with several general types of financing: general obligation bonds and tideland oil revenues (under the Burns-Porter Act, which was approved by the Legislature in 1959, and the bond issue approved by voters in 1960); revenue bonds; and capital resources revenues. Repayment of these funds and the operations, maintenance, power, and replacement costs associated with water supply are paid by the 29 agencies and districts that have long-term contracts with the Department for SWP water; costs are repaid as they are incurred.

The contracts initially provided for a combined maximum annual Table A amount of 4,230,000 acre-feet of water supply. As a result of contract amendments in the 1980s and the Monterey Amendment, the current combined maximum annual Table A totals 4,172,686 acre-feet. The contracts are in effect for the longest of the following periods:

- the project repayment period, which extends to the year 2035;
- 75 years from the date of the contract; or
- the period ending with the latest maturity date of any bond used to finance the construction costs of project facilities.

Long-Term Contracting Agencies

From 1963 through 1967, 32 agencies or districts signed long-term water supply contracts with the Department. However, in 1965, the City of West Covina was annexed to the Metropolitan Water District of Southern California, and in 1981 Hacienda Water District was assigned to Tulare Lake Basin Water Storage District. On January 1, 1992, Castaic Lake Water Agency assumed all rights and obligations granted to

Devil's Den Water District according to its long-term water supply contract. The 29 agencies and districts that now have long-term contracts with the Department as of December 31, 2000, are listed in Figure 1-2 and Table 1-6.

Figure 1-2 shows the name and location of each contracting agency and district and lists the first year of SWP delivery service for each. Table 1-6 presents information about each contracting agency.

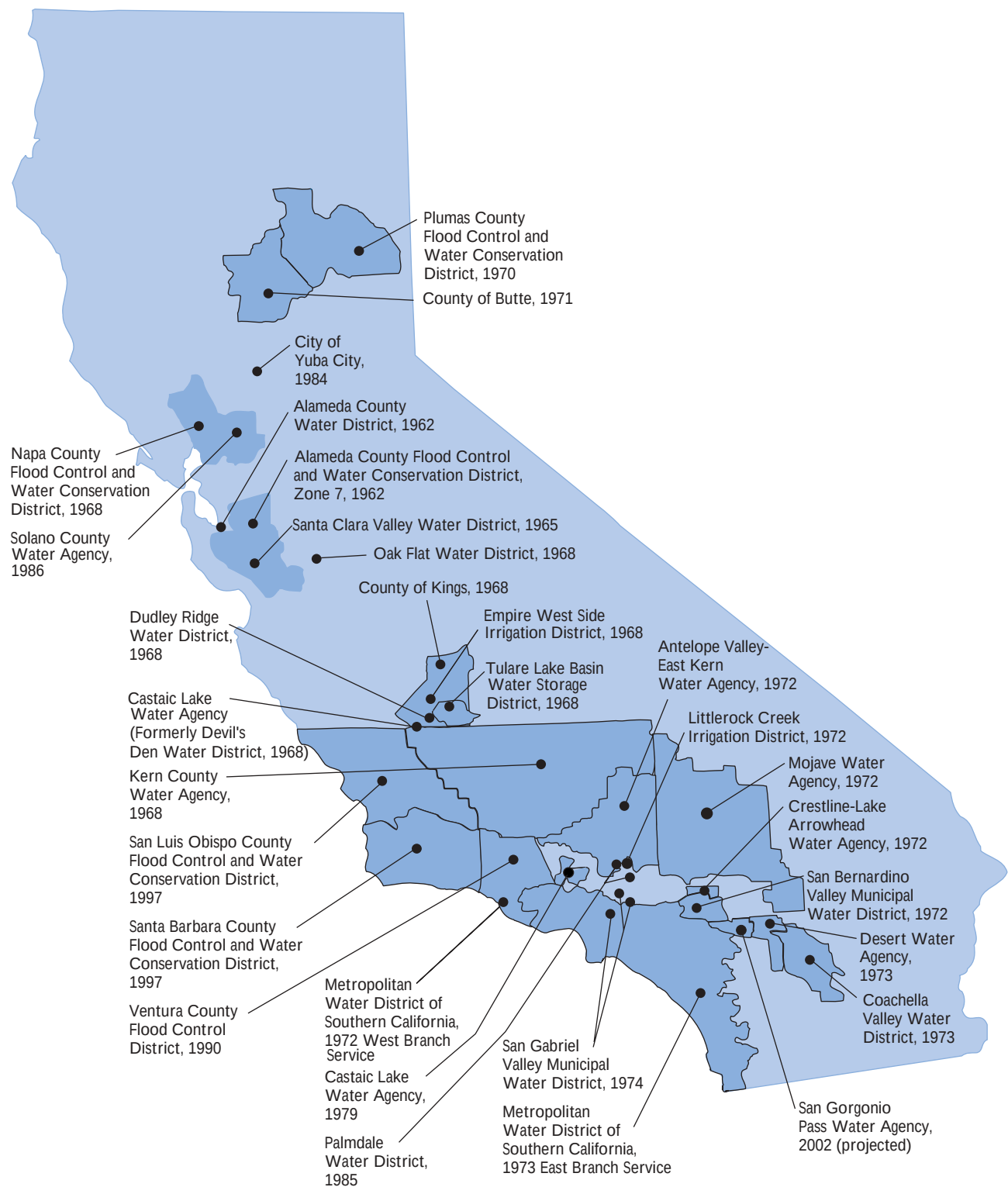


Figure 1-2. Names, Locations, and First Year of Service of Long-Term Contracting Agencies, December 31, 2000

Table 1-6. Long-Term Water Supply Contracting Agencies, by Area, as of December 31, 2000

Contracting Agency	Cumulative Deliveries through December 31, 2000 (Acre-Feet) ^a	Maximum Annual Table A (Acre-Feet)	Payments through December 31, 2000 (Dollars)	Gross Area as of December 31, 2000 (Acres)	Assessed Valuation 2000 (Dollars) ^b	Estimated Population December 31, 2000
Upper Feather River Area						
City of Yuba City	10,260	9,600	2,403,425	5,107	1,160,461,860	37,120
County of Butte	9,473	27,500	620,314	1,069,000	6,239,500,000	172,600
Plumas County Flood Control and Water Conservation District	10,472	2,700	1,136,541	1,676,056 ^c	2,060,744,342 ^c	21,200
<i>Subtotal</i>	19,945	39,800	4,160,280	2,750,163	9,460,706,202	230,920
North Bay Area						
Napa County Flood Control and Water Conservation District	176,170	29,025	47,091,755	510,010	11,375,403,517	124,588
Solano County Water Agency	354,699	47,756	60,753,333	537,600	22,175,539,868	394,542
<i>Subtotal</i>	530,869	76,781	107,845,088	1,047,610	33,550,943,385	519,130
South Bay Area						
Alameda County Flood Control and Water Conservation District, Zone 7	854,386	78,000	65,893,557	275,900	20,183,892,830	172,750
Alameda County Water District	841,174	42,000	66,531,560	65,806	26,626,071,457	319,400
Santa Clara Valley Water District	2,949,276	100,000	208,283,021	849,000	147,074,863,200	1,715,374
<i>Subtotal</i>	4,644,836	220,000	340,708,138	1,190,706	193,884,827,487	2,207,524
San Joaquin Valley Area						
County of Kings	75,437	4,000	3,025,856	893,300	3,847,066,037	122,848
Castaic Lake Water Agency	431,803			8,700	4,300,000	0
Dudley Ridge Water District	1,698,952	53,370	49,053,003	37,568	44,500,000	36
Empire West Side Irrigation District	94,392	3,000	2,555,408	7,400	^d	50
Kern County Water Agency	26,331,565	1,000,949	1,146,237,582	5,161,000	39,015,380,552	695,000
Oak Flat Water District	166,310	5,700	3,952,326	4,500	^d	10
Tulare Lake Basin Water Storage District	3,838,156	118,500	101,798,811	189,519	152,288,305	23
<i>Subtotal</i>	32,636,613	1,185,519	1,306,622,986	6,301,987	43,063,534,894	817,967
Central Coastal Area						
San Luis Obispo County Flood Control and Water Conservation District	12,496	25,000	34,719,439	2,131,300	20,104,042,147	246,681
Santa Barbara County Flood Control and Water Conservation District	70,175	45,486	153,555,091	1,775,296	15,003,892,855	399,347
<i>Subtotal</i>	82,671	70,486	188,274,530	3,906,596	35,107,935,002	646,028
Southern California Area						
Antelope Valley-East Kern Water Agency	1,181,925	138,400	260,435,224	1,525,547	11,661,403,243	310,000
Castaic Lake Water Agency ^e	307,397	95,200	126,489,004	133,700	12,073,683,645	184,700
Coachella Valley Water District	628,141	23,100	123,218,788	637,600	11,132,616,000	279,300
Crestline-Lake Arrowhead Water Agency	35,344	5,800	15,802,164	55,100	1,500,527,807	25,000
Desert Water Agency	872,777	38,100	1,151,656,974	209,760	5,276,513,800	72,165
Littlerock Creek Irrigation District	18,995	2,300	4,282,725	10,000	106,085,538	2,900
Metropolitan Water District of Southern California	18,615,035	2,011,500	5,371,674,780	3,328,000 ^f	1,081,495,885,041 ^f	17,000,000 ^f
Mojave Water Agency	165,367	75,800	123,735,700	3,160,400	13,300,357,119	353,391
Palmdale Water District	114,894	21,300	35,730,973	119,680	862,000,000	90,000
San Bernardino Valley Municipal Water District	330,008	102,600	279,705,236	210,000	14,907,805,419	600,000
San Gabriel Valley Municipal Water District	250,901	28,800	87,756,631	18,297	9,647,715,579	201,145
San Geronimo Pass Water Agency	0	17,300	39,817,546	140,600	1,945,425,320	44,600
Ventura County Flood Control District	15,424	20,000	33,191,648	308,252	21,957,265,429	457,000
<i>Subtotal</i>	22,536,208	2,580,200	6,653,497,393	9,856,936	1,185,867,283,940	19,620,201
Total, State Water Project	60,451,144	4,172,786	8,601,108,415	25,053,998^g	1,500,935,230,910^g	24,041,770^g

^aAll water delivered to long-term SWP contractors, including carryover, Article 21, surplus, unscheduled, exchange, permit, purchased, local, and non-SWP water.

^bStatutes of 1978, Chapter 1207, added Section 135 to the Revenue and Taxation Code, requiring assessment at 100 percent of full value for the 1981-82 fiscal year and fiscal years thereafter.

^cTotal of all Plumas County Flood Control and Water Conservation District, including Last Chance Creek Water District.

^dAssessed valuation not available on an agency area breakdown.

^eDistrict includes land in the San Joaquin Valley Area formerly known as Devil's Den Water District.

^fTotal for MWD, including Calleguas Municipal Water District, which is common to MWD and Ventura County Flood Control District.

^gIncludes duplicate values. Some areas that are within two or more agencies are included in each agency's total.

Information in this chapter was contributed by the Division of Operations and Maintenance and the State Water Project Analysis Office.

Chapter 2

Delta Resources



Sandy Beach Park, on the Sacramento River
about a mile downstream of Rio Vista

Significant Events in 2000

- The Department contracted with a consultant to develop preliminary wildlife management plans for Sherman and Twitchell Islands. The plans are designed to benefit species of wildlife that occupy wetland, upland, and riparian habitats and to provide recreational opportunities for hunting and viewing.
- CALFED staff completed the *White Paper on North Delta Improvements* in July (with the input of agency representatives and stakeholders) to lay the groundwork for current CALFED North Delta planning effort.
- CALFED has designated the Department as the State Implementation Agency for North Delta improvements, which have been identified as a Stage I action.
- The Delta Flood Protection Program continued to develop 291.8 acres of various types of habitat for flood mitigation and 19.38 acres for enhancement and is also in the process of developing 36,350 linear feet of shaded riverine aquatic habitat, of which 12,898 linear feet will be used for mitigation and 23,452 linear feet for enhancement.

Over the past 40 years many programs were developed and implemented by federal and State agencies, including the Department of Water Resources, to manage the Sacramento-San Joaquin Delta as both a unique environmental resource and as one of California's major water supply sources.

The common goals of these programs have been to

- improve water supply reliability to the State Water Project, Central Valley Project, and Delta water users;
- determine levels of flow and salinity necessary to protect fish and wildlife habitat; and
- devise methods to control flooding, protect fish and wildlife, and provide recreational activities.

Delta Water Management Programs

Over the last decade or so, the Department's planning programs focused on solving water management problems in three distinct areas of the Sacramento-San Joaquin Delta: the North Delta, West Delta, and South Delta (Figure 2-1). However, the listing of several Bay-Delta fish species under the Endangered Species Act resulted in additional operational restrictions on the SWP, which caused considerable uncertainty as to the benefits the SWP would obtain as a result of implementing these programs. Further complicating this issue were the promulgation of new Delta standards by the federal Environmental Protection Agency and the implementation of 800,000 acre-feet of Central Valley Project yield for fish and wildlife protection under the 1992 Central Valley Project Improvement Act.

In June 1994, a Framework Agreement between federal and State governments defined a joint federal-State cooperative process for developing a long-term solution to water supply, water

quality, and ecosystem problems of the Delta. The CALFED Bay-Delta Program was formed to develop the long-term Delta "solution." The program includes extensive public outreach and input.

South Delta Improvements Program

During the late 1990s, the Department pursued the accelerated construction of South Delta facilities to improve Delta water conditions (the Interim South Delta Program) while awaiting the independent development of the CALFED Bay-Delta Program's long-term solution. The Department released a Draft EIS/EIR for ISDP in July 1996; however, a Final EIS/EIR was never produced. In 1999, the CALFED Bay-Delta Program decided that South Delta facilities would be included as a key component of the CALFED decision-making process. Subsequently, the program was renamed the *South Delta Improvements Program*. The purpose of SDIP has been slightly revised from that of the former ISDP. The new purpose for SDIP is to

- improve the reliability of existing SWP facilities;
- ensure that water of adequate quantity and quality is available for diversion to the South Delta Water Agency's service area for beneficial use; and
- reduce the effects of SWP exports on both aquatic resources and direct losses of fish in the south Delta.

Preferred Plan. A preferred plan for SDIP is being formulated as part of the ongoing process

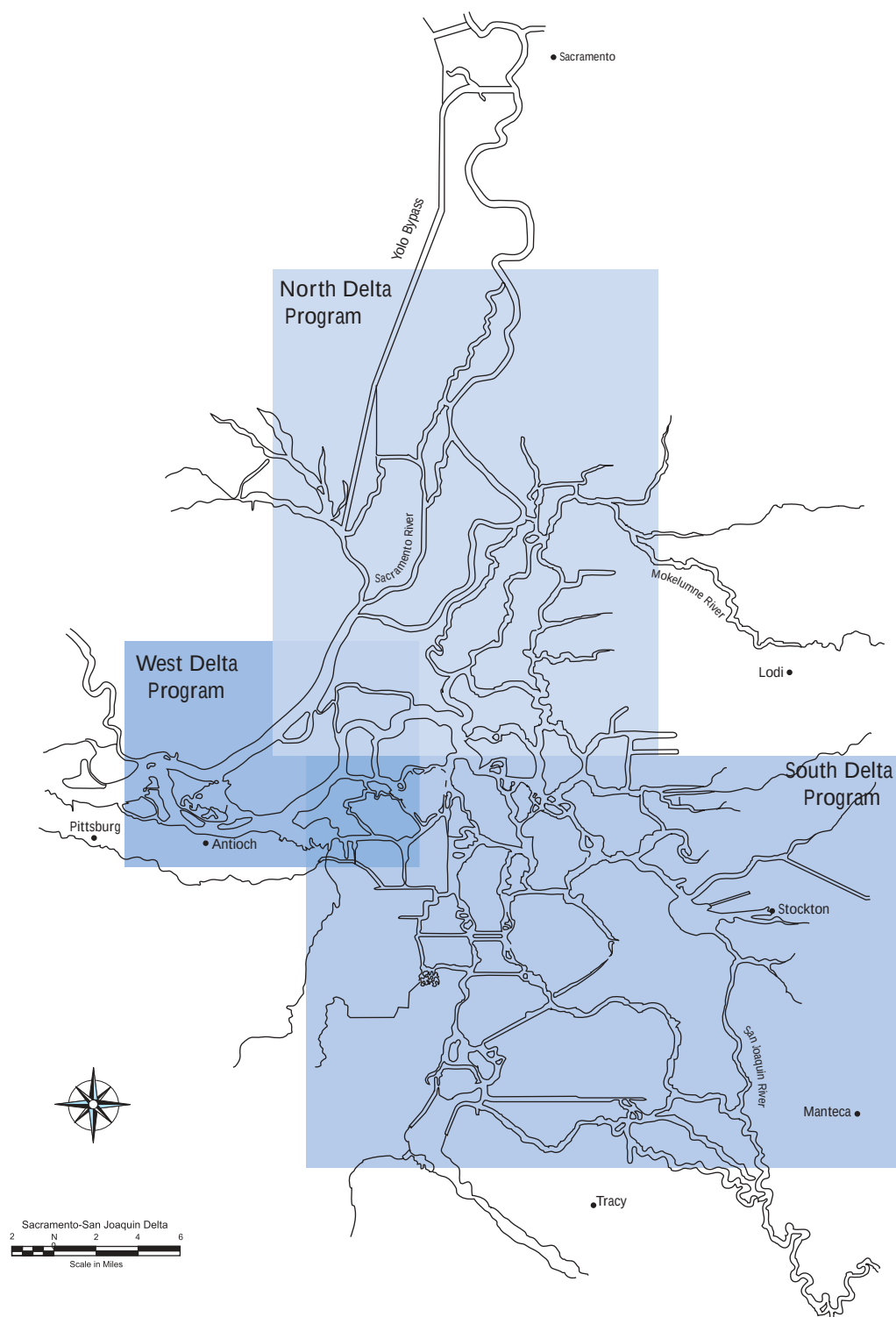


Figure 2-1. Boundaries of North, West, and South Delta Water Management Programs

of preparing project-specific environmental documentation. It is likely to consist of

- three flow-control structures to improve local water levels and circulation in south Delta channels;
- a fish-control structure to improve fish migration in the San Joaquin River;
- approximately 5 miles of dredging in existing south Delta channels to improve conveyance and circulation;
- extensive dredging in south Delta to improve conditions for local navigation conducted from September through December (at cost of \$2.8 million including mitigation costs);
- modifications to existing agricultural diversion intakes;
- a new SWP intake to Clifton Court Forebay with fish screening and salvage facilities to replace the existing Skinner Fish Facility; and
- increasing the maximum allowable diversions into Clifton Court Forebay.

Planning activities for increasing the SWP export limit to its maximum, 10,300 cfs, continued. The proposed project includes a new, screened intake to Clifton Court Forebay and four permanent, operable flow control facilities in south Delta channels; it is a key component of the CALFED Conveyance Program. It would improve the reliability of SWP water supply and increase operational flexibility. In addition, the proposal to construct flow control structures in south Delta channels would allow the Department and the Bureau of Reclamation to improve conditions for local agricultural diverters in the vicinity of the project export facilities. The flow control structure would benefit both spring and fall salmon migrations in the San Joaquin River. The first action, to increase the export limit to 8,500 cfs, will be implemented by mid-2003 in accordance with the milestone dates listed in CALFED's Record of Decision.

Environmental Review Process. A Draft EIS / EIR for the SDIP is scheduled for release in early 2001 and a Final EIR / EIS is scheduled for

release in late 2002. Once the Final EIR / EIS is completed, a Notice of Determination and Record of Decision will be filed. State and federal regulatory agencies may then act on permits required to construct and operate the proposed facilities.

The necessary permits would be issued by U.S. Army Corps of Engineers according to both Section 404 of the Federal Water Pollution Control Act (Clean Water Act) for dredging operations and Section 10 of the Rivers and Harbors Act for Navigation. Approval for the permits must be coordinated with the U.S. Fish and Wildlife Service, National Marine Temporary Barriers Project, Fisheries Service, the Environmental Protection Agency, and the Department of Fish and Game.

Clean Water Act

Section 404 of the Federal Water Pollution Control Act (Title 33, United States Code Section 1344 [1977]), also known as the Clean Water Act, requires that a permit be obtained from the U.S. Army Corps of Engineers for any activity that results in discharge of dredged material or placement of fill material in the waters of the United States. Section 404 has been interpreted by the federal courts to include most structures or fills introduced into waters within a state that may be used for interstate or foreign commerce. Section 402 of the Clean Water Act established a permit system known as the National Pollutant Discharge Elimination System to regulate point sources of discharges in navigable waters of the United States.

The Porter-Cologne Water Quality Control Act is California's comprehensive water quality control law and is a complete regulatory program designed to protect water quality and beneficial uses of the State's water. In 1972, the Porter-Cologne Act was amended to give California the authority and ability to operate the NPDES permits program. These laws require regional water quality plans to be adopted and implemented by issuing waste discharge requirements to each discharger of waste that could impact the waters of the State.

The Department has installed and operated temporary barrier facilities in the South Delta

since 1990 to improve South Delta conditions and collect data to design and operate permanent barrier facilities, as proposed in the SDIP.

In addition, biological monitoring programs have been conducted to

- determine potential effects of barriers on Delta fish and vegetation
- evaluate and review computer model calibration
- develop comprehensive environmental information for the design and operation of permanent barrier facilities

Temporary rock barriers are installed on an annual basis, during low flow conditions, at the four sites listed below.

- (1) Old River at Head, in Old River where it splits from the San Joaquin River
- (2) Old River near Tracy, in Old River, one-half mile east of the Tracy Pumping Plant intake and about 8 miles northwest of the City of Tracy
- (3) Middle River, just south of the confluence of Middle River, Trapper Slough, and North Canal
- (4) Grant Line Canal, 420 feet east of the Tracy Boulevard Bridge

The barrier at Old River at Head prevents San Joaquin River flow from entering Old River and flowing toward export facilities. The additional flow in the San Joaquin River helps guide San Joaquin salmon to the ocean in the spring and improves dissolved oxygen levels for upstream salmon migration in the fall. The other barriers have culverts with flap gates that improve water levels and circulation in south Delta channels during the irrigation season.

Since 1963, the Old River at Head barrier is installed in the fall. Since 1992, it is also intermittently in the spring. High San Joaquin River flows sometimes prevent the Old River at Head barriers from being installed. The Old River barrier near Tracy has also been seasonally installed

since 1991, as has the Middle River barrier since 1987, and the Grant Line Canal barrier since 1996.

West Delta Program

The objectives of the West Delta Program are to

- effectively manage SWP-owned lands on Sherman and Twitchell Islands (approximately 12,000 acres total)
- improve the integrity of local levees
- implement land-use management to control subsidence and soil erosion on Sherman and Twitchell Islands
- implement mitigation requirements associated with the Temporary Barriers Program and proposed SDIP
- provide diverse habitat for wildlife and waterfowl

The Department contracted with a consultant to develop preliminary wildlife management plans for Sherman and Twitchell Islands. The plans are designed to benefit species of wildlife that occupy wetland, upland, and riparian habitats and to provide recreational opportunities for hunting and viewing. In addition, property acquired and potential habitat developed by the Department could mitigate impacts associated with current and future Delta water management programs, including those being proposed by the Department and the CALFED Bay-Delta Program.

The Department is a major landowner on both Twitchell and Sherman Islands and holds two of the three trustees' positions for Reclamation District 1601 (Twitchell Island) and Reclamation District 341 (Sherman Island). This allows the Department to participate in the management and operation of each district with the goal of improving conditions and accountability. The reclamation districts provide levee maintenance, island drainage, and some internal water supply. The districts also assess the landowners for the operational needs of the public districts.

North Delta Program

North Delta improvements have been identified as a Stage I action under the CALFED Bay-Delta Program. These improvements will primarily address flood control and ecosystem restoration in the North Delta area, but will also support other CALFED goals such as water supply reliability to the extent possible. CALFED has designated the Department as the State Implementation Agency for North Delta improvements.

Many of the proposed CALFED North Delta improvement elements are similar to the elements of previous North Delta planning efforts that were suspended in deference to the CALFED Program. CALFED staff completed the *White Paper on North Delta Improvements* in July 2000 (with the input of agency representatives and stakeholders) to lay the groundwork for current CALFED North Delta planning effort.

CALFED and Department staff coordinated a consultant Scope of Work and issued a solicitation for the consultant contract to prepare an EIR/EIS for North Delta improvements. Contract award is anticipated in early 2001. CALFED also convened the Mokelumne-Cosumnes Watershed Alliance to coordinate numerous planning activities in the North Delta area and the Mokelumne-Cosumnes watershed. The Department will engage MCWA as a vehicle for coordination as the North Delta planning effort progresses.

Delta Flood Control

The Sacramento-San Joaquin Delta is one of California's most valuable and irreplaceable resources. Without adequate levee protection, the Delta, as we know it today, would be lost. The levees serve many needs: they protect valuable wildlife habitat, farms, homes, urban areas, recreational developments, highways and railroads, natural gas fields, utility lines, major aqueducts, and other public developments. The levees are critical to the protection of Delta water quality and serve a significant function in the State's water transfer system. The State Leg-

islature recognized the importance of the Delta after the floods of the early 1980s and enacted the Delta Flood Protection Act of 1988 (SB 34 [Water Code Sections 12310 *et seq.*, and 12980 *et seq.*]). With SB 34, the Legislature declared that, "...the Delta is endowed with many invaluable and unique resources and that these resources are of major statewide significance."

In SB 34, the Legislature declared its intent to appropriate \$12 million annually through fiscal year 1998-99 for the Delta Flood Protection Fund. Six million dollars of the appropriation are for local assistance under the Delta Levee Maintenance Subventions Program. The remaining \$6 million are for Delta Special Flood Control Projects, including subsidence studies and monitoring on Bethel, Bradford, Jersey, Sherman, and Twitchell Islands; Holland, Hotchkiss, and Webb Tracts; and the towns of Thornton and Walnut Grove.

Since 1988, the program has managed \$114 million in appropriated funds and, combined with local funds, has realized \$140 million in levee improvements. In 1996, AB 360 was signed into law. This law expanded the area covered by the Delta Special Flood Control Projects Program to include the remainder of the legal Delta and the northern Suisun Bay from Van Sickle Island to Montezuma Slough. Bond appropriations of \$25 million from Proposition 204 (enacted in 1996) and \$30 million from Proposition 13 (enacted in 2000) provide supplemental funding.

Delta Levee Maintenance Subventions Program

The Delta Levee Maintenance Subventions Program provides funding, as a reimbursement, to local Delta reclamation districts to assist levee maintenance and repair, and each year, participating districts prepare work plans and file applications for funding with the State Reclamation Board.

The applications and work plans are reviewed by the Department, which makes a recommendation and requests the approval of SRB for the

Endangered Species Acts

In planning, constructing, and operating the SWP, the Department must consider the effects its actions will have on organisms, including plants, birds, reptiles, fish, and mammals, listed as threatened or endangered according to the Federal Endangered Species Act (Title 16, United States Code sections 1531-1544 [1973]) and the California Endangered Species Act (California Fish and Game Code sections 2050-2098 [1984]). An endangered species is one in danger of extinction in all or a significant portion of its range; a threatened species is one likely to become endangered. These acts are designed to protect threatened and endangered species by

- ensuring federal and State agencies adopt measures to protect the species during the design, construction, and operation of projects and in taking other forms of agency action; and
- prohibiting the unauthorized take of endangered species.

One important aspect of the acts is preserving habitat critical to the survival of the threatened or endangered species.

program funding level. SRB also approves each district's maximum possible reimbursement—up to 75 percent for levee work and habitat mitigation—and maximum advanced reimbursement amount. After SRB approval, agreements are executed between SRB and each participating district. These agreements state that eligible work will be completed during the current fiscal year. All work must be in compliance with appropriate State and federal laws, including the California Environmental Quality Act, the State and federal ESA, Section 1600 of the Fish and Game Code, Section 404 of the Clean Water Act, and must have confirmation from DFG that a net long-term habitat improvement of riparian, fisheries, and wildlife habitat will result.

Delta Special Flood Control Projects

The Special Flood Control Projects Program assists the eight western islands, northern Suisun Bay, the towns of Thornton and Walnut Grove, and other locations in the Delta. In July 1989, the Legislature approved a plan of action

for flood control for the towns of Thornton and Walnut Grove.

For the eight western Delta islands, the California Water Commission approved a report of initial or “fast-track” actions in September 1989 and approved the long-term actions and priorities in May 1990. The long-term plans are used by the Department to determine how to best use appropriations to protect these islands and include

- rehabilitation of threatened levees through the use of imported dredged material;
- verification of elevations in the Delta through the use of Global Positioning System equipment; and
- upgrading levees to the standards included in Bulletin 192-82, *Delta Levees Investigation*.

Depending on the ability-to-pay of each reclamation district, the Department pays up to 100 percent of the cost of these activities. Districts receiving funds under the Special Flood Control Projects Program are required to participate in habitat improvement programs to ensure a net long-term habitat enhancement.

Delta Levees Habitat Improvement. The Delta Flood Protection Program continues to make significant strides in its efforts to create valuable habitat in the Delta. In 2000, the program continued to develop 291.8 acres of various types of habitat for flood mitigation and 19.38 acres for enhancement. The program is also in the process of developing 36,350 linear feet of shaded riverine aquatic habitat, of which 12,898 linear feet will be used for mitigation and 23,452 linear feet for enhancement.

Completed mitigation and enhancement projects include

- Medford Island
- Terminous Tract
- Twitchell Island setback levee
- Staten Island berm and channel islands
- Wright Elmwood Tract

- Thornton–New Hope Tract (Grizzly Slough)
- Palm Tract
- Bethel Island
- Canal Ranch attached berm
- Kimball Island
- Lower Sacramento River revegetation, Grand Island in participation with the Corps
- Webb Tract Site 3

Projects underway include

- Decker Island Phase I construction
- Decker Island Phase 2 design
- Lower Sacramento River revegetation, Grand Island in participation with the Corps
- Prospect Island
- Sherman Island berm
- Sherman Island Parcel 11
- Franks Tract
- the last phase of Tyler Island

Projects that have been proposed include Veale Tract and McCormack-Williamson Tract.

The Department, DFG, and reclamation districts are making substantial progress in providing adequate avoidance or mitigation of net long-term habitat losses and in enhancing habitat in the Delta. Many participating districts are identifying potential habitat mitigation and enhancement areas that may be developed into diverse habitats as the program's habitat development process moves forward. The Department and DFG will continue to work with the reclamation districts to improve the quantity and quality of habitat in the Delta.

Subsidence Investigations. Organic soils in the Sacramento-San Joaquin Delta are now between 10 and 25 feet below sea level. The peat has oxidized and subsided since the mid-1800s, when the land was first drained and levees constructed. The Legislature recognized the problem and, with the initiation of the Delta Flood

U.S. Army Corps of Engineers

In addition to its historical leadership in flood control, the U.S. Army Corps of Engineers regulates structures or work affecting navigable waters of the United States according to Section 10 of the Rivers and Harbors Act (Title 33, United States Code, Section 403 [1899]) and any activity which results in discharges of dredged or fill material into waters of the United States (which includes wetlands), according to Section 404 of the Clean Water Act.

Bureau of Reclamation

The Bureau of Reclamation manages the operation of the Central Valley Project and shares with the Department responsibilities for meeting water quality and flow objectives in the Delta. CVP delivers about 7 million acre-feet of water a year to contractors in the Sacramento and San Joaquin Valleys and parts of the San Francisco Bay Area. Under the requirements of CVPIA, the Bureau also supplies water for fisheries and wildlife refuges in the Central Valley.

Because the Department and the Bureau share Delta responsibilities, the Department coordinates SWP operations with the Bureau according to terms and conditions of the Coordinated Operation Agreement, signed in 1986. That agreement replaced an earlier system of year-to-year agreements regarding the responsibilities of the Department and the Bureau in the Delta. COA is significant in that the federal government agreed to accept a significant portion of responsibility for meeting the State Water Resources Control Board's water quality requirements for the Delta, with certain restrictions as to limitations of State and federal authorities.

Protection Act, the Department began monitoring subsidence and studying its causes.

The Department and the U.S. Geological Survey conduct an ongoing subsidence investigation in the Delta. Preliminary data indicate that

- land management practices substantially influence subsidence rates;
- cultivation practices that raise soil temperature and lower the water table dramatically increase oxidation of the peat soils;

- conversion of highly organic peat soils to carbon dioxide gas (oxidation) appears to be the primary cause of subsidence;
- permanently shallow flooded wetlands decrease release of gaseous carbon by as much as 80 percent, thereby mitigating subsidence;
- permanently shallow flooded wetlands also promote the growth of wetland vegetation that adds biomass back to the system; and
- subsidence mitigation and growth of wetland vegetation suggest that shallow permanent flooding has potential to reverse subsidence through biomass accretion.

In 1999, CALFED granted Category III funds to the Department to construct a Subsidence Reversal Demonstration Project on Twitchell Island. During 2000, a draft of the monitoring plan was completed and reviewed by CALFED. A geomorphic assessment of the project area was completed; background data was assembled of the Twitchell and Sherman Islands areas. Field monitoring, determination of hydrologic and tidal boundary conditions, and sediment modeling was initiated and construction, monitoring, and instrumentation installation was started at the field test sites. Water quality, soils, hydraulic, and carbon release data was collected from the test sites.

In 2003, USGS and area consultants will set up a learning laboratory to find ways to reverse subsidence. This project will combine the cultivation of tules and other aquatic vegetation in shallow ponds with application of thin layers of sediment. Land surface accretion and organic soil oxidation rates will be measured.

Reuse of Dredged Material for Delta Levees.

As local sources of fill material for levee repair are depleted, new economical sources must be located. The Department, in coordination with the Corps, local reclamation districts, and the Central Valley Regional Water Quality Control Board, implemented three pilot projects at Sherman, Twitchell, and Jersey Islands to demonstrate the viability of relocating material from

the San Francisco Bay Area to the Delta. Extensive monitoring and testing programs for salinity impact were required; no salinity impact was demonstrated.

Based on these results, the Department's Central District Flood Protection and Geographic Information Branch worked on finding more opportunities to reuse clean, bay-dredged materials in the Sacramento-San Joaquin Delta.

Current efforts for beneficial reuse of dredged material from the Bay Area principally consist of

- coordination with the CVRWQCB to address water quality concerns;
- discussions with the Corps to promote identification and acquisition of federal funds to support beneficial reuse projects;
- assistance to the Long-Term Management Strategy and Save the Bay in preparing proposals to CALFED to evaluate the potential for Delta reuse of clean, dredged material from San Francisco Bay;
- coordination with the Corps, CVRWQCB, CALFED, and RD 341 to stockpile dredged material from Suisun Bay and New York Slough on Sherman Island—this is a long-term project and could consist of 200,000 cubic yards of material dredged annually for 5 years. This project will be initiated by a demonstration project with 150,000 cubic yards coupled with an intense monitoring program;
- levee restoration and habitat projects proposed or under construction; and
- submittal of Report of Waste Discharge to the CVRWQCB for an application to obtain Waste Discharge Requirements for this project.

Levee restoration and habitat projects worked on in 2000 include

- stability berms on Bradford Island to repair cracking and foundations;

- long-term levee improvements on Sherman Island, including stability berms to strengthen levees in critical areas;
- stability berms and internal drains, to strengthen historically weak levees and control seepage along Three Mile Slough on Sherman Island;
- levee repair of areas with stability and seepage problems on Webb Tract;
- design of a 2.2-acre island in the San Joaquin River for the Sherman Island Berm Demonstration Project;
- engineering investigation for levee restoration on Jersey Island; and
- reuse of dredged material stored on Decker Island for levee rehabilitation on Webb Tract and habitat construction in borrow area on Decker Island.

Levee Upgrades. The Department funds upgrades to the levees according to standards contained in Bulletin 192-82, *Delta Levees Investigation*. According to those standards most levees should be high enough to protect against overtopping during a 300-year flood event. The minimum freeboard should be 1.5 feet for levees protecting agricultural land, and 3 feet for levees protecting urban areas. A typical improved levee section should have a 16-foot crown width with a waterside slope of 2 horizontal to 1 vertical.

In August 1991, the Corps, the Bureau, and the Department signed a feasibility cost-sharing agreement for a special study of the Sacramento-San Joaquin Delta. Updating an earlier 1982 study, the 1991 special study provided for investigation of solutions for Delta flood protection, salinity intrusion, recreation, and navigation. In accordance with the Water Resources Development Act of 1986 and the federal policy of incurring no net loss of habitat, the 1991 study included environmental and wildlife habitat restoration measures. The study also considered the Department's management plans for water supply and flood control when developing alternatives for a comprehensive Delta plan.

This special study is divided into two phases. Phase I began in September 1991 and ended in March 1993. The Phase I report, called the *Initial Report*, described problems, possible solutions, and opportunities to improve and / or provide flood protection, fish and wildlife habitat, water quality, recreation, and navigation. The *Initial Report* included a plan that identified existing and future land uses in years 2000, 2020, and 2040. The report discussed developing a comprehensive plan, primarily for flood control, navigation, and environmental restoration.

In Phase II, a regional planning report for environmental restoration, flood control, and navigation continues to be developed. The goal of this report is to develop a region-wide plan for Corps involvement in the Delta that links to the other planning efforts. This regional planning report will incorporate and be closely coordinated with CALFED long-term policies and plans. Other Phase II current efforts are to

- design and construct a levee test section
- study borrow material sources
- study dredged material reuse
- develop a Memorandum of Understanding between the Corps and the Department concurrent with CALFED planning efforts

In addition, a joint program has been planned to investigate other reuse opportunities and technical studies of sediment traps, water quality effects of sediment reuse, subsidence control, and habitat restoration. These investigations will demonstrate the value of sediment reuse and will continue to build momentum for developing solutions to Delta problems, particularly for flood-control issues.

Delta Water Rights Management

Several agencies in the western Delta have rights to water in the Delta. To manage those water rights and resolve issues associated with them, the Department negotiated water rights management contracts with some of the agencies concerned. Those agencies serve

agricultural, municipal, and industrial users of Delta water.

Delta Agricultural Water Users

In 1974, the Delta Water Agency was replaced by six Delta agricultural water agencies—North Delta Water Agency, SDWA, Central Delta Water Agency, East Contra Costa Irrigation District, Contra Costa County Water Agency, and Byron-Bethany Irrigation District. Two of those agencies—NDWA and ECCID—signed water-rights management contracts with the Department in 1981. The Department also negotiated contracts, or is requesting negotiations, with other agencies to provide for water level, circulation, and quality needs in certain areas.

South Delta Water Agency Contract

In September 1990, the Department completed negotiations for a long-term agreement with SDWA and the Bureau. Under the proposed SDWA contract, the parties agreed to proceed with the design, construction, and operation of certain barrier facilities in the south Delta channels. The facilities resolved those portions of the lawsuit that SDWA filed in 1982 regarding the alleged effects of export pumping by the SWP and /or CVP on water levels, quality, and circulation in the south Delta.

Since 1990, the Department has installed and operated temporary barrier facilities in the south Delta to improve south Delta conditions and collect data needed to design and operate permanent barrier facilities as proposed in SDIP. In 1999, data collected in the Temporary Barriers Program assessed the barriers' ability to reduce or eliminate adverse water levels and improve local hydraulic circulation patterns.

Western Delta Municipal Water Users

To compensate the Contra Costa Water District and the City of Antioch for purchasing water of usable quality when such water is not available from Mallard Slough and the San Joaquin River, the Department signed contracts with CCWD in 1967 and the City of Antioch in 1968.

According to terms of the contracts, the Department compensates each agency for additional costs of purchasing a substitute water supply from the Contra Costa Canal to replace water supplies of usable quality lost because of SWP operations. Credits for the number of days of above-average water supplies of usable quality from Mallard Slough and the San Joaquin River accrue to offset the number of below-average days in future years.

Information in this chapter was contributed by the Division of Planning and Local Assistance, the Central District, and the Bay-Delta Office.

Chapter 3

Environmental Programs



Delta smelt in palm of hand

Significant Events in 2000

- Average net Delta outflow in February and March was higher than the historical average and was higher again from mid-April through early May. State Water Project export pumping was reduced from mid-April to mid-May to support the Vernalis Adaptive Management Plan. SWP exports were reduced again from late May through July because of elevated Delta smelt numbers near the South Delta facilities. Despite curtailed pumping, the red-light take level for Delta smelt was exceeded in May and June; 87 percent of the Delta smelt salvaged in 2000 occurred during these 2 months.
- From April 15 to May 15, a series of fisheries studies assessed juvenile salmon survival through the Delta under conditions of relatively high San Joaquin River flows and relatively low SWP and CVP exports.
- The National Marine Fisheries Service listed the steelhead, Northern California Evolutionarily Significant Unit, as a threatened species under the Federal Endangered Species Act.
- Critical habitat was designated by NMFS under FESA for previously listed Central Valley spring-run Chinook salmon ESU and the California Coastal Chinook salmon ESU.
- A Federal District Court judge ruled that the decision by the U.S. Fish and Wildlife Service to list the splittail as threatened under FESA was not reached in accordance with the law. The judge remanded the decision to USFWS for further analysis and review.
- The Department and the Department of Fish and Game implemented seven fishery-improvement projects to offset fish losses at Banks Pumping Plant under the Four Pumps Mitigation Agreement.

The Department of Water Resources has developed and implemented several programs to avoid, minimize, or offset any adverse impact that might result from construction and operation of State Water Project facilities.

Operations for Fish Species of Concern

Avoiding, minimizing, and offsetting adverse impacts to fish species of concern is a primary consideration in operation of the SWP. By definition, a species of concern is one that has been listed or proposed for listing as threatened or endangered by a State or federal Endangered Species Act. Maintaining flexibility in SWP operations is key to avoiding and minimizing adverse impacts to fish of concern. Operational responses can include Delta Cross Channel gate closure, export curtailments, changes in delivery schedules, increased reservoir releases, preferential use of certain facilities, or a combination of these actions.

The Environmental Water Account, a cooperatively managed program, is intended to provide protection to the fish of the Bay-Delta Estuary at no uncompensated cost to the SWP and Central Valley Project water users. Additional information about EWA can be found in Chapter 7.

San Joaquin River Activities

In recent years the Department coordinated with the Bureau of Reclamation to decrease Delta exports and increase flows in the San Joaquin River from mid-April through mid-May (pulse flow period) to benefit fall-run Chinook salmon emigrating from the San Joaquin River Basin. This plan, known as the Vernalis Adaptive Management Plan, is a 12-year federal/State research component associated with the San Joaquin River Agreement. VAMP calls for intensive fisheries sampling in the lower San Joaquin River. Several studies intended to esti-

mate the relative survival of marked salmon moving through the Delta under varied export pumping rates were coordinated with fisheries collection efforts under VAMP during the pulse flow period. The goal is to conduct operational changes and associated studies over a number of years to determine if a relationship exists between river flow, Delta exports, and salmon survival through the Delta. The resulting information will be used to determine if changing San Joaquin River flows and Delta exports in the spring can significantly benefit San Joaquin River fall-run Chinook salmon.

Temporary Barriers. As part of VAMP, temporary barriers were constructed to

- provide an adequate water supply for south Delta water diverters;
- improve water quality conditions in the Stockton Deep Water Channel; and
- prevent Chinook salmon from entering Old River, thereby reducing the likelihood of entrainment at the south Delta facilities.

In 2000, a temporary barrier was installed in Old River at Head on April 16 and removed on June 2. The purpose of this spring season barrier was to improve conditions for juvenile Chinook salmon migrating out of the San Joaquin River Basin. The Old River at Head barrier was installed again in the fall (October 7 through December 8) to help with low dissolved oxygen levels in the lower San Joaquin River and to prevent migrating adult Chinook salmon from entering the area.

Temporary barriers were installed on Middle River and Old River near Tracy on April 6, and

the Grant Line Canal barrier was completed on June 1. The primary purpose of these barriers is to increase water levels in the south Delta for local water users. The barriers were removed on October 7 due to the end of irrigation water needs and possible conflicts with winter-run salmon.

Spring-Run Chinook Salmon Protection Plan

The Spring-Run Chinook Salmon Protection Plan outlines a monitoring program, identifies indicators that would trigger a response, and identifies possible actions to minimize SWP and CVP impacts on emigrating yearling spring-run salmon. Flow, turbidity, and either fish movement or fish presence are all continuously monitored using in-stream measurements, surveys, and in-stream sampling devices (e.g., rotary screw traps). Indicators triggering a potential response include an increase in flows or turbidity in the Sacramento River and its tributaries, fish migration toward the Delta, and the detection of spring-run salmon at the export facilities. Possible actions include the closure of the Delta Cross Channel gates and export reductions. Implementation of the Protection Plan continued in 2000.

The gates were operated to protect fisheries resources and for scientific experimentation. In June the gates were closed to protect striped bass migration in the area. Between September and November they were opened and closed at different intervals for a study of impacts on fish, flows, and water quality by an interagency group of scientists. The gates were closed again for a 3-day period in December because fish sampling found young out-migrating Chinook salmon in the north Delta.

Delta Export Curtailments Due to Delta Smelt

The biological opinion on the effects of SWP / CVP operations on Delta smelt has set thresholds for combined (SWP and CVP) Delta smelt salvage for each month. SWP and CVP Delta smelt salvage is compared with these thresholds

to determine when consultation should be reinitiated between USFWS, the Bureau, and the Department. If needed, further actions are taken to reduce water project impact on Delta smelt. These thresholds include

- the 14-day running average of combined SWP and CVP Delta smelt salvage greater than or equal to 400 fish, commonly referred to as the *yellow-light level*; and
- the cumulative total of combined salvage for each month, commonly referred to as the *red-light level*.

The red-light level is based on historical salvage data and varies by month and water year type. For example, in an above-normal water year, the red-light level ranges from 733 fish in December to 11,990 fish in October. Monthly red-light levels for below-normal water years are generally higher—as much as six times—than levels for above-normal water years. Reaching the yellow-light level triggers informal consultation to consider options for reducing Delta smelt take. Reaching the red-light level triggers formal reconsultation among the agencies to determine whether additional actions are necessary to avoid jeopardizing the species.

In 2000, approximately 85,000 Delta smelt were salvaged at the SWP and about 28,500 at CVP, a decline from the approximately 152,000 Delta smelt salvaged at both facilities in 1999. Adult salvage numbers (almost 5,500) peaked in February 2000 at the SWP. The red-light take level was exceeded in May and June when peak salvage of juvenile Delta smelt occurred; 87 percent of the Delta smelt salvage occurred during these 2 months.

The red-light level triggered a reconsultation with USFWS and several actions were implemented by the CALFED Operations Group and its subgroups—the No-Name Group, the Data Assessment Team, and the Delta Smelt Work Group. These actions included

- SWP export reductions from late May through June; and

- delay of a proposal to relax the export/inflow ratio until after the end of June.

In 2000, the Delta Smelt Working Group, a product of the 1995 Delta Smelt Biological Opinion, established a Delta Smelt Decision Tree, which is a written description of the types of information, questions, and thought processes the working group uses to determine if recommendations for operational changes are warranted. The decision tree is not intended to add any new requirements or criteria, but rather to inform other interested parties of the decision process presently in use.

Decisions on Endangered Species

Federal fish and wildlife agencies listed one additional fish species as threatened in 2000. Listing may require modifications to project operations to reduce impacts on listed species. NMFS listed the Northern California steelhead Evolutionarily Significant Unit as threatened under FESA, but as of December 31, 2000, had not designated its critical habitat. NMFS did, however, designate critical habitat and adopted a 4(d) rule as of September 8, 2000, under FESA for previously listed steelhead in the Central Valley ESU, Central California Coast ESU, South-central California Coast ESU, and the Southern California ESU. The 4(d) rule determines the activities NMFS needs to authorize for the incidental take of the fish.

Although proposed as a candidate species for listing in 1999, NMFS determined that listing for Central Valley fall-run and late fall-run Chinook salmon ESUs was not warranted. Critical habitat designations were issued by NMFS under FESA for the previously listed Central Valley spring-run Chinook salmon ESU and the California Coastal Chinook salmon ESU.

The Department and the Bureau consulted with NMFS and DFG about the potential impact of SWP and CVP operations on steelhead and spring-run Chinook salmon. A 1-year biological opinion and take authorization for these species

was provided in 1999 and again in 2000. The Department and the Bureau prepared a Biological Assessment in 2000 on the effects of the SWP and CVP on the two species. The Department and the Bureau, through the CALFED Operations Group, continued the Spring-Run Chinook Salmon Protection Plan to provide greater and more immediate protection for the species during fall 2000.

USFWS listed splittail as threatened under FESA in 1999. This species had been considered for listing since 1994. In 2000, a Federal District Court judge found that the decision by USFWS to list the splittail as endangered under FESA was not reached in accordance with the law. The judge remanded the decision to USFWS for further analysis and review. The Department and the Bureau have continued consultation with USFWS to develop an incidental take statement for operation of the SWP and CVP should this species remain listed.

Fish Population Estimates

Figure 3-1 shows the abundance index for Delta smelt from 1967 through 2000, based on fall midwater trawl sampling. Using the first two tow-net surveys only, Delta smelt abundance indices are calculated as the product of the total catch at each site and a weighting factor that represents the estimated water volume for the site, divided by 1,000. The fall abundance index is significant because it provides one of the best indicators of the status of the adult Delta smelt population. The 2000 index was slightly lower than 1999, but it was still among the highest values observed in the last 10 years. Scientists do not know what causes these variations in abundance.

Figure 3-2 shows estimates of returning adult winter-run Chinook salmon from 1967 through 2000. The estimates are referred to as *escapement estimates*—the number of adults that escape mortality and return to spawn. The estimated escapement for 2000 was 1,204, which more than replaced the estimated 900 adults in the

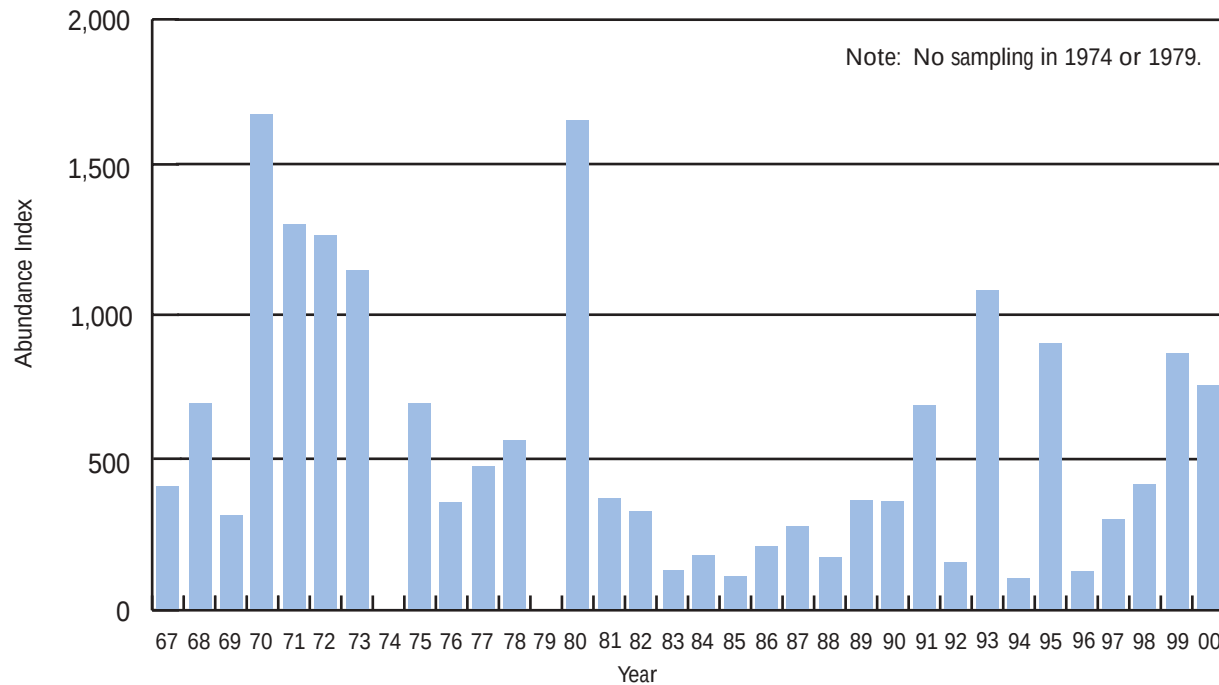


Figure 3-1. Delta Smelt Fall Midwater Trawl Sampling Abundance Index, 1967 through 2000

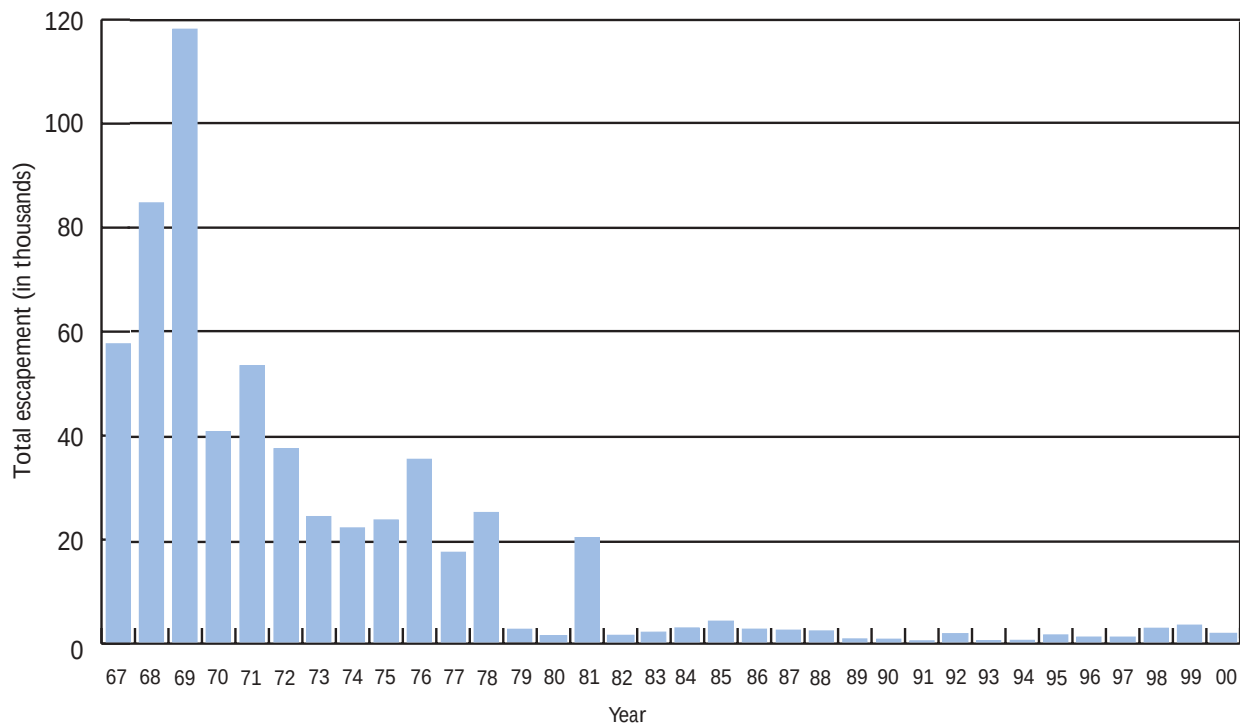


Figure 3-2. Estimated Total Adult Winter-Run Chinook Salmon Escapement, 1967 through 2000

parent stock of 1997. This data continues to indicate a positive trend in the size of the reproductive population. Factors such as improved spawning and rearing habitat, reduced losses in the Delta, and reduced commercial fishing losses are all thought to have benefited winter-run Chinook salmon.

Figure 3-3 shows estimates of returning adult spring-run Chinook salmon from 1990 through 2000. Individual estimates are shown for Deer Creek, Mill Creek, Butte Creek, and the Feather River—the principal spawning streams for this species of salmon. The escapement estimates are shown separately for each stream because the Feather River estimate is based on returns to the Feather River Hatchery, where the genetic integrity of spring-run Chinook salmon is uncertain. The estimated escapement for 2000 was 3,675 for the Feather River Hatchery and about 5,455 for the other streams combined. Overall, spring-run escapement in 2000 was very similar to 1999. Although the escapement estimates have fallen below recent highs in 1995 and 1998, they remain consistently higher than those observed during the early 1990s. Factors such as improved spawning and rearing habitat, reduced losses in the Delta, and reduced commercial fishing losses are all thought to have benefited spring-run Chinook salmon.

Due to lack of comprehensive monitoring programs, there are no reliable escapement estimates for Central Valley steelhead.

Figure 3-4 shows the fall midwater abundance trawl index for young-of-the-year splittail for the period 1967 through 2000. The year 2000 index was below average for the period of record. Splittail reproduce in spring and appear to have higher reproductive success in years when ample seasonally flooded habitat (such as Sutter and Yolo Bypasses) is available. This habitat was available for a portion of the splittail spawning season in 2000. Splittail is a long-lived minnow species (5-8 years), which helps it “weather” periods of low reproduction.

Feather River Fish Studies

The Feather River fish studies were initiated in the early 1990s to document and monitor fish populations of the lower Feather River. Early efforts focused on studies to identify flow requirements for Chinook salmon and steelhead. The program has progressively expanded since the mid-1990s in preparation for the Federal Energy Regulatory Commission relicensing of the SWP’s Oroville-Thermalito Complex. In 2000, field program elements included operation of rotary screw traps, seining, snorkeling, salmon spawning surveys, and temperature monitoring.

Rotary screw traps capture juvenile salmon and steelhead as they emigrate from the Feather River. Data collected from the traps are used to monitor the timing and abundance of salmonid emigrants. This long-term monitoring effort yields valuable baseline information about juvenile salmon production in the Feather River and the effects of project operations on abundance and migration timing. Snorkel surveys monitor juvenile and adult steelhead abundance, distribution, and habitat use in the Feather River. This information is useful for identifying critical habitats and evaluating the impacts of project operations on natural production of steelhead in the Feather River. Seining surveys supplement other methods by sampling over a greater area and by more efficiently capturing larger fish. Salmon spawning surveys estimate the number and distribution of adult Chinook salmon that returned to spawn in the Feather River.

Data from these Feather River sampling programs have revealed several significant and noteworthy trends. For example, snorkeling studies have shown there is substantial in-river spawning of steelhead. Juvenile steelhead first appear in March, and are most abundant in well-vegetated side channels of the low-flow channel. Within the low-flow channel, water temperatures do not appear to limit the abundance of juvenile steelhead. Also, rotary screw traps show that the peak of salmon emigration occurs in February or March. Flows do not

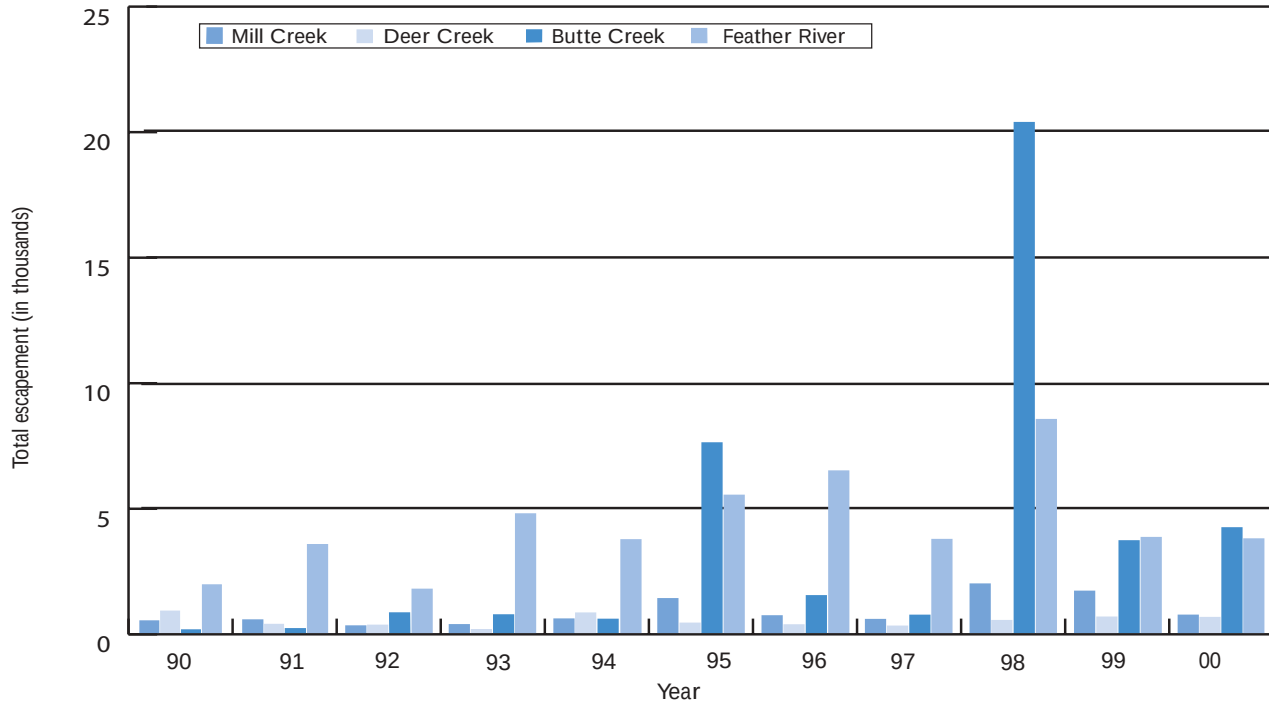


Figure 3-3. Estimated Spring-Run Chinook Salmon Escapement, 1990 through 2000

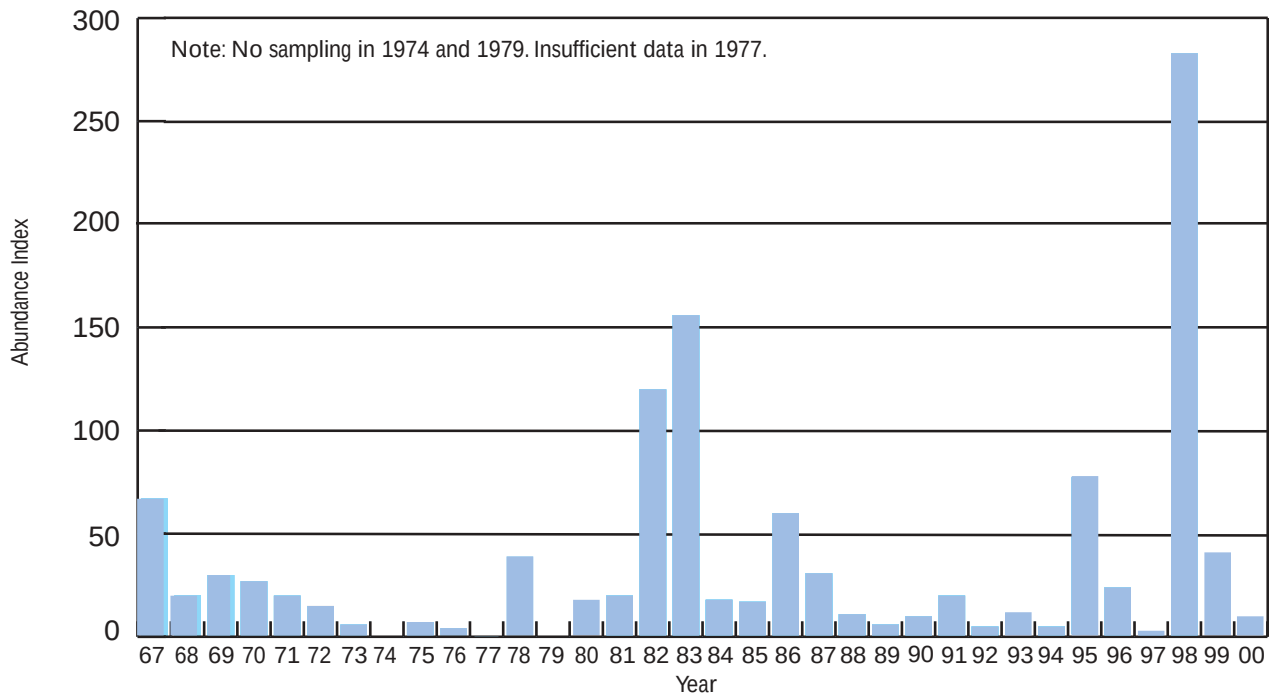


Figure 3-4. Young-of-the-Year Splittail Abundance Index, Fall Midwater Trawl, 1967 through 2000

appear to cue or influence the timing of salmon emigration. Salmon spawning surveys have shown that two-thirds of all spawning occurs within the low-flow channel. An estimated record 120,000 salmon spawned in the Feather River from the Fish Barrier Dam downstream to Gridley.

Fish-Related Mitigation Projects

In 1986, the Department and DFG signed the Four Pumps Agreement to annually provide funds to replace fish lost at Banks Pumping Plant. The agreement also provides a \$15 million lump sum for additional projects to compensate for losses prior to 1986. Although the agreement focuses on Chinook salmon, striped bass, and steelhead, it also considers other fish.

Since 1986, the Department has spent \$31 million on mitigation projects developed under this agreement. These projects include the following:

- improving salmon spawning and rearing habitat;
 - planting hatchery- and net-pen-reared striped bass;
 - implementing a conjunctive-use project to improve salmon migration flows in Mill Creek in Tehama County;
 - constructing fish ladders and screens on Butte Creek;
 - constructing fish screens in Suisun Marsh;
 - operating an acclimation pen to improve survival of hatchery-reared salmon during their release into San Pablo Bay; and
 - enhancing enforcement of fish and game laws in the Delta and upstream to benefit salmon, steelhead, and striped bass and to increase protection for spring-run salmon.
- In 1996, the Department and DFG amended the agreement to
- provide another 5 years to spend the remaining \$9 million of the \$15 million lump sum provided in the agreement; and
 - specify the likely allocation of the remaining funds.
- Because of difficulties in developing mitigation projects, the Department could not spend the full \$15 million lump sum in the 10 years required by the original agreement. The remaining funds were tentatively allocated to provide
- \$2 million for screening diversions in Suisun Marsh;
 - \$1 million for predator-isolation projects on San Joaquin River tributaries;
 - \$2 million for a conjunctive-use project to improve spring-run salmon migration in Deer Creek in Tehama County; and
 - \$4 million for a salmon conservation hatchery on the Tuolumne River.
- Other mitigation projects approved in 2000 for implementation from the agreement's annual funds and the \$15 million lump sum include
- stocking up to 1,275,000 yearling striped bass in 2000 and 2001;
 - more funding for construction of a salmon habitat project on the Merced River to improve salmon survival by eliminating predator habitat from rearing areas and migration pathways and by improving salmon-spawning habitat; and
 - spawning gravel replenishment and monitoring of gravel movement at the most upstream spawning area of the Merced River.

Information in this chapter was contributed by the Division of Environmental Services and the Division of Operations and Maintenance.

Chapter 4

Water Quality Programs



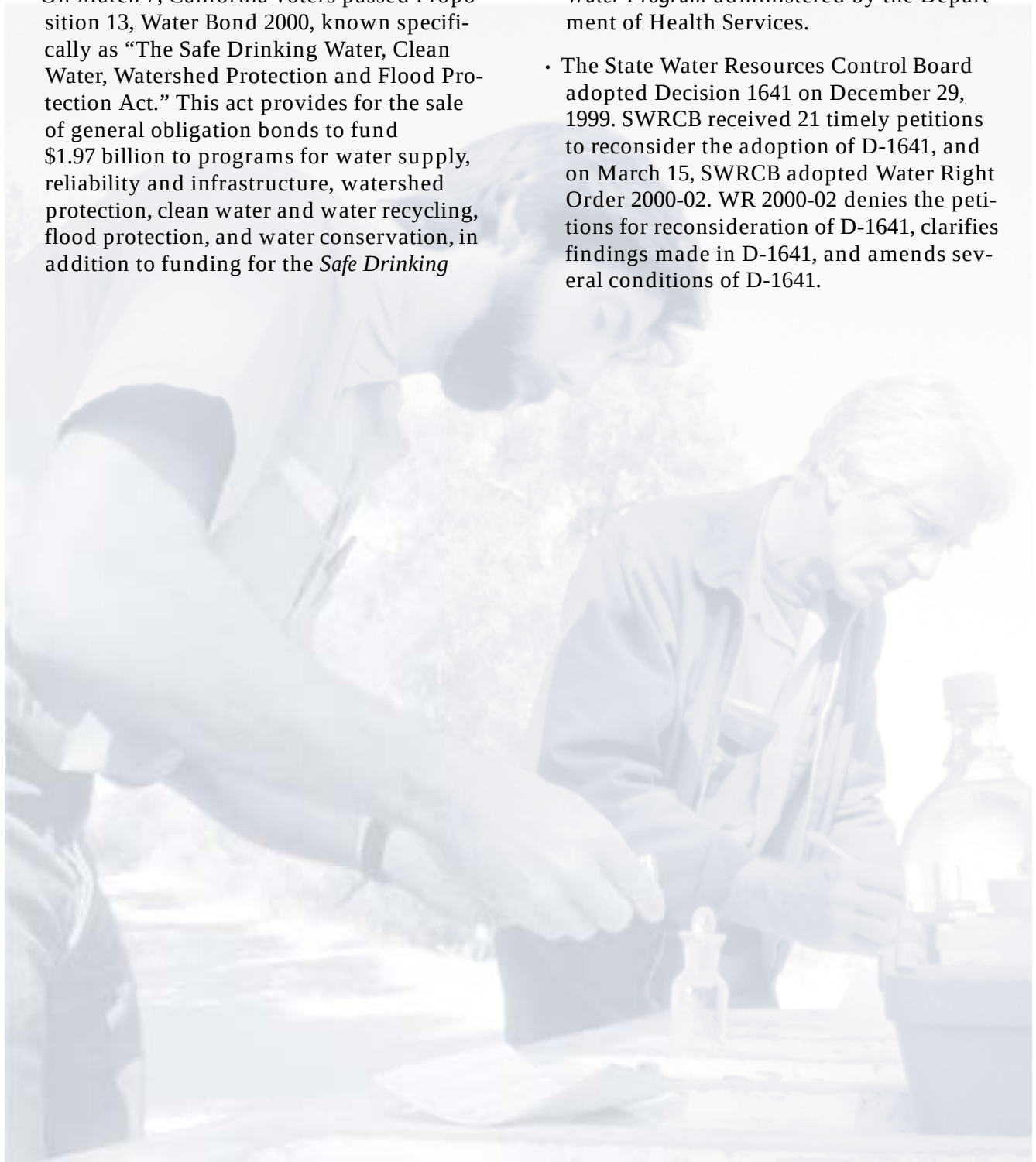
Staff conducting water quality tests

Significant Events in 2000

- On March 7, California voters passed Proposition 13, Water Bond 2000, known specifically as “The Safe Drinking Water, Clean Water, Watershed Protection and Flood Protection Act.” This act provides for the sale of general obligation bonds to fund \$1.97 billion to programs for water supply, reliability and infrastructure, watershed protection, clean water and water recycling, flood protection, and water conservation, in addition to funding for the *Safe Drinking*

Water Program administered by the Department of Health Services.

- The State Water Resources Control Board adopted Decision 1641 on December 29, 1999. SWRCB received 21 timely petitions to reconsider the adoption of D-1641, and on March 15, SWRCB adopted Water Right Order 2000-02. WR 2000-02 denies the petitions for reconsideration of D-1641, clarifies findings made in D-1641, and amends several conditions of D-1641.



Many Californians rely on the State Water Project for part or all of their daily residential water needs. Water for agriculture, industry, power generation, recreation, and fish and wildlife is also provided by the SWP. The Department monitors SWP water quality throughout the system, using an automated network of continually operating recorders and laboratory analyses of field samples collected weekly, monthly, quarterly, or annually.

Delta Activities

The State Water Resources Control Board sets water quality objectives for beneficial water uses in California, and the Department of Health Services establishes maximum contaminant levels for treated drinking water. Additional water quality objectives are set at points of delivery by Article 19 of the long-term SWP water supply contracts. Water quality in the

Delta and Suisun Marsh is protected under the SWRCB's Decision 1641 adopted in December 1999.

Decision 1641

SWRCB's issuance of D-1641 is part of their implementation of the 1995 Bay-Delta Water Quality Control Plan and, accordingly, this decision amends certain water rights of the water

State Water Resources Control Board

The State Water Resources Control Board, established by the California Legislature in 1967, oversees water rights and water quality for California. Among its many responsibilities, SWRCB issues permits for the use of all water except groundwater and riparian water; distributes State and federal loans and grants for constructing sewage facilities; adopts water quality control plans, regulations, and policies; and sets water quality standards for the Delta.

To implement its mandate to set Delta water quality standards, SWRCB issued Water Right Decision 1485: Sacramento-San Joaquin Delta and Suisun Marsh in 1978. That decision focused on SWP and CVP water right permits and operations, requiring the SWP and CVP to maintain Delta water quality as it would have existed without the projects. However, after D-1485 was adopted, various water users as well as the federal government challenged it in court. Since then, SWRCB updated its Water Quality Control Plan, adopted on May 22, 1995. Water Right Order 95-6 amended D-1485 to be consistent with the plan on June 8, 1995. WR 95-6 modified the standards for Suisun Marsh and allowed the SWP and CVP to use either project's Delta pumping plant to pump project water to increase fish protection and maintain project delivery capability. Water Right Order 98-9, adopted by SWRCB on December 3, 1998, extended the terms and conditions of WR 95-6 to allow time for the issuance of a comprehensive Water Right Decision.

On December 29, 1999, SWRCB issued Decision 1641, replacing D-1485, and conditioning the water right permits of the SWP and CVP to implement the objectives of the Bay-Delta Water Quality Control Plan. D-1641 covers Phases 1-7 of the Bay-Delta Water Rights Hearings. On March 15, 2000, SWRCB adopted Water Right Order 2000-02, which denies the petitions for reconsideration of D-1641, clarifies findings, and amends several conditions of D-1641. Phase 8, the permanent allocation of responsibility to meet the Delta outflow objectives now temporarily assigned to the Department and the Bureau of Reclamation, is still under consideration.

rights holders to help achieve the plan's objectives. Although Phase 8, the allocation of responsibility to meet the Delta outflow objectives of D-1641, is still under consideration, the following amendments are included in the decision.

- The decision expands the responsibilities of the Department and the Bureau of Reclamation, including the addition of some objectives that were not included in the two previous limited term orders. These additional objectives involve southern Delta agricultural salinity standards that were listed in the 1995 Bay-Delta Water Quality Control Plan, but prior to D-1641 no water rights holder had responsibility under a water right permit to meet these salinity objectives.
- The decision, in contrast to the above expansion of responsibilities, relieves the Department and the Bureau of the responsibility of meeting salinity objectives at two locations in the western Suisun Marsh: Morrow Island (S-35) and Ibis Club (S-97). D-1641 further allows some variability in meeting the remaining Suisun Marsh salinity objectives.
- The decision also approves a joint petition of the Department and the Bureau to change points of diversion of the SWP and CVP in the southern Delta. The decision further approves a Bureau petition to change CVP places and purposes of use.

D-1641 also approves the San Joaquin River Agreement for a period of 11 years. SJRA facilitates the implementation of the Vernalis Adaptive Management Plan that is designed to gather information on the effects of exports and San Joaquin River flows on the survival of San Joaquin fall-run Chinook salmon.

The balance of the permit amendments in the decision involves the recognition of various memorandums of understanding, stipulations, and agreements among various groups, including the Department, that seek to resolve questions of responsibility for meeting the water

quality objectives contained within the Water Quality Control Plan.

On March 15, 2000, SWRCB adopted WR 2000-02, amending D-1641 and denying 21 petitions for reconsideration of D-1641. The year 2000 was the first year of operation under D-1641, although hearings covering Phase 8 continued during the first half of the year. On June 23, SWRCB announced, at the request of the Department and the Bureau, the postponement of any further Phase 8 hearings until January 2001.

The Department conducts extensive monitoring to protect beneficial uses of water in the Delta and Suisun Marsh as required by SWRCB's D-1641. Figure 4-1 shows water quality monitoring sites throughout the Sacramento-San Joaquin Delta.

Water Supply Conditions

Water Year Classifications and Water Supply Indexes

The 1999-00 water year was classified as above normal for California under criteria set forth by SWRCB in D-1641. (For a detailed discussion of the 1999-00 water year, see Chapter 8.)

SWRCB's D-1641 contains objectives that are conditioned by water year type, which, generally, become less stringent in years with less precipitation. The water year classification system provides relative estimates of a basin's available water supply from the amounts of rainfall, snowmelt runoff, and groundwater accretion rates. Water year types are classified as either *wet*, *above normal*, *below normal*, *dry*, or *critical*.

D-1641 applies a water supply forecast tool, the Sacramento Valley 40-30-30 Index, which replaced the Sacramento River Index. SWRCB first introduced the Sacramento Valley 40-30-30 Index in its 1991 Water Quality Control Plan for Salinity.

The Sacramento Valley unimpaired runoff lists the major flows into the Sacramento Basin.

Station Number and Name

C3	Sacramento River at Greens Landing	D14A	Big Break near Oakley
C7	San Joaquin River at Mossdale Bridge	D15	San Joaquin River at Jersey Point
C9	West Canal at mouth of intake to Clifton Court Forebay	D16	San Joaquin River at Twitchell Island
C10	San Joaquin River near Vernalis	D19	Franks Tract near Russo's Landing
D4	Sacramento River above Point Sacramento	D22	Sacramento River at Emmaton
D6	Suisun Bay off Bulls Head Point near Martinez	D24	Sacramento River below Rio Vista Bridge
D7	Grizzly Bay at Dolphin near Suisun Slough	D26	San Joaquin River at Potato Point
D8	Suisun Bay off Middle Point near Nichols	D28A	Old River opposite Ranch Del Rio
D9	Honker Bay near Nichols	D41	San Pablo Bay near Pinole Point
D10	Sacramento River at Chipps Island	MD7A	Little Potato Slough at Buckley Cove
D11	Sherman Lake near Antioch	MD10	Disappointment Slough at Bishop Cut
D12	San Joaquin River at Antioch Ship Channel	P8	Middle River at Buckley Cove
		P10A	Middle River at Union Point
		P12	Old River at Tracy Road Bridge

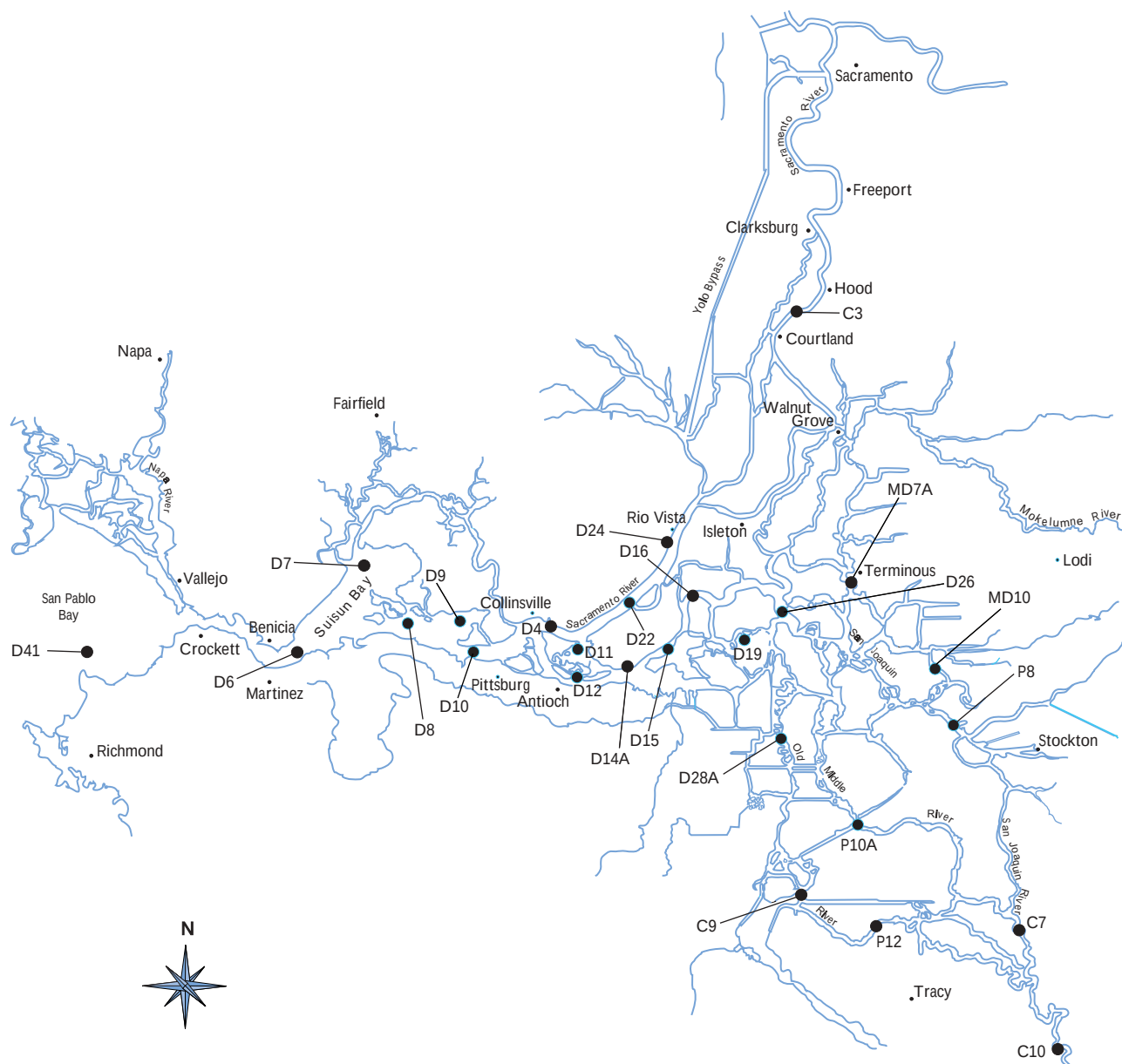


Figure 4-1. Water Quality Monitoring Sites in the Sacramento-San Joaquin Delta

The factors used in the Sacramento Valley 40-30-30 Index are the following: (1) the current year's April to July Sacramento Valley unimpaired runoff (40 percent), (2) current October through March Sacramento Valley unimpaired runoff (30 percent), and (3) the previous year's 40-30-30 Index (30 percent, with a cap of 10 million acre-feet).

D-1641 also includes another water supply forecast tool, the San Joaquin Valley 60-20-20 Index, which uses methods similar to the Sacramento Valley 40-30-30 Index.

The Eight River Index—the sum of the runoff from the eight major rivers of the Sacramento and San Joaquin Valleys—determines the duration of the fish and wildlife salinity/flow standard at Chipps Island or Port Chicago during February through June.

The April through July Sacramento Valley unimpaired runoff forecast for May 1, 2000, was 6.71 million acre-feet (102 percent of average). The resulting Sacramento Valley 40-30-30 Index forecast was 9.2 million acre feet (a 7 percent decrease over the 40-30-30 Index of 9.8 acre-feet in 1998-99). On May 1, 2000, the Index forecast was on the border between *wet* and *above normal*, and was classified as *wet* for all beneficial uses, while the water year actually ended with an *above normal* classification. This difference in classifications occurred as a result of an over-forecast of Sacramento River unimpaired runoff for May through July and, to a lesser degree, by slightly below median precipitation in May and June. The San Joaquin Valley 60-20-20 Index was classified as *above normal* for 2000, at 3.4 million acre feet. The Eight River Index was forecast on May 1 to be 10.5 million acre-feet for April through July.

Operations under the State Water Resource Control Board Water Right Decision 1641

During 2000, the Department and the Bureau operated projects in accordance with SWRCB's D-1641, adopted on December 29, 1999, which

includes water quality, flow, and operational criteria for the estuary. Operations of the SWP and CVP were coordinated with various objectives of CALFED, the Bay-Delta Plan, Central Valley Project Improvement Act, and biological opinions for fish species listed under federal and State endangered species acts. CALFED's Record of Decision signed on August 28, 2000, mandates an Environmental Water Account managed by the Department, the Bureau, Department of Fish and Game, and U. S. Fish and Wildlife Service for the protection of listed fish species. Fish species currently listed under the Federal and State Endangered Species Act include the winter and spring runs of Chinook salmon, Delta smelt, steelhead, and splittail.

Real-time monitoring of fish movement and conditions in the estuary aid daily water management. The purpose of real-time monitoring is to provide more timely protection of targeted fish species from entrainment at the Delta pumping facilities of the SWP and CVP and to ensure water supply reliability. (See Chapter 3 for a discussion of other environmental issues.)

Delta Cross Channel Gates

The Delta Cross Channel Gates allow fresher Sacramento River water to flow into interior Delta channels toward the export facilities of the SWP and CVP. During 2000, the gates were open for 235 days. The gates close during January if Delta outflow is greater than 12,000 cfs—and any time Sacramento River flow at Freeport exceeds 25,000 cfs—to reduce flooding potential on the Mokelumne River and to prevent scour on the downstream side of the gate structure. D-1641 contains measures that require closure of the gates from February 1 until May 20, during peak migration of winter, spring, and fall-run Chinook salmon smolts and steelhead, and the spawning season for Delta smelt, longfin smelt, Sacramento splittail, and striped bass.

The gates were open during the first half of January, with Delta outflow remaining below 12,000 cfs, and closed on January 16 as precipitation quickly boosted Delta outflow. The gates

remained closed until May 26 when the gates were opened and essentially remained open throughout the balance of the 2000 calendar year, with the exception of an experimental period during October when they were operated tidally for a few weeks. This experiment, funded by CALFED and CVPIA, involved closing the gates for the ebb tide and opening them on the flood tide while monitoring fish movement and salinity conditions. The final portion of the experiment closed the gates completely for a 3-week period. However, growing concern over the degradation of water quality changed the experiment so the gates could be operated either half-time tidally or closed 75 percent of the time. There were also two 3-day closures in June for the protection of migrating striped bass, and one 3-day closure in late December to protect out-migrating juvenile Chinook salmon.

Water Quality Standards

Water quality standards and objectives are categorized by the beneficial uses they are intended to protect. These standards include municipal and industrial, agricultural, and fish and wildlife. The Department attempts to meet D-1641 water quality and flow standards through releases from upstream reservoirs and Delta export operations, but D-1641 also contains a salinity standard for the San Joaquin River at Vernalis. San Joaquin River flows are not influenced by SWP upstream reservoirs, but they may be influenced by SWP exports and placement of south Delta barriers.

High river outflows, export restrictions, and water releases to benefit migrating fish (both pulse and attraction flows) helped maintain most electrical conductivity values well below objectives.

Chloride Standard

D-1641 includes a year-round 250 mg/L chloride standard that is in effect at Delta export locations (Clifton Court Forebay, Tracy Pumping Plant, Barker Slough, Contra Costa Canal at Pumping Plant #1, and Cache Slough at City of

Vallejo intake) where the chloride levels remained below the standard throughout 2000.

An additional municipal and industrial water quality standard for chloride at the Contra Costa Canal Intake near Rock Slough specifies that the chloride level must be below 150 mg/L for a given number of days during the year. The wet year requirement of 240 days was met during 2000.

Salinity Standard

Agricultural objectives included an EC standard of 0.45 mS/cm (14-day running average) during the irrigation season from April to mid-August, set at Emmaton, Jersey Point, Terminous, and San Andreas in the western and central Delta. All of these agricultural salinity standards were met in 2000. An additional salinity standard is applied year-round in the southern Delta at two locations on the San Joaquin River—Brandt Bridge and Vernalis—and two locations on Old River, at the Tracy Road Bridge and at the head of Middle River. Responsibility for meeting the salinity standard at the latter two of these four sites was included in D-1641. This year-round agricultural salinity standard of 1.0 mS/cm was met at all four locations throughout 2000.

Estuarine Habitat Protection Standard

The estuarine habitat protection standard incorporates modified X2 criteria (geographic isohaline), first established in the 1994 Delta Smelt Biological Opinion. The upstream movement of a 2 ppt isohaline (2 parts per thousand of salt in the water), measured as 2.64 mS/cm at the surface, is maintained within a certain range of positions in the estuary by adequate Delta outflow. These positions (Chippis Island or Port Chicago from February through June) are associated with fish and biota abundance.

The number of days per month when the daily averaged EC maximum (2.64 mS/cm) is in effect at Chippis Island or at Port Chicago is conditioned by the previous month's Eight River Index. This may alternately be met with a maximum 14-day running average EC of

2.64 mS/cm or with specific Delta outflow, set as a 3-day average Net Delta Outflow Index of 11,400 cfs or 29,200 cfs, when the X2 position is at Chipps Island or Port Chicago, respectively. The Port Chicago standard becomes effective when the Port Chicago 14-day EC average immediately prior to the first day of the month is less than or equal to 2.64 mS/cm. During 2000, the Eight River Index for January through May was 2.53 million acre-feet, 5.47 million acre-feet, 4.04 million acre-feet, 3.55 million acre-feet, and 3.63 million acre-feet, respectively. On the last day of January 2000, the 14-day EC average at Port Chicago exceeded 2.64 mS/cm, triggering compliance at Chipps Island for February. Twenty-eight days were required for X2 at Chipps Island during February and were met with a combination of sufficient NDOI flows and EC below 2.64 mS/cm. March easily met the required 28 days of X2 at Port Chicago with all three criteria—NDOI, daily EC average, and 14-day running average of EC. During April and May, the X2 requirement was also met at the more westerly Port Chicago location. April met the standard of 20 days with both EC and flows, while May met its 9-day standard using flows. The 14-day average EC at Port Chicago exceeded the 2.64 mS/cm on the last day of May, triggering the Chipps Island X2 location for June. June met the required 15 days of X2 using the 14-day average of EC below 2.64 mS/cm.

From February through June, a habitat protection outflow, measured as NDOI, is set at 7,100 cfs and calculated as a 3-day running average. This standard may be used in lieu of the Collinsville minimum daily average or 14-day running average EC of 2.64 mS/cm. During the February 1 through June 30 period, the 3-day running average of NDOI averaged 52,750, although the 3-day average fell to 7,089 cfs for 1 day on June 24. Notwithstanding, the habitat protection outflow was met with the alternate standard of 14-day average of EC below 2.64 mS/cm at Collinsville for the February 1 to June 30 period.

Net Delta Outflow Index Standard

Delta outflow cannot be measured directly due to the tidal influence in the Delta. An approximation of Delta outflow is calculated instead, using measured inflows, exports, and estimated Delta water use. NDOI, introduced in the 1995 Bay-Delta Plan, now part of D-1641, guided operations in 2000. It provides a more accurate method for calculating Delta outflow by including inflows of the Yolo Bypass system, the eastside stream system (consisting of the Mokelumne, Cosumnes, and Calaveras Rivers), the Sacramento Regional Treatment Plant, and a measurement of San Joaquin River flow at Vernalis. The NDOI-calculated flows cannot be directly compared to the Delta Outflow Index used prior to 1995, because the DOI does not include the above-listed flows. The calculation of in-Delta consumptive use also differs in NDOI.

Excess outflow conditions, as defined by the Coordinated Operation Agreement, allow greater flexibility in project operations. During 2000, conditions vacillated between excess and balanced throughout the year, though most of the first half of the year enjoyed excess conditions. In 2000, the year began and ended in balanced conditions. From February 15 through March 16, 2000, Delta outflow, calculated as NDOI, averaged almost 154,000 cfs per day. By comparison, February 8 to March 10, 1999, averaged nearly 121,000 cfs per day.

D-1641 sets specific minimum monthly NDOI standards between 3,000 and 8,000 cfs for the protection of fish and wildlife during January and from July to December. July's wet year NDOI standard is the strictest of all months at 8,000 cfs. Monthly NDOI was highest in March at 103,865 cfs. Monthly mean NDOI remained above 4,900 cfs during all months of 2000, with the lowest monthly mean occurring in September at 4,934 cfs. All NDOI standards were met in 2000.

Flow Standards

D-1641 includes minimum fish and wildlife flows measured in the Sacramento River at Rio Vista. These flow standards were incorporated from the Winter-Run Salmon Biological Opinion and set flow requirements based on the May 1 water year classification forecast. Water year 2000 was forecast to be wet, requiring mean monthly flow objectives of 3,000 cfs, 4,000 cfs, and 4,500 cfs for September, October, and November to December, respectively. During these periods, the 7-day running average cannot be more than 1,000 cfs below the monthly objective. All Rio Vista flow standards were met during 2000.

The Bay-Delta Plan also includes a minimum San Joaquin River base and pulse flows from the Winter-Run Salmon Biological Opinion. These are measured at Vernalis on the San Joaquin River. Base flows are set at 3,420 cfs from February to April 14 and from May 16 through June 30, if the X2 objective is required to be at the further downstream Port Chicago location. The base-flow objective is relaxed to 2,130 cfs when X2 is not required to be west of Chipps Island. The Vernalis base-flow objective was met during 2000 with the X2 objective being located at Port Chicago during March through May, while February and June were under the less stringent Chipps Island standard.

During wet years, the San Joaquin River spring pulse flow for April 15 to May 15 is set at a mean of 8,620 cfs at Vernalis. However, the CALFED Operations Group may vary the actual timing and duration of the pulse / attraction flow, based on real-time monitoring data. VAMP, part of the San Joaquin River Agreement approved in D-1641, contains a spring experimental period, which generally coincides with the spring export limits and pulse flow period of D-1641. VAMP flow target for the spring experimental season was set at 5,700 cfs on April 13; however, a large storm unexpectedly increased precipitation in the San Joaquin River basin and subsequent flows on the San Joaquin River. Vernalis flows averaged nearly 5,900 cfs during the VAMP experiment period.

Export Standards

D-1641 includes a SWP and CVP export limitation carried over from the Bay-Delta Accord that conditions SWP and CVP exports, using a ratio of total Delta exports to Delta inflow, and is expressed as a maximum allowable percentage of Delta inflow diverted. The maximum percentage of Delta inflow diverted varies by month; in February, it is conditioned by the previous month's Eight River Index. During the San Joaquin River pulse flow for April 15 to May 15, the VAMP export rates usually supercede D-1641 spring export limitation and the CALFED Ops Group may impose additional export restrictions.

The actual export amount is calculated using the 3-day average combined inflow rate for Clifton Court Forebay (excluding Byron-Bethany Irrigation District diversions from Clifton Court Forebay) added to the Tracy Pumping Plant diversion. The export / inflow ratio limit is reported as either a 3-day or 14-day running average. A 14-day running average of inflows is used unless storage withdrawals from upstream reservoirs are being made for export, in which case a 3-day average of inflows is used. In all water year types, the February through June maximum combined export rate is 35 percent of Delta inflow; this may be relaxed in February, during years with less precipitation, to between 35 percent and 45 percent. From July through January, the export / inflow ratio rises to 65 percent.

During January 2000, combined SWP and CVP exports averaged 49 percent of Delta inflow. While below the 65 percent objective, exports were higher than normal for this time of the year due to water needs brought on by an unseasonably warm and dry December in Southern California. Exports during the more restrictive February to June period (35 percent objective) averaged only 18 percent. The highest daily combined export percentage for the period occurred on June 28, 29, and 30, with 38 percent of the Delta inflow. SWRCB allowed a relaxation in the percent inflow diverted standard from 35 to 45 percent to make up for spring export

reductions related to the high Delta smelt salvage.

Exports at Banks and Tracy Pumping Plants are limited under D-1641 to 1,500 cfs or 100 percent of the 3-day average of San Joaquin River flow at Vernalis during the 30-day April 15 to May 15 pulse flow period, whichever is greater. This export limit can be used in lieu of the 35 percent export/inflow ratio only if it results in more restrictive conditions. As stated above, San Joaquin River spring pulse flow generally coincides with the VAMP experimental period. In 2000, the VAMP spring experimental period extended from April 17 through May 17, during which the SWP and CVP used a combined export target of 2,250 cfs, and exports averaged 11 percent of outflow during this period.

SWP exports were scheduled to increase to approximately 5,500 cfs following the end of the VAMP experimental period. However, concerns over Delta smelt salvage caused exports to be adjusted down to less than 3,000 cfs. Despite this reduction in exports, Delta smelt salvage rose to a red light concern level, triggering consultation with USFWS, and exceeded 49,000 fish by the end of May. Delta smelt salvage also exceeded the red light level in June but decreased dramatically in July.

From July to December 2000 during the less restrictive 65 percent objective, the percent inflow diverted ratio averaged 54 percent. On September 20 and 21, 2000, the SWP inadvertently exceeded the D-1641 allowable diverted inflow of 65 percent. Letters of explanation were sent out to the U.S. Army Corps of Engineers and SWRCB and copies were forwarded to the Operations and Fisheries Forum. In late October, the Department and the Bureau notified SWRCB, with permission from the fisheries agencies, of their intent to exceed the 65 percent inflow diverted restriction for the Environmental Water Account. The EWA water was pumped under the relaxed restriction in early November. The SWP and CVP cut exports in late November and December due to water quality concerns related to the Delta Cross Channel gate experiment that occurred in Octo-

ber and early November. Banks Pumping Plant pumped a total of 52,892 cfs of CVP water in 2000.

Temporary Delta Barriers

The Temporary Barriers Project began in 1991, following the 1990 release of the South Delta Water Management Program Draft Environmental Impact Report/Environmental Impact Statement. The program was designed to resolve local South Delta water supply issues within the larger context of the Department's water banking program. The barriers improve local water levels and circulation patterns, protect fishery resources, improve agricultural operations, and meet other South Delta Water Management Program objectives. Though originally established as a 5-year project, it was extended for an additional 5 years in 1995.

The installation of the Old River barrier near Tracy and the Middle River barrier was completed on April 6, 2000. The spring Old River at Head barrier was operational by April 16 and helped prevent migrating juvenile salmon from straying from their migration routes into interior Delta channels. The spring Old River at Head barrier was removed by June 2. The installation of the Grant Line Canal barrier was finished on June 1. The Old River near Tracy, Middle River, and the Grant Line Canal barriers were all removed by October 7.

The fall Old River at Head barrier, which helps keep upstream migrating salmon from straying out of the San Joaquin River into interior Delta channels, was operational on October 7, 2000. Removal of the fall Old River at Head barrier was completed on December 8.

Special Study and Biological Surveys

The Department monitors dissolved oxygen levels in the Stockton Ship Channel during the late summer and early fall of each year because low DO levels can occur at that time due to low inflows and warm water temperatures. Low DO

levels can cause physiological stress to fish and block migration of salmon up the San Joaquin River. The Department also surveys benthic organism density and diversity and phytoplankton biomass and community composition in the Sacramento-San Joaquin Delta and Suisun and San Pablo Bays. These surveys are conducted in response to the mandate of D-1641.

Fall Dissolved Oxygen Study in the Stockton Ship Channel

Historically, DO levels in the eastern and central portions of the Stockton Ship Channel have dropped below 5.0 mg/L during the late summer and early fall because of a variety of conditions. These conditions include low San Joaquin River inflows, warm water temperatures, high biochemical oxygen demand, reduced tidal circulation, and intermittent reverse flow conditions in the San Joaquin River past Stockton. The low DO levels can cause physiological stress to fish and block upstream migration of salmon. During periods of projected low fall flows in the San Joaquin River, the Department usually installs a temporary rock barrier across the Head of Old River to increase net flows down the San Joaquin River past Stockton. These increased flows can partially alleviate DO concerns in the channel.

Water year 1999-00 was classified as *above normal*, with relatively low—approximately 2,000 cfs—San Joaquin River flows past Vernalis in August and September. As a result of these low summer flows, and because fall flows were not projected to be sufficient to alleviate DO concerns within the eastern channel, the Department installed the Old River barrier on October 7 at the request of DGF. Although average daily flows in the San Joaquin River past Vernalis increased slightly in October (ranging from 2,223 to 3,658 cfs), the barrier was not sufficient to eliminate reverse flow conditions in the San Joaquin River past Stockton; average daily flows past Stockton ranged from -401 cfs to +626 cfs from August through October.

As in previous years, the DO levels in the western portion of the channel from Prisoner's Point to Disappointment Slough were relatively high and stable throughout the study period, ranging from 6.7 to 11.2 mg/L. The robustness of DO concentrations in the western portion of the Channel continues to be due to the greater tidal mixing and the absence of conditions creating excessive biochemical oxygen demand within this portion of the channel.

A DO sag (a region within the channel with DO levels less than or equal to 5.0 mg/L) was detected in bottom samples obtained within the central portion of the channel on August 14, when water temperatures were warmest and San Joaquin inflows were lowest. The minimum bottom DO level of 4.5 mg/L was measured immediately east of Turner Cut. A dissolved oxygen sag was not consistently measured within the channel during the remainder of the late summer and fall of 2000. However, a DO depression (a region within the channel with dissolved oxygen levels less than or equal to 6.0 mg/L) developed in August at the surface and bottom of the central channel and in portions of the eastern channel. The bottom depression extended from Rough and Ready Island in the eastern channel to Fourteen Mile Slough in the central channel. This DO depression persisted in the central channel through September, with minimum surface and bottom values of 5.0 mg/L measured immediately west of Turner Cut on September 26. The depression was due in part to continued warm water temperatures (21-27° C) and sustained reverse flow conditions past Stockton.

A gradual but sustained improvement of DO conditions within the channel occurred in October, as the minor depression detected within the channel's central portion on October 13 was eliminated by October 26. In fact, DO concentrations throughout the channel were 8.0 mg/L or greater on October 26, due in part to cooler water temperatures (14-19° C), and the reduction of reverse flow conditions past Stockton. The improved San Joaquin River flows were the result of the barrier, reservoir releases, and increasing rainfall within the drainage basin of

the San Joaquin River. Monitoring on November 14 confirmed sustained improvement of DO levels throughout the channel. Because of the sustained improvement, no further fall DO studies were conducted, and the barrier was removed on December 8.

Benthic Monitoring

The benthic monitoring program documents changes in the composition, abundance, density, and distribution of the benthic biota within the Bay-Delta. Benthic biota are relatively long-lived and can respond to changes in physical factors within the Delta such as fresh water inflows, salinity, and substrate composition. As a result, benthic data can provide an indication of physical changes occurring within the Delta. Because operation of the SWP can impact the flow characteristics of the Delta and subsequently influence the density and distribution of benthic biota, benthic monitoring is an important component of the monitoring program to comply with D-1641. Finally, the benthic monitoring data are used to detect and document the presence of newly introduced species.

Benthic monitoring is conducted at ten sampling sites distributed throughout the major habitat types within the Delta. Department staff collect four bottom grab samples and one sediment sample monthly at all sites. The grab samples are analyzed in the laboratory to identify organisms to genus (and to species when possible) and to enumerate all organisms collected. Sediment samples are analyzed to determine substrate composition.

As a result of the environmentally diverse sampling regime, eleven new organisms were added to the benthic species list in 2000. The new species and their collection locations are as follows:

- San Pablo Bay (a saline to brackish-water site west of the Delta)
 - the nematodes *Monochulus sp. A* and *Nematoda sp. A* in February and March, respectively

- the annelid *Scolecopsis sp. A* in May
- an unidentified *planariid sp. A* in July
- The Sacramento River at Rio Vista (a fresh-water site in the western Delta)
 - the arthropods *Dubiraphia sp. A*, *Tanytarsus sp. B*, and *Psectrocladius sp. B* in February and March
- Rock Slough near Old River (a fresh-water site in the southern Delta)
 - the annelid *Pristinella jenkinsi* in April

Of the 160 species of benthic macrofauna collected in 2000, ten species represented approximately 88 percent of all organisms collected. These ten species include:

- the amphipods: *Corophium stimpsoni*, *Corophium spinicorne*, *Corophium alienense*, *Ampelisca abdita*, and *Gammarus daiberi*;
- the aquatic oligochaetes: *Varichaetadrilus angustipenis* and *Limnodrilus hoffmeisteri*;
- the cumacean or fresh water crustacean: *Nippoleucon hinumensis*; and
- the Asian clams: *Potamocorbula amurensis* and *Corbicula fluminea*. The Asian clams represented approximately 40 percent of the total species abundance.

Of the ten dominant species, *Ampelisca abdita* and *Potamocorbula amurensis* represent macrofauna that inhabit a more saline environment and were found in San Pablo Bay, Suisun Bay, and Grizzly Bay. *Corophium stimpsoni* and *Corophium spinicorne* tolerated a wider range of salinity, and were collected in the more saline western sites as well as the more brackish-to-freshwater eastern sites such as the San Joaquin River at Twitchell Island and the Sacramento River above Point Sacramento. The remaining six species are predominantly fresh water species and were collected at sites east of Suisun Bay.

Phytoplankton and Chlorophyll a

Average monthly chlorophyll *a* concentrations throughout much of the Delta were low, with 80 percent of the stations sampled in 2000

having baseline levels below 25 mg/L. The maximum chlorophyll *a* concentration for most stations was reached during the spring, followed by another, smaller peak in late summer or early fall. The maximum chlorophyll *a* concentration of 46 mg/L was reached during September in the south Delta at Vernalis. This peak was well above the high of 36.6 mg/L recorded in July of 1999 and occurred when water temperatures were high and fresh water inflows were low. Concentrations of chlorophyll *a* west of the Delta in Suisun and San Pablo Bays were typically low and usually sustained highs of approximately 10 mg/L. However, in July of 2000, a maximum of 30.4 mg/L was recorded in Grizzly Bay near Suisun Slough. One possible cause for the relatively low chlorophyll *a* concentrations in these westerly bays could be the extensive filtration of the water column by the introduced Asian clam, *Potamocorbula amurensis*. Well established benthic populations of *P. amurensis* in this region have apparently contributed to the low chlorophyll *a* concentrations (and increased water clarity) measured in the bays since the mid-1980s by grazing on phytoplankton and subsequently suppressing chlorophyll biomass.

Percent chlorophyll *a* is the proportion of chlorophyll *a* in total chlorophyll *a* and pheophytin *a* (a breakdown product of chlorophyll *a*), and is an indicator of phytoplankton activity. The chlorophyll *a* concentrations in the spring and early summer of 2000 were well above 55 percent at most monitoring sites. The relatively high percentage of chlorophyll *a* indicates that plankton were growing well throughout the Delta during this period.

Melosira granulata, miscellaneous flagellates, and *Cyclotella* *sp.* were the most common species detected in the mid-Delta region. Miscellaneous flagellates, *Skeletonema costatum*, and *Thalassiosira eccentrica* were the most common species in the Suisun and San Pablo Bay regions west of the Delta. Finally, *Melosira granulata*, miscellaneous flagellates, and *Thalassiosira eccentrica* were the most common species present during the spring blooms throughout the Delta.

Activities Outside the Delta

Activities conducted outside the Delta include scheduled routine SWP water quality monitoring as well as special studies. Most of these special studies are in response to fish and wildlife and water quality issues of importance to agencies that provide domestic water supply. These agencies face increasingly stringent regulations and look to the SWP to deliver high quality raw water.

Water Quality Monitoring

The Division of Operations and Maintenance collects detailed water quality information on the concentration and distribution of chemical, biological, and physical parameters at 33 aqueduct and reservoir sites located throughout SWP facilities. Stations are situated south of the Delta at reservoirs, pumping plants, power plants, and check structures of the South Bay, Coastal Branch, and California Aqueduct. Other monitoring activities are conducted on the North Bay Aqueduct, Feather River, and at State reservoirs north of the Delta—Lake Oroville, Antelope Lake, Frenchman Lake, and Lake Davis.

The Water Quality Program of the SWP was established in 1968 when the California Aqueduct was completed. More than 60 different chemical constituents are monitored monthly, quarterly, or annually. In addition, automated stations are maintained for continuous monitoring of aqueduct water.

The Department maintains an analytical laboratory (Bryte Laboratory in West Sacramento), which processes most SWP laboratory water quality assessments. The Department also contracts for some laboratory services. Water samples from 15 SWP stations are analyzed monthly to determine levels of dissolved solids and concentrations of nutrients, chloride, sulfate, sodium, trace metals, and other constituents. Herbicides, pesticides, organic substances, and phytoplankton are monitored less frequently.

Selected SWP water quality data are available electronically through the Department's internet home page at www.womwq.water.ca.gov and reported monthly in the State Water Project Operations Data Report. Table 4-1 presents laboratory results of sampling at several representative stations during 2000.

Delta exports are normally the primary source of water in SWP facilities and reservoirs south of the Delta. Most Delta water is exported south during the winter and spring when the greatest freshwater outflow occurs; as a result, reservoirs south of the Delta are usually supplied with the highest quality water. San Luis Reservoir, the only SWP conservation storage facility between the Delta and Southern California, is usually filled by May 1.

Municipal Water Quality Investigations Program

The Sacramento-San Joaquin Delta provides drinking water for over 22 million people in California. Because the Delta is a relatively unprotected watershed, water quality degradation is possible from many sources, including industrial and municipal wastewater discharges, storm water runoff from cities, agricultural discharges, recreational activities, abandoned mines, and illegal dumping. The Municipal Water Quality Investigations Program was established to evaluate the suitability of Delta water as a drinking water source, to identify sources of water quality degradation, and to evaluate means of eliminating or preventing degradation of Delta water quality.

Participants in the program include the municipal water contractors of the SWP and Contra Costa Water District. Program advisors include representatives of participating agencies, including the Environmental Protection Agency, Department of Health Services, and California Urban Water Agencies. Because water quality concerns change rapidly with new drinking water regulations and water quality issues, the MWQI Program must be flexible enough to adapt to changing requirements. The former

Delta Health Aspects Monitoring and Delta Island Drainage Investigations Programs merged into the MWQI Program in 1990; the program continues to evolve.

The program's initial focus was to compile a comprehensive database on the quality of drinking water in the Delta. Since then, the program has investigated ways of managing Delta lands and waters to minimize adverse impacts on drinking water quality. It has also identified sources of contaminants in the Delta and assessed their significance for drinking water quality and water treatment. Drinking water standards are more difficult to meet when natural organic materials from agricultural drainage and watershed runoff are involved.

The current MWQI Program has progressed from the monitoring, problem identification, and assessment stages to the development of tools for the planning and study of alternative solutions to resolve the quality and reliability concerns about the Delta as a major drinking water source. In addition to monitoring water quality in the Delta, the program now includes studies on source water improvement and management. Several studies developed and tested possible solutions to drinking water problems of the Delta and other watersheds of the SWP.

The North Bay Aqueduct/Barker Slough Watershed Study was started to investigate problems identified in the 1996 Sanitary Survey. The study was initially divided into two phases. Phase I began July 1, 1996, and continued until July 1997. The results were published in *The North Bay Aqueduct Barker Slough Watershed Water Quality Phase I Report*. Since then the MWQI Program has worked closely with the NBA Technical Advisory Committee to conduct yearly studies for the last 4 years to further investigate the sources of high organic carbon and turbidity within the watershed. A 4-year report will be completed in the winter of 2002 describing the state of knowledge to date. Sodium-enriched soils and poor land use practices within the watershed are identified as major culprits for the poor water quality of the runoff in the watershed.

Table 4-1. 2000 Mean Water Quality at Selected State Water Project Locations

Constituents	Units	Detection Limit	California Aqueduct								Devil Canyon Afterbay near San Bernardino
			Thermalito Afterbay at Outlet to Feather River	North Bay Aqueduct Barker Slough Pumping Plant	Banks Pumping Plant	Delta-Mendota Canal Upstream of McCabe Road	O'Neill Outlet (Check 13)	Kettleman City (Check 21)	Highway 119 (Check 29)	Tehachapi Afterbay (Check 41)	
Alkalinity	mg/L	1	39	92	64	71	68	69	70	71	71
Arsenic	mg/L	0.001	< 0.001	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002
Boron	mg/L	0.1	< 0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2
Bromide	mg/L	0.01	< 0.01	0.04	0.32	0.28	0.36	0.32	NR	0.18	0.30
Calcium	mg/L	1	8	15	16	20	18	18	19	19	19
Carbon-Total Organic	mg/L	0.1	NR	6.9	3.8	3.8	4.0	4.6	3.3	3.6	3.3
Chloride	mg/L	1	1.0	18.0	53.5	88.0	54.0	99.0	NR	51.5	93.0
Chromium	mg/L	0.005	< 0.005	0.007	< 0.005	< 0.005	< 0.005	0.005	0.005	0.005	0.005
Copper	mg/L	0.001	0.001	0.003	0.002	0.002	0.003	0.002	0.002	0.003	0.004
Fluoride	mg/L	0.1	< 0.1	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Hardness	mg/L	1	34	87	83	97	91	92	92	94	92
Iron	mg/L	0.005	< 0.005	0.025	0.021	0.024	0.014	0.038	0.010	0.010	< 0.005
Lead	mg/L	0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Magnesium	mg/L	1	3	12	10	12	11	11	12	11	11
Manganese	mg/L	0.005	0.005	0.015	0.016	< 0.005	0.007	< 0.005	< 0.005	< 0.005	0.071
Nitrate + Nitrite	mg/L	0.01	< 0.01	0.24	0.50	NR	NR	0.59	NR	0.81	0.55
Phosphorus - Total	mg/L	0.01	< 0.01	0.15	0.10	NR	NR	0.10	NR	0.11	0.09
Phosphorus - Ortho	mg/L	0.01	< 0.01	0.09	0.07	NR	NR	0.06	NR	0.07	0.07
Selenium	mg/L	0.001	< 0.001	< 0.001	0.001	0.001	< 0.001	< 0.001	0.001	0.001	< 0.001
Sodium	mg/L	1	3	23	39	46	44	43	46	45	45
Specific Conductance	µS/cm	1	84	277	371	438	404	404	419	422	426
Sulfate	mg/L	1	1	20	28	40	32	34	36	33	35
Total Dissolved Solids	mg/L	1	58	162	205	240	226	228	234	237	235
Turbidity	NTU	1	3	44	10	18	10	11	10	13	3
Zinc	mg/L	0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005

Notes: All reported constituents are the yearly mean of laboratory analytical values sampled monthly. Nondetectable values were not used in the calculation of the yearly mean.

NR = No data recorded at this location.

NTU = nephelometric turbidity units

mg/L = milligrams per liter

µS/cm = microsiemens per centimeter

Currently, the stakeholders are investigating the feasibility of best management practices to reduce carbon and turbidity in the slough. The MWQI Program will continue to work with the stakeholders to provide water quality technical assistance to the project.

In fall 1999, the MWQI Program began assessing EPA method 1623, a new EPA-approved sampling methodology for the protozoans *Cryptosporidium* and *Giardia*. The study continued into winter 2000. Even though the study showed consistency of recovery for replicate spiked samples at each site, recovery varied greatly between sites in the Delta. This could be attributed to different source water matrix turbidities and the constituents within the water interfering with recovery. Staff is currently in the process of publishing the results in a peer-reviewed scientific journal. The article should be published in late fall 2002. Based on the findings, the MWQI Program is not supporting the use of 1623 for source water monitoring in the Delta.

Other components of the MWQI Program include

- evaluation of the water quality impacts at drinking water intakes from the proposed Delta Wetlands storage project;
- the study of the reactivity and sources of organic carbon from land uses in the Delta watershed;
- evaluation of proposed CALFED restoration actions in terms of drinking water impacts;
- working with the State and regional water quality control boards to develop drinking water policy as part of the basin plan;
- development of models to predict water quality based on sources and loads; and
- investigation of new and increasing sources of pollution, including urban sources.

Collectively, these and other MWQI studies and activities are designed and conducted to address major water quality and water supply issues, such as the Delta's ability to meet user

needs, adjust to stricter State and federal regulations, and provide reliable, clean water supplies in the future. Each study or activity serves to discover, test, and assess possible solutions to problems in the Delta and other watersheds of the SWP and assures that future demands for safe, potable water supplies can be met.

Bryte Chemical Laboratory

Bryte Chemical Laboratory, established in 1951, continues to perform the vast majority of chemical and other related analyses required to support the Department's water quality programs. Thousands of water samples are analyzed routinely for minerals, nutrients, metals, pesticides, volatile organic compounds, and many other chemical constituents. Bryte Chemical Laboratory has continued to manage several analytical contracts with outside laboratories according to the master contract policy approved in fiscal year 1994-95. The laboratory continually works with the Quality Assurance/Quality Control Section to replace contracts that expire each fiscal year.

Bryte Laboratory's analytical procedures and methods are continually updated and evaluated by the laboratory. Several new sample preparation methods are currently being evaluated for semi-volatile organic compounds, which include pesticides and herbicides. The new automated solid-phase extraction system manufactured by Horizon Technology is designed to run unattended and use 90 percent less solvents. If successful, it would result in a substantial savings in labor, time, and cost for the laboratory and improved environmental safety. Bryte Laboratory is also in the process of developing and adding phytoplankton analyses to its list of analytical services. Several water quality programs are asking Bryte Laboratory to provide these services in conjunction with current chlorophyll analysis. The laboratory is scheduled to start performing the phytoplankton speciation analyses in early 2001.

The laboratory purchased several new analytical instrument systems during 2000 to

modernize and expand its capabilities. A new automated OI Analytical, Model 1020A, Total Organic Carbon Analyzer was purchased to perform organic carbon analysis using EPA Method 415.1. This method analyzes organic carbon by high temperature combustion technology. This new system will help to augment the current TOC instrumentation and will primarily be used to analyze TOC and not dissolved organic carbon. It will also have the capability to confirm results produced by several new TOC field instruments scheduled to be installed and operational in 2001 that utilize the same combustion technology. The laboratory also replaced an outdated Fisher CAT Titrimeter. The titrimeter system was purchased in 1989 and is no longer in production nor cost effective to maintain. The new replacement, a Brinkman Metrohm Titrimeter System, is fully automated, computer-controlled, and designed to operate unattended for overnight operation. The new system is faster, less labor intensive, has a greater capacity, and will perform several different operations simultaneously. It will determine the aliquot for the sample, execute titrations, perform quality control functions, and measure three different parameters without any intervention by the chemist.

The Field and Laboratory Information Management System, implemented in 1997, has continued to enhance the laboratory's data management capabilities. This system simplifies the transfer process by allowing electronic transfer of samples for analysis to the laboratory. It provides users with information on all analytical services available through Bryte Laboratory, including costs. It also provides users with sample requirements for each analysis requested, such as types of containers needed, sample volumes necessary, and the type of sample preservation required. The system is designed to store all current analytical data, including all required QA/QC data pertaining to sample analysis. It is designed to log, track, and assign sample analyses to the appropriate chemist in the laboratory. FLIMS will also generate the final reports to the requestor in hard copy and electronic format.

In 1999 and 2000, initial data structures for the new Water Data Library Water Quality Module were completed with the assistance of California State University, Sacramento, and the Division of Planning and Local Assistance. Development of the Water Data Library database was moved to the Department. The Water Data Library, when completed, will permanently house all of the FLIMS data in an accessible format for all of the Department. Relationships between FLIMS, the library, and other important Department databases were explored and a strategy for integrating them drafted.

Quality Assurance/Quality Control

The QA/QC Program, established in 1992, ensures that data generated by the Department's environmental monitoring activities meet high quality standards and are scientifically defensible.

The QA/QC Program actively ensures that in-house and contract laboratories providing water quality analytical services for the Department comply with QA/QC procedures, standards, and requirements. The QA/QC Program performs the following functions:

- procures specialized products and services from outside sources on an as-needed basis. These may include obtaining certified laboratory standards, outside instructors for teaching technical classes, etc.;
- periodically submits performance evaluation samples to all in-house and contract laboratories to evaluate their performance;
- performs data quality review of incoming environmental data for programs within the Water Quality Assessment Branch of DPLA and other departmental programs upon request;
- publishes QA/QC technical documents;
- develops and maintains the drinking water quality database and associated QC metadata as part of the Department's FLIMS;

- provides assistance in acquiring outside contract laboratory services; and
- assists other Department programs in developing their quality assurance project plans, evaluating their sampling plans, and testing their monitoring equipment.

In 2000, the QA/QC Program provided data quality review for the annual report of the MWQI Program in the Water Quality Assessment Branch. The program finalized the QA/QC evaluation of the new TOC analyzer located at the Sacramento River Hood station. The TOC analyzer is a laboratory instrument that has been modified for field use. It required extensive quality control validation to ensure that the data it generated was of known and acceptable quality. The TOC data is available on the California Data Exchange Center Web site. Additional TOC analyzers will be added at other key stations in the future. In cooperation

with the staff at Bryte Chemical Laboratory, the QA/QC Program developed and finalized a contract for conducting overflow analytical work and specialized analyses that cannot be handled in-house. An outside laboratory was selected after open competitive bidding. The contract will run for 3 years. A second contract to provide certified Performance Evaluation standards for the Department was drafted and is in the process of being finalized prior to bidding. The samples are used to independently evaluate the accuracy and precision of analyses performed by the in-house and contract laboratories.

Suisun Marsh Activities

The Suisun Marsh

Suisun Marsh is about 59,000 acres of tidal and managed brackish water wetlands and 30,000 acres of bays and sloughs. It is the largest contiguous brackish marsh remaining in the United States. Situated in southern Solano County, west of the Sacramento-San Joaquin Delta and north of Suisun Bay, the marsh encompasses more than 10 percent of California's remaining natural wetlands. In addition, the marsh is the resting and feeding ground for thousands of waterfowl migrating on the Pacific Flyway.

Since the early 1970s, the California Legislature, SWRCB, the Bureau, DFG, Suisun Resource Conservation District, the Department, and other agencies have focused on preserving the Suisun Marsh as a unique environmental resource. As part of its responsibility for protecting Suisun Marsh, SWRCB included water quality standards for the marsh in Term 10 of SWRCB D-1641, which applies to SWP and CVP operations. D-1641 was adopted by SWRCB on December 29, 1999. In 1987, the Department, the Bureau, DFG, and SRCD signed the Suisun Marsh Preservation Agreement (see sidebar). SMPA contains provisions for actions to control channel water and soil salinity to mitigate impacts of the SWP, CVP, and other upstream diverters on managed wetlands in Suisun Marsh.

Quality Assurance/Quality Control

The water quality data collected by the Department must be scientifically supportable. To help protect the Department's large investment in water quality data, the Quality Assurance/Quality Control Program was established in 1992. The QA/QC Program, provides guidance and technical support to managers of water data collection programs throughout the Department.

In addition to the basic mission of supporting and strengthening the validity, integrity, and credibility of water quality data collected by the Department, the QA/QC Program provides leadership in efficient planning and execution of field sampling activities. To minimize cost, it is necessary to carefully plan, implement, interpret, and evaluate the data collected. Good data collection programs begin with identifying the data collection goal and establishing the data quality objectives to meet the goal. This planning is done before actual data collection commences and assures that the correct type and amount of data are collected to meet program objectives. Through this process, the Department avoids collecting inadequate, irrelevant, or extraneous data, and thereby avoids waste.

Amendment Three Actions. The SMPA Amendment Three issues are now addressed as part of the Suisun Marsh Charter.

Suisun Marsh Charter. CALFED requested that the Department, DFG, the Bureau, USFWS, and SRCD develop a charter for resolving the conflicts that had escalated over Amendment Three, regional general permits, the levee investigations, and endangered species recovery. Since fall 2000, the Charter Group has been meeting to address the myriad of issues in Suisun Marsh and develop a coordinated and comprehensive solution to marsh conflicts. The goal of the charter is to “develop a regional plan that balances implementation of the CALFED program, SMPA, and other management and restoration programs within Suisun Marsh in a manner responsive to the concerns of stakeholders and based upon voluntary participation of private landowners.”

The charter agencies acknowledge the difficulty of determining an overall balance between water quality, landowner needs, levee, and endangered species recovery needs and are developing a Long-Term Implementation Plan that will address these needs on an equal basis.

SMPA Environmental Coordination Advisory Team. The SMPA Environmental Coordination Advisory Team was convened to ensure compliance with conditions, mitigation, and monitoring responsibilities specified in SMPA. ECAT includes staff from the Department, the Bureau, DFG Grizzly Island, DFG Central Valley Bay-Delta Branch, and SRCD. USFWS, NMFS, and the Corps staff have participated on ECAT in an advisory role. ECAT documents compliance with biological opinion measures and permit terms and provides reports to SMPA coordinators.

At ECAT’s monthly meetings during 2000, discussions included Suisun Marsh monitoring efforts and property acquisition for tidal marsh restoration. Monitoring focused on marshwide vegetation surveys, Island Slough, and the salt marsh harvest mouse. ECAT also provides support for the charter group. The ECAT agencies received funding for property acquisition and habitat restoration in Suisun Marsh.

Individual Ownership Cost Share Program. The Individual Ownership Cost Share Program is a component of SMPA and is designed to

Suisun Marsh Preservation Agreement

In 1986, federal legislation (Public Law 99-546) authorized funds to the Bureau to protect Suisun Marsh. On March 2, 1987, the Department, the Bureau, DFG, and SRCD signed the Suisun Marsh Preservation Agreement. The objective of SMPA is to assure that the Bureau and the Department mitigate for any adverse effects of the Central Valley Project and State Water Project on managed wetlands in the marsh, as well as a portion of the adverse effects of other upstream diversions. Under the original agreement, this objective is primarily accomplished by constructing large-scale facilities in the marsh to maintain a dependable supply of adequate quality water within Suisun Marsh channels. A component of the large-scale facilities is the Suisun Marsh Salinity Control Gates facility, which began operating in November 1988.

On August 4, 1995, the Suisun Marsh Coordinators, representing the four agencies party to SMPA, began discussions directed at updating the agreement, pursuant to SMPA Articles 4 and 17. Representatives from the Bureau, the Department, DFG, and SRCD established an ad hoc Negotiating Team, Technical Group, Drafting Committee, and Environmental Documentation Team. Beginning September 1995, the SMPA Negotiation Team met monthly in Sacramento and made significant progress in developing the basis to amend the agreement. Representatives from the SWP and CVP contractors actively participated in the negotiations. Updating SMPA will reflect future hydrologic and salinity conditions in the Suisun Marsh as prescribed by the SWRCB 1995 Water Quality Control Plan and will place more emphasis on improving water and land management practices and facilities on managed wetlands. The SMPA parties will sign Amendment Three after completing CEQA and NEPA documentation and CESA and ESA consultations.

assist individual landowners with water management on privately owned land within Suisun Marsh. The program includes replacing, lowering, and/or enlarging drainage structures and the purchase of pumps to assist drainage. The program began in 1987 with a 50 percent reimbursement by the Department and the Bureau. Participation in the program has greatly increased since 1994, when SMPA coordinators retroactively increased departmental and Bureau reimbursement to 75 percent.

There was no activity under the cost share program during 2000. The Department and the Bureau have paid a total of \$1,203,825.

Suisun Ecological Workgroup

In the 1995 Bay-Delta Plan, SWRCB directed the Department to convene an interagency work group to evaluate the technical basis of the Suisun Marsh water quality objectives and their effects on beneficial uses. Consequently, SEW was formed to recommend salinity objectives to protect the beneficial uses of Suisun Marsh. Staff from SWRCB, SRCD, DFG, the Bureau, USFWS, and the Department have actively participated in the workgroup.

In 2000, SEW completed its final report, which was reviewed by IEP. The final report is currently posted on the Web site at iep.water.ca.gov/suisun_eco_workgroup/.

Modeling Support

Suisun Marsh Planning Support for the CALFED Levee Investigation Team

The CALFED Bay-Delta Program established the Suisun Marsh Levee Investigation Team to gather information on the costs and benefits of including Suisun Marsh levees in the CALFED program, especially as they relate to CALFED water quality, water supply reliability, and Ecosystem Restoration Program goals. The Suisun Marsh Planning Section supported the team by using the Department's Delta Simulation Model 1 to evaluate hydrodynamics and salinity

impacts of controlled and uncontrolled levee breaches in Suisun Marsh.

Suisun Marsh Planning Participation in the Project Work Team

The IEP Delta Simulation Model 2 Project Work Team is nearing completion of a multiagency cooperative effort to recalibrate the DSM2 model. Recalibration efforts began in August 1999. The project work team activities include:

- collection of new Bay-Delta channel geometry data;
- collection of flow data at strategic Delta locations;
- model testing and sensitivity analysis;
- preparation of calibration protocols; and
- active participation in calibration activities among participants.

Geometry data is available to the public at modeling.water.ca.gov/delta/models/dsm2/tools/csdp/index.html. Flow data are available at www.iep.ca.gov/dss/. Project work team participation in the calibration is facilitated by Web site www.iep.dms2pwt/dsm2pwt.html.

Participants in the calibration effort include staff from the Department's Environmental Services Office, Office of State Water Project Planning, DPLA, and O&M; the Bureau; USGS; University of California, Berkeley; Stanford University; Contra Costa Water District; and the Metropolitan Water District of Southern California. The process is unique—a virtual interagency collaboration on calibration of a complex hydrodynamics and water quality model. The potential benefits include creating an accurate model and generating trust and understanding about the cooperative process. The team is working toward a February 2002 deadline for completion of the calibration.

Suisun Marsh Technical Advisory Committee

In 2000, Department staff facilitated four quarterly Suisun Marsh Technical Advisory

Committee meetings. The quarterly meetings, which provided an overview of current activities in the marsh, were attended by representatives from federal, State, and local agencies. Since October 1999, the committee meeting agenda and minutes have been posted on the Internet at www.iep.ca.gov/suisun/.

Operation and Maintenance

Suisun Marsh Salinity Control Gates

The Suisun Marsh Salinity Control Gates are operated from October 1 through May 31, as needed to meet salinity standards; otherwise they are placed in an open position to minimize fish concerns related to predation and impedance. In the past, the gates' operation and installation or removal of the flashboards has varied due to salinity conditions, fisheries agencies' requests for sensitive species concerns, or special studies and repairs.

During the 1999-00 control season (October 1999 through May 2000), the Suisun Marsh Salinity Control Gates were operated according to the schedule in Table 4-2.

From September 1 through November 9, 1999, a fish passage study with modified flashboards was conducted at the gates under the three scenarios outlined below. Following completion of the study, the gates resumed normal operations to control salinity, with the modified flashboards installed through the end of the control season. The modified flashboards were installed after the fish study to gather more data points

and to evaluate the impacts of water quality conditions in the marsh relative to the original flashboards. From December 10, 1999, through January 16, 2000, the gates were held open to allow an additional 300 cfs outflow for water quality concerns in the Delta. From January 17 through February 29, 2000, gate operations resumed tidally due to water quality concerns in the marsh. The concern was alleviated with some precipitation in February, and thus from March 1 through 27, 2000, the gates were held open; however, water quality conditions were still being monitored. By the end of March 2000, salinity was controlled so operators could cease gate operations and remove the modified flashboard.

Since results from the modified test of the gates indicate that the slots caused less passage than the original flashboards, the fish passage study was postponed in fall 2000 until fall 2001, so that the SMSCG Technical Committee could review results of past studies Morrow Island Distribution System Maintenance.

The fish screens, originally required by the biological opinion for the project, serve to protect sensitive fisheries in the area. During 2000, the Department began a final engineering design for the fish screen components. A request for proposal was written for installation of the five conical fish screens distributed along Goodyear and Suisun Sloughs. Department staff also began preparation of the documents required to obtain necessary environmental permits for the project.

Table 4-2. Suisun Marsh Salinity Control Gates Schedule

Date	Gates Status	Flashboard Status
September 1 - 26, 1999	Tidal operations	Modified flashboard installed
September 27 - October 14, 1999	Tidal operations	Original flashboard installed
October 15 - November 9, 1999	All gates open	Removed from channel
November 10 - December 9, 1999	Tidal operations	Modified flashboard installed
December 10, 1999 - January 16, 2000	All gates open	Modified flashboard installed
January 17 - February 29, 2000	Tidal operations	Modified flashboard installed
March 1 - 27, 2000	All gates open	Modified flashboard installed
March 28 - May 31, 2000	All gates open	Removed from channel

Monitoring

Comprehensive Review of Suisun Marsh Monitoring Data

SMPA and the Suisun Marsh Monitoring Agreement were signed in 1987 and outlined a monitoring program for data collection in the Suisun Marsh. Monitoring was conducted from water years 1985 through 1995. These agreements also stipulated that the monitoring data and the effectiveness of the agreements were to be reviewed every 5 years. This review was not completed in 1992, and a comprehensive review of all the monitoring data began in 1996. The monitoring program included channel water salinity, water quality, and pond stage data from managed wetlands in the marsh, vegetation monitoring, and wildlife surveys. Review of the draft report was completed in 1999 and the final report is expected to be released in March 2001.

Water Quality Monitoring and Compliance

Suisun Marsh channel water salinity standards were specified in SWRCB WR 98-9 for seven compliance stations. Four of these—National Steel (S-64), Beldons Landing (S-49), Volanti (S-42), and Sunrise (S-21)—are located within the marsh. A fifth—Collinsville (C-2)—is located in the western Delta (Figure 4-2). The Department requested that the two remaining sites located in the western marsh—Morrow Island (S-35) and Ibis (S-97)—be converted to monitoring stations because of the SWP's minimal control on salinity levels at these locations. D-1641 granted an exemption from the compliance monitoring requirement for these stations. However, both remain active as water salinity monitoring stations.

Salinity levels remained well within compliance during the period from October 1, 1999, through May 31, 2000. See the Department's annual report to SWRCB, *Suisun Marsh Monitoring Program Data Summary: 2000 Water Year*, for details.

Monitoring Station Maintenance, Repair, and Enhancements

Routine maintenance, repair, and enhancement activities for Suisun Marsh monitoring stations during water year 1999-00 included

- flushing of tide wells to remove accumulated sediments;
- clearing / trimming of encroaching vegetation;
- repairing and resetting of staff gauges;
- calibrating monitoring instruments;
- quality control and assurance of collected data;
- surveying the station elevation; and
- replacement of expanded probe floats with plastic floats to protect fish from possible ingestion hazards.

These maintenance activities are necessary to ensure proper operation of the stations and protection of the environment and public safety. Activities also include those necessary to upgrade scientific instrumentation to provide accurate hydrologic and water quality data. Generally, improvements in instrumentation, such as replacing stilling wells with pressure transducers, reduce the size and impact of monitoring stations on the marsh. Listed below are additional maintenance activities performed on the sampling stations during water year 1999-00.

- Installation of a pressure transducer system at S-97 (Ibis) for tide data collection.
- Reconstruction of a walkway and railings at S-33 (Cygnus) and repositioning of EC probe location for improved data collection.
- Installation of a new walkway ramp at the S-49 (Beldons Landing) station platform.
- Construction of a New Hampshire Beaver Pond Leveler in the beaver dam 150 yards downstream of S-10 (Green Valley Creek) to reduce backwater to the station. Relocation process of Station S-10 was begun.
- Installation of a new dimple collar around the stilling well at Collinsville (C-2) to



Figure 4-2. Compliance and Monitoring Stations in the Suisun Bay and Marsh

suppress wave action coming through holes in the well. Since the tide well is corroding rapidly and the landowner is planning to make changes in the immediate area, plans have been initiated to share the newly restored Bureau station located approximately one-third mile upstream at the end of Collinsville road.

Vegetation Monitoring

In 1999, *The Vegetation Survey for the Suisun Marsh, A New Methodology*, was approved by SMPA coordinators, and development of a new vegetation map for the marsh began. Development of this map continued during 2000. DFG continued photo interpretation and GIS scanning and registration. Field sampling data was entered into a database and vegetation classification codes were developed. DFG staff collected additional vegetation samples to refine the attribution of the polygon database. The database includes about 37,000 polygons, each of which will have a final series of attributes including the vegetation type, type of disturbance, the amount of vegetation cover, and information on how the attribute was derived. A final report and vegetation map will be available by January 2001.

Salt Marsh Harvest Mouse Monitoring in Conservation Areas

In 1981, USFWS issued a Section 7 Biological Opinion for the implementation of the Suisun Marsh Plan of Protection that required DFG, on behalf of the Department, to manage 1,000 acres as salt marsh harvest mouse (*Reithrodontomys raviventris halicoetes*) conservation areas, with a goal of preserving a total of 2,500 acres as conservation areas throughout the marsh. Seven conservation areas totaling 1,130 acres were established in 1987. Since 1998, the Suisun Marsh Environmental Coordination Advisory Team has been working with USFWS to determine which areas of the marsh to include in the 2,500 acres of conservation areas. In 1999, the 253-acre Peytonia Slough Ecological Reserve was accepted by USFWS as a conservation area, and in 2000, six parcels were under consider-

ation by USFWS as new conservation areas. In addition, there are two parcels at Island Slough that are managed as mouse habitat as mitigation for the Department's projects in the marsh.

In water year 1999-00, a total of ten areas in the Suisun Marsh were surveyed for presence of the mice. These areas included five existing salt marsh harvest mice conservation areas, two sites proposed as new conservation areas, two mitigation areas at Island Slough, and one upland area owned by Solano County Open Space Foundation. Salt marsh harvest mice were captured at all the areas surveyed except one mitigation area and the upland area where western harvest mouse was the target species. The primary goal of the surveys was to determine if salt marsh harvest mice were present at each site and to generally assess population levels. The goal of the survey at the upland area was to collect western harvest mice (*Reithrodontomys megalotis*) specimens for a harvest mouse genetics study.

Western harvest mice occur with salt marsh harvest mice in wetland habitats of Suisun Marsh, but they also commonly occupy upland grassland habitats. During salt marsh harvest mice surveys, several morphological characteristics are assessed to determine the species of captured harvest mice. During 1999 and 2000, many harvest mice captured in the marsh had characteristics between the two species and were recorded as "unknown harvest mice." These unknowns raised questions about the genetics of harvest mice in Suisun Marsh and the applicability of the standard protocols, and interest was generated in conducting a study of harvest mouse genetics. In 2000, with recommendations from the Suisun Marsh ECAT, the Department agreed to fund a salt marsh harvest mouse genetics study at California Polytechnic State University in San Luis Obispo. The study has three objectives: (1) identification of species-specific genetic markers and matching the markers to morphological characteristics, (2) test for hybridization between the salt marsh harvest mouse and the western harvest mouse, and (3) test for genetic differentiation between populations from different areas around the San

Francisco Bay Estuary. Results of the study are expected in 2002.

Suisun Marsh Waterfowl Feeding Ecology Study

The objective of the waterfowl feeding ecology study was to determine the food source for mallards, northern pintail, and green-winged teal in Suisun Marsh. During winters 1997 and 1998, 223 feeding birds were collected and their esophagi removed for analysis. Mud core samples were also collected from feeding sites to assess availability of plant and invertebrate foods. In addition, hunters from public and private areas of the marsh contributed more than 750 esophagi for the study.

The samples are being analyzed at a University of California at Davis laboratory. During 2000, most of the esophagi and mud cores were analyzed. A final report that will include all samples is expected by spring 2002.

Aquatic Monitoring

In 2000, the Department contracted with the University of California at Davis to conduct fisheries monitoring in Suisun Marsh. The monitoring was conducted to meet the Corps and San Francisco Bay Conservation and Development Commission permit requirements for construction and operation of the gates and the NMFS 1993 Biological Opinion for operation of the SWP and CVP.

The U.C. Davis fish sampling and DFG juvenile striped bass sampling have not led to definitive findings on the gates' impacts, since the control data or background condition for an assessment (the absence of gates) no longer exists. The data analyses addressed the question indirectly by comparing data collected before and after 1988. Because the overall decline in Suisun Marsh fish abundance began before installation of the gates, analysis indicates that the decline seems independent of gate operation.

U.C. Davis has sampled for fish in Suisun Marsh since 1979, with Department and Bureau

funding. In 2000, the number of fish in the marsh continued to rise. The total catch was the fourth highest since sampling began in 1979. Sampling indicates that population levels continue to fluctuate at lower levels compared to the early 1980s. This effect is largely due to changes in the abundance of introduced species, which have dominated the fisheries since 1988. Before considering the 2000 fish catch, the general trend in abundance over the history of this survey has been an overall decline. Despite this trend, abundance of introduced species in 2000 reached its highest levels since sampling began. From 1995-2000, there has been a gradual rise in abundance of native species, with only the Sacramento splittail showing consistent increases during this period. Delta smelt and longfin smelt numbers declined from the 1999 levels, but remained high in comparison with the past 15 years. Abundances of Delta smelt and longfin smelt larvae increased, possibly reflecting the moderate flow conditions in 2000. The presence of eggs and larvae of Delta smelt and longfin smelt since surveying began in 1994 indicates that these species use the marsh for rearing and, most likely, spawning. Splittail larvae were captured in the marsh for only the fourth time since sampling began in 1994.

DFG and the IEP Environmental Monitoring Program have monitored *Neomysis mercedis* densities and chlorophyll *a* concentrations in Suisun Marsh since 1972 and 1976, respectively.

N. mercedis has declined since sampling began, with the most dramatic decrease following 1991. Since that time, densities have remained relatively low. Chlorophyll *a* concentrations, which serve as an indicator of phytoplankton abundance, have shown an overall decline in Suisun Marsh since 1987. This decline has, in part, been attributed to the efficient feeding habits of *Potamocorbula amurensis*, a suspension-feeding clam that invaded the San Francisco Bay and Estuary in 1986. Recently, the average annual chlorophyll *a* concentration in Suisun Marsh has fluctuated slightly, but remains low compared to levels measured prior to 1992. Food limitation, caused by low phytoplankton abundance, and competition with *Acanthomysis bowmani*, a mysid shrimp recently introduced from Asia,

are important factors in the decline of *N. mercedis*.

DFG researchers also conduct sampling for juvenile striped bass (defined as schools of fish with mean length from 17.8 mm to 38.1 mm) in Suisun Marsh. In 2000, average abundance in Montezuma Slough increased slightly for the third consecutive year, following the lowest level to date, measured in 1997. Since this sampling began in 1959, a gradual decrease in average abundance has been observed in the Delta and Montezuma Slough. Because this decline has been relatively constant over the last 30 years, it is unlikely that changes in abundance have been due to installation and operation of the control gates.

Mitigation and Fulfillment of Permit Conditions

Suisun Marsh Salinity Control Gates Flashboard Modification Study

Preliminary results from the first 2 years of the modified SMSCG test indicate that the slots are not providing improved passage for salmon at SMSCG. The reasons for this are unknown. In addition, the 1998 and 1999 studies showed no statistical difference in passage numbers between the full operation configuration (no slots) and when the flashboards and gates were out of the water.

Because preliminary results from the modified test indicate that the slots are resulting in less passage than the original flashboards, the Department and the Bureau decided to postpone the third year of the test until September 2001 and to reinstall the original flashboards if gate operation is needed during the 2000-01 control season.

Salt Marsh Harvest Mouse Habitat Restoration and Mitigation Sites at Island Slough

In the 525-acre Island Slough wetland complex are two ponds designated as salt marsh harvest

mouse mitigation areas. Pond 7 is 100 acres and serves as mitigation for impacts from construction of the initial facilities described in the Suisun Marsh Plan of Protection. Pond 4 is 57 acres and serves as mitigation for the loss of habitat due to the dredging of the Morrow Island Distribution System in 1997.

Construction at Island Slough began in May 1996. In 2000, the development of 57 acres of salt marsh harvest mouse habitat in Pond 4, required by the Morrow Island Distribution System permit, was completed. The final construction included building the east end levee to separate the wetland area from the parking lot. The levee along Grizzly Island Road, adjacent to Ponds 4 and 6, was also upgraded.

Vegetation was monitored in both Island Slough ponds designated as mitigation areas and compared to USFWS criteria for preferred salt marsh harvest mouse mitigation. Neither pond met the criteria for percentage of pickleweed. A vegetation improvement plan will be developed and implemented subsequent to USFWS approval to improve the vegetation to meet these criteria.

Morrow Island Distribution System Fish Screen and Alternatives

On July 2, 1997, the Corps issued permit No. 20698N to perform maintenance on MIDS. Permit conditions required installation of a fish screen on the Goodyear Slough diversion structure. In early 1999, the Department began development of design alternatives for the fish screen. Design alternatives were presented and discussed at SMPA-ECAT meetings. In consultation with USFWS and the Corps, the Department and the Bureau developed a hybrid proposal for meeting the permit condition. During 2000, the Department began final engineering design for the fish screen components. A Request for Proposal was written for installation of the five conical fish screens distributed along Goodyear and Suisun Sloughs. Department staff also began preparation of documents required to obtain the necessary environmental permits for the project.

Reports

In 2000, the following reports on Suisun Marsh were written and/or published. The reports are available online at iep.water.ca.gov/suisun/curr-report/, or by request.

- The *Annual Data Summary Report* for water year 1998 was published in August 2000. The report includes data from water quality monitoring stations, salt marsh harvest mouse surveys, waterfowl surveys conducted in the marsh, and a discussion of maintenance activities in the marsh.
- The *Suisun Marsh Monitoring Program Reference Guide* was updated in June 2000 to reflect changes in regulations following release of D-1641. The *Reference Guide* provides comprehensive information on the Department's Suisun Marsh monitoring program.

Suisun Marsh Expenditure History

Suisun Marsh expenditures and reimbursements administered by the Department for calendar years 1968 through December 2000 are summarized in Table 4-3. From 1968 through December 31, 2000, the Department disbursed more than \$97 million of SWP funds for planning, design, environmental documentation, construction, maintenance, monitoring, mitigation, and permit compliance in support of implementing the plan of protection for Suisun Marsh and SMPA and meeting standards set by SWRCB. The Bureau has reimbursed the Department about \$36.6 million—37.6 percent—and the State's general fund has reimbursed about \$9.5 million, or 10 percent. These figures do not include up-front payments made by the Bureau for staff and other direct costs, as well as about \$5.7 million in Bureau interest payments during 1988 and 1989.

Annual figures are reported in Table 4-3 for the Department's up-front payments, Bureau reimbursements, general fund reimbursements, and the Department's cumulative expenditure balance.

Table 4-3. Suisun Marsh Expenditures and Reimbursements Administered by the Department (in dollars)

Calendar Year	Up-front Payment	Bureau Reimbursement	General Fund Reimbursement	Cumulative Expenditure Balance (CXB) ^a
1968	10,571	0	0	10,571
1969	34,182	0	0	44,753
1970	23,343	0	0	68,096
1971	1,042	0	0	69,138
1972	47	0	0	69,185
1973	0	0	0	69,185
1974	0	0	0	69,185
1975	2,709	0	0	71,894
1976	32,961	0	0	104,855
1977	37,475	0	0	142,331
1978	350,831	0	0	493,162
1979	3,660,096	0	0	4,153,258
1980	5,005,759	0	0	9,159,017
1981	2,964,977	0	0	12,123,995
1982	2,955,702	2,500,000	0	12,579,697
1983	2,754,091	0	0	15,333,788
1984	2,418,345	0	0	17,752,133
1985	2,332,776	0	0	20,084,909
1986	6,495,323	0	0	26,580,232
1987	13,600,701	0	0	40,180,933
1988	7,456,364	17,368,725 ^b	0	30,268,572
1989	2,341,843	1,219,691 ^c	9,478,000 ^d	21,912,724
1990	3,030,016	695,450	0	24,247,290
1991	6,222,531	2,925,429	0	27,544,392
1992	2,737,242	1,174,655	0	29,106,978
1993	2,979,254	238,130	0	31,848,102
1994	3,192,211	1,962,549	0	33,077,764
1995	2,721,213	647,138	0	35,151,839
1996	3,391,135	1,482,396	0	37,060,579
1997	3,631,829	1,520,219	0	39,172,188
1998	5,342,834	1,107,501	0	43,407,521
1999	8,792,037	2,696,200	0	49,503,358
2000	2,753,692	1,101,477	0	51,155,573
Total	97,273,133^e	36,639,560^{e,f}	9,478,000^g	51,155,573^h

^aCXB = (previous year's CXB + departmental up-front payment) - (Bureau + general fund reimbursements)

^bThe Bureau paid an additional \$5,111,831 as interest in 1988 not shown in the table.

^cThe Bureau paid an additional \$607,175 as interest in 1989 not shown in the table.

^dUnder State Assembly Bill 1442, the General Fund paid 20 percent of departmental up-front payment through June 1988, amounting to \$9,478,000. This payment includes \$6,643,600 for the Department's recreation project purpose share of 14 percent.

^eDoes not include Bureau up-front payments for staff and other direct costs.

^fThe Bureau has paid 37.6 percent of the total Department up-front payment.

^gGeneral Fund paid 10 percent of the total Department up-front payment.

^hThe Department paid 52.4 percent of the total Department up-front payment.

Information in this chapter was contributed by the Division of Environmental Services and the Division of Operations and Maintenance.

Chapter 5

Local Assistance



Workers adjusting irrigation pipes

Significant Events in 2000

- Passage of Proposition 13 on March 7 ensured provision of \$560 million for continuation of many local assistance loan and grant programs administered by the Division of Planning and Local Assistance as well as authorization of several new programs, including the Groundwater Storage Grant Program and Infrastructure Rehabilitation Grant Program. Information regarding these programs may be accessed on DPLA's Loans and Grants Web site at www.dpla.water.ca.gov/grants-loans.
- The Department, in coordination with the San Joaquin Valley Drainage Implementation Program, began implementation of Proposition 204 with the Drainage Reuse Program. A total of 11 projects were funded for fiscal year 2000-01.
- The Department's California Irrigation Management Information System expanded to 113 weather stations, 70 percent of which belong to local agencies. The Department has developed a new Web site that will give CIMIS users access to all archived data by zip code. The Web site is slated to go on line in January 2001.
- The San Joaquin District completed a Web site which includes information on drainage activities programs, purpose and history, salinity, shallow groundwater maps, and links to Web sites related to other agricultural drainage programs.
- The *San Joaquin Valley Drainage Monitoring Program 1997 Report* was released to the public in March.

The Department of Water Resources manages water use efficiency, the Davis-Grunsky Act, agricultural drainage, environmental impact document review, and Water Conservation Bond Law programs, and participates in several other programs that assist local agencies and benefit State Water Project contractors.

Davis-Grunsky Act Program

The Davis-Grunsky Act, authorized in 1960 as part of the Burns-Porter Act, provides construction loans for local domestic water projects and agricultural water conservation projects. It provides grants for recreation and fish and wildlife enhancement. Loans and grants may also be given to rehabilitate dams and reservoirs.

The Department's ongoing administration of the program provides oversight of the 32 recreation grant projects to ensure compliance with the contracts. Administration costs are recovered from the revenues provided by the repayment of Davis-Grunsky loans. The recreation grant contracts are being amended to reflect actual facilities constructed and the modification of the Department's fee oversight function.

Water Use Efficiency

The Department's California Irrigation Management Information System expanded to 113 weather stations in 2000 and a new weather database is being created to support the web-based Internet site (www.cimis.water.ca.gov). The Department provides reference evapotranspiration information to the public as a free service on the Internet and Telnet. There were more than 3,000 registered users on the CIMIS database sites.

Department staff completed evapotranspiration zone maps for the State. These maps include the monthly average ET_0 from a reference crop in each of the 18 zones.

Agricultural Water Management Plans

During 2000, three water districts, one county, and one environmental entity became signatories of the Agricultural Water Management Memorandum of Understanding and members of the Agricultural Water Management Council. As a result, the total represented acreage of water suppliers joining the Council increased to more than 4.5 million acres.

Three Agricultural Water Management Plans were submitted by agricultural water suppliers to the Department for review. (Department staff provided technical assistance to the suppliers preparing plans.) The Department also refined the AWMP net benefit analysis approach and made it available electronically to the users.

Urban Water Management Plans

The Department conducted 20 workshops to assist water agencies in the preparation of their Urban Water Management Plans and received several plans for review. The Department also coordinated with California Urban Water Conservation Council on water use efficiency workshops to help develop urban certification process.

CALFED Record of Decision

CALFED Record of Decision was signed in 2000 and a new funding program for water use efficiency was initiated as a result. The program is expected to initiate funding in 2001.

Outreach

The *Water Conservation News* continues to be the primary water conservation outreach newsletter. The quarterly publication reaches more than 8,000 California subscribers.

Agricultural Drainage Program

San Joaquin Valley Drainage Implementation Program

The Department continues to participate in the multiagency SJVDIP. Four State and four federal agencies sponsor SJVDIP. The Department is the lead agency and provides staff, management, and contributes funding. During December 1996, the program's management group approved in concept a Proposed Action Plan that was advanced by an association of local districts, the University of California, and the Department of Food and Agriculture. The intent of the Proposed Action Plan is to update the 1990 Management Plan and pursue voluntary implementation of the recommended options. The Action Plan has three stages as described below.

The *first stage* consisted of two concurrent, coordinated independent tasks. First, subarea committees assessed the feasibility of adopting the management recommendations proposed in the management plan and prepared reports on San Joaquin Valley drainage problem areas. Second, a set of technical committees evaluated the technical and economic management options.

During *the second stage*, an Ad Hoc Coordination Committee synthesized the information from the first stage into a report and, based on technical and economic considerations, identified interactions and trade-offs among management options and developed a set of recommendations. The technical committee and subarea reports were completed in 1999. The Ad Hoc Coordination Committee published a final report to SJVDIP in January 2000.

The third stage will use the recommendations formulated during the second stage and identify

acceptable mechanisms to encourage the adoption and voluntary implementation of the updated management plan. Shallow water tables, toxic trace elements, and high salinity threaten agricultural productivity and environmental quality. The Department has a responsibility to engage in activities to ameliorate the problems associated with irrigated agriculture. Salinity buildup on the west side and the lower parts of the Sacramento Valley is gradually destroying agricultural lands.

In October 2000, SJVDIP adopted a Drainage Management Strategy and outlined its approach to salinity / drainage programs. The SJVDIP Action Plan and the cooperative effort initiated among the parties are necessary to resolve drainage problems. The Department continues to participate in this effort to assist the local districts, working with other agencies. It also continues to play a major role in collecting necessary data, developing and transferring technologies, identifying research needs, and helping districts and growers implement the drainage management options. Information on SJVDIP and its reports can be found on the Department's DPLA Web site (www.dpla.water.ca.gov).

Proposition 204. In 1996, Proposition 204, *The Safe, Clean, Reliable Water Supply Act*, authorized the transfer of approximately \$6.1 million from State Water Resources Control Board to DFA and from DFA to the Department for developing methods of agricultural drainage water reuse. In 2000, the Department completed the interagency contract and began the work. A total of 11 projects totaling \$1,000,000 were approved for the fiscal year 2000-01. This program is closely coordinated with SJVDIP.

Drainage Monitoring and Evaluation

The Department continues to

- participate in a cooperative information system program with the Bureau of Reclamation and the Central Valley Regional Water Quality Control Board. This program provides local, State, and federal agencies with

flow and salinity projections to assist in managing drainage releases into the San Joaquin River. It operates under a 2-year grant from CALFED, which expires in 2002.

- monitor shallow groundwater levels and electrical conductivity data as well as collect drainage-water flow data and water quality data from about 30 tile drainage system sumps.
- produce an annual drainage report. *The San Joaquin Valley Drainage Monitoring Program 1997 Report* was released to the public in March 2000.
- produce land use maps of the shallow groundwater areas and irrigation methods maps using the drainage monitoring data in conjunction with land use and irrigation methods data.
- maintain a new Web site which includes information on drainage activities programs, purpose and history, salinity, shallow groundwater maps, and Web site links related to other agricultural drainage programs.

Drainage Treatment

The Department continues to investigate technologies for the treatment of agricultural drainage water and has agreed to participate in a pilot-scale desalinization project at Buena Vista Water Storage District in Kern County. This project is a cooperative effort among Buena Vista Water Storage District, Boyle Engineering, University of California at Los Angeles, and the Department to develop information on pretreatment, reverse osmosis treatment, and brine disposal. Agreements were written and plant operation began in 2000 irrigation season and will continue until the contract ends in 2002.

The Department began active participation in the In-Valley Drainage Reuse Plan, which is a multiagency cooperative effort with Grasslands Area farmers, to comply with the objectives of the California Regional Water Quality Control Board's Water Quality Control Plan (Basin Plan) for the Sacramento River Basin and the San

Joaquin River. The Department's planning activities included development of an economic model that evaluates all possible options, evaluation of costs for subsurface drainage water treatment, and active land management alternatives.

Other activities included continued support of a cooperative investigation into the use of wetlands for selenium removal at Tulare Lake Drainage District (activity ended in 2000) and investigations of processes for concentrating and purifying drainage salt for marketing purposes. The Department also provided support for an investigation at UCLA to develop systematic protocol to evaluate and rank potential nanofiltration and reverse osmosis membranes in the treatment of subsurface drainage water.

On-Farm Drainage Reduction and Reuse Program

The Department's on-Farm Drainage Reduction and Reuse Program provides technical assistance, information, and other resources to all growers and irrigators. The program helps irrigation districts and growers apply irrigation water efficiently to reduce deep percolation and drainage water from the immediate on-farm source, while providing a sustainable soil environment by maintaining salt balance in the crop root zone.

The program objective is being achieved through on-farm demonstration projects, studies, research and educational training, and workshops. Workshop topics include

- irrigation scheduling
- management, including upgrading, maintenance, operations, and performance
- advances in irrigation technology
- irrigation system evaluation
- drainage reuse
- salinity management

These activities help improve and advance irrigation management, fine-tune the performance of irrigation hardware, and offer growers and

irrigators the opportunity to increase their knowledge.

Staff is presently involved in the following major activities:

- management of in-progress contracts; and
- work on SJVDIP Phase III Implementation Process.

Management of In-Progress Contracts

In-progress contracts for research and demonstration projects, and contracts for workshops, are designed to disseminate state-of-the-art irrigation technologies and management practices to reduce and manage drainage water. The following contracts were developed from a Request for Proposals process initiated in 1996-97, which was targeted for State water contract areas. The contracts in place or under development in 2000 include:

- *Integrated Management of Irrigation and Shallow Groundwater* – field demonstration at Westlake Farms of irrigation management techniques to optimize crop use of shallow groundwater.
- *Lost Hills Drainage Reuse Trial* – a small trial to determine if drainage water can be reused on selected crops, such as pistachios, and incorporated in the District's drainage water management programs.
- *Lost Hills Pre-irrigation Drainage Reduction* – field demonstration of sprinkler / furrow irrigation management for pre-irrigation drainage reduction.
- *Pond-Shafter-Wasco Mobile Lab* – program to assist growers with irrigation system evaluations to improve distribution uniformity and irrigation efficiency.
- *Pond-Shafter-Wasco Irrigation Training Workshops* – irrigation training workshops conducted in both English and Spanish for growers and field workers.
- *Center for Irrigation Technology Irrigation/Drainage Management Workshops* – training

and educational workshops on recent advances in irrigation and drainage management, conducted at California State University, Fresno.

- *Detrimental Salinity Buildup on the Periphery of the Wetted Areas Caused by Subsurface Drip Irrigation* – identification of factors in subsurface drip irrigation that may lead to a detrimental buildup of salinity and suggestions for practices to reduce or avoid salinity buildup in root zones.
- *Salinity Mobile Lab Mapping and Analysis* – mapping of the salinity profile in a given crop field to assess the performance of irrigation management. This will produce site-specific salinity management programs resulting in substantial water savings, prevention of drainage problems from over-irrigation, and increased yields.
- *Irrigation Management Education and Training Workshop Through the Use of Demonstration Farms* – workshops that provide practical methods of irrigation management at on-farm demonstration sites. Effectiveness of various practices will be determined through the use of a mobile irrigation lab.

Work on SJVDIP

Staff continue to participate in SJVDIP program activities. These activities include planning for the Phase III document which focuses on future course of actions for SJVDIP.

Evaporation Ponds

Operators of the agricultural evaporation ponds continue to function under the waste-discharge requirements adopted by the CVRWQCB in August 1994. Clean wetlands mitigation procedures provide compensation for operation of the evaporation ponds. Pond management for some systems has changed and most required structural modifications have been completed at the evaporation basins. Research funded through the Department's Evaporation Pond Investigation developed most of these mitigation procedures. As required, the pond operators compiled draft progress reports for the first years of implementation. CVRWQCB has

reviewed these reports for adequacy and will prepare modifications to the waste-discharge requirements if needed.

During 2000, the Department continued to

- assist CVRWQCB in assessing the biological implications of any proposed modifications;
- fund and coordinate research on the evaporation ponds. A study by the Biological Resource Division to analyze shorebird-feeding behavior was completed and a final report was issued;
- study the Rainbow Ranch evaporation basin in Kern County. Based on studies that the Department and U.S. Fish and Wildlife Service conducted in the past, a relationship between water-borne selenium and selenium concentrations found in eggs was described for the evaporation basins. For the last few years, the selenium levels in shore bird eggs at Rainbow Ranch were lower than expected. Initial studies determined that, at times, the evaporation pond cells develop both thermal and salinity stratification. This stratification may be associated with the low levels of egg selenium. The relationship between egg selenium levels and the conditions that result in stratification has not yet been determined.

Environmental

During 2000, the Department continued to

- assist CVRWQCB in assessing the biological implications of any proposed modifications
- monitor wildlife impacts at Integrated on-Farm Drainage Management Program projects
- develop wildlife management criteria at IFDM demonstration projects in coordination with the USFWS
- participate in the Grasslands By-pass project EIS/EIR
- assist University of California researchers in invertebrate studies and other studies at evaporation ponds

Other Activities

Department and SJVDIP staff updated a *Water Facts* pamphlet, *Salt Balance in the San Joaquin Valley*. These pamphlets are short reports on water resources issues of general interest. The Department continued experimental work at Red Rock Ranch, an IFDM project. It constructed a solar still as an experiment to demonstrate the use of solar energy to enhance evaporation of highly concentrated drainage water, produce distilled water, and separate salts. The Department also initiated an investigation to determine if selenium present in subsurface drainage water can be removed using granulated activated carbons.

CALFED approved a proposal to develop a pilot plant to produce usable salts from farm drainage for commercial purposes. Rainbow Ranch initiated conversion from an evaporation basin to an IFDM operation based upon a plan developed by the Department.

Environmental Impact Documents Review

The Environmental Review section in DPLA screens State Clearinghouse documents and circulates SWP-related materials for review by the Department's four districts, as well as DPLA, O&M, and the Division of Engineering. In addition, other divisions and offices are notified of activities and are asked to comment when their expertise is required.

Some environmental impact documents handled by the State Clearinghouse concern proposed activities that would affect the SWP. State Clearinghouse documents are regularly reviewed to identify any public safety or liability issues arising from the proposed activities.

From January through December 2000, about 3,700 documents were screened by the Environmental Review section, with 548 referred for detailed review. Of these referrals, 350 were made during the preliminary stages when the projects were at the Notice of Preparation or

Early Consultation stage and 198 assignments were for negative declarations and environmental impact reports. O&M received 70 formal referrals and 9 for information. The State Water Project Analysis Office received 43 formal referrals and 2 for information, and the Office of State Water Project Planning received 3 formal referrals. In addition to the information referrals made to O&M and SWPAO, 391 other information referrals were made to other departmental staff.

Comments submitted to the lead agencies from the documents submitted for formal review addressed a number of issues. They included safety and water supply issues, encroachment on physical facilities, and water quality issues. Additional departmental actions involving such items as encroachment permit submittals and informal comments took place, but cannot be tracked by the Environmental Review Section.

During 2000, the Environmental Review Section tracked documents related to development along the California Aqueduct, water transfers and other water supply issues, wastewater treatment, and fiber optic construction near SWP facilities. Water transfer activity increased in 2000 with several projects involving blanket approvals as well as temporary water transfers from the Bureau. In addition, the Bureau was involved in several contract renewals that affect the SWP directly or indirectly.

Water Conservation Bond Laws

With the objective of assisting local agencies in obtaining financing for their water management programs, California voters approved five bond laws between 1984 and 2000 authorizing the Department to provide low interest loans and grants to fund project feasibility studies or construction activities.

(1) The Clean Water Bond Law of 1984 (Proposition 25) authorized \$10.5 million for water conservation projects.

- (2) The Water Conservation and Water Quality Bond Law of 1986 (Proposition 44) authorized \$75 million for water conservation and groundwater recharge projects.
- (3) The Water Conservation Bond Law of 1988 (Proposition 82) authorized \$60 million for water conservation, groundwater recharge, and new local water supply improvements.
- (4) The Safe, Clean, Reliable, Water Supply Act of 1996 (Proposition 204) authorized \$55 million for water conservation, groundwater recharge, and local water supply projects and authorized about \$6 million to DFA for drainage reuse studies and programs. Since then, DFA requested the Department to administer the \$6 million and conduct the necessary projects.
- (5) The Safe Drinking Water, Clean Water, Watershed Protection and Flood Protection Act of 2000 (Proposition 13) authorized \$535 million for agricultural and urban water conservation, groundwater recharge, infrastructure rehabilitation, groundwater storage, and interim reliable water supply projects and studies.

Construction loans and grants are available for up to \$5 million per project, with repayment for the loans up to 20 years at reduced interest rates for most programs. Proposition 204 provided grants for local water supply feasibility studies and a single construction grant for a groundwater recharge project. Proposition 13 provides grants for groundwater storage, infrastructure rehabilitation, and interim reliable water supply studies and projects. Among other approval criteria, applicants for this funding must demonstrate that project benefits exceed project costs. Typical projects fall under the following six categories:

Water Conservation

- improvements to, or replacement of, distribution and storage systems;
- lining and piping ditches;
- water meters; and
- water recycling distribution systems.

Groundwater Recharge

- facilities for new artificial groundwater recharge; and
- expansion of existing artificial groundwater recharge facilities.

Local Water Supply/Local Projects

- new conveyance and / or storage facilities;
- groundwater recharge extraction facilities, well-field development; and
- desalination (ocean or brackish groundwater recovery).

Groundwater Storage

- utilization of existing sub-surface storage and construction of artificial recharge, extraction, and conveyance facilities.

Infrastructure Rehabilitation

- replacement or rehabilitation of leaking mains, reservoirs, or distribution system components;
- replacement of failing system components that threaten the health, safety, economy, or welfare of the community served by the system.

Interim Reliable Water Supply

- projects or programs located in the Delta export service area designed to increase water supplies, enhance water supply reliability, or improve water quality.

Table 5-1, organized by project type, summarizes the number of projects and funds committed for each of the five bond laws.

California Irrigation Management Information System

The Department's CIMIS expanded to 113 weather stations in 2000. Seventy percent of the stations on the CIMIS network belong to local agencies. The demand for CIMIS data has been increasing steadily over the years since its establishment in 1982. For example, the number of registered CIMIS data users has grown from 661 in 1989 to 3,421 in 2000. There were approximately 60,000 requests for information in the year 2000 alone. A new CIMIS web site (www.cimis.water.ca.gov) has been launched to satisfy growing demands. Users can now register online and access archived CIMIS data. Currently, a preliminary study is underway to develop a system that can use remotely sensed satellite data as an input to map reference evapotranspiration for the entire State. CIMIS is actively pursuing the establishment of new partnerships and outreach activities, especially in the urban sector.

Table 5-1. Water Conservation Bond Laws Projects and Funding

Bond Law	Type of Project	Number of Projects^a	Funding^a (millions of dollars)
Clean Water Bond Law of 1984	Water conservation	7	9.74
Water Conservation and Water Quality Bond Law of 1986	Water conservation	24	41.60
	Groundwater recharge	10	28.04
	<i>Subtotal</i>	<i>34</i>	<i>69.64</i>
Water Conservation Bond Law of 1988	Water conservation	7	17.44
	Groundwater recharge	8	24.30
	Local water supply	4	9.00
	<i>Subtotal</i>	<i>19</i>	<i>50.74</i>
Safe, Clean, Reliable Water Supply Act of 1996	Water conservation	2	7.00
	Groundwater recharge	5	22.10
	Local water supply	9	7.90
	<i>Subtotal</i>	<i>16</i>	<i>37.00</i>
Safe Drinking Water, Clean Water, Watershed Protection and Flood Protection Act of 2000	Water conservation	0	0.00
	Agricultural	0	0.00
	Urban	0	0.00
	Groundwater recharge	0	0.00
	Infrastructure rehabilitation	0	0.00
	Groundwater storage	0	0.00
	Interim reliable water supply	10	141.50
	<i>Subtotal</i>	<i>10</i>	<i>141.50</i>
All water conservation		40	75.78
All groundwater recharge		23	74.44
All local water supply		13	16.90
All infrastructure rehabilitation		0	0.00
All groundwater storage		0	0.00
All interim reliable water supply		10	141.50
Total of all projects		86	308.62

^aConstruction project and feasibility study loan and grant commitments as of December 31, 2000.

Information in this chapter was contributed by the Division of Planning and Local Assistance.

Chapter 6

Legislation and Litigation



Rotunda of the State Capitol

Significant Events in 2000

- Assembly Bill 303 enacts the Local Groundwater Management Assistance Act of 2000 to establish a grant program within the Department to provide funding to local public agencies to implement groundwater monitoring and management activities.
- Assembly Bill 1147 (1) establishes legislative intent for the Governor to establish a Floodplain Management Task Force; (2) provides for greater State oversight of flood control projects; (3) changes the nonfederal cost share equation for flood control projects; and (4) authorizes a number of flood control projects.
- Senate Bill 1341 requires the Department to release a preliminary draft of the *California Water Plan*'s water assumptions and estimates and restructures Water Code Section 10004 relevant to the *California Water Plan*.
- *Planning and Conservation League, Plumas County, and Santa Barbara Citizens Planning Association of Santa Barbara County v. Department of Water Resources and Central Coast*

Water Authority. The Planning and Conservation League filed a lawsuit on December 27, 1995, challenging the California Environmental Quality Act compliance for the Monterey Amendment. A Sacramento Superior Court judge later dismissed the lawsuit. PCL appealed the decision and on September 15, 2000, the Third District Court of Appeal reversed the Superior Court ruling.

- *Tulare Lake Basin Water Storage District v. U.S.* In February 1998, plaintiffs Tulare, Kern County Water Agency, Wheeler Ridge-Maricopa Water Storage District, and others filed a claim in the U.S. Court of Federal Claims alleging that the federal government took plaintiffs' water without just compensation in violation of the Fifth Amendment of the U.S. Constitution. The plaintiffs claim a right to the water based on their long-term water supply contracts with the Department. The federal government filed motions denying the allegations and claiming an affirmative defense.

The Department of Water Resources' Deputy Director for Legislation monitors State and federal legislation introduced or enacted, including bills or laws that could impact the State Water Project. Similarly, the Office of the Chief Counsel tracks litigation of potential significance to the SWP and manages litigation involving SWP operations.

Legislation

State Legislation

AB 303 (Thomson) Groundwater (Chapter 708, Statutes of 2000). AB 303 enacts the Local Groundwater Management Assistance Act of 2000 to establish a grant program within the Department to provide funding to local public agencies to implement groundwater monitoring and management activities.

AB 1147 (Honda) Flood Control (Chapter 1071, Statutes of 2000). AB 1147: (1) establishes legislative intent for the Governor to establish a Floodplain Management Task Force; (2) provides for greater State oversight of flood control projects; (3) changes the nonfederal cost share equation for flood control projects; and (4) authorizes flood control projects for Upper Guadalupe River, Sacramento North Area, American and Sacramento Rivers, Folsom Dam modification, Colusa Basin, Los Angeles River, Tule River, Yuba Basin, San Lorenzo River, Santa Ana River, and Gunnerson Pond.

SB 1341 (Burton) State Water Plan (Chapter 720, Statutes of 2000). SB 1341: (1) requires the Department to release a preliminary draft of the *California Water Plan's* water assumptions and estimates; and (2) restructures Water Code Section 10004 relevant to the *California Water Plan*.

Federal Legislation

HR 2605 (R. Packard) Energy and Water Development Appropriations Act, 2000. HR 2605 appropriates monies for energy and

water development purposes, including CALFED activities at \$60 million.

S 2796 (G. Voinovich) Water Resources Development Act of 2000, Public Law 106-541. S 2796 authorizes the Secretary of the Army to construct various projects designed to improve rivers and harbors; it includes authorization of several flood control projects in California.

Litigation

As of December 31, 2000, the Department was involved in a number of court cases related to management of the SWP. In addition, the Department monitored other cases that could significantly impact management of the SWP.

San Luis and Delta-Mendota Water Authority v. Department of Interior, et al. On November 12, 1997, the San Luis and Delta-Mendota Water Authority filed a lawsuit in federal district court for injunctive relief against the United States for misinterpretation and misapplication of the Central Valley Project Improvement Act. The plaintiffs have challenged the legality of the U.S. Department of the Interior's November 20, 1997, *CVPIA Final Administrative Proposal on Management of Section 3406(b)(2) Water*, in which DOI sets forth its plan for implementing the so-called "(b)(2)" section of CVPIA. The water districts claim that the administrative proposal fails to account for the water as required by CVPIA and is subject to the National Environmental Policy Act. In contrast, environmental groups also filed a lawsuit against the U.S., claiming that the proposal fails to properly

account for the water, fails to dedicate sufficient water to implement (b)(2), and that the U.S. misinterpreted its authority in permitting reuse of CVP yield. The two cases have been consolidated and, in November 1998, plaintiffs submitted motions for partial summary judgement in preparation for a January 1999 hearing.

On March 19, 1999, the federal District Court issued a Memorandum Opinion for partial summary judgement finding that the administrative proposal was contrary to CVPIA. Plaintiffs sought a preliminary injunction to prevent the Bureau of Reclamation from implementing (b)(2) measures. In March 2000, the District Court judge issued an order dissolving its preliminary injunction against DOI finding that DOI's interpretation of the definition of CVP yield was lawful, except for a deduction for D-1400 flows. The Court also found that DOI had acted lawfully when modeling the proposed 1999–00 fishery actions and when accounting for use of CVP yield for (b)(2) purposes. In March, the Bureau submitted to the Court a corrected CVP yield value using D-893 flows. In May, the Water Authority and water-district intervenors appealed the District Court order that dissolved the preliminary injunction. DOI has yet to file its summary judgement motion on the substantive claims of the environmental and water-district plaintiffs.

Planning and Conservation League, Plumas County, and Santa Barbara Citizens Planning Association of Santa Barbara County v. Department of Water Resources and Central Coast Water Authority. The Planning and Conservation League filed a lawsuit on December 27, 1995, against the Department and Central Coast Water Authority, challenging the California Environmental Quality Act compliance for the Monterey Amendment. PCL amended the complaint February 13, 1996, alleging that the Department could not legally transfer the Kern Water Bank to Kern County Water Agency as part of the Monterey Amendment.

After a hearing held May 17, 1996, a Sacramento County Superior Court judge ruled in favor of the Department and CCWA on PCL's complaint

and dismissed the lawsuit. With regard to the CEQA causes of action, the court ruled that the Department should have served as lead agency, but that this was a harmless error, not requiring the preparation of a new environmental impact report. The court also ruled that PCL had failed to join indispensable parties in the lawsuit, including Metropolitan Water District of Southern California and Kern, in its cause of action to enjoin the transfer of KWB. On August 15, 1996, judgement was entered in favor of the Department and CCWA.

PCL appealed the decision to the Third District Court of Appeal. On September 15, 2000, the Court of Appeal held that the EIR was inadequate and that the Department should have acted as lead agency for the project. In addition, the Court of Appeal reversed the Superior Court's entry of summary judgement and reinstated the validation claim in the complaint, providing a forum for review of the entire Monterey Amendment and, in particular, the transfer of the Kern Fan Element of KWB.

In its decision, the Court of Appeal held the EIR was inadequate because the document should have included an analysis of Article 18(b), a standard term in the long-term water supply contracts, as part of its 'no project alternative' analysis. Article 18(b) authorized the Department to declare a permanent shortage and reduce all contractors' Table A amounts across the board, thereby avoiding the agricultural shortage provisions. The Department believed that it was very unlikely that Article 18(b) would ever be invoked and, therefore, the elimination of Article 18(b) did not require a no-project analysis. The Court of Appeal adopted PCL's reasoning that local planners rely on Table A amounts in the contracts and that reductions would affect local land use planning decisions. Accordingly, the Court held that both the elimination and possible invocation of Article 18(b) needed to be evaluated for environmental impacts, and the EIR was inadequate for failure to do so. The Court directed the Department to prepare a new EIR and remanded the matter to the trial court to vacate

the Department's certification of the EIR and make such other orders as appropriate.

On December 13, 2000, the California Supreme Court denied review. The case is expected to become active in the trial court in early 2001.

Tulare Lake Basin Water Storage District v. U.S.

In February 1998, plaintiffs Tulare, Kern, Wheeler Ridge-Maricopa Water Storage District, and others filed a claim in the U.S. Court of Federal Claims alleging that the federal government took plaintiffs' water without just compensation in violation of the Fifth Amendment of the U.S. Constitution. The plaintiffs claim that in 1992, 1993, and 1994 the U.S. Fish and Wildlife Service and National Marine Fisheries Service, under authority of the Endangered Species Act and through issuance of biological opinions for winter-run salmon and Delta smelt, took their water for a public purpose without compensation. The plaintiffs claim a right to the water based on their long-term water supply contracts with the Department. The plaintiffs claimed damages of \$25,720,320 plus attorney fees and other costs.

The federal government filed motions denying the allegations and claiming an affirmative defense. A hearing on summary judgment motions will be scheduled.

Southern California Bass Council, et al. v. State of California. In late November 1994, the Southern California Bass Council, the Sierra Club, and the Audubon Society filed a CEQA lawsuit against the Department, challenging the Department's Mitigated Negative Declaration prepared for the reconstruction of the intake tower at Silverwood Lake. The Department was directed by the Federal Energy Regulatory Commission to replace the existing intake tower to the San Bernardino Tunnel because the existing tower did not meet current seismic standards. The petitioners claimed the Department's environmental documentation did not provide sufficient mitigation for adverse effects on the environment, including impacts on fisheries and the bald eagle.

At an April 1995 hearing in San Bernardino Superior Court, Judge John Kennedy, Jr., ruled that the Department's mitigated negative declaration was adequate. The ruling validated the Department's plans to mitigate possible adverse effects on fish and wildlife resources, including the bald eagle, and recreation at the lake.

In June 1995, the petitioners appealed the trial court judgement. No order for stay (to prevent work from proceeding) was filed, and construction at Silverwood Lake began in September 1995. Work on replacement of the intake tower was substantially completed by May 1997, and the lake was returned to its preproject level.

On October 17, 1996, the Court of Appeal affirmed the Mitigated Negative Declaration in all respects but one. As to fishery mitigation, the appellate court held that the Mitigated Negative Declaration should have included either a commitment to the specific nature and extent of restocking the fishery or specific standards under which the Department and the California Department of Fish and Game would determine the nature and extent of restocking.

Petitioners then filed a petition for review with the California Supreme Court seeking to invalidate the entire Mitigated Negative Declaration. On January 22, 1997, the California Supreme Court denied the petition for review, and jurisdiction was returned to the Superior Court. A hearing was held in San Bernardino Superior Court on May 2, 1997, and the Department presented its Fishery Mitigation Plan. Further briefing occurred on the merits of the plan, and oral argument was postponed to January 30, 1998.

On January 30, 1998, upon remand from the Court of Appeal, Judge Kennedy approved the Department's fishery mitigation plan as providing sufficient performance criteria for mitigating the project's significant effects on the fishery at Silverwood Lake. The mitigation plan was amended in 1999. The mitigation plan included the following mitigation measures: (1) fish macro and micro habitat enhancement; (2) fish population studies through 2001; (3) rough fish removal; (4) annual fish stockings,

and (5) a one-time fish stocking if the fishery has not recovered by the end of 2001. In January 2000, the Department filed a mitigation status

report with the court. The Department implemented the mitigation plan during 2000.

Information for this chapter was contributed by the Deputy Director for Legislation and the Office of the Chief Counsel.

Chapter 7

Water Supply Reliability, Planning, and Development



Delta waterway with Mt. Diablo in the background

Significant Events in 2000

- In July 2000, CALFED released its Final Programmatic Environmental Impact Statement/Environmental Impact Report for the Bay-Delta Program, following substantial public review and comments on the Draft PEIS/EIR.
- In August 2000, CALFED released its Record of Decision, formalizing State and federal agreement on the CALFED Bay-Delta Program.
- CALFED ROD established the Environmental Water Account. EWA is a cooperatively managed program intended to provide protection to the fish of the Bay-Delta Estuary at no uncompensated cost to the State Water Project or Central Valley Project water users.
- The In-Delta and Off-Aqueduct Storage investigations completed reconnaissance level studies of five reservoir sites: in-Delta islands, Los Vaqueros Enlargement, Panoche Creek, Ingram Canyon, and Quinto Creek. Further studies on Panoche, Ingram, and Quinto were deferred for future long-term studies. Under the CALFED ROD, project-specific studies for in-Delta storage and Los Vaqueros Enlargement were initiated in December.
- Decision 1641 (adopted on December 29, 1999) addresses objectives for 2000 and beyond to protect water quality and flow in the San Francisco Bay / Sacramento-San Joaquin Delta estuary.
- In June, the Department requested that the State Water Resources Control Board postpone Phase 8 of the Bay-Delta Water Right hearings until late 2000 or early 2001 to provide parties an opportunity to resolve certain Phase 8 issues prior to commencement of the hearing.

To deliver the full annual Table A water specified in water service contracts, the Department of Water Resources will need to construct additional storage and delivery facilities as part of the State Water Project, as well as maintain and improve the reliability of all SWP supplies. However, finding environmentally and technically suitable projects and satisfying many complex environmental procedures, laws, and regulations, present two significant challenges in planning and developing new facilities. Many environmental concerns center on the effects that additional storage and delivery facilities may have on the water quality and the environment of the Sacramento-San Joaquin Delta. The Delta is the critical link in the SWP conveyance system. As such, developing additional SWP facilities depends on resolution of Delta conflicts and the solutions currently being outlined by CALFED.

Through 2000, the CALFED Bay-Delta Program continued to work on a comprehensive, long-term solution for the Delta. This program is a component of a process defined in the State-federal Framework Agreement, signed in June 1994, which calls for a cooperative and coordinated process to solve long-term water quality and ecosystem problems in the Bay-Delta estuary. The signers of the agreement, known collectively as CALFED, became responsible for setting water quality standards and developing long-term solutions for fish and wildlife, water supply reliability, flood control, and water quality problems in the estuary.

In June 1999, CALFED released its multivolume Draft Programmatic Environmental Impact Statement/Environmental Impact Report for the Bay-Delta Program. The plan proposed strategies for improvements in four interrelated problem areas: ecosystem health, water quality, levee system integrity, and water supply reliability.

Agreement on the CALFED Bay-Delta Program was jointly announced by federal and State authorities on June 9, 2000. In July 2000, CALFED released its Final PEIS/EIR, which incorporated public comment on the Draft

PEIS/EIR. On August 28, 2000, CALFED released its Record of Decision, formalizing State and federal agreement on the CALFED Bay-Delta Program's plan to address major Delta water issues, including establishment of the Environmental Water Account.

EWA is a cooperatively managed program intended to provide protection to the fish of the Bay-Delta Estuary through environmentally beneficial changes and increased flexibility in the operations of the SWP and CVP, at no uncompensated water cost to the projects' water users. Responsibility for implementing EWA rests with the National Marine Fisheries Service, U.S. Fish and Wildlife Service, and the Department of Fish and Game (management agencies), as well as with the Bureau of Reclamation and the Department (project agencies).

The Department has vigorously supported the CALFED effort, seeing it as a means of developing and managing the State's water resources to benefit the public and the environment, as well as to meet the water delivery commitments of the SWP. The Department is also developing a planning strategy for the SWP to lay the groundwork for the development of additional SWP water supplies. The progress of the

planning strategy depends on the evolution of the CALFED Bay-Delta Program and the support of SWP contractors.

Supply Reliability Activities

Increased emphasis has been given to maintaining and improving the reliability of future SWP supplies—the core of the SWP planning activities.

Water Supply Contract Evaluation

Evaluation of existing SWP water supply contracts and project operations is a continuing activity aimed at improving reliability.

Transfer and Exchange Evaluations

Evaluation of the effects of proposed non-SWP water transfers on the SWP continues, in cooperation with the State Water Project Analysis Office, Division of Operations and Maintenance, and the Office of the Chief Counsel. This team develops formal responses to specific issues, projects, or programs. Coordination of this effort by the Office of State Water Project Planning ensures timely identification and evaluation of significant projects. The team also identifies and evaluates water transfer proposals, water acquisitions by the Bureau of Reclamation and other water agencies, and proposes water right settlement agreements for potential impact on the SWP.

Emphasis on early intervention tailors the proposals to minimize adverse effects or maximize benefits to the SWP. The team is monitoring the the Bureau contract renewal process to evaluate potential impact. These activities help the Department understand the potential cumulative impact of other agencies' actions on the SWP and to proactively address those actions.

This team also explores potential transfer options available to the SWP and individual contractors. In addition, the Department coordinates its participation in the CALFED Transfer Agency Group and the Bay-Delta Advisory Committee Transfers Workgroup.

Watershed Management

This continuing effort evaluates the state of the Feather River watershed above Lake Oroville and identifies actions that can be taken within the watershed to increase base-flow runoff and reduce sedimentation. The initial effort explored ways to improve local water supplies without adversely affecting SWP supply or operations. Early activities included installing monitoring equipment and gathering pertinent data on stream flows, water quality, erosion, and land use. This data will be used to formulate reports and studies for future actions. The work continues to receive strong local support.

SWP Bay-Delta Proceedings—2000 Activities

For almost 40 years, the State has worked very hard to develop the appropriate water quality standards for the Bay-Delta and to identify which water sources are required to meet those standards. SWRCB has received and reviewed numerous testimony and evidence to establish water quality objectives for the Bay-Delta estuary to protect urban, agricultural, and fish and wildlife water uses. The current water quality objectives are set forth in the 1995 Water Quality Control Plan, which is designed to implement

- water quality flow objectives in the Delta;
- objectives for the Suisun Marsh;
- salinity control actions in the San Joaquin Basin;
- objectives for the south Delta (including dissolved oxygen); and
- combined use of the SWP and Central Valley Project points of diversion in the Delta.

The current series of the Bay-Delta Water Right hearings address the implementation of the 1995 Bay-Delta Plan through a water right hearing process staged in eight phases. The Bay-Delta hearings were held from July 1, 1998, through December 31, 1999. SWRCB heard 80 days of testimony, concluded Phases 1 through 7, and adopted the Final EIR and Water Right Decision 1641.

D-1641 (adopted on December 29, 1999) addresses objectives for 2000 and beyond to protect water quality and flow in the San Francisco Bay / Sacramento-San Joaquin Delta estuary. Highlights of D-1641 include

- continuation of the interim responsibility of the Department and the Bureau to meet the water quality objectives for Delta outflow until November 30, 2001, or the adoption of new decision, whichever comes first;
- approval of the joint petition of the Department and the Bureau to change points of diversion of the SWP and CVP in the south Delta;
- approval of the San Joaquin River Agreement / Vernalis Adaptive Management Plan to provide information on the effects of flow and exports on the San Joaquin fall-run Chinook salmon;
- removal from the Department and the Bureau of the responsibility to meet the objectives at two control stations in the western part of the Suisun Marsh;
- recognition of the contract between the Department and the North Delta Water Agency to assure a dependable water supply of suitable quality; and
- recognition of Cache and Putah Creeks stipulations that relieve those water rights holders from obligation to implement the objectives set out in the 1995 Bay-Delta Plan.

Phases 1 through 7 of the water right proceedings involved the San Joaquin Valley and other Delta issues. Phase 8 hearings are designed to consider potential responsibilities of numerous water users to implement the objectives in WQCP. In Phase 8, the Department and the Bureau claimed that certain water rights holders in the valley must cease diversion or release water from the storage to help meet Delta water quality standards. On the other hand, the Sacramento Valley water users believed that their use did not contribute to water quality problems in the Delta. As senior water rights holders and water users within the watershed and counties

of origin, they contended they are not responsible for meeting these standards. The Phase 8 process will ultimately determine which entities and individuals will be responsible for meeting water quality standards.

In early 2000, SWRCB received a number of communications from water rights holders, including the projects, requesting an extension of time prior to commencement of Phase 8 proceedings. Since Phase 8 could involve litigation and judicial review for an extended period of time, and to avoid the consequences of delay, a number of parties to the hearings began developing negotiated agreements. The Department, the Bureau, State Water Contractors, and Northern California water associations were among negotiating parties. One of the main issues in these negotiations was “how CALFED negotiations might interface with Phase 8.”

Throughout the remainder of 2000, SWRCB convened workshops to receive comments and information to assist them in developing key issues for Phase 8, and also monitored the ongoing negotiations among the parties. Discussed were issues such as

- the responsibilities of water rights holders to meet the objectives in the 1995 Bay-Delta Plan under the water right priority system;
- conditions needed to protect the public interest and public trust;
- the effect of the hearing on the CALFED program; and
- appropriate methods for calculating carriage water.

In June 2000, the Department requested that SWRCB postpone Phase 8 of the hearing until late 2000 or early 2001 to provide parties an opportunity to resolve certain Phase 8 issues prior to commencement of the hearing. The Bureau, federal export water users, and upstream Sacramento River water users supported this request.

Water Supply Development

To meet the SWP contractors’ increasing need for water, the Department investigates and implements plans to augment the SWP water supply.

The Department’s plans include

- developing programs to transfer water, either through programs such as the drought water bank or transfers between SWP long-term contractors and / or other agencies, including CVP contractors;
- establishing conjunctive-use programs;
- using SWP funds to develop local water supplies; and
- investigating and evaluating storage projects.

State Water Project Conveyance

The Department arranges for the temporary transfer of water through SWP facilities for the SWP long-term contractors, as well as for other agencies. These transfers can occur in three different ways:

- (1) water transfers among long-term SWP contractors with approved Table A water;
- (2) water exchanges either among the SWP long-term contractors or between contractors and non-SWP contracting entities;
- (3) transfers of nonproject water to non-SWP and SWP agencies.

CALFED Bay-Delta Program—Water Transfer Program

The Department actively participated in the formulation of CALFED’s Water Transfer Program through the Bay-Delta Advisory Council Water Transfer Work Group and the Transfers Agency Group. The program proposed a framework of actions, policies, and processes to facilitate water transfers and further develop a statewide water transfer market. The program document describes the relationship of water transfers to

other water management actions and programs and identifies issues and problems related to transfers. The document also makes recommendations to resolve these issues and suggests strategies to implement the recommendations.

The Water Transfer Program is one of eight program elements developed for the programmatic EIR/EIS. As part of the Water Transfer Work Group, Department staff, along with other agencies, assisted SWRCB in the formulation and publication of *A Guide to Water Transfers* (July 1999 draft) to provide a resource for information.

CALFED Bay-Delta Program—In-Delta and Off-Aqueduct Storage Element of the Integrated Storage Investigation Program

The Division of Planning and Local Assistance is assisting CALFED with their Integrated Storage Investigation Program. CALFED initiated ISI as part of its ongoing evaluation of the appropriate role of storage alternatives in the CALFED solution. ISI will evaluate surface storage, groundwater storage, power facility reoperation, and the potential for conjunctive-use operations. ISI will also identify and evaluate barriers to fish passage that may be modified or removed. One element of ISI’s surface storage

Table 7-1. Potential Reservoir Sites for In-Delta and Off-Aqueduct Storage

Project/Location	Type of Reservoir	Gross Storage Capacity (TAF)
<i>In-Delta</i>		
In-Delta Storage Project/ San Joaquin County	Island storage in the Delta	217
<i>Off-Aqueduct - South Delta</i>		
Ingram Canyon Reservoir Stanislaus County	Off-stream storage	333 to 1,201
Los Vaqueros Enlargement Contra Costa County		Additional 965
Panoche Reservoir San Benito and Fresno Counties		160 to 3,100
Quinto Creek Reservoir Merced County		332 to 381

investigations is the In-Delta and Off-Aqueduct Storage investigation

In 2000, the In-Delta and Off-Aqueduct Storage Element of the ISI Program completed reconnaissance level studies of five reservoir sites: in-Delta islands, Los Vaqueros Enlargement, Panoche Creek, Ingram Canyon, and Quinto Creek (Table 7-1). Three combinations of reservoir storage islands in the Delta—Webb, Bacon, MacDonald, Upper and Lower Jones, Woodward, and Victoria Islands—were studied. The other four Off-Aqueduct sites or surface storage reservoirs are adjacent to the State and federal aqueducts south of the Delta.

Further studies on Panoche Creek, Ingram Canyon, and Quinto Creek reservoir sites have been deferred for future long-term studies. Under the CALFED Record of Decision, project-specific studies for in-Delta storage and Los Vaqueros Enlargement were initiated in December 2000. The project-specific feasibility studies will include

- definition of the scope of each project
- development of alternative operations studies
- water quality
- engineering
- environmental
- policy and legal considerations

The feasibility reports will also provide information on

- project descriptions
- cost estimates
- facilities description
- geologic investigations and findings

The facilities description will include layout of dams, embankments, levees, conveyance channels, siphons, and pumping-generating plants. Other issues that will be considered include power availability, road and utility relocations, pipelines, and right-of-way.

Environmental documentation will deal with existing biological inventories (Department of Fish and Game, U.S. Fish and Wildlife Service) and studies for these or similar areas.

Operations studies will utilize the latest hydrology, water quality, and flow standards for the Sacramento-San Joaquin Bay-Delta areas currently under consideration by SWRCB. In addition, effects of fisheries biological opinions and urban intake water quality constraints on the project yield will be evaluated in operations studies.

In-Delta storage could provide operational flexibility which, in turn, could enhance water supply reliability and ecosystem benefits. The In-Delta and Off-Aqueduct Storage studies must carefully evaluate the unique attributes of Delta storage to assess possible impact to water quality, the ecosystem, existing water projects, and agricultural land. They must also carefully evaluate the attributes of off-aqueduct storage, which could include the enhancement of operational flexibility by providing additional opportunities to export Delta water when optimum biologic and water quality conditions occur in the Delta.

The findings of these studies are intended to be used in the SWP and CVP water supply reliability and system flexibility evaluations.

Conjunctive-Use Program

The term *conjunctive use* denotes a set of water management techniques designed to maximize the complementary use of surface and groundwater storage in order to provide improved water supply reliability. Conceptually, surplus surface water is used to recharge groundwater basins in wetter years. The stored groundwater is extracted when needed to augment diminished surface water supplies during dry years. If they are thoughtfully designed and implemented, conjunctive-use projects can be operated with minimal impact to the environment or to other water users. However, the groundwater component of conjunctive use has become

Water Code Section 1810 et seq.

1810. Notwithstanding any other provision of law, neither the state, nor any regional or local public agency may deny a bona fide transferor of water the use of a water conveyance facility which has unused capacity, for the period of time for which that capacity is available, if fair compensation is paid for that use, subject to the following:

(a) Any person or public agency that has a long-term water service contract with or the right to receive water from the owner of the conveyance facility shall have the right to use any unused capacity prior to any bona fide transferor.

(b) The commingling of transferred water does not result in a diminution of the beneficial uses or quality of the water in the facility, except that the transferor may, at the transferor's own expense, provide for treatment to prevent the diminution, and the transferred water is of substantially the same quality as the water in the facility.

(c) Any person or public agency that has a water service contract with or the right to receive water from the owner of the conveyance facility who has an emergency need may utilize the unused capacity that was made available pursuant to this section for the duration of the emergency.

(d) This use of a water conveyance facility is to be made without injuring any legal user of water and without unreasonably affecting fish, wildlife, or other instream beneficial uses and without unreasonably affecting the overall economy or the environment of the county from which the water is being transferred.

1811. As used in this article, the following terms shall have the following meanings:

(a) "Bona fide transferor" means a person or public agency as defined in Section 20009 of the Government Code with a contract for sale of water which may be conditioned upon the acquisition of conveyance facility capacity to convey the water that is the subject of the contract.

(b) "Emergency" means a sudden occurrence such as a storm, flood, fire, or an unexpected equipment outage impairing the ability of a person or public agency to make water deliveries.

(c) "Fair compensation" means the reasonable charge incurred by the owner of the conveyance system, including capital, operation, maintenance, and replacement costs, increased costs from any necessitated purchase of supplemental power, and including reasonable credit for any offsetting benefits for the use of the conveyance system.

(d) "Replacement costs" means the reasonable portion of costs associated with material acquisition for the correction of unrepairable wear or other deterioration of conveyance facility parts which have an anticipated life which is less than the conveyance facility repayment period and which costs are attributable to the proposed use.

(e) "Unused capacity" means space that is available within the operational limits of the conveyance system and which the owner is not using during the period for which the transfer is proposed and which space is sufficient to convey the quantity of water proposed to be transferred.

1812. The state, regional, or local public agency owning the water conveyance facility shall in a timely manner determine the following:

(a) The amount and availability of unused capacity.

(b) The terms and conditions, including operation and maintenance requirements and scheduling, quality requirements, term or use, priorities, and fair compensation.

1813. In making the determinations required by this article, the respective public agency shall act in a reasonable manner consistent with the requirements of law to facilitate the voluntary sale, lease, or exchange of water and shall support its determinations by written findings. In any judicial action challenging any determination made under this article the court shall consider all relevant evidence, and the court shall give due consideration to the purposes and policies of this article. In any such case the court shall sustain the determination of the public agency if it finds that the determination is supported by substantial evidence.

1814. This article shall apply to only 70 percent of the unused capacity.

increasingly controversial as it gains more prominence in both the CALFED process and as part of various water transfer proposals. As a result, many counties, particularly in the Sacramento Valley, have adopted ordinances designed to regulate water transfers that use a groundwater substitution technique.

The Department perceives conjunctive use as somewhat of a double-edged sword. On the one hand, in dry years there is the potential for cooperative projects with local agencies to augment existing SWP supplies. On the other hand, given the frequent interconnection of surface and groundwater, conjunctive use and other groundwater development projects, if poorly designed, have the potential to adversely effect SWP supplies. To minimize this adverse potential, increased efforts are required to evaluate water transfer, conjunctive use, and other proposals that could impact the reliability of SWP supplies. The Department's Sacramento Valley Conjunctive-Use Program takes into account both the positive and potentially negative aspects of conjunctive use.

American Basin

Efforts to negotiate an agreement for a conjunctive-use project with the Natomas Central and Pleasant Grove-Verona Mutual Water Companies did not continue. They ended in 2000 because, following the development of Principles of Participation, the parties concluded that institutional uncertainties regarding Phase 8 of the Bay-Delta hearings, contract renewal issues with the Bureau, and uncertainties concerning future local demand for Natomas facilities precluded effective project contract negotiations. It was agreed to resume negotiations should the institutional uncertainties be favorably resolved in the future. These negotiations were undertaken as part of the Opt-in Pilot Program between the Department and the SWP contractors. Under this program, individual SWP contractors have the option of funding project activities in return for receiving the water supply developed by a project. Six SWP contractors participated in the American Basin Project.

- (1) The Metropolitan Water District of Southern California
- (2) Solano County Water Agency
- (3) Santa Clara Valley Water District
- (4) Napa County Flood Control and Water Conservation District
- (5) Alameda County Flood Control and Water Conservation District
- (6) Castaic Lake Water Agency

The participants negotiated a set of Principles of Participation that set forth a staged approach to develop up to 47,000 acre-feet of dry-year water supply. Using existing facilities, the first stage was designed for early implementation to provide up to 10,000 acre-feet. A second stage would entail the construction of a new Sacramento River diversion and new conveyance features in Natomas Central. Both phases use water provided by Natomas to achieve in lieu recharge. A possible third stage involving storage of the SWP water was contemplated.

Lower Colusa Basin

The Department continues to investigate the conjunctive-use potential of the Lower Colusa Basin in cooperation with Reclamation District No. 108, Colusa County Water District, and the Yolo-Zamora Water District. A proposed project could yield up to 34,000 acre-feet of dry year water supply for the SWP. During 2000, activities focused on development and calibration of a groundwater flow model to be used to evaluate project operation scenarios. Model development was supported by continued monitoring of groundwater level and quality as well as detailed evaluation of available hydrogeologic information.

Butte Basin

The Department's efforts in Butte County focused on improving the technical understanding of the Butte Basin groundwater system and on building relationships with local interests. The Department continued to cooperate with the Butte County Department of Water and Resources Conservation to design and develop

a monitoring-well network for the basin. The Department also provided technical assistance to the county and to the Butte Basin Water Users Association, including assistance in the evaluation of the Butte Basin groundwater model developed for the association. In addition, the Department, in cooperation with the county, Western Canal, and several landowners in the Cherokee Strip, designed a conjunctive-use demonstration project with the intent of testing the permitting process under the Butte County groundwater ordinance. The design of this demonstration project entails groundwater pumping by Western Canal to meet post-irrigation season demands and in lieu recharge in the Cherokee Strip. The parties began negotiations to develop Principles of Participation to guide project contract negotiations.

Institutional Concerns

Local entities and individuals in the Sacramento Valley and elsewhere are faced with a confusing array of proposals and activities that are sometimes seen as threats to their water supplies. These include the Department's conjunctive use and water transfer programs; CALFED's Bay-

Delta Program; SWRCB's Delta water right hearings and related settlement attempts; activities of the Bureau in implementing CVPIA; contract renewal negotiations; and other proposals.

Local agencies are increasingly active in developing groundwater management programs and asserting control over water supply development and management activities. The Department works with local agencies and interested parties by providing technical and other assistance to help alleviate local anxieties and build consensus for local and regional conjunctive use. Concurrently, the Department actively monitors and evaluates proposed water transfers and other groundwater management activities to protect the existing SWP water supply.

Local Water Supply Projects

Local projects to augment water supply may be financed with SWP funds and become units of the SWP if the Department determines that the projects are structurally, economically, financially, and contractually feasible as well as environmentally acceptable.

Central Valley Project Improvement Act of 1992

The Central Valley Project Improvement Act (PL 102-575; 106 Stat. 4706) made protection, restoration, and enhancement of fish and wildlife a major purpose of CVP. Because it requires specific water supply actions, CVPIA directly affects the joint activities of the SWP and CVP. The act indirectly influences SWP operations by addressing several Delta environmental issues.

CVPIA is designed to (1) protect, restore, and enhance fish, wildlife, and associated habitats in the Central Valley and Trinity River basins; (2) address impacts of CVP on fish, wildlife, and associated habitats; (3) improve operational flexibility of CVP; (4) encourage expanded use of voluntary water transfers and water conservation; (5) contribute to efforts to protect the Sacramento-San Joaquin Delta and estuary; and (6) achieve a reasonable balance among competing demands for CVP water, including fish and wildlife, agricultural, municipal, and power uses.

In addition to imposing further limitations on new and renewed CVP contracts and encouraging voluntary transfers of CVP water, CVPIA requires the implementation of a program to ensure that by 2002, natural production of anadromous fish will be sustainable at population levels twice the average sustained from 1967 to 1991. CVPIA also requires the dedication and management of an additional 800,000 acre-feet of CVP yield for fish and wildlife needs.

CVPIA also specifies measures to restore fish and wildlife and their habitat. Several measures—including installing a structural temperature control device at Shasta Dam, constructing specified Delta barriers, and acquiring supplemental wildlife refuge water—require cost sharing by the State of California. The Bureau is responsible for establishing guidelines and procedures to implement CVPIA requirements. The Department works closely with the Bureau as these programs develop to manage any effects on SWP operations and minimize adverse impacts to threatened and endangered species.

SWP contractors benefit from increased water supplies or reduced demands resulting from the projects.

Should construction costs of a local project exceed available SWP funds, local participation in financing the construction will be required. In addition, SWP funding will not exceed actual construction costs, and a local project will not become a unit of the SWP until all participants sign an agreement.

For a project to be financed by the SWP, the Department must be assured that

- appropriate water supply contracts will be amended;

- yield developed by a local project as a unit of the SWP will become part of the SWP yield, whether for the life of the project or for a prescribed interim period; and
- the local project will not adversely affect the costs of water deliveries to nonparticipating SWP contractors.

The Department conducts a feasibility study of local water supply projects only when conceptual and reconnaissance reports support the project and SWP contractors agree that the project is advantageous.

At this time, no local water supply projects are being considered by the Department.

The information in this chapter was contributed by the State Water Project Analysis Office, the Division of Planning and Local Assistance, and the Bay-Delta Office.

Chapter 8

Water Supply and Allocation



Aerial view of Lake Perris and Dam

Significant Events in 2000

- Water conditions in water year 1999-00, as measured by statewide annual precipitation, April 1 snowpack, annual unimpaired runoff, and end-of-water year reservoir storage, were near average. The total annual amounts mask some strong monthly departures. Most of the rainy season was dry, especially in the south where dry conditions prevailed until January. December was extremely dry. Most of the rain and snow fell during a 60-day window from about mid-January to mid-March, with February precipitation double average for the month.
- Very few flood stages occurred and flood-related problems were at a minimum. The Sacramento River rose above warning stage in February. Reservoir storage dropped 10 percent during the year after good carry-over from 5 prior wet years. A La Niña ocean surface temperature pattern, which is associated with the drier conditions experienced in Southern California, also characterized the water year.



To meet contracted obligations to the State Water Project long-term water supply contractors, the Department of Water Resources monitors precipitation, calculates runoff, and operates storage facilities during each water year, from October 1 through September 30.

Water Year 1999-00

Precipitation and Snowpack

Statewide precipitation during October and November 1999 was about 70 percent of average with a strong north-to-south gradient. The below-normal trend did not improve during December. Northern Sierra precipitation accumulation dropped from 90 percent of average at the end of November to about 60 percent of average at the end of December. This very dry month left the statewide snowpack at about 20 percent of normal on January 1, 2000. Figure 8-1 shows statewide precipitation by hydrologic region.

About 2 weeks into the new calendar year, conditions began to change dramatically. By the end of February 2000, statewide snowpack and northern Sierra precipitation had increased to approximately 110 percent and 125 percent of average, respectively. February precipitation was 250 percent of average across Central California, and twice average statewide.

The wet weather stopped in mid-March, limiting March precipitation to 55 percent of average in the northern Sierra. The statewide snowpack peaked on March 13, and dropped to average on April 1, the date of the historical maximum accumulation. Fair and warmer weather and northeasterly winds caused some sublimation losses of water from the snow and early melting of the pack, especially at lower elevations. This dry period was interrupted by brief storms in mid-April and mid-May, which slowed the snowmelt. Precipitation during the spring and

summer months was slightly below average in Northern California.

The Northern Sierra Eight Station Precipitation Index finished with 56.7 inches for the water year (114 percent of average). The Feather River Basin was among the driest mountain basins, with average October through March total precipitation, and 80 percent of average spring precipitation.

Runoff and Storage

Despite the monthly variation in precipitation, statewide water year runoff totaled 95 percent of average. The Sacramento River and San Joaquin River regions were slightly above average, while the Tulare Lake, North Lahontan, and South Lahontan regions pulled down the statewide average. Feather River unimpaired inflow to Lake Oroville was 4.2 million acre-feet (94 percent of average).

Statewide runoff during the dry fall was only 45 percent of average. This climbed to 180 percent of average in February. Consequently, the operational focus at some Central Valley reservoirs shifted from drought management to flood control by March. The early onset of snowmelt helped raise March and April unimpaired runoff above average in most regions. The snowmelt peaked near May 24 in most snow-fed rivers and then receded quickly. Runoff during July dropped to 85 percent of average in the Sacramento River region, and 50 percent of average in the San Joaquin River region.

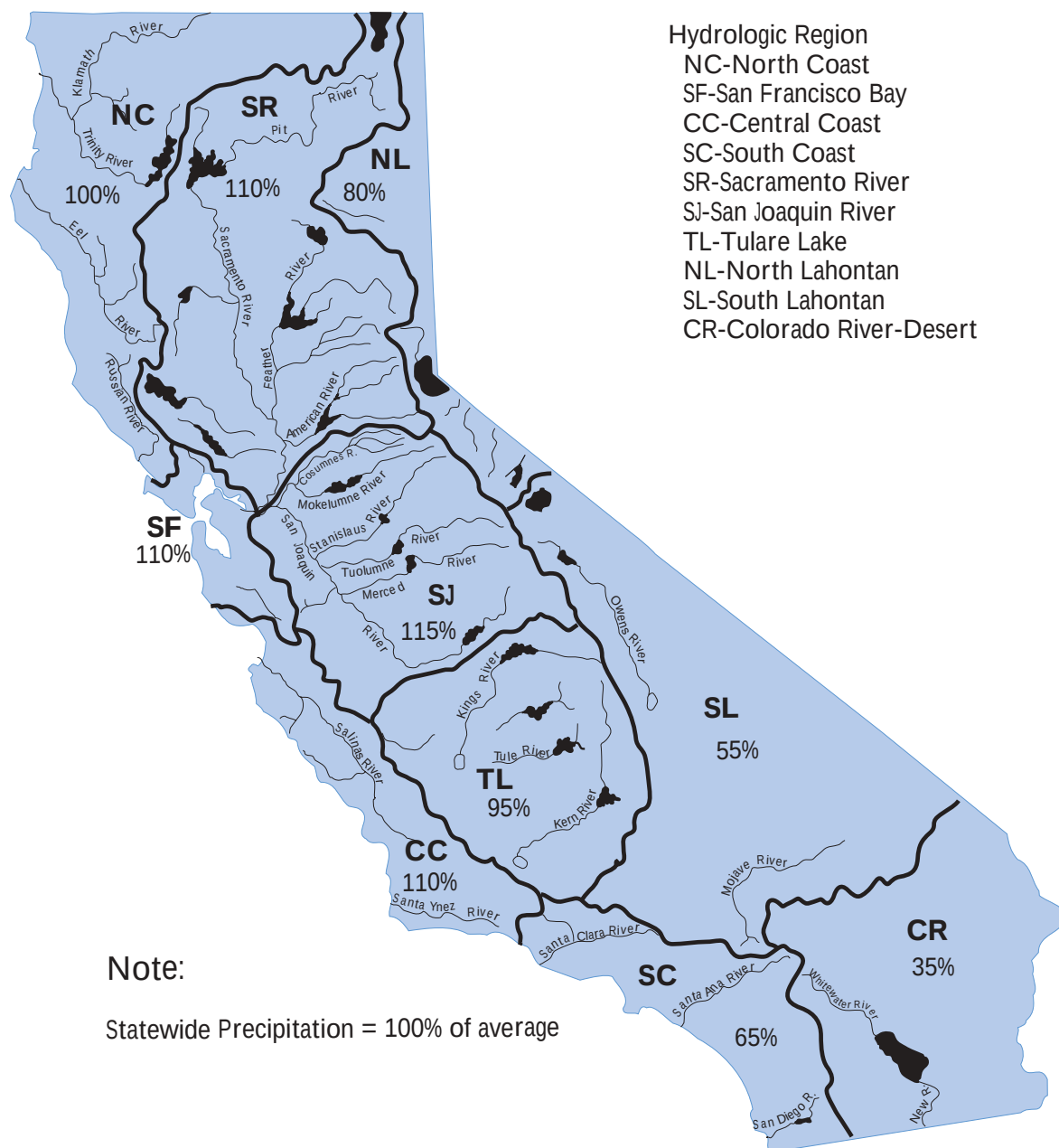


Figure 8-1. Statewide Precipitation by Hydrologic Region, 1999-00 Water Year, in Percentage of Average

The Sacramento River Index for water year 1999-00 was 18.9 million acre-feet (105 percent of average). The Sacramento Valley 40-30-30 Index was *above normal*, thus ending a 5-year period during which the water year type was *wet*. San Joaquin River system unimpaired runoff from the Stanislaus, Tuolumne, Merced, and San Joaquin Rivers was 5.9 million acre-feet (104 percent of average). The San Joaquin Valley 60-20-20 Index was *above normal*.

There was some high water on the major rivers, mostly in February and early March, but very few flood stages occurred and flood-related problems were at a minimum. On the Sacramento River system, overflow into Sutter and Yolo Bypasses occurred at all fixed weirs.

Reservoir storage started well with good carry-over from the previous wet years. Statewide storage ranged from 120 percent of average at the start of the water year and after the February storms, to 110 percent at the end.

First Quarter Water Year 2000-01

After double average statewide precipitation in October, November and December were very dry. The snowpack by the end of December was highest in the northern State, where it was only 45 percent of normal for the date. Statewide unimpaired runoff was 35 percent of average for the 3 months ending December 2000. Reservoir storage dropped to 105 percent of average statewide by December 31, 2000.

SWP Storage

The SWP operates a complex system of 28 dams and reservoirs to collect and store water for future deliveries. Lake Oroville is the first of two primary SWP conservation facilities. Inflow into Lake Oroville comes from the Feather River.

San Luis Reservoir, in the central part of the State, is the second primary SWP conservation facility and derives its inflow from pumping at Gianelli Pumping-Generating Plant. San Luis is

off-stream storage, with most water in the reservoir pumped in from late fall to early spring, temporarily stored, and then later released back to the Aqueduct to meet water contractor peaking demands in the summer months. The remaining 26 dams and reservoirs regulate the stored water supply into water delivery patterns designed to fit local needs.

Reservoir storage in the SWP at the end of the 1999-00 water year was 87 percent of average, compared to 107 percent of average at the end of water year 1998-99. Total 1999-00 storage in major SWP reservoirs was 2.97 million acre-feet on September 30, 2000, about 690 thousand acre-feet less than storage at the same time in water year 1998-99. September 30 storage at Lake Oroville was 1.92 million acre-feet, about 507,000 acre-feet less than last year. The State's share of San Luis Reservoir storage was 386,781 acre-feet, compared to 591,796 acre-feet last year. The combined storage in southern reservoirs was 629,788 acre-feet on September 30, compared to 640,124 acre-feet at the end of the 1998-99 water year.

Total storage in major SWP reservoirs was about 2.95 million acre-feet at the end of calendar year 2000, compared with 3.53 million acre-feet in 1999. The State's share of San Luis Reservoir storage was about 481,655 acre-feet, compared with 717,426 acre-feet at the end of 1999. The combined storage in southern reservoirs was about 636,000 acre-feet on December 31, 2000, compared to 625,000 acre-feet in 1999.

The following information about these reservoirs, including amounts of unimpaired runoff to Lake Oroville and storage levels for SWP conservation and other storage facilities, is based on the 1999-00 water year. Some of the paragraphs below refer to calendar year and are noted as such.

Lake Oroville

Lake Oroville, the keystone of the SWP, has a maximum capacity of 3,537,580 acre-feet. Runoff from the Feather River drainage is collected and stored in the reservoir for release to the

Sacramento-San Joaquin Delta through Oroville Dam, Thermalito Diversion Dam, and Thermalito Afterbay.

Lake Oroville inflow for the 1999-00 water year totaled about 3.99 million acre-feet—86 percent of average. Minimum storage occurred December 30, 2000, at 1,724,943 acre-feet—49 percent of its capacity. Maximum storage occurred May 29, 2000, at 3,131,132 acre-feet—about 89 percent of capacity. See Figures 8-2 and 8-3 for monthly and cumulative inflow, respectively, into Lake Oroville.

Total inflow into Lake Oroville during the 2000 calendar year was 3,940,490 acre-feet. Lake Oroville storage at the end of 2000 was 1,724,943 acre-feet. Figure 8-4 compares end-of-month storage in Oroville Reservoir for the 1999 and 2000 calendar years.

San Luis Reservoir

The Department and the Bureau of Reclamation operate San Luis Reservoir jointly according to operating procedures adopted in June 1981. San Luis Reservoir has a normal operating capacity of 2,027,840 acre-feet. The SWP share of capacity is 1,062,183 acre-feet.

At the beginning of the 1999-00 water year, San Luis Reservoir contained 706,497 acre-feet—34 percent of its capacity. The SWP share was 596,225 acre-feet. By March 26, 2000, San Luis Reservoir reached its maximum storage for 2000 at 2,028,217 acre-feet—100 percent of normal maximum operating capacity. The highest end-of-month SWP share of storage was in March 2000 at 1,063,822 acre-feet (Figure 8-5), with the SWP storing some water in the vacant Bureau share of storage.

Lake Del Valle

Lake Del Valle, situated off the South Bay Aqueduct, functions primarily as a storage facility for later water delivery in Santa Clara and Alameda Counties. At the beginning of the 1999-00 water year, Lake Del Valle held 34,883 acre-feet—about 45 percent of its maximum capacity of

77,106 acre-feet. Its highest storage occurred May 2, 2000, with 39,971 acre-feet.

By the end of the 1999-00 water year, on September 30, 2000, storage in Lake Del Valle had dropped to 32,986 acre-feet—43 percent of maximum capacity. Releases to Arroyo Del Valle and South Bay Aqueduct from Lake Del Valle had totaled 25,103 acre-feet for the 1999-00 water year.

Southern Reservoirs

During normal operating conditions, the Department maintains its four southern reservoirs—Pyramid, Castaic, and Silverwood Lakes and Lake Perris—at or near full operating capacity to ensure uninterrupted delivery of water to Southern California contractors.

At the beginning of the 1999-00 water year, these reservoirs held 637,533 acre-feet—91 percent of combined normal maximum operating capacity of 701,321 acre-feet. At the end of the water year, they held 629,788 acre-feet—90 percent of combined normal maximum operating capacity.

Diversions from the Delta

The SWP diverts water from the Sacramento-San Joaquin Delta through Banks and Barker Slough Pumping Plants for delivery to contractors and SWP storage facilities. In 2000, the SWP diverted 3,735,652 acre-feet at Banks Pumping Plant, including 235,119 acre-feet of Cross Valley Canal water wheeled by the Department. Figure 8-6 shows the amounts of water pumped each month in 2000 at Banks Pumping Plant; Figure 8-7 shows the monthly amounts of water diverted from the Delta by the SWP and CVP in 2000. CVP diverts water to similar areas from the Delta through Tracy Pumping Plant. CVP diverted about 2,560,221 acre-feet at Tracy Pumping Plant in 2000. Combined Delta exports include all of these plants.

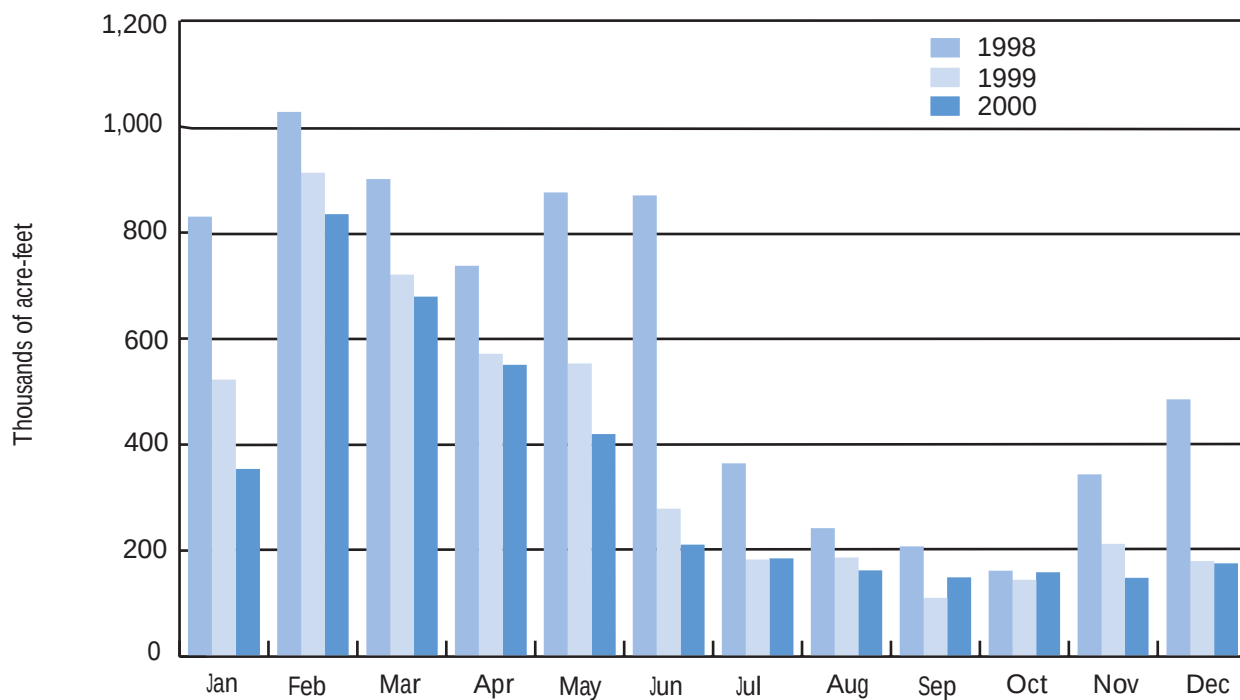


Figure 8-2. Monthly Inflow Into Lake Oroville, 1998-00 Calendar Years

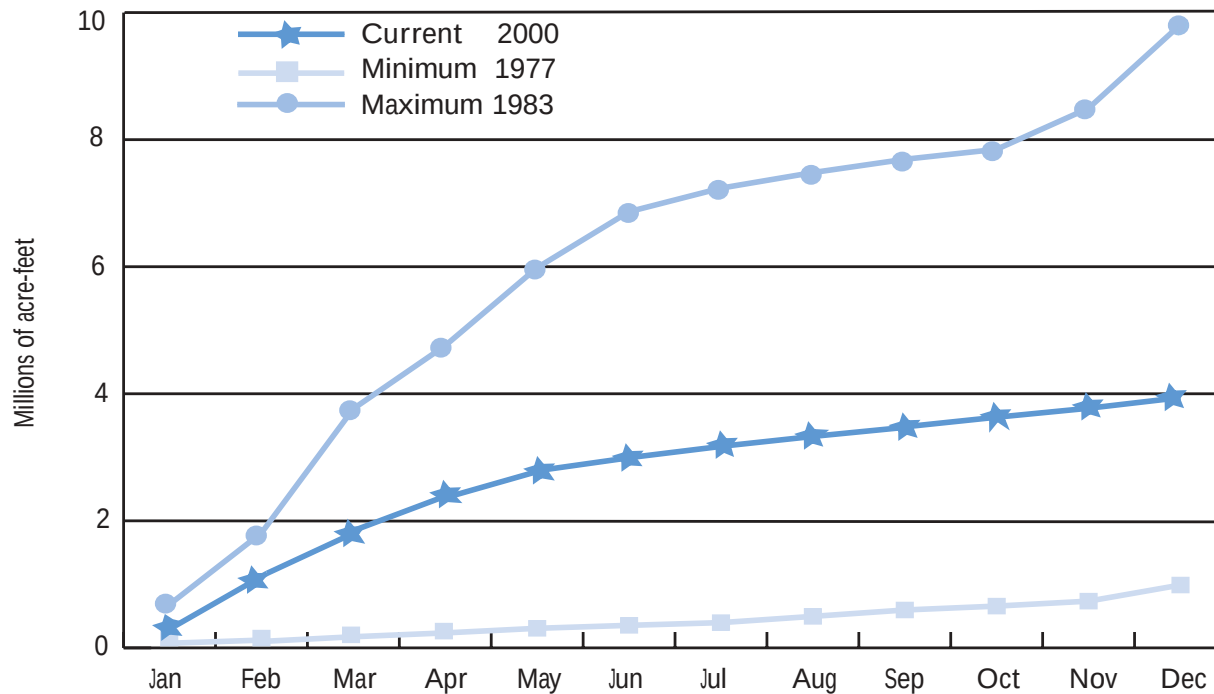


Figure 8-3. Cumulative Inflow into Lake Oroville

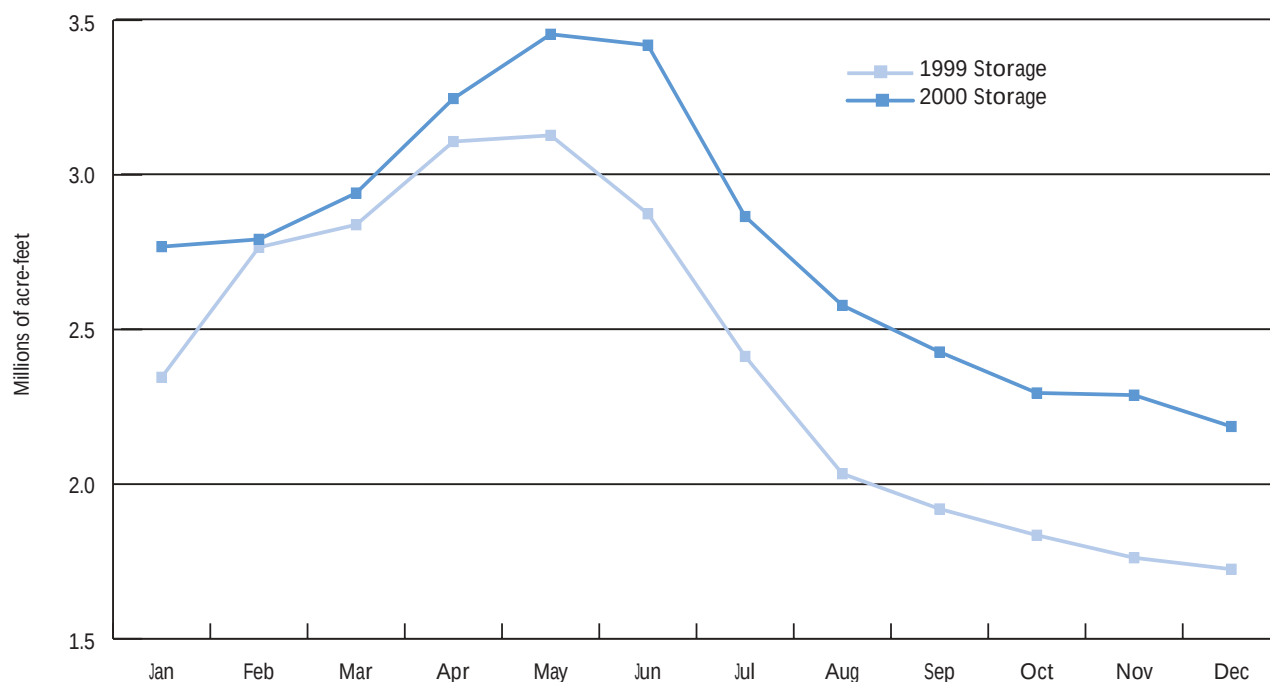


Figure 8-4. End-of-Month Storage in Lake Oroville, 1999 and 2000 Calendar Years

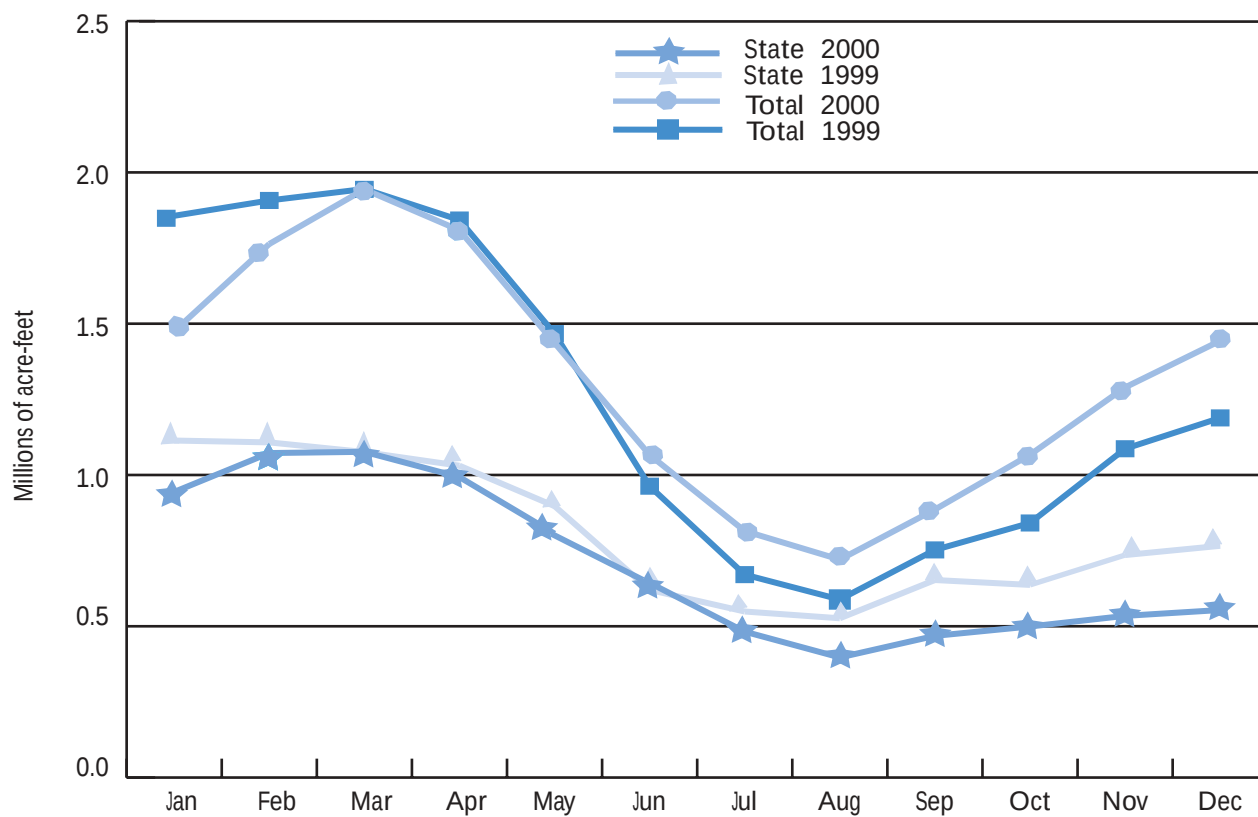


Figure 8-5. End-of-Month Storage in San Luis Reservoir, 1999 and 2000 Calendar Years

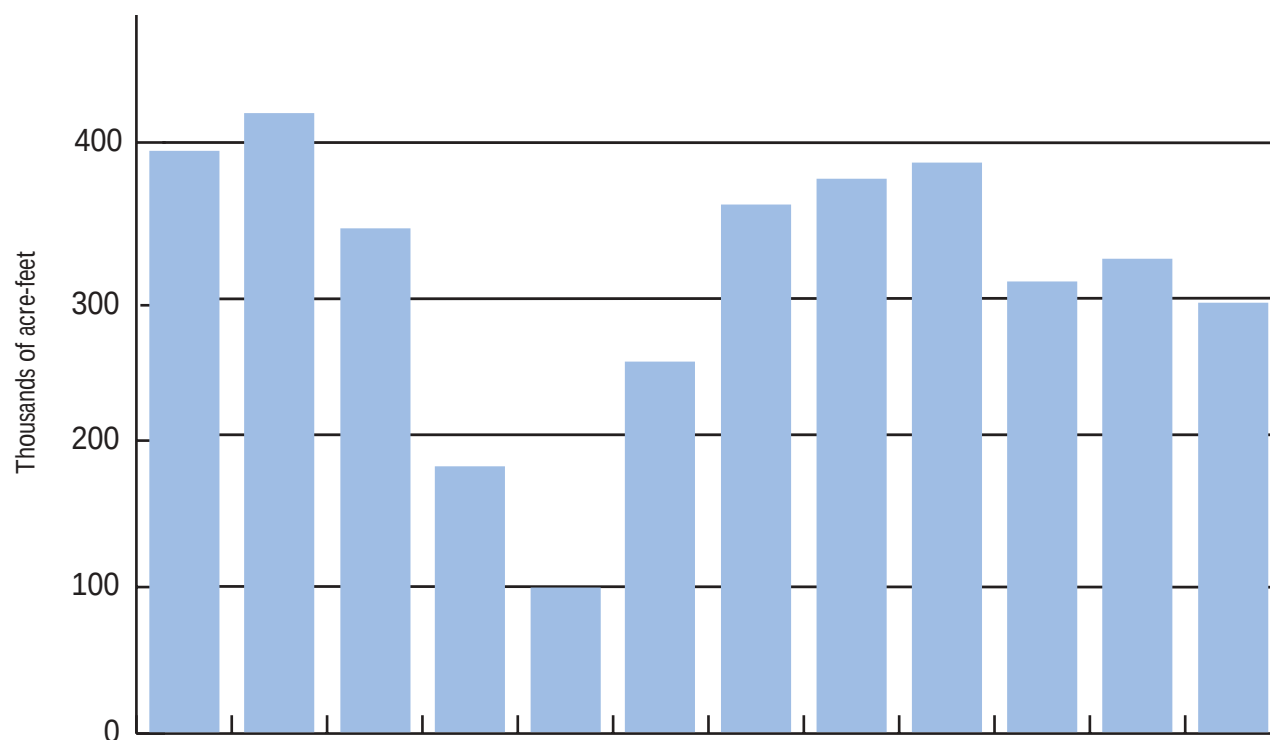


Figure 8-6. Water Pumped at Banks Pumping Plant in 2000, by Month

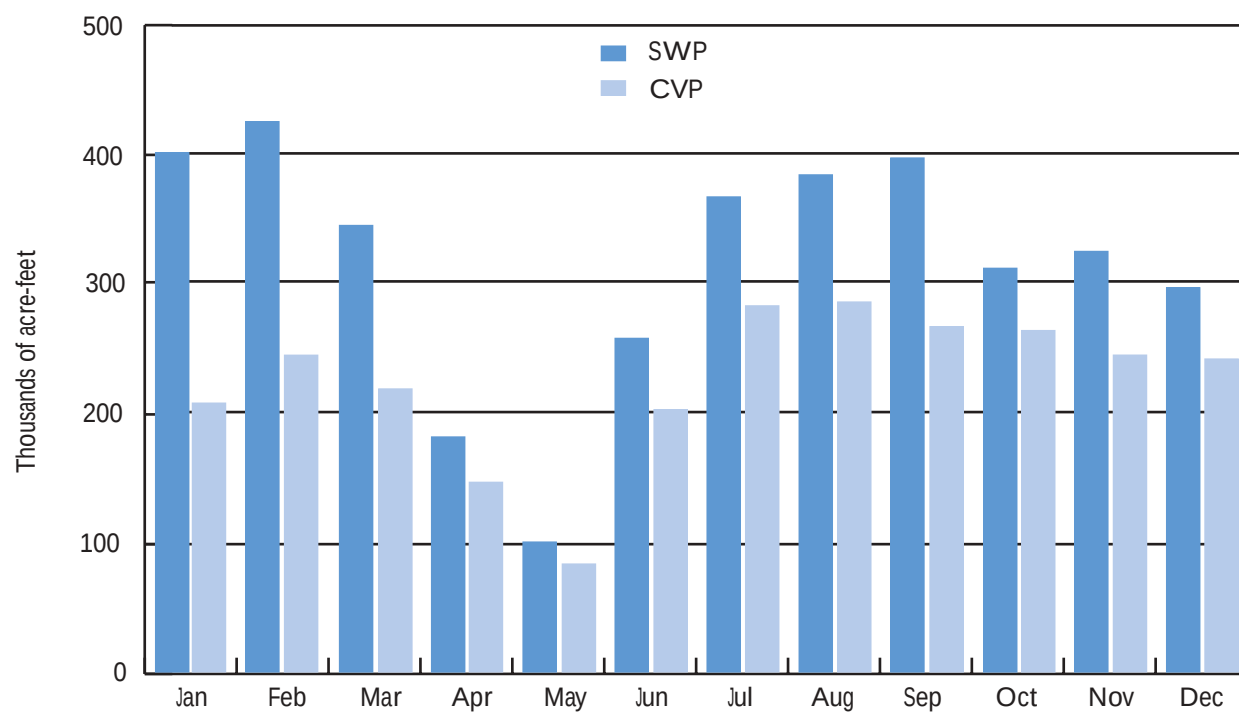


Figure 8-7. Water Diverted from the Sacramento-San Joaquin Delta by State Water Project and Central Valley Project in 2000, by Month

From Banks Pumping Plant, water is delivered either to the South Bay area through the South Bay Aqueduct or to the San Joaquin Valley, Central Coastal, and Southern California areas through the California Aqueduct. From Barker Slough Pumping Plant, water is delivered to the North Bay Aqueduct.

The Department pumped Cross Valley Canal water at Banks Pumping Plant for the Bureau at four different times during 2000 in accord with the Cross Valley Canal conveyance agreements. The pumping rate varied from as low as 43 acre-feet per day to a high of 9,455 acre-feet per day. The amount pumped during this period was about 235,119 acre-feet.

Combined SWP and CVP Delta exports were highest at around 22,500 acre-feet per day during February and September. Monthly Delta exports in 2000 varied from a low of 183,484 acre-feet in May to a high of 668,219 acre-feet in August. Delta exports totaled about 6.46 million acre-feet for 2000.

The SWP also diverted 47,704 acre-feet at Barker Slough Pumping Plant for delivery to North Bay Aqueduct water contractors.

In the San Joaquin Valley near Kettleman City, the existing Coastal Branch of the Aqueduct serves agricultural areas west of the California Aqueduct, including municipal and industrial water users in San Luis Obispo and Santa Barbara Counties. In 2000, total water pumped through Dos Amigos Pumping Plant to the San Joaquin Valley totaled 4,369,260 acre-feet. Included in that amount are 108,494 acre-feet for CVC water delivered to Westlands Water District. Also included was 802,868 acre-feet federal share of pumping at Dos Amigos. Figure 8-8 shows the State's share of water pumped each month.

In 2000, water pumped through Edmonston Pumping Plant for delivery to Southern California totaled 1,694,750 acre-feet. Figure 8-9 shows the amount of water pumped each month.

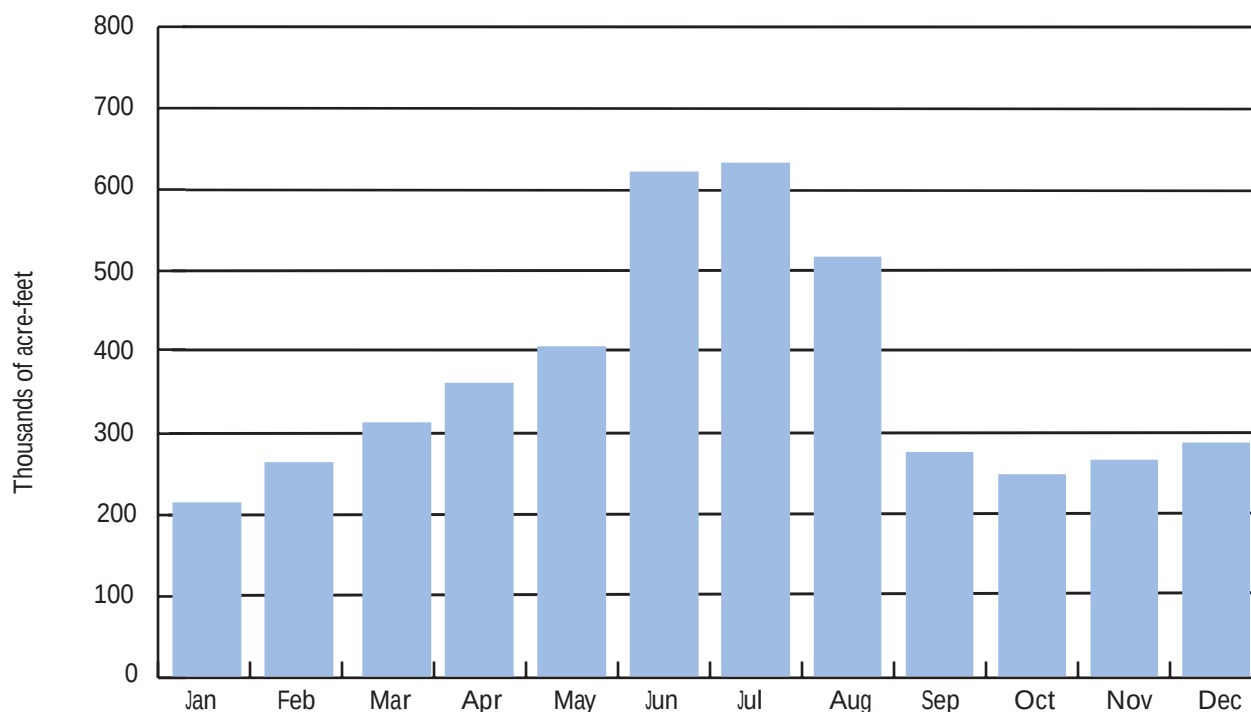


Figure 8-8. State's Share of Water Pumped at Dos Amigos Pumping Plant in 2000, by Month

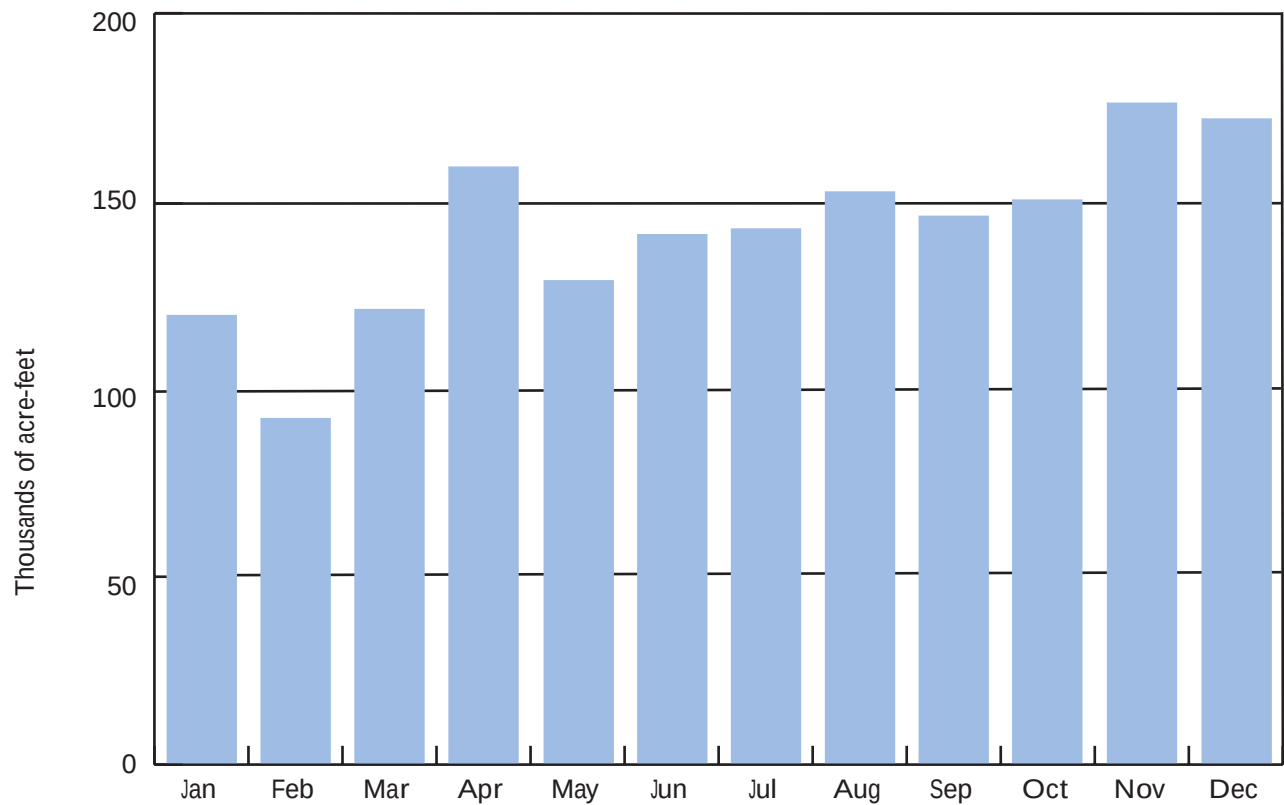


Figure 8-9. Water Pumped at Edmonston Pumping Plant in 2000, by Month

Information for this chapter was provided by the Division of Flood Management, the Division of Operations and Maintenance, and the State Water Project Analysis Office.

Chapter 9

Water Contracts and Deliveries



Oroville Dam spillway

Significant Events in 2000

- On October 1, 1999, State Water Project long-term contractors submitted initial requests for 2000 approved Table A deliveries totalling 3.62 million acre-feet. The Department approved deliveries of 2.06 million acre-feet on November 30, 1999, resulting in an initial approved Table A amount for most SWP contractors of 50 percent of Table A requests for 2000. Improved water conditions increased the 2000 approved Table A amount to 2.88 million acre-feet or 70 percent on February 25, 2000. As a result of additional improvements in water conditions, approved Table A amounts were further increased to 3.62 million acre-feet or 100 percent on March 10, 2000. Unusually dry conditions from mid-March on caused a reduction in approved Table A amounts to 3.42 million acre-feet or 90 percent of contractor requests; approved Table A amounts remained at that level for the rest of 2000.
- In 2000, 4,932,032 acre-feet of water were conveyed to 27 long-term contractors and 17 other agencies. That amount includes a total of 3,523,492 acre-feet of SWP water of which 2,983,670 acre-feet is approved Table A water; 308,257 acre-feet is Article 21 water and 528 acre-feet is unscheduled water; 216,237 acre-feet is carryover; 10,770 acre-feet is flexible storage withdrawal; and 4,030 acre-feet is SWP water for recreation.
- The Department executed seven amendments to long-term water supply contracts.
- The Department executed 14 water conveyance / storage agreements and 3 turnout agreements with SWP contractors.
- The Department conveyed 301,146 acre-feet of Central Valley Project water through SWP facilities.
- Nine Feather River water right settlement agencies received a total of 1,085,886 acre-feet of water.

The long-term water supply contracts for water service from the State Water Project between the Department and 29 local agencies are basic to the project's construction and operation. In return for State financing, constructing, operating, and maintaining facilities needed to provide water service, the agencies contractually agreed to repay all associated SWP capital and operating costs.

The Department delivers water to SWP contractors according to their long-term water supply contracts.

The SWP contractors' long-term water supply contracts set forth Table A amounts, which determine how much water a contractor may request each year from the Department.

Annual Table A represents the total amount of project water that an SWP contractor may request each year, according to that contractor's long-term water supply contracts.

Approved Table A represents the amount of annual Table A requested by the contractors and approved for delivery by the Department, based on hydrologic conditions, current reservoir storage, and total requests by the SWP

Long-Term SWP Water Supply Contracts

The first water supply contract was signed with the Metropolitan Water District of Southern California on November 4, 1960. The contract was negotiated by the Department and Metropolitan according to terms of the contracting principles for water service contracts announced by Governor Edmund G. Brown on January 20, 1960.

The Metropolitan contract became the prototype for all water contracts; by the end of 1967, 31 agencies had contracted for water. In addition, a water supply contract was executed with the City of West Covina in December 1963, but was terminated in August 1965; the city's Table A amount was transferred to Metropolitan through an amendment to the district's long-term contract with the Department. Long-term contracts with Hacienda Water District and Devil's Den Water District were also terminated when those districts transferred their Table A amounts, through contract amendments, to Tulare Lake Basin Water Storage District (1981) and Castaic Lake Water Agency (1992), respectively. Today the SWP has long-term water supply contracts with 29 agencies. Those contracts have been amended periodically to incorporate mutually desired modifications.

All water contracts signed in the 1960s included an estimate of the date water would first be delivered and a schedule of the amount of water the agency could expect to be delivered annually (annual Table A amounts). That amount was designed to increase gradually until the maximum amount of annual Table A was reached. The total combined maximum annual Table A amount for all water contracting agencies was initially 4,230,000 acre-feet, assuming full development of the SWP.

The contracts were initially designed to be valid for 75 years or until all bonds sold as part of the California Water Resources Development Bond Act were repaid, whichever period was longer. As a result of amendments to contracts in the 1990s, the current combined maximum annual Table A amount totals 4,172,786 acre-feet, and the contracts are in effect for the longest of the following periods: (1) the project repayment period, which extends to the year 2035; (2) 75 years from the date of the contract; or (3) the period ending with the latest maturity date of any bond used to finance the construction costs of project facilities.

water contractors. The Department is not always able to deliver the quantity of water requested by the contractors; under certain conditions, a lesser amount, allocated according to the long-term water supply contracts and the process noted above, is made available for delivery.

Approved Table A amounts may also be referred to in this chapter as *approved amounts* or *approved water*.

The long-term water contracts are amended as needed. During 2000, the Department executed seven amendments to these contracts.

The Department also enters into miscellaneous agreements with SWP contractors and other agencies—which may be amended periodically—to convey SWP and non-SWP water through the California Aqueduct and approve the construction, operation, and maintenance of turnouts along SWP facilities. During 2000, the Department executed 14 water conveyance/storage agreements, and 3 turnout agreements with SWP contractors.

The State Water Project Analysis Office has developed a numbering system for contracts, amendments, and agreements executed by the Department. These numbers, designated as SWPAO #XXXXX, are located in parentheses after each contract, amendment, or agreement.

Detailed information about contracts and amendments follows.

Amendments to Long-Term SWP Water Supply Contracts

All the original contracts signed by the Department and local agencies have been previously amended to incorporate mutually desired changes. Most amendments fall under the following five general categories:

- revision of Table A amounts in the water supply contracts;

- allocation of costs and benefits for the enlargement or extension of the East Branch and extension of the Coastal Branch of the California Aqueduct;
- purchase of excess capacity in the California Aqueduct;
- provisions to allow contractors, during certain conditions, to carry over undelivered SWP approved Table A water from one year for delivery in the next year; and
- implementation of Monterey Agreement principles.

The following long-term SWP Water Supply Contracts were amended during 2000.

Alameda County Flood Control and Water Conservation District, Zone 7. The Department executed Amendment Number 21 to the Water Supply Contract between Alameda-Zone 7 and the Department on December 8, 2000. The Amendment provided for the permanent transfer of 10,000 acre-feet of SWP agricultural Table A water to Alameda-Zone 7 from Kern County Water Agency, and set forth conditions for the transfer. The transfer is consistent with implementation of the Monterey Amendment, which provides for the permanent transfer of up to 130,000 acre-feet of agricultural Table A water to urban agencies. The transfer is effective January 1, 2001. (SWPAO #01005)

County of Butte. The Department executed Amendment Number 15 to the Water Supply Contract between Butte and the Department on November 14, 2000. The Amendment provided for reduction of Butte's Table A amounts from 27,500 acre-feet to 3,500 acre-feet for 2001. In 2002, Butte's Table A amounts will revert to the maximum of 27,500 acre-feet. (SWPAO #01002)

Kern County Water Agency. The Department executed Amendment Number 32 to the Water Supply Contract between Kern and the Department on December 8, 2000. The Amendment provided for the permanent transfer of 10,000 acre-feet of SWP agricultural Table A amount from Kern to Alameda-Zone 7, and set forth conditions for the transfer. The transfer is

consistent with implementation of the Monterey Amendment, which provides for the permanent transfer of up to 130,000 acre-feet of agricultural Table A amounts to urban agencies. The transfer is effective January 1, 2001. (SWPAO #01008)

Kern County Water Agency. The Department executed Amendment Number 33 to the Water Supply Contract between Kern and the Department on December 8, 2000. The Amendment provided for the permanent transfer of 5,756 acre-feet of SWP agricultural Table A amounts from Kern to Solano County Water Agency, and set forth conditions for the transfer. The transfer is consistent with implementation of the Monterey Amendment, which provides for the permanent transfer of up to 130,000 acre-feet of agricultural Table A amounts to urban agencies. The transfer is effective January 1, 2001. (SWPAO #01007)

Kern County Water Agency. The Department executed Amendment Number 34 to the Water Supply Contract between Kern and the Department on December 8, 2000. The Amendment provided for the permanent transfer of 4,025 acre-feet of SWP agricultural Table A amount from Kern to Napa County Flood Control and Water Conservation District, and set forth conditions for the transfer. The transfer is consistent with implementation of the Monterey Amendment, which provides for the permanent transfer of up to 130,000 acre-feet of agricultural Table A amount to urban agencies. The transfer is effective January 1, 2001. (SWPAO #01006)

Napa County Flood Control and Water Conservation District. The Department executed Amendment Number 21 to the Water Supply Contract between Napa and the Department on December 8, 2000. The Amendment provided for the permanent transfer of 4,025 acre-feet of SWP agricultural Table A amounts to Napa from Kern and set forth conditions for the transfer. The transfer is consistent with implementation of the Monterey Amendment, which provides for the permanent transfer of up to 130,000 acre-feet of agricultural Table A amounts to urban agencies. The transfer is effective January 1, 2001. (SWPAO #01003)

Solano County Water Agency. The Department executed Amendment Number 17 to the Water Supply Contract between Solano and the Department on December 8, 2000. The Amendment provided for the permanent transfer of 5,756 acre-feet of SWP agricultural Table A amounts to Solano from Kern, and set forth conditions for the transfer. The transfer is consistent with implementation of the Monterey Amendment, which provides for the permanent transfer of up to 130,000 acre-feet of agricultural Table A amounts to urban agencies. The transfer is effective January 1, 2001. (SWPAO #01004)

Monterey Amendments

The Monterey Amendments increase the reliability of existing water supplies; provide stronger financial management for the SWP; and increase water management flexibility, providing more tools for local water agencies to maximize use of existing facilities.

Changes to SWP operations incorporated in the Monterey Amendments include changes in determination of approved Table A water, the transfer of Table A amounts and land, financial restructuring, and increased operational flexibility. The Monterey Amendments are discussed in detail in Chapter 1, *Summary of Significant Events*, of Bulletin 132-95.

No Monterey Amendments were executed during 2000. Plumas County Flood Control and Water Conservation District and Empire West Side Irrigation District remain the only long-term SWP contractors who have not signed the Monterey Amendment.

The Planning and Conservation League filed a lawsuit on December 27, 1995, challenging the California Environmental Quality Act compliance for the Monterey Amendment. A Sacramento County Superior Court judge later dismissed the lawsuit. PCL appealed the decision and on September 15, 2000, the Third District Court of Appeal reversed the Superior Court ruling. Additional information can be found in Chapter 6, *Legislation and Litigation*.

Miscellaneous Agreements with Long-Term SWP Contractors

Water Conveyance/Exchange Agreements

During 2000, water conveyance/exchange agreements were executed with long-term SWP contractors as described below.

Antelope Valley-East Kern Water Agency.

An agreement pending execution among the Department, AVEK, and Littlerock Creek Irrigation District, will provide for the delivery of up to 5,000 acre-feet of AVEK's 2000 approved Table A water to Littlerock. The water delivered through the Littlerock Creek Turnout will be used to study recharge into AVEK's service area. A total of 5,002 acre-feet was delivered in 2000. (SWPAO #00024)

Castaic Lake Water Agency. A letter agreement dated August 30, 2000, and executed September 6, 2000, between the Department and Castaic Lake, approved a water transfer of Castaic Lake's 2000 approved Table A water to Westlands Water District, a Central Valley Project contractor. The transfer was on behalf of Rolling Hills Farms, who leases land in both the Castaic Lake and WWD service areas, in order to utilize annual water supplies in the most beneficial manner for 2000 farming operations. The transfer was completed in 2000, with a total of 1,200 acre-feet delivered to WWD. (SWPAO #00015)

Dudley Ridge Water District. A letter agreement pending execution among the Department, Dudley Ridge, and Kern, will provide for the transfer of up to 1,500 acre-feet of Dudley Ridge's 1999 approved Table A carryover water to Kern during the first three months of 2000. The agreement will facilitate a transfer of water to Paramount Farming Company, a landholder who farms in both Dudley Ridge and Kern service areas. A total of 1,500 acre-feet was transferred to Kern in 2000. (SWPAO #00034).

Empire West Side Irrigation District. An agreement executed May 1, 2000, between the Department and Empire, approved the delivery of unscheduled water to Empire in 2000 at times when project water was not needed for fulfilling approved Table A water deliveries or for meeting project operational commitments. A total of 528 acre-feet of unscheduled water was delivered to Empire in 2000. (SWPAO #00011)

Kern County Water Agency. A letter agreement dated May 12, 2000, and executed May 31, 2000, between the Department and Kern, approved the transfer of up to 32,767 acre-feet of Kern's 2000 approved Table A water to WWD. The agreement facilitated a water transfer in 2000 from landholders within member units of Kern—Lost Hills Water District, Berrenda Mesa Water District, and BWSD—to land they farm in WWD. The Department has approved similar transfers annually since 1996. A total of 29,267 acre-feet was delivered to WWD in 2000. (SWPAO #00012)

Kern County Water Agency. A letter agreement dated June 29, 2000, and executed July 5, 2000, between the Department and Kern, approved the transfer in 2000 of up to 6,580 acre-feet of Kern's 2000 approved Table A water to WWD. The agreement facilitated a water transfer from landholders within member units of Kern—LHWD, BMWD, and BWSD—to land they farm in WWD. The Department has approved similar transfers annually since 1996. A total of 6,580 acre-feet was delivered to WWD in 2000. (SWPAO #00014)

Kern County Water Agency. A letter agreement dated August 31, 2000, and executed September 7, 2000, between the Department and Kern, approved the exchange of up to 60,000 acre-feet of Kern's 2000 approved Table A water for a like amount of Kern Water Bank water acquired by WWD. The Department petitioned and received approval from the State Water Resources Control Board and then approved the delivery to WWD from Reaches 4, 5, 6, and 7 of the California Aqueduct. In return, WWD would release up to 60,000 acre-feet of previously banked Kern River floodwater from

the Kern Water Bank Authority to Kern. The exchange was completed in 2000, and a total of 54,629 acre-feet was delivered to WWD. (SWPAO #00016)

Kern County Water Agency. A letter agreement dated August 31, 2000, and executed September 11, 2000, between the Department and Kern, approved the delivery of up to 20,000 acre-feet of Kern's 2000 approved Table A water to WWD, in exchange for a like amount of previously banked Kern River floodwater. In 1996, Kern entered into an agreement with Nickel/Garces LLC (La Hacienda, Inc.) to receive Kern River water in exchange for a like amount of future Kern approved Table A water to a future designated water agency. The Department petitioned and received approval from SWRCB and then approved the delivery to WWD from Reaches 4, 5, 6, and 7 of the California Aqueduct. The exchange was completed in 2000, and a total of 15,000 acre-feet was delivered to WWD. (SWPAO #00017)

Kern County Water Agency. A letter agreement dated August 29, 2000, and executed September 13, 2000, among the Department, Kern, and Tulare, approved the transfer of up to 400 acre-feet of Kern's 2000 approved Table A water to Tulare. The water was transferred from LHWD, a member unit of Kern, to Westlake Farms located within the service area of Tulare. The transferred water was used to create wetland habitat for shore birds as required under a mitigation agreement between the Regional Water Quality Control Board and LHWD for the operation of LHWD's evaporation basin. The Department has approved similar transfers annually since 1996. A total of 400 acre-feet was delivered to Tulare in 2000. (SWPAO #00018)

Kern County Water Agency. A letter agreement dated September 29, 2000, and executed October 9, 2000, between the Department and Kern, approved the exchange of up to 75,000 acre-feet of Kern's 2000 approved Table A water for previously banked Kern River floodwater and Friant-Kern Section 215/floodwater purchased by the Bureau of Reclamation from the Kern Water Bank Authority. The

Department petitioned and received approval from SWRCB and then approved the delivery of Table A water to the Bureau at O'Neill Forebay. Kern would use banked non-SWP water in lieu of scheduled Table A water. The exchange was completed in 2000, and a total of 72,280 acre-feet was delivered to O'Neill Forebay. (SWPAO #00019)

Kern County Water Agency. A letter agreement dated September 29, 2000, and executed October 16, 2000, between the Department and Kern, approved the 1-year exchange of up to 25,000 acre-feet of Kern's 2000 approved Table A water for a like amount of previously banked Friant-Kern Canal water acquired by WWD. SWP water was approved for delivery to WWD from Reach 7 of the California Aqueduct for use on lands within the SWP place of use. The exchange was completed in 2000, and a total of 20,970 acre-feet was delivered to WWD. (SWPAO #00020)

Kern County Water Agency. An agreement executed on June 8, 2000, between the Department, Kern, and Western Hills Water District, approved the delivery of 8,000 acre-feet of pre-1914 Lower River Rights Water banked in Kern's share of the Pioneer Groundwater Banking Project. A portion of Kern's annual Table A water will be delivered to WHWD from Reach 2A of the California Aqueduct; in exchange, Kern will take a like amount of banked local water from the Pioneer Groundwater Bank. The Department petitioned SWRCB and by SWRCB Order dated April 21, 2000, WHWD's service area was included within the authorized SWP place of use. The delivery structure for WHWD has not been constructed, so Kern did not exchange any approved Table A water with WHWD in 2000. (SWPAO #01001)

Kern County Water Agency. A letter agreement, pending execution between the Department and Kern, will provide for the delivery of up to 30,000 acre-feet of nonproject water from four CVP contractors using 2000 water year CVP water supply. In exchange, Kern would return a like amount of its approved Table A water back to CVP by December 31, 2003. The

Department will petition SWRCB for approval for delivery of the return water. A total of 23,941 acre-feet was delivered to Kern in 2000. (SWPAO #00032)

Kern County Water Agency. A letter agreement, pending execution between the Department and Kern, will provide for the delivery of up to 20,000 acre-feet of Kern's 2000 approved Table A water to WWD, in exchange for a like amount of WWD's CVP water. SWP water was approved for delivery to WWD from Reach 7 of the California Aqueduct for use on lands within the SWP place of use. A total of 20,000 acre-feet was delivered to Kern and a total of 20,000 acre-feet was returned to WWD in 2000. (SWPAO #00035)

Kern County Water Agency. A letter agreement dated December 20, 2000, and pending execution between the Department and Kern, will provide for the delivery of up to 4,167 acre-feet of Kern's 2000 approved Table A water to WWD, in exchange for a like amount of WWD's CVP water returned prior to December 2000. SWP water was approved for delivery to WWD from Reach 7 of the California Aqueduct for use on lands within the SWP place of use. A total of 4,167 acre-feet was delivered to Kern in 2000, and a total of 4,167 acre-feet of water was returned to WWD in 2000. (SWPAO #00036)

Metropolitan Water District of Southern California. A letter agreement dated October 27, 2000, and executed November 27, 2000, between the Department and Metropolitan, approved the delivery of up to 1,995 acre-feet of nonproject water to the Santa Margarita Water District through Metropolitan's delivery structures in Reach 26A of the California Aqueduct, in accordance with Water Right Orders 99-012 and 2000-01. The transfer was completed in 2000, and a total of 900 acre-feet was delivered to Metropolitan. (SWPAO #00021)

Metropolitan Water District of Southern California. A letter agreement, dated December 18, 2000, and pending execution between the Department and Metropolitan, will provide for the delivery of up to 20,000 acre-feet of Metro-

politan's 2000 approved Table A water to WWD in exchange for a like amount of water from WWD, prior to December 31, 2003. SWP water was approved for delivery to WWD from Reach 7 of the California Aqueduct for use on lands within the SWP place of use. A total of 20,000 acre-feet was delivered to WWD in 2000. (SWPAO #00026)

Napa County Flood Control and Water Conservation District. An agreement, pending execution between the Department, Napa, and Solano will provide for the delivery of up to 628 acre-feet of Napa's annual Table A amount to a turnout in Solano's service area. This water will be delivered to the City of Vallejo water treatment plant in Solano and then further conveyed to the City of American Canyon, a member agency of Napa. The agreement shall remain in effect through December 31, 2035. No water was delivered to Solano in 2000. (SWPAO #00029)

Tulare Lake Basin Water Storage District. A letter agreement dated May 12, 2000, and executed June 12, 2000, between the Department and Tulare, approved the transfer of up to 3,000 acre-feet of Tulare's 2000 Table A water to WWD. The agreement facilitated the water transfer from Tulare to WWD, on behalf of landowner Hansen Ranches who farms in both the Tulare and WWD (Vista Verde Farms, Inc.) service areas. The Department has approved similar transfers annually since 1996. The transfer was completed in 2000, and a total of 3,000 acre-feet was delivered to WWD. (SWPAO #00013)

Tulare Lake Basin Water Storage District. A letter agreement dated August 14, 2000, and executed August 18, 2000, between the Department and Tulare, will provide for the delivery of up to 20,500 acre-feet of Tulare's 2000 approved Table A water to WWD, in exchange for a like amount of the Bureau's Section 215 water or Tule River water. SWP water is approved for delivery to WWD from Reach 7 of the California Aqueduct for use on lands within the SWP place of use. The exchange was completed in 2000, and a total of 20,500 acre-feet was delivered to WWD. (SWPAO #00023)

Tulare Lake Basin Water Storage District. A letter agreement dated December 15, 2000, and executed December 27, 2000, between the Department and Tulare, approved the delivery to Tulare of 7,000 acre-feet of nonproject CVP water on behalf of Arvin-Edison Water Storage District, a CVP contractor. In exchange, Tulare is to return a like amount of water to AEWS from the Friant-Kern Canal. AEWS's water was delivered from O'Neill Forebay to Tulare's delivery structures in Reaches 8C and 8D of the California Aqueduct. The exchange was completed in 2000, and a total of 7,000 acre-feet of nonproject water was delivered to Tulare. (SWPAO #00022)

Tulare Lake Basin Water Storage District. A letter agreement, pending execution between the Department, Tulare, and WWD, provides for the delivery of up to 50,000 acre-feet of nonproject water from WWD to Tulare between December 2000 and April 15, 2001, in exchange for a like amount of Tulare's Table A water during the period from 2001 through 2003. The delivery of SWP exchange water to WWD will be from the Delta to Reach 7 of the California Aqueduct for use within the Kings County portion of WWD's service area. A total of 2,981 acre-feet was delivered to Tulare in December 2000. (SWPAO #01009)

During 2000, water was delivered pursuant to agreements with long-term SWP contractors executed prior to 2000, as described below.

Alameda County Flood Control and Water Conservation District-Zone 7. A conveyance agreement dated July 28, 1995, between Alameda-Zone 7 and the Department provides for the transfer of up to 5,000 acre-feet of BBID's local water annually to Alameda-Zone 7 through SWP facilities. An amendment to extend the agreement to December 31, 2001, is expected to be executed in March 2001. BBID may only transfer water that has been made available by conservation and fallowing. In 2000, 1,000 acre-feet of BBID's local water was pumped at Banks Pumping Plant and delivered to Alameda-Zone 7's turnouts in the South Bay Aqueduct.

Dudley Ridge Water District. An agreement executed May 22, 1998, among the Department, Dudley Ridge, and Tulare, provided for the conveyance, through the year 2035, of up to 1,000 acre-feet of Dudley Ridge's approved Table A amount through Tulare's turnout located at milepost 172.66 of the California Aqueduct. Dudley Ridge's approved Table A water will be delivered to Westlake Farms, which is located within Dudley Ridge's service area but not near its conveyance facilities. Tulare has conveyance capability and has agreed to provide service to Westlake Farms. During 2000, the Department delivered 166 acre-feet of Dudley Ridge's 2000 approved Table A water through Tulare's turnout. (SWPAO #98001)

Kern County Water Agency. Under two programs in 1978 and 1982, Metropolitan reduced its approved Table A deliveries by supplementing its water supply with Colorado River water, in order to help during a predicted dry year (1978) and during the San Luis slide repair (1982). Kern was one of several SWP contractors that acquired water from these programs. In 1978, when it became apparent that a dry year would not occur, and in 1982, when San Luis slide repairs progressed ahead of schedule, Metropolitan agreed to store the water acquired by Kern in Metropolitan's local groundwater basins for future use. During 2000, the Department delivered to Kern, by exchange of Metropolitan's approved Table A water, its remaining 24,870 acre-feet of the 1978/1982 water.

Mojave Water Agency. An agreement executed November 13, 1997, among AVEK, Mojave, and the Department, approved a change in point of delivery through the year 2019 of up to 2,250 acre-feet of Mojave's approved Table A amount to AVEK's Fairmont Turnout in Reach 19 of the California Aqueduct. Mojave does not have conveyance facilities to provide service to a solar energy generating station located within its service area. AVEK has conveyance capability and has agreed to provide service. During 2000, the Department delivered 1,361 acre-feet of Mojave's 2000

approved Table A water through AVEK's turnout. (SWPAO #97003)

Turnout Agreements

Antelope Valley-East Kern Water Agency.

An agreement dated March 28, 2000, between the Department and AVEK, allowed the construction, operation, and maintenance of the Rancho Vista Turnout at milepost 339.68, Reach 20B of the California Aqueduct. The turnout has a design capacity of 5 cfs. Construction was completed in March 2000.

Kern County Water Agency and West Kern Water District.

An agreement dated March 6, 2000, among the Department, Kern, and WKWD, allowed the construction, operation, and maintenance of the West Kern Turnout No. 3 at milepost 224.07, Reach 12D of the California Aqueduct. The turnout has a design capacity of 15 cfs. Construction of the turnout is expected to be completed in January 2001.

Kern County Water Agency and Western Hills Water District.

An agreement dated June 8, 2000, among the Department, Kern, and WHWD, allowed the construction, operation, and maintenance of the Western Hills Turnout at milepost 42.90, Reach 2A, on the west side of the California Aqueduct. The turnout has a design capacity of 30 cfs. Construction of the turnout is expected to be completed in September 2001.

Agreements and Activities Related to the Monterey Amendments

Turnback Water Pool Program. Under Article 56(d) of the Monterey Amendments, the fourth year of the Turnback Water Pool Program was initiated through Notice to the State Water Project Contractors No. 00-01, dated January 28, 2000. All SWP contractors who signed Monterey Amendments were permitted to participate in the program. The program allowed SWP contractors to offer a portion of their approved 2000 Table A water for sale in a turnback pool for use by interested SWP contractors. Based on supply and demand, the turn-

back water was allocated among the selling and purchasing contractors. In 2000, 282,305 acre-feet of water were purchased under the Turnback Water Pool Program.

Transactions for Pool A occurred in February 2000; transactions for Pool B occurred in March 2000. Turnback water sold for \$11.97 per acre-foot, 50 percent of the Delta Water Rate through Pool A, and for \$5.99 per acre-foot, 25 percent of the Delta Water Rate through Pool B. All money collected through the Turnback Water Pool Program was paid to the selling contractors. The 2000 Turnback Water Pool Program closed April 1, 2000.

The following contractors participated in Pool A of the Turnback Water Pool Program:

- County of Butte sold 645 acre-feet
- City of Yuba City sold 3,300 acre-feet
- San Luis Obispo County Flood Control and Water Conservation District sold 8,561 acre-feet
- AVEK sold 430 acre-feet
- Castaic Lake sold 4,101 acre-feet
- Crestline-Lake Arrowhead Water Agency sold 750 acre-feet
- Mojave sold 29,000 acre-feet
- San Bernardino Valley Municipal Water District sold 25,000 acre-feet
- San Geronio Pass Water Agency sold 1,500 acre-feet
- Ventura County Flood Control District sold 7,500 acre-feet
- Dudley Ridge purchased 3,615 acre-feet
- Kern purchased 69,145 acre-feet
- Tulare purchased 8,027 acre-feet

The following contractors participated in Pool B of the Turnback Water Pool Program:

- Butte sold 1,156 acre-feet
- Yuba City sold 3,840 acre-feet
- San Luis Obispo sold 10,000 acre-feet
- Santa Barbara sold 8,392 acre-feet

- AVEK sold 46,630 acre-feet
- Castaic Lake sold 40,000 acre-feet
- Crestline sold 2,320 acre-feet
- Mojave sold 28,220 acre-feet
- San Bernardino Valley Municipal Water District sold 42,340 acre-feet
- San Gabriel Valley Municipal Water District sold 11,920 acre-feet
- San Geronio sold 1,200 acre-feet
- Ventura sold 5,500 acre-feet
- Dudley Ridge purchased 8,578 acre-feet
- Kern purchased 164,057 acre-feet
- Tulare purchased 19,046 acre-feet
- Coachella Valley Water District purchased 3,713 acre-feet
- Desert Water Agency purchased 6,124 acre-feet

Storage of Water Outside Service Area. Pursuant to Article 56 of the Monterey Amendments, five SWP contractors delivered and stored SWP water outside their service area for later use within their service area. The following agreements include provisions concerning the points of delivery and method for transporting such water.

Alameda County Flood Control and Water Conservation District, Zone 7. An agreement pending execution among the Department, Alameda-Zone 7, and Kern, will provide for the delivery of a portion of Alameda-Zone 7's 2000 approved Table A water, Article 21 water, and other water supplies for storage and later recovery from the Semitropic Water Storage District Banking Program, in accordance with the Alameda-Zone 7 and Semitropic Water Storage District Banking Program Agreement. Alameda-Zone 7 signed similar delivery agreements for 1998 and 1999. All return water is to be delivered to Alameda-Zone 7 by December 31, 2010. During 2000, the Department delivered 20,200 acre-feet of Alameda-Zone 7's 2000 approved Table A water and 3,740 acre-feet of Article 21 water to Reach 10A for storage by SWSD. (SWPAO #00037)

Alameda County Water District. An agreement, pending execution among the Department, Alameda County, and Kern, will provide for the delivery of a portion of Alameda County's 2000 approved Table A water, Article 21 water, and other water supplies for storage and later recovery from the Semitropic Water Storage District Banking Program, in accordance with the Alameda County and Semitropic Banking Program Agreement. Alameda County has signed similar delivery agreements since 1996. All return water is to be delivered to Alameda County by December 31, 2035. During 2000, the Department delivered 11,000 acre-feet of Alameda County's 2000 approved Table A water and 2,380 acre-feet of Article 21 water to Reach 10A for storage by Semitropic. (SWPAO #00030)

Dudley Ridge Water District. An agreement pending execution among the Department, Dudley Ridge, and Kern, will provide for the delivery of a portion of Dudley Ridge's 2000 approved Table A water, Article 21 water, and other water supplies for storage and later recovery from KWB. Dudley Ridge signed similar delivery agreements since 1996. All return water is to be delivered to Dudley Ridge by December 31, 2010. During 2000, the Department delivered 953 acre-feet of Dudley Ridge's 2000 Article 21 water to Reach 12E for storage by Kern. (SWPAO #00033)

Dudley Ridge Water District. A letter agreement dated January 14, 2000, and executed February 2, 2000, among the Department, Dudley Ridge, and San Gabriel, provides for the delivery of a portion of Dudley Ridge's 1999 carryover Table A water for storage and later recovery from groundwater basins within San Gabriel. All return water is to be delivered to Dudley Ridge by December 31, 2010. During January 2000, the Department delivered 665 acre-feet of Dudley Ridge's 1999 Article 56(c) (extended carryover) Table A water to Reach 26A for storage by San Gabriel. (SWPAO #99002)

Metropolitan Water District of Southern California. An agreement, pending execution among the

Department, Metropolitan, and Kern, will provide the delivery of a portion of Metropolitan's annual Table A and other water supplies for storage and later recovery from groundwater basins within Arvin-Edison Water Storage District, in accordance with the Metropolitan and Arvin-Edison Water Storage District water management program agreement. All return water is to be delivered to Metropolitan by December 31, 2035. During 2000, the Department delivered 133,207 acre-feet of Metropolitan's 2000 approved Table A water and 16,524 acre-feet of extended carryover to Reach 12E for storage by AEWS. (SWPAO #01013)

Santa Clara Valley Water District. An agreement pending execution among the Department, Santa Clara, and Kern, will provide for the delivery of a portion of Santa Clara's 2000 approved Table A water, Article 21 water, and other water supplies, for storage and later recovery from the Semitropic Water Storage District Banking Program, in accordance with the Santa Clara and Semitropic Banking Program Agreement. Santa Clara has signed similar delivery agreements since 1996. All return water is to be delivered to Santa Clara by December 31, 2010. During 2000, the Department delivered 10,000 acre-feet of Santa Clara's 2000 approved Table A water and 13,730 acre-feet of Article 21 water to Reach 10A for storage by SWSD. (SWPAO #00031)

Solano County Water Agency. A letter agreement pending execution among the Department, Solano, and Mojave Water Agency, will provide for a 2:1 exchange of up to 4,000 acre-feet of Solano's 2000 approved Table A water to Mojave for the return of up to 2,000 acre-feet of Mojave's future annual Table A or other future water supply as mutually agreed to by Mojave and Solano, and as approved by the Department. The water is to be returned to Mojave by December 31, 2010. The Department has approved similar exchanges annually since 1997. A total of 2,245 acre-feet of Solano's 2000 approved Table A water was delivered to Mojave in 2000. (SWPAO #00028).

Other Administrative Action

Santa Barbara County Flood Control and Water Conservation District. A letter dated August 13, 1999, from the Department to Santa Barbara approved the extension of the deadline for reacquisition of all or a portion of the 12,214 acre-feet of previously established relinquished Table A amounts until July 1, 2000. The original deadline of March 12, 1998, previously established by the Department, had been extended several times. Santa Barbara did not take delivery of any reacquired water in 2000.

Article 21 Water Program

Pursuant to Article 21 of the Monterey Amendments, Article 21 water replaces surplus, wet weather, and Article 12(d) water. The Article 21 water program allows a contractor to take delivery of water over the approved and scheduled Table A amounts for the current year. Article 21 water is available for delivery on a short-term basis as determined by the Department when water is still available after operational requirements for project water deliveries, water quality, and other requirements are being met.

The conditions for the Article 21 Water Program for 2000 were described in the January 4, 2000, Notice to State Water Project Contractors No. 99-12. Participants were required to sign the notice, which indicated acceptance of the criteria, procedures, and charges for the program. Twelve SWP contractors participated and collectively received a total of 308,257 acre-feet of Article 21 water.

Since Empire has not signed the Monterey Amendment, it may still receive unscheduled water for agricultural purposes. Empire received 528 acre-feet of unscheduled water in 2000.

Flexible Storage Program

Pursuant to Article 54 of the Monterey Amendments, the flexible storage program provides SWP contractors participating in the repayment of the capital costs of Castaic Lake and Lake Perris the option to withdraw water in excess of

approved deliveries. The objective of this program is to provide additional flexibility and water management benefits to local participating agencies.

Available “flexible storage” is approximately 50 percent of active storage, providing for 160,000 acre-feet at Castaic Lake and 65,000 acre-feet at Lake Perris. Participating contractors of the Castaic Lake flexible storage program include Metropolitan, Ventura, and Castaic Lake. Respectively, each can withdraw a maximum amount of 153,940 acre-feet, 1,377 acre-feet, and 4,683 acre-feet. At Lake Perris, Metropolitan can withdraw a maximum amount of 65,000 acre-feet. Any participating contractor is given 5 years to replace the water with Table A water, purchased water, exchange water, or local water.

Two SWP contractors participated in the Flexible Storage Program in 2000. Metropolitan withdrew 8,181 acre-feet from Lake Perris in the spring and replaced 3,471 acre-feet in the summer. Castaic Lake withdrew 2,589 acre-feet during the winter from Castaic Lake.

Extended Carryover Program

Pursuant to Article 56 of the Monterey Amendments, contractors can elect to store project water outside of their service area for later use within their service area. Qualified contractors can request carryover Table A water for delivery in the following year to the extent that such deliveries do not adversely affect current or future project operations. Factors that influence how much extended carryover water can be delivered include operational constraints of project facilities, filling of SWP conservation storage facilities, flood control releases, and water quality restrictions. If storage requests exceed the available storage capacity, the amount available is allocated among the contractors requesting storage in proportion to their annual Table A amounts for that year. Six SWP contractors took delivery of 186,060 acre-feet of 1999 approved Table A water carried over into 2000 as extended carryover. Two SWP contractors had 17,189 acre-feet of their extended carry-

over delivered to storage outside their service areas.

Miscellaneous Agreements with Other Agencies

In addition to negotiating agreements with SWP contractors to provide for specified water deliveries, the Department also entered into several agreements with other agencies for water conveyance, or exchange, between January 1, 2000, and December 31, 2000.

Water Conveyance Agreements—CVP Water

The Department regularly enters into agreements to convey CVP water, such as agreements with contractors receiving water from the Bureau through the Cross Valley Canal, a water conveyance facility that connects with the Aqueduct near Tupman in Kern County. Other agencies or corporations receive CVP water through agreements between the Department and the Bureau, including the U.S. Department of Veterans Affairs, U.S. Fish and Wildlife Service, and Musco Olive Products, Inc. Occasionally the Department also enters into agreements with the Bureau to convey CVP or SWP water from the Delta to O'Neill Forebay through CVP or SWP facilities. Some of these agreements allow the Bureau to make up for curtailed water exports from Tracy Pumping Plant associated with improving conditions for fish in the Delta. Other agreements allow replacing water exports foregone during maintenance and repair of Tracy and Banks Pumping Plants and CVP and SWP conveyance facilities between the Delta and O'Neill Forebay.

Cross Valley Canal. Eight CVP water contractors use the CVC to obtain water from the California Aqueduct either by exchange with other agencies or by direct delivery. The eight water contractors are: County of Fresno, County of Tulare, Hill's Valley Irrigation District, Kern-Tulare Water District, Lower Tule River Irrigation District, Pixley Irrigation District, Rag Gulch Water District, and Tri-Valley Water

District. These agencies have had uninterrupted water conveyance service by the Department since 1976 through:

- individual 3-party contracts with the Department and the Bureau, executed in 1976, and amendments extending the contracts through February 29, 1996;
- interim renewal contracts: the first from March 1, 1996, through February 28, 1998; the second from March 1, 1998, through February 28, 2000; the third from March 1, 2000, through November 30, 2000; and the fourth from December 1, 2000, through February 28, 2001.

Between January 1, 2000, and December 31, 2000, the Department executed agreements with CVC contractors as follows:

- On March 22, 2000, PID requested the Department extend the term of the December 21, 1999, agreement through April 30, 2000. Under this extension, the Department delivered a total of 12,704 acre-feet of PID's 1999 CVP approved water to WWD in 2000. On July 11, 2000, PID requested that the Department change the point of delivery for their full 2000 CVP water from the CVC turnout in Reach 12E to turnouts in Reaches 4 through 7 of the California Aqueduct for delivery to WWD. The Department conveyed 12,000 acre-feet of the District's 31,102 acre-feet of CVP water to WWD's turnouts in 2000. An agreement is expected to be signed in January 2001.
- On March 22, 2000, LTRID requested the Department extend the term of the December 21, 1999, agreement through April 30, 2000. Under this extension, executed on June 7, 2000, the Department delivered a total of 5,237 acre-feet of LTRID's 1999 CVP approved water to WWD in 2000. On July 11, 2000, LTRID requested that the Department change the point of delivery for their full 2000 CVP water from the CVC turnout in Reach 12E to turnouts in Reaches 4 through 7 of the California Aqueduct for delivery to WWD. The Department conveyed 20,771 acre-feet of the District's 31,102 acre-feet of CVP approved water to WWD's turnouts in 2000. An agreement is expected to be signed in January 2001.
- Kern-Tulare Water District requested the Department change the point of delivery for up to 28,000 acre-feet of their 1999 and 23,000 acre-feet of their 2000 CVP water from the CVC turnout in Reach 12E to turnouts in Reaches 4 through 7 of the California Aqueduct for delivery to WWD. Under agreements executed on December 21, 1999, and a second, expected to be signed in April 2001, the Department conveyed 22,045 acre-feet and 23,000 acre-feet of water, respectively, in 2000.
- Rag-Gulch Water District requested the Department change the point of delivery for up to 9,310 acre-feet of their 1999 and 5,000 acre-feet of their 2000 CVP approved water from the CVC turnouts in Reach 12E to turnouts in Reaches 4 through 7 of the California Aqueduct for delivery to WWD. Under agreements executed on December 21, 1999, and a second, expected to be signed in April 2001, the Department conveyed 5,676 acre-feet and 5,002 acre-feet of water, respectively, for the District in 2000.
- On January 10, 2000, County of Tulare requested the Department change the point of delivery for up to 3,716 acre-feet of their 2000 CVP approved water from the CVC turnout in Reach 12E of the California Aqueduct to the federal share of O'Neill Forebay. The Department and the District executed the agreement on June 9, 2000, for the Department conveyance of up to 3,716 acre-feet, of which 3,605 acre-feet were delivered to the federal share of O'Neill Forebay.
- On December 7, 1999, Fresno County requested the Department change the point of delivery for up to 2,100 acre-feet of their 1999 CVP approved water from the CVC turnouts in Reach 12E to turnouts in Reaches 4 through 7 of the California Aqueduct for delivery to WWD. Under an agreement expected to be signed in February

2001, the Department conveyed 2,100 acre-feet to WWD's turnouts in 2000.

- On January 10, 2000, Hills Valley and Tri-Valley Water Districts requested the Department change the point of delivery for up to 2,324 and 799 acre-feet, respectively, of their 2000 CVP approved water from the CVC turnout in Reach 12E of the California Aqueduct to the federal share of O'Neill Forebay. The Department and the Districts executed the agreements on June 9, 2000, for the Department conveyance of up to 2,324 acre-feet and 799 acre-feet, respectively, of which 2,254 acre-feet and 775 acre-feet were delivered to the federal share of O'Neill Forebay.

Friant Water Users Authority. An agreement dated September 24, 1999, between the Department and Friant Water Users Authority requested the Department to convey up to 25,000 acre-feet of CVP approved water from the San Luis Canal at Kettleman City to the CVC turnout at Tupman. The water was identified as "Exchange Water" in a July 6, 1999, letter agreement between the Friant Water Users Authority, various CVP Friant water service contractors, and the Bureau. This water was to be conveyed from July 1, 1999, through February 29, 2000. In 2000, a total of 4,894 acre-feet was delivered.

Musco Olive Products, Incorporated. An annual agreement dated December 15, 2000, between the Department and the Bureau provided for the conveyance of up to 800 acre-feet of CVP approved water to Reach 2A of the California Aqueduct for use by Musco Olive Products, Inc. This water was to be conveyed from January 1, 2000, through September 30, 2001. A total of 568 acre-feet was delivered in 2000.

Tracy Golf and Country Club. An agreement dated April 28, 1999, among the Department, the Bureau, and Tracy Golf and Country Club, provided for the conveyance of up to 1,240 acre-feet of CVP water through SWP facilities to the Tracy Golf and Country Club. This water was to be conveyed from March 1, 1999, through

February 29, 2000. A total of 54 acre-feet was delivered in 2000.

U.S. Department of Veterans Affairs. A total of 33 acre-feet was delivered to the San Joaquin Valley National Cemetery in 2000. An annual agreement between the Department and the Bureau for the conveyance of up to 450 acre-feet of CVP approved water to Reach 2B of the California Aqueduct to the U.S. Department of Veterans Affairs' San Joaquin Valley National Cemetery is expected to be executed in June 2001. The water was conveyed from October 1, 1999, through September 30, 2000.

Bureau Level 4 Water. Between October and December 2000, the Department conveyed a total of 21,666 acre-feet of Bureau-purchased Level 4 water to O'Neill Forebay. The water was provided to the wildlife refuges in San Joaquin Valley to enhance and maintain wetland habitats for the benefit of waterfowl and wetland-dependent wildlife. The water was purchased from Merced Irrigation District's Lake McClure. A letter agreement is expected to be executed between the Department and the Bureau in January 2001.

U.S. Fish and Wildlife Service Cooperative Agreement. The Bureau initiated a cooperative agreement with the Department to deliver CVP water to the Kern National Wildlife Refuge for USFWS. Under the terms of this cooperative agreement, dated September 9, 1994, up to 26,530 acre-feet of CVP water would be delivered from Check 21 to the Buena Vista Water Storage District Turnout BV-1B, on Reach 10A of the California Aqueduct, from October 1, 1993, through April 10, 1995. Since the cooperative agreement was signed, eight modifications to the agreement have been executed. Under Modification No. 001, dated October 31, 1994, additional funding was provided. Similar funding adjustments through modifications were made each year to the agreement. Modification No. 007, executed August 17, 1999, extended the agreement through April 10, 2000, and defined the water delivery rates for 2000. Modification No. 008, dated November 29, 1999, obligated

funding for that period. The Department conveyed 17,068 acre-feet for the Bureau to the Kern National Wildlife Refuge in 2000.

Bureau of Reclamation. Pursuant to a letter agreement, dated April 18, 2000, between the Department and the Bureau, the Department conveyed 82,980 acre-feet of CVP water from the Sacramento-San Joaquin Delta to O'Neill Forebay. CVP water transported to O'Neill Forebay, under the terms of this agreement, replaces exports forgone by the Bureau as a result of environmental protection action taken in 1999. The estimated shortfall would have resulted in lower allocations of CVP water for CVP purposes or decreased storage of CVP water in San Luis Reservoir at the end of the 2000 water year.

Other Agreements-Turnouts. In 2000, there were no new turnout agreements with non-SWP contractor agencies.

Amendment to Miscellaneous Agreements with Other Agencies

An amendment, executed February 7, 2000, modified and clarified provisions of the existing contract between the Department and East Contra Costa Irrigation District, dated January 7, 1981, and the contract among the Department, ECCID, and Contra Costa Water District, dated April 11, 1991, to allow the diversion of water under both contracts at the Contra Costa Canal Intake and the Los Vaqueros Project Intake and to increase the allowable rate of diversion at those locations. The amendment also defined the allowable place of use and allowed the use of water outside ECCID boundaries only with the prior written consent of the Department.

Water Deliveries

Approved Table A Deliveries

Each year, by October 1, the SWP long-term water contractors submit initial requests for approved Table A deliveries allocated to con-

tractors for use in the subsequent calendar year. Initial approved Table A amounts for the coming year are made by the Department in December and are based on operations studies that assume 90 percent exceedence of historic water supply, current reservoir storage, and total requests by the SWP water contractors. Forecasts for the year are updated as the hydrological conditions change. Approved Table A amounts are increased or decreased depending on both actual and projected hydrologic conditions.

On October 1, 1999, SWP long-term contractors submitted initial requests for 2000 approved Table A deliveries totaling 3.62 million acre-feet. The Department approved deliveries of 2.06 million acre-feet on November 30, 1999 (Notice to SWP Contractors 99-10), resulting in initial approved Table A amounts of 50 percent for most SWP contractor requests. Improved water conditions increased the 2000 approved Table A amounts to 2.88 million acre-feet or 70 percent on February 25, 2000 (Notice to SWP Contractors 00-03). As a result of additional improvements in water conditions, approved Table A amounts were further increased to 3.62 million acre-feet or 100 percent on March 10, 2000 (Notice to SWP Contractors 00-06). Unusually dry conditions during March and April 2000 created the need to reduce approved Table A amounts to 90 percent on April 20, 2000 (Notice to SWP Contractors 00-09), which equated to a reduction from 3.62 million acre-feet to 3.42 million acre-feet.

SWP Deliveries

The SWP delivers water for a variety of beneficial uses. In addition to delivering approved Table A water to long-term water supply contractors, the SWP

- conveys water to, and stores water for, other public agencies through special contracts and agreements;
- provides water for wildlife and recreational uses; and

- stores, releases, and delivers local runoff water from SWP facilities to agencies that hold local water rights.

In 2000, 4,932,032 acre-feet of water were conveyed to 27 long-term contractors and 17 other agencies. That amount includes

- 3,199,907 acre-feet of approved Table A water¹;
- 308,257 acre-feet of Article 21 water and 528 acre-feet of unscheduled water;
- 10,770 acre-feet of Article 54 flexible storage withdrawal;
- 4,030 acre-feet of SWP water for recreation, fish and wildlife; and
- 1,408,540 acre-feet of water delivered to satisfy water rights settlement agreements and agreements with SWP contractors and other agencies, including the Bureau.

Figure 9-1 shows amounts of water delivered to various locations during 2000.

Specific information about water deliveries made to long-term contractors and other agencies during 2000 and historical deliveries from 1962 through 2000 are presented in the following three sections, each with a corresponding table:

- Water Delivered to Long-term Water Supply Contractors in 2000, by Service Area (Table 9-1);
- Water Delivered in 2000, by Month (Table 9-2); and
- Total Amounts of Annual Table A Water and Water Conveyed, by Type, 1962-00 (Table 9-3).

¹ Annual Table A water is the amount of SWP water long-term contractors may request each year in accordance with Article 12(a), "Procedure for Determining Water Delivery Schedule," of their water supply contract.

Water Deliveries and Credits to Long-Term SWP Contractors

Table 9-1 shows amounts of water delivered in 2000. The following information about specific columns in Table 9-1 is arranged by column number.

2000 Approved Table A Water Delivered.

Columns 1 through 5 show a detailed breakdown of approved Table A water delivered to long-term water supply contractors in 2000.

Turnback Pool Water. Column 4 shows 282,305 acre-feet of turnback pool water was delivered to long-term water supply contractors in 2000.

1999 Carryover Approved Table A Water Delivered During 2000. For several years, the Department has offered contractors the opportunity to carry over a portion of their approved Table A water for delivery in the current year to be delivered during the next year.

The carryover program was designed to encourage the most effective and beneficial use of water and to avoid obligating the contractors to use or lose the water by December 31 of each year. The SWP contractors' long-term contracts and amendments state the criteria for carrying over approved Table A water from one year to the next. Column 6 shows 217,737 acre-feet of water was carried over from 1999 for delivery in 2000.

Article 14(b) Water. No 1999 approved Table A water was delivered in 2000 under Article 14(b).

Total Table A Water Delivered. Column 8 shows all approved Table A water delivered in 2000—a total of 3,199,907 acre-feet.

2000 Article 21 Water. Column 9 shows 308,785 acre-feet of 2000 Article 21 water delivered to long-term water supply contractors in 2000 (includes 528 acre-feet of unscheduled

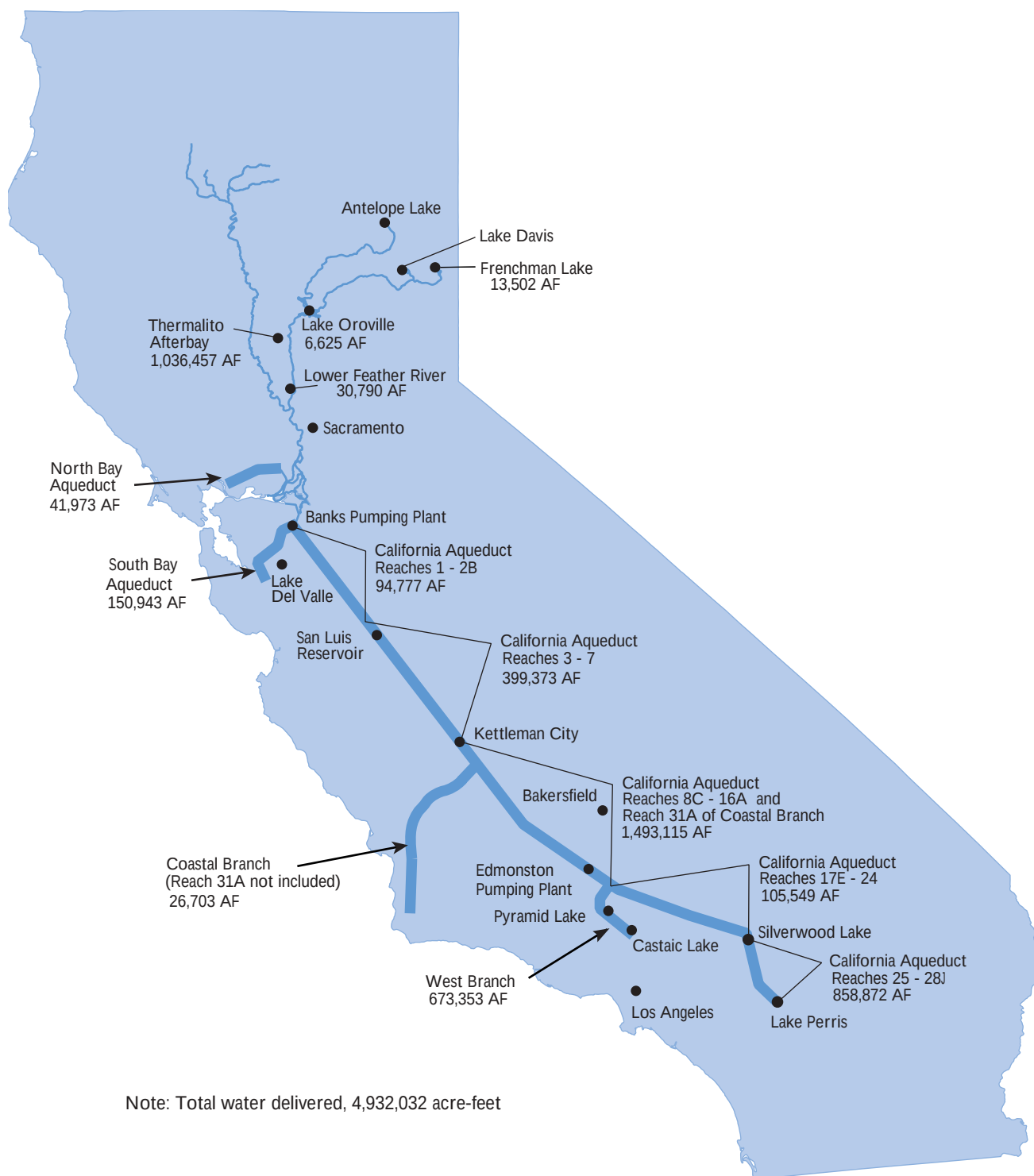


Figure 9-1. Water Delivered in 2000 and Delivery Locations of Long-Term Water Supply Contractors and Feather River Area Districts with Water Right Agreements with the Department

Table 9-1. Water Delivered to Long-Term Contractors through 2000, by Service Area (Acre-feet)

Water Contractor or Agency	Water Deliveries in 2000													
	Annual Table A Water Deliveries													
	2000 Table A without Transfers, Exchanges, and Storage (1)	2000 Table A Delivered through Transfers and Exchanges (2)	2000 Table A Delivered to Storage (3)	Pool Water (4)	Total 2000 Table A Delivered (5)	1999 Carryover Table A Delivered during 2000 (6)	Makeup Water Per Article 14(b) (7)	Total Table A Delivered (8)	2000 Article 21 Water (9)	2000 Article 54 Flexible Payback (10)	2000 Article 54 Flexible Withdrawal (11)	Total SWP Water Delivered (12)	Non-SWP Water Deliveries (13)	Total Deliveries (14)
Feather River Area														
County of Butte	586	0	0	0	586	0	0	586	0	0	0	586	0	586
Plumas County FCWCD	0	0	0	0	0	0	0	0	0	0	0	0	0	0
City of Yuba City	901	0	0	0	901	0	0	901	0	0	0	901	0	901
North Bay Area														
Napa County FCWCD	3,136	0	0	0	3,136	1,525	0	4,661	297	0	0	4,958	0	4,958
Solano County WA	30,637	0	0	0	30,637	1,417	0	32,054	1,040	0	0	33,094	3,921	37,015
South Bay Area														
Alameda County FCWCD-Zone 7	33,677	0	20,200	0	53,877	0	0	53,877	3,740	0	0	57,617	10,967	68,584
Alameda County WD	22,598	0	11,000	0	33,598	0	0	33,598	2,380	0	0	35,978	5,364	41,342
Santa Clara Valley WD	60,433	0	10,000	0	70,433	13,174	0	83,607	18,381	0	0	101,988	0	101,988
San Joaquin Valley Area														
Castaic Lake WA	8,395	1,200 ^a	0	0	9,595	0	0	9,595	0	0	0	9,595	0	9,595
County of Kings	3,600	0	0	0	3,600	0	0	3,600	0	0	0	3,600	0	3,600
Dudley Ridge WD	38,507	0	0	12,193	50,700	719	0	51,419	7,454	0	0	58,873	0	58,873
Empire West Side ID	1,271	0	0	0	1,271	0	0	1,271	528 ^b	0	0	1,799	0	1,799
Kern County WA	316,063	247,763 ^c	286,501	233,202	1,083,529	14,693 ^d	0	1,098,222	78,908	0	0	1,177,130	48,108 ^e	1,225,238
Oak Flat WD	4,494	0	0	0	4,494	14	0	4,508	0	0	0	4,508	0	4,508
Tulare Lake Basin WSD	75,095	24,066 ^f	0	27,073	126,234	15,827	0	142,061	56,818	0	0	198,879	9,981 ^g	208,860
Central Coastal Area														
San Luis Obispo County FCWCD	3,962 ^h	0	0	0	3,962	0	0	3,962	0	0	0	3,962	0	3,962
Santa Barbara County FCWCD	22,741	0	0	0	22,741	0	0	22,741	0	0	0	22,741	0	22,741
Southern California														
Antelope Valley-East Kern WA	78,575 ⁱ	1,361 ^j	0	0	79,936	0	0	79,936	0	0	0	79,936	0	79,936
Castaic Lake WA	31,085	0	0	0	31,085	0	0	31,085	0	0	2,589	33,674	0	33,674
Coachella Valley WD	20,790	0	0	3,713	24,503	0	0	24,503	17,820	0	0	42,323	0	42,323
Crestline-Lake Arrowhead WA	1,194	0	0	0	1,194	0	0	1,194	0	0	0	1,194	264	1,458
Desert WA	34,290	0	0	6,124	40,414	0	0	40,414	17,820	0	0	58,234	0	58,234
Littlerock Creek ID	0	5,002 ^k	0	0	5,002	0	0	5,002	0	0	0	5,002	0	5,002
Metropolitan WD	1,092,181	20,000 ^l	133,207	0	1,245,388	169,529	0	1,414,917	103,124	3,471 ^m	8,181	1,529,693	0	1,529,693
Mojave WA	7,774	2,245 ⁿ	0	0	10,019	0	0	10,019	0	0	0	10,019	0	10,019
Palmdale WD	8,221	0	0	0	8,221	839	0	9,060	0	0	0	9,060	0	9,060
San Bernardino Valley MWD	18,399	0	0	0	18,399	0	0	18,399	0	0	0	18,399	0	18,399
San Gabriel Valley MWD	14,000	665 ^o	0	0	14,665	0	0	14,665	475	0	0	15,140	0	15,140
San Geronio Pass WA	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ventura County FCD	4,050	0	0	0	4,050	0	0	4,050	0	0	0	4,050	0	4,050
Total	1,936,655	302,302	460,908	282,305	2,982,170	217,737	0	3,199,907	308,785	3,471	10,770	3,522,933	78,605	3,601,538

^aTransfer approved Table A water to WWD

^bUnscheduled water.

^cIncludes deliveries of 24,870 acre-feet exchange approved Table A water from Metropolitan WDSC; 72,280 acre-feet approved Table A transfer water to the Bureau; 35,847 acre-feet transfer approved Table A water to WWD; and 114,766 acre-feet exchange approved Table A water to WWD.

^dIncludes delivery of 1,500 acre-feet of carryover approved Table A water from Dudley Ridge WD.

^eIncludes 23,941 acre-feet from the Bureau and 24,167 acre-feet from WWD.

^fIncludes deliveries of 400 acre-feet exchange approved Table A from Kern County WA; 166 acre-feet exchange Table A water from Dudley Ridge WD; 3,000 acre-feet transfer Table A water to WWD; and 20,500 acre-feet exchange Table A water to WWD.

^gIncludes 7,000 acre-feet from Arvin-Edison Water Storage District and 2,981 acre-feet from WWD.

^hIncludes delivery of 23 acre-feet of approved Table A advance water.

ⁱIncludes delivery of 5,904 acre-feet of approved Table A advance water.

^jTransferred approved Table A water from Mojave WA.

^kIncludes 4,829 acre-feet of approved Table A and 173 acre-feet of approved Table A advance water from AVEK.

^lExchange approved Table A water to WWD.

^mArticle 54 flexible payback is not counted toward SWP deliveries.

ⁿExchange approved Table A water from Solano County WA.

^oExchange carryover approved Table A water from Dudley Ridge WD.

Table 9-2. Water Delivered in 2000, by Month

Contracting Agency and Type of Service	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	2000 Total Deliveries	2000 Contract Table A
Feather River Area														
City of Yuba City														
Approved Table A water	0	0	0	0	0	0	427	474	0	0	0	0	901	9,600
Pool A water sale *	0	3,300	0	0	0	0	0	0	0	0	0	0	3,300	
Pool B water sale *	0	0	3,840	0	0	0	0	0	0	0	0	0	3,840	
Agency Total (* excluded water)	0	0	0	0	0	0	427	474	0	0	0	0	901	
County of Butte														
Approved Table A water	89	158	186	119	2	3	16	4	3	4	1	1	586	2,890
Pool A water sale *	0	645	0	0	0	0	0	0	0	0	0	0	645	
Pool B water sale *	0	0	1,156	0	0	0	0	0	0	0	0	0	1,156	
Agency Total (* excluded water)	89	158	186	119	2	3	16	4	3	4	1	1	586	
Plumas County Flood Control and Water Conservation District														
Approved Table A water	0	0	0	0	0	0	0	0	0	0	0	0	0	1,510
Recreation/Fish and Wildlife														
Recreation/fish and wildlife water	0	0	0	0	0	0	1	0	0	0	0	0	1	
Last Chance Creek Water District														
Regulated delivery of local supply	0	0	0	190	2,729	3,370	3,088	3,080	845	200	0	0	13,502	
Thermalito Irrigation District														
Regulated delivery of local supply	90	71	115	183	227	362	393	381	272	171	110	103	2,478	
Oroville-Wyandotte Irrigation District														
Regulated delivery of local supply	184	61	101	283	745	1,060	1,060	1,140	1,060	556	171	204	6,625	
Western Canal Water District														
Regulated delivery of local supply	7,051	0	0	6,999	53,007	52,084	61,468	43,903	10,169	30,335	27,795	20,624	313,435	
Joint Water Districts Board														
Regulated delivery of local supply	32,580	0	0	24,400	114,229	113,500	126,520	108,840	50,690	37,118	56,190	55,890	719,957	
Oswald Water District														
Regulated delivery of local supply	0	0	0	0	143	174	190	39	0	0	0	0	546	
Tudor Mutual Water Company														
Regulated delivery of local supply	0	0	0	48	801	1,245	1,214	300	606	66	0	0	4,280	
Garden Highway Mutual Water Company														
Regulated delivery of local supply	0	0	0	954	2,482	3,460	3,667	2,603	840	0	0	0	14,006	
Plumas Mutual Water Company														
Regulated delivery of local supply	0	0	0	971	1,809	2,429	2,388	866	2,199	395	0	0	11,057	
SWP	89	158	186	119	2	3	444	478	3	4	1	1	1,488	
Non-SWP	39,905	132	216	34,028	176,172	177,684	199,988	161,152	66,681	68,841	84,266	76,821	1,085,886	
Feather River Area Total	39,994	290	402	34,147	176,174	177,687	200,432	161,630	66,684	68,845	84,267	76,822	1,087,374	14,000
North Bay Area														
Napa County Flood Control and Water Conservation District														
Approved Table A water	0	0	0	102	220	250	252	337	397	173	488	917	3,136	16,325
Article 12(e) carryover approved water	726	799	0	0	0	0	0	0	0	0	0	0	1,525	
Article 21 water	0	0	297	0	0	0	0	0	0	0	0	0	297	
Agency Total	726	799	297	102	220	250	252	337	397	173	488	917	4,958	
Solano County Water Agency														
Approved Table A water	1,577	1,178	0	318	1,880	3,724	5,018	4,669	5,015	3,772	1,530	1,956	30,637	39,620
Article 21 water	0	0	1,040	0	0	0	0	0	0	0	0	0	1,040	
Article 56(c) extended carryover	1,417	0	0	0	0	0	0	0	0	0	0	0	1,417	
Vallejo Permit water	157	144	0	235	327	437	478	483	1,095	158	145	262	3,921	
Exchange approved water to Mojave Water Agency *	0	0	0	0	0	0	0	0	0	0	1,205	1,040	2,245	
Agency Total (* excluded water)	3,151	1,322	1,040	553	2,207	4,161	5,496	5,152	6,110	3,930	1,675	2,218	37,015	
SWP	3,720	1,977	1,337	420	2,100	3,974	5,270	5,006	5,412	3,945	2,018	2,873	38,052	
Non-SWP Total	157	144	0	235	327	437	478	483	1,095	158	145	262	3,921	
North Bay Area Total	3,877	2,121	1,337	655	2,427	4,411	5,748	5,489	6,507	4,103	2,163	3,135	41,973	55,945
South Bay Area														
Alameda County Flood Control and Water Conservation District, Zone 7														
Approved Table A water	285	0	0	890	6,876	13,072	14,176	6,164	4,909	3,596	1,910	1,999	53,877	68,000
Article 21 water	0	1,340	2,400	0	0	0	0	0	0	0	0	0	3,740	
General Conveyance	0	0	0	0	0	0	0	1,000	0	0	0	0	1,000	
Local water	1,788	1,690	2,193	2,997	359	166	77	233	215	118	0	131	9,967	
Agency Total	2,073	3,030	4,593	3,887	7,235	13,238	14,253	7,397	5,124	3,714	1,910	2,130	68,584	
Alameda County Water District														
Approved Table A water	1,748	0	0	0	2,111	6,622	9,028	3,607	4,268	2,535	1,132	2,547	33,598	42,000
Article 21 water	0	880	1,500	0	0	0	0	0	0	0	0	0	2,380	
Local Water	0	1,541	1,804	1,988	31	0	0	0	0	0	0	0	5,364	
Agency Total	1,748	2,421	3,304	1,988	2,142	6,622	9,028	3,607	4,268	2,535	1,132	2,547	41,342	
Santa Clara Valley Water District														
Approved Table A water	0	0	0	6,627	6,846	8,067	8,020	8,636	16,269	5,116	4,576	6,276	70,433	100,000

Table 9-2. Water Delivered in 2000, by Month (Continued)

Sheet 2 of 5

Contracting Agency and Type of Service	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	2000 Total Deliveries	2000 Contract Table A
Article 21 water	0	5,664	12,717	0	0	0	0	0	0	0	0	0	18,381	
Article 56(c) extended carryover	7,760	5,414	0	0	0	0	0	0	0	0	0	0	13,174	
Agency Total	7,760	11,078	12,717	6,627	6,846	8,067	8,020	8,636	16,269	5,116	4,576	6,276	101,988	
Recreation/Fish and Wildlife														
Recreation/fish and wildlife water	4	2	4	10	15	15	29	24	0	28	6	8	145	
SWP	9,797	13,300	16,621	7,527	15,848	27,776	31,253	18,431	25,446	11,275	7,624	10,830	195,728	
Non-SWP	1,788	3,231	3,997	4,985	390	166	77	1,233	215	118	0	131	16,331	
South Bay Area Total	11,585	16,531	20,618	12,512	16,238	27,942	31,330	19,664	25,661	11,393	7,624	10,961	212,059	210,000
San Joaquin Valley Area														
Castaic Lake Water Agency														
Approved Table A water	1,675	1,252	1,064	1,614	226	614	1,020	902	22	0	0	6	8,395	12,700
Transfer approved water to Westlands *	0	0	0	0	0	0	1,200	0	0	0	0	0	1,200	
Agency Total (* excluded water)	1,675	1,252	1,064	1,614	226	614	1,020	902	22	0	0	6	8,395	
County of Kings														
Approved Table A water	0	0	0	400	400	400	400	400	0	500	600	500	3,600	4,000
Dudley Ridge Water District														
Approved Table A water	494	877	0	4,309	5,557	9,546	9,607	1,704	3,532	1,940	409	532	38,507	53,370
Article 21 water	0	2,671	4,783	0	0	0	0	0	0	0	0	0	7,454	
Article 56(c) extended carryover	719	0	0	0	0	0	0	0	0	0	0	0	719	
Pool A water	0	0	0	0	0	0	3,113	502	0	0	0	0	3,615	
Pool B water	0	0	0	0	0	0	0	8,578	0	0	0	0	8,578	
Exchange carryover approved water to San Gabriel WA *	665	0	0	0	0	0	0	0	0	0	0	0	665	
Transfer carryover approved water to Kern Co. WA *	0	1,500	0	0	0	0	0	0	0	0	0	0	1,500	
Transfer approved water to Tulare Lake Basin WSD *	0	0	0	0	0	0	0	0	166	0	0	0	166	
Agency Total (* excluded water)	1,213	3,548	4,783	4,309	5,557	9,546	12,720	10,784	3,532	1,940	409	532	58,873	
Empire West Side Irrigation District														
Approved Table A water	0	0	373	549	0	0	0	0	0	0	185	164	1,271	3,000
Unscheduled water	0	528	0	0	0	0	0	0	0	0	0	0	528	
Agency Total	0	528	373	549	0	0	0	0	0	0	185	164	1,799	
Kern County Water Agency														
Approved Table A water	6,151	21,716	20,283	61,658	94,243	172,025	91,963	61,370	35,156	22,644	8,207	7,148	602,564	1,020,730
Article 21 water	0	37,227	41,681	0	0	0	0	0	0	0	0	0	78,908	
Article 56(c) extended carryover	7,320	5,873	0	0	0	0	0	0	0	0	0	0	13,193	
Pool A water	0	0	0	10,000	12,100	0	17,926	22,274	500	6,345	0	0	69,145	
Pool B water	0	0	0	0	0	12,290	89,144	61,082	1,541	0	0	0	164,057	
Exchange approved water from MWD	0	0	0	0	0	0	0	16,208	8,662	0	0	0	24,870	
Transfer carryover approved water from Dudley Ridge WD	0	1,500	0	0	0	0	0	0	0	0	0	0	1,500	
Exchange water from the Bureau	0	0	0	0	0	0	0	0	0	0	14,205	9,736	23,941	
Exchange water from Westlands Water District	11,570	8,430	0	4,167	0	0	0	0	0	0	0	0	24,167	
Transfer approved water to Tulare Lake Basin WSD *	0	0	0	0	0	0	0	400	0	0	0	0	400	
Exchange approved water to Westlands Water District *	0	0	0	0	10,000	23,061	0	56,067	14,967	2,794	4,500	3,377	114,766	
Exchange banked approved water to the Bureau *	0	0	0	0	0	0	44,000	19,000	9,280	0	0	0	72,280	
Transfer approved water to Westlands *	0	0	0	0	0	0	18,500	17,347	0	0	0	0	35,847	
Agency Total (* excluded water)	25,041	74,746	61,964	75,825	106,343	184,315	199,033	160,934	45,859	28,989	22,412	16,884	1,002,345	
Oak Flat Water District														
Approved Table A water	0	0	108	569	657	945	996	528	366	281	5	39	4,494	5,700
Article 12(e) carryover approved water	14	0	0	0	0	0	0	0	0	0	0	0	14	
Agency Total	14	0	108	569	657	945	996	528	366	281	5	39	4,508	
Tulare Lake Basin Water Storage District														
Approved Table A water	0	0	0	7,697	2,357	11,786	1,394	5,481	8,858	4,042	10,463	23,017	75,095	118,500
Article 12(e) carryover approved water	10,452	5,375	0	0	0	0	0	0	0	0	0	0	15,827	
Article 21 water	0	18,927	37,881	0	0	0	0	0	0	0	0	0	56,818	
Pool A water	0	0	0	0	0	0	8,027	0	0	0	0	0	8,027	
Pool B water	0	0	0	0	0	0	4,622	14,424	0	0	0	0	19,046	
Transfer approved water from Kern County WA	0	0	0	0	0	0	200	200	0	0	0	0	400	
Transfer approved water from Dudley Ridge WD	0	0	0	0	0	0	0	0	166	0	0	0	166	
Exchange CVP water from Arvin-Edison Water Storage District	5,306	1,694	0	0	0	0	0	0	0	0	0	0	7,000	
Exchange CVP water from Westlands Water District	0	0	0	0	0	0	0	0	0	0	0	2,981	2,981	
Exchange approved water to Westlands Water District *	0	0	0	0	0	0	20,500	0	0	0	0	0	20,500	
Transfer approved water to Westlands Water District *	0	0	0	0	0	0	2,000	1,000	0	0	0	0	3,000	
Agency Total (* excluded water)	15,758	26,006	37,881	7,697	2,357	11,786	14,243	20,105	9,024	4,042	10,463	25,998	185,360	
Westlands Water District														
Transfer approved water from Kern County WA	0	0	0	0	0	0	18,500	17,347	0	0	0	0	35,847	
Transfer approved water from Tulare Lake Basin WSD	0	0	0	0	0	0	2,000	1,000	0	0	0	0	3,000	

Table 9-2. Water Delivered in 2000, by Month (Continued)

Contracting Agency and Type of Service	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	2000 Total Deliveries	2000 Contract Table A
Transfer approved water from Castaic Lake WA	0	0	0	0	0	0	1,200	0	0	0	0	0	1,200	
Exchange approved water from Kern County WA	0	0	0	0	10,000	23,061	0	56,067	14,967	2,794	4,500	3,377	114,766	
Exchange approved water from MWD	0	0	0	0	0	0	1,843	15,867	1,968	322	0	0	20,000	
Exchange approved water from Tulare Lake Basin WSD	0	0	0	0	0	0	20,500	0	0	0	0	0	20,500	
Transfer CVP water from Lower Tule River	0	5,237	7,273	1,500	0	0	6,270	4,517	125	1,086	0	0	26,008	
Transfer CVP water from Pixley ID	0	0	9,704	3,000	0	0	6,270	4,517	125	1,088	0	0	24,704	
Transfer CVP water from Kern-Tulare WD	0	0	17,545	4,500	0	0	10,971	7,906	220	3,903	0	0	45,045	
Transfer CVP water from Rag Gulch WD	0	0	4,676	1,000	0	0	2,612	1,882	52	456	0	0	10,678	
Transfer CVP water from Co. of Fresno	0	2,100	0	0	0	0	0	0	0	0	0	0	2,100	
Exchange water to Kern County WA *	11,570	8,430	0	4,167	0	0	0	0	0	0	0	0	24,167	
Exchange water to Tulare Lake Basin WSD *	0	0	0	0	0	0	0	0	0	0	0	2,981	2,981	
Agency Total (* excluded water)	0	7,337	39,198	10,000	10,000	23,061	70,166	109,103	17,457	9,649	4,500	3,377	303,848	
Recreation/Fish and Wildlife														
Department of Fish and Game	39	41	42	38	69	116	116	94	30	55	63	50	753	
Department of Parks and Recreation	2	1	2	7	2	12	13	25	11	4	0	2	81	
Total	41	42	44	45	71	128	129	119	41	59	63	52	834	
SWP	26,866	95,998	106,217	86,841	125,611	230,795	272,584	284,053	75,779	38,927	24,432	34,835	1,402,938	
Non-SWP	16,876	17,461	39,198	14,167	0	0	26,123	18,822	522	6,533	14,205	12,717	166,624	
San Joaquin Valley Area subtotal	43,742	113,459	145,415	101,008	125,611	230,795	298,707	302,875	76,301	45,460	38,637	47,552	1,569,562	1,218,000
Other Non-SWP Water Conveyed														
General Conveyance to Tracy Golf and Country Club	4	0	0	0	0	0	0	20	7	1	11	11	54	
CVP Water Conveyed - Annual Contracts														
Plain View WD/ Musco Olive Products, Inc.	40	48	55	53	66	64	52	24	50	50	45	21	568	
U.S. Department of Veteran Affairs, S.I.V. National Cemetery	1	1	2	3	2	3	4	5	6	3	2	1	33	
Subtotal	41	49	57	56	68	67	56	29	56	53	47	22	601	
Cross Valley Canal Contracts														
CVP water to the Bureau's refuge from County of Tulare *	0	3,605	0	0	0	0	0	0	0	0	0	0	3,605	
CVP water to the Bureau's refuge from Hills Valley ID *	0	2,254	0	0	0	0	0	0	0	0	0	0	2,254	
CVP water to the Bureau's refuge from Tri-Valley WD *	0	775	0	0	0	0	0	0	0	0	0	0	775	
CVP water to Westlands WD from County of Fresno *	0	2,100	0	0	0	0	0	0	0	0	0	0	2,100	
CVP water to Westlands WD from Lower Tule River *	0	5,237	7,273	1,500	0	0	6,270	4,517	125	1,086	0	0	26,008	
CVP water to Westlands WD from Pixley ID *	0	0	9,704	3,000	0	0	6,270	4,517	125	1,088	0	0	24,704	
CVP water to Westlands WD from Kern-Tulare WD *	0	0	17,545	4,500	0	0	10,971	7,906	220	3,903	0	0	45,045	
CVP water to Westlands WD from Rag Gulch WD *	0	0	4,676	1,000	0	0	2,612	1,882	52	456	0	0	10,678	
Agency Total (* excluded water)	0	0	0	0	0	0	0	0	0	0	0	0	0	
Bureau Of Reclamation														
Kern National Wildlife Refuge	0	0	0	306	363	0	0	245	3,695	5,486	4,346	2,627	17,068	
CVP water to the Bureau's refuge from County of Tulare *	0	3,605	0	0	0	0	0	0	0	0	0	0	3,605	
CVP water to the Bureau's refuge from Hills Valley ID *	0	2,254	0	0	0	0	0	0	0	0	0	0	2,254	
CVP water to the Bureau's refuge from Tri-Valley WD *	0	775	0	0	0	0	0	0	0	0	0	0	775	
Federal Conveyance	0	0	82,980	0	0	0	0	0	0	0	0	0	82,980	
Exchange banked approved water from KCWA	0	0	0	0	0	0	44,000	19,000	9,280	0	0	0	72,280	
Merced ID water	0	0	0	0	0	0	0	0	0	1,690	17,927	2,049	21,666	
Friant Water Users Authority	1,718	3,176	0	0	0	0	0	0	0	0	0	0	4,894	
Recreation/fish and wildlife water (San Luis)	31	35	37	36	57	105	106	98	32	50	52	40	679	
Exchange water from FWUA to TLBWSD *	5,306	1,694	0	0	0	0	0	0	0	0	0	0	7,000	
Exchange CVP water to KCWA *	0	0	0	0	0	0	0	0	0	0	14,205	9,736	23,941	
Subtotal (* excluded water)	1,749	9,845	83,017	342	420	105	44,106	19,343	13,007	7,226	22,325	4,716	206,201	
SWP	0	0	0	0	0	0	44,000	19,000	9,280	0	0	0	72,280	
Non-SWP	1,794	9,894	83,074	398	488	172	162	392	3,790	7,280	22,383	4,749	134,576	
San Joaquin Valley Area subtotal	1,794	9,894	83,074	398	488	172	44,162	19,392	13,070	7,280	22,383	4,749	206,856	
SWP	26,866	95,998	106,217	86,841	125,611	230,795	316,584	303,053	85,059	38,927	24,432	34,835	1,475,218	
Non-SWP	18,670	27,355	122,272	14,565	488	172	26,285	19,214	4,312	13,813	36,588	17,466	301,200	
San Joaquin Valley Area Total	45,536	123,353	228,489	101,406	126,099	230,967	342,869	322,267	89,371	52,740	61,020	53,301	1,776,418	1,218,000
Central Coastal Area														
San Luis Obispo County Flood Control and WCD														
Approved Table A water	199	264	281	331	358	397	430	435	371	331	292	250	3,939	25,000
Advanced approved water	0	0	0	0	0	0	0	0	0	0	0	23	23	
Pool A water sale *	0	8,561	0	0	0	0	0	0	0	0	0	0	8,561	
Pool B water sale *	0	0	10,000	0	0	0	0	0	0	0	0	0	10,000	
Agency Total (* excluded water)	199	264	281	331	358	397	430	435	371	331	292	273	3,962	

Table 9-2. Water Delivered in 2000, by Month (Continued)

Sheet 4 of 5

Contracting Agency and Type of Service	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	2000 Total Deliveries	2000 Contract Table A
Santa Barbara County Flood Control and WCD														
Approved Table A water	1,306	1,107	1,066	1,883	2,422	3,187	2,572	2,815	2,566	1,419	1,366	1,032	22,741	45,486
Pool B water sale *	0	0	8,392	0	0	0	0	0	0	0	0	0	8,392	
Agency Total (* excluded water)	1,306	1,107	1,066	1,883	2,422	3,187	2,572	2,815	2,566	1,419	1,366	1,032	22,741	
SWP	1,505	1,371	1,347	2,214	2,780	3,584	3,002	3,250	2,937	1,750	1,658	1,305	26,703	
Non-SWP	0	0	0	0	0	0	0	0	0	0	0	0	0	
Central Coastal Area Total	1,505	1,371	1,347	2,214	2,780	3,584	3,002	3,250	2,937	1,750	1,658	1,305	26,703	70,486
Southern California Area														
Antelope Valley-East Kern Water Agency														
Approved Table A water	2,898	2,697	3,998	5,925	8,711	10,631	11,919	11,152	8,336	5,710	694	0	72,671	138,400
Transfer approved water from Mojave Water Agency	73	62	91	147	124	143	209	162	141	108	58	43	1,361	
Advance approved water	0	0	0	0	0	0	0	0	0	0	2,597	3,307	5,904	
Transfer approved water to Littlerock Irrigation District*	0	0	0	0	0	479	945	800	872	921	812	0	4,829	
Transfer advance approved water to Littlerock Irrigation District*	0	0	0	0	0	0	0	0	0	0	53	120	173	
Pool A water sale *	0	430	0	0	0	0	0	0	0	0	0	0	430	
Pool B water sale *	0	0	46,630	0	0	0	0	0	0	0	0	0	46,630	
Agency Total (* excluded water)	2,971	2,759	4,089	6,072	8,835	10,774	12,128	11,314	8,477	5,818	3,349	3,350	79,936	
Castaic Lake Water Agency														
Approved Table A water	1,845	1,387	2,022	2,364	3,187	3,566	4,127	4,266	3,650	2,741	972	958	31,085	82,500
Article 54 Flexible storage withdrawal (Castaic Lake)	0	0	0	0	0	0	0	0	0	0	1,244	1,345	2,589	
Pool A water sale *	0	4,101	0	0	0	0	0	0	0	0	0	0	4,101	
Pool B water sale *	0	0	40,000	0	0	0	0	0	0	0	0	0	40,000	
Agency Total (* excluded water)	1,845	1,387	2,022	2,364	3,187	3,566	4,127	4,266	3,650	2,741	2,216	2,303	33,674	
Coachella Valley Water District														
Approved Table A water	963	0	0	2,202	2,503	2,502	2,753	2,502	3,713	1,704	994	954	20,790	23,100
Pool B water	0	0	0	0	0	0	0	0	0	3,713	0	0	3,713	
Article 21 water	0	5,544	12,276	0	0	0	0	0	0	0	0	0	17,820	
Agency Total	963	5,544	12,276	2,202	2,503	2,502	2,753	2,502	3,713	5,417	994	954	42,323	
Crestline-Lake Arrowhead Water Agency														
Approved Table A water	62	0	0	0	77	153	209	203	181	118	86	105	1,194	5,800
Local water	0	67	93	65	39	0	0	0	0	0	0	0	264	
Pool A water sale *	0	750	0	0	0	0	0	0	0	0	0	0	750	
Pool B water sale *	0	0	2,320	0	0	0	0	0	0	0	0	0	2,320	
Agency Total (* excluded water)	62	67	93	65	116	153	209	203	181	118	86	105	1,458	
Desert Water Agency														
Approved Table A water	3,175	0	0	3,457	4,145	4,147	4,562	4,146	4,146	2,707	2,707	1,098	34,290	38,100
Article 21 water	0	5,544	12,276	0	0	0	0	0	0	0	0	0	17,820	
Pool B water	0	0	0	0	0	0	0	0	0	6,124	0	0	6,124	
Agency Total	3,175	5,544	12,276	3,457	4,145	4,147	4,562	4,146	4,146	8,831	2,707	1,098	58,234	
Littlerock Creek Irrigation District														
Approved Table A water	0	0	0	0	0	0	0	0	0	0	0	0	0	2,300
Transfer approved water from Antelope Valley-East Kern WA	0	0	0	0	0	479	945	800	872	921	812	0	4,829	
Transfer advance approved water from Antelope Valley-East Kern WA	0	0	0	0	0	0	0	0	0	0	53	120	173	
Agency Total	0	0	0	0	0	479	945	800	872	921	865	120	5,002	
Metropolitan Water District of Southern California														
Approved Table A water	0	0	0	135,953	104,298	125,421	134,856	137,539	132,651	149,405	152,228	153,037	1,225,388	2,011,500
Article 12(e) carryover approved water	30,000	0	0	0	0	0	0	0	0	0	0	0	30,000	
Article 21 water	0	15,657	87,467	0	0	0	0	0	0	0	0	0	103,124	
Article 56(c) extended carryover	75,056	64,473	0	0	0	0	0	0	0	0	0	0	139,529	
Article 54 Flexible storage withdrawal (Lake Perris)	0	0	1,243	5,117	1,821	0	0	0	0	0	0	0	8,181	
General Conveyance	0	0	0	0	0	0	0	0	0	900	0	0	900	
Article 54 Flexible storage replacement with approved water (Lake Perris)*	0	0	0	0	0	3,471	0	0	0	0	0	0	3,471	
Exchange approved water to KCWA *	0	0	0	0	0	0	0	16,208	8,662	0	0	0	24,870	
Exchange approved water to Westlands *	0	0	0	0	0	0	1,843	15,867	1,968	322	0	0	20,000	
Agency Total (* excluded water)	105,056	80,130	88,710	141,070	106,119	125,421	134,856	137,539	132,651	150,305	152,228	153,037	1,507,122	
Mojave Water Agency														
Approved Table A water	499	823	1,170	216	124	224	233	235	431	1,067	997	1,755	7,774	75,800
Exchange approved water from Solano County WA	0	0	0	0	0	0	0	0	0	0	1,205	1,040	2,245	
Transfer approved water to Antelope Valley-East Kern WA *	73	62	91	147	124	143	209	162	141	108	58	43	1,361	
Pool A water sale *	0	29,000	0	0	0	0	0	0	0	0	0	0	29,000	
Pool B water sale *	0	0	28,220	0	0	0	0	0	0	0	0	0	28,220	
Agency Total (* excluded water)	499	823	1,170	216	124	224	233	235	431	1,067	2,202	2,795	10,019	
Palmdale Water District														
Approved Table A water	0	0	155	0	0	1,120	1,114	2,044	1,734	1,499	555	0	8,221	21,300
Article 56(c) extended carryover	510	329	0	0	0	0	0	0	0	0	0	0	839	
Agency Total	510	329	155	0	0	1,120	1,114	2,044	1,734	1,499	555	0	9,060	

Table 9-2. Water Delivered in 2000, by Month (Continued)

Contracting Agency and Type of Service	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	2000 Total Deliveries	2000 Contract Table A
San Bernardino Valley Municipal Water District														
Approved Table A water	1,219	526	138	46	200	1,425	2,134	2,566	2,919	2,831	2,126	2,269	18,399	102,600
Pool A water sale *	0	25,000	0	0	0	0	0	0	0	0	0	0	25,000	
Pool B water sale *	0	0	42,340	0	0	0	0	0	0	0	0	0	42,340	
Agency Total (* excluded water)	1,219	526	138	46	200	1,425	2,134	2,566	2,919	2,831	2,126	2,269	18,399	
San Gabriel Valley Municipal Water District														
Approved Table A water	0	0	0	0	0	2,307	2,469	2,448	2,369	2,510	1,897	0	14,000	28,800
Article 21 water	0	475	0	0	0	0	0	0	0	0	0	0	475	
Exchange carryover approved water from Dudley Ridge WD	665	0	0	0	0	0	0	0	0	0	0	0	665	
Pool B water sale *	0	0	11,920	0	0	0	0	0	0	0	0	0	11,920	
Agency Total (* excluded water)	665	475	0	0	0	2,307	2,469	2,448	2,369	2,510	1,897	0	15,140	
San Geronimo Pass Water Agency														
Approved Table A water	0	0	0	0	0	0	0	0	0	0	0	0	0	3,000
Pool A water sale *	0	1,500	0	0	0	0	0	0	0	0	0	0	1,500	
Pool B water sale *	0	0	1,200	0	0	0	0	0	0	0	0	0	1,200	
Agency Total (* excluded water)	0	0	0	0	0	0	0	0	0	0	0	0	0	
Ventura County Flood Control District														
Approved Table A water	154	154	154	154	154	154	154	154	1,960	548	154	156	4,050	20,000
Pool A water sale *	0	7,500	0	0	0	0	0	0	0	0	0	0	7,500	
Pool B water sale *	0	0	5,500	0	0	0	0	0	0	0	0	0	5,500	
Agency Total (* excluded water)	154	154	154	154	154	154	154	154	1,960	548	154	156	4,050	
Recreation/Fish and Wildlife														
Recreation/fish and wildlife water	70	172	98	145	202	238	491	473	324	364	121	352	3,050	
Recreation/Fish and Wildlife														
USFWS Recreation/fish and wildlife water (Pyramid Lake)	28	0	0	0	0	0	0	4	2	2	1	1	38	
SWP	117,189	97,843	121,088	155,726	125,546	152,510	166,175	168,690	163,427	182,970	169,500	166,539	1,787,203	
Non-SWP	28	67	93	65	39	0	0	4	2	2	1	1	302	
Southern California Area Total	117,217	97,910	121,181	155,791	125,585	152,510	166,175	168,694	163,429	180,972	169,501	166,540	1,787,505	2,553,200
SWP Water														
SWP Approved Table A Water														
Agriculture and M&I approved water	24,339	32,139	30,998	237,383	247,554	382,288	309,849	264,781	243,822	217,193	194,574	206,716	2,391,636	4,121,631
Advance Agriculture and M&I approved water	0	0	0	0	0	0	0	0	0	0	2,597	3,330	5,927	
Article 12(e) carryover approved water	41,192	6,174	0	0	0	0	0	0	0	0	0	0	47,366	
Article 21 water	0	93,939	214,318	0	0	0	0	0	0	0	0	0	308,257	
Article 54 Flexible storage withdrawal	0	0	1,243	5,117	1,821	0	0	0	0	0	1,244	1,345	10,770	
Article 56(c) extended carryover	92,782	76,089	0	0	0	0	0	0	0	0	0	0	168,871	
Unscheduled water	0	528	0	0	0	0	0	0	0	0	0	0	528	
Transfer approved water	73	1,562	91	147	124	622	67,054	38,509	10,459	1,029	870	43	120,583	
Transfer advance approved water from Antelope Valley-East Kern WA	0	0	0	0	0	0	0	0	0	0	53	120	173	
Exchange approved water	665	0	0	0	10,000	23,061	22,343	88,142	25,597	3,116	5,705	4,417	183,046	
Pool A water	0	0	0	10,000	12,100	0	29,066	22,776	500	6,345	0	0	80,787	
Pool B water	0	0	0	0	0	12,290	93,766	84,084	1,541	9,837	0	0	201,518	
Pool A water sale *	0	80,787	0	0	0	0	0	0	0	0	0	0	80,787	
Pool B water sale *	0	0	201,518	0	0	0	0	0	0	0	0	0	201,518	
Subtotal (approved Table A water)(* excluded water)	159,051	210,431	246,650	252,647	271,599	418,261	522,078	498,292	281,919	237,520	205,043	215,971	3,519,462	
SWP Table A-related water														
Recreation/fish and wildlife water	115	216	146	200	288	381	650	616	365	451	190	412	4,030	
Subtotal (Table A-related water)	115	216	146	200	288	381	650	616	365	451	190	412	4,030	
<i>Subtotal (SWP water)</i>	<i>159,166</i>	<i>210,647</i>	<i>246,796</i>	<i>252,847</i>	<i>271,887</i>	<i>418,642</i>	<i>522,728</i>	<i>498,908</i>	<i>282,284</i>	<i>237,971</i>	<i>205,233</i>	<i>216,383</i>	<i>3,523,492</i>	
Non-SWP Water														
Other water														
Local water	41,693	3,430	4,306	39,078	176,601	177,850	200,065	161,385	66,896	68,959	84,266	76,952	1,101,481	
Vallejo Permit Water	157	144	0	235	327	437	478	483	1,095	158	145	262	3,921	
General Conveyance	4	0	0	0	0	0	0	1,020	7	901	11	11	1,954	
USFS Recreation/fish and wildlife water (Pyramid Lake)	28	0	0	0	0	0	0	4	2	2	1	1	38	
Subtotal	41,882	3,574	4,306	39,313	176,928	178,287	200,543	162,892	68,000	70,020	84,423	77,226	1,107,394	
CVP Water														
Transferred water from CVP contractor	0	13,971	39,198	10,000	0	0	26,123	18,822	522	8,223	17,927	2,049	136,835	
Exchanged water from CVP contractor to SWP contractor	16,876	10,124	0	4,167	0	0	0	0	0	0	14,205	12,717	58,089	
Conveying CVP water Annual Contract	41	49	57	56	68	67	56	29	56	53	47	22	601	
Conveying CVP water (Kern National Wildlife Refuge - the Bureau)	0	0	0	306	363	0	0	245	3,695	5,486	4,346	2,627	17,068	
Conveying CVP water recreation/fish and wildlife water (San Luis)	31	35	37	36	57	105	106	98	32	50	52	40	679	
Federal Conveyance	1,718	3,176	82,980	0	0	0	0	0	0	0	0	0	87,874	
Subtotal (CVP water)	18,666	27,355	122,272	14,565	488	172	26,285	19,194	4,305	13,812	36,577	17,455	301,146	
<i>Total (Non-SWP water)</i>	<i>60,548</i>	<i>30,929</i>	<i>126,578</i>	<i>53,878</i>	<i>177,416</i>	<i>178,459</i>	<i>226,828</i>	<i>182,086</i>	<i>72,305</i>	<i>83,832</i>	<i>121,000</i>	<i>94,681</i>	<i>1,408,540</i>	
Grand Total	219,714	241,576	373,374	306,725	449,303	597,101	749,556	680,994	354,589	321,803	326,233	311,064	4,932,032	4,121,631

Table 9-3. Total Amounts of Annual Table A Water and Water Conveyed, by Type, 1962-00

Annual Table A Water According to Long-Term Water Supply Contract								Water Conveyed									
Year	Upper Feather River Area (1)	North Bay Area (2)	South Bay Area (3)	San Joaquin Valley Area (4)	Central Coastal Area (5)	Southern California Area (6)	Total (7)	Deliveries							Initial Fill Water (14)	Operational Losses and Storage Changes ^d (15)	Total (16)
								Annual Table A Water (8)	Article 21 Surplus and Unscheduled Water ^a (9)	Other Water ^b (10)	Feather River Diversions ^c (11)	Wildlife/ Recreation Water (12)	Subtotal (13)				
1962	0	0	0	0	0	0	0	0	0	18,289	0	0	18,289	9	272	18,570	
1963	0	0	0	0	0	0	0	0	0	22,456	0	0	22,456	71	185	22,712	
1964	0	0	0	0	0	0	0	0	0	32,507	0	0	32,507	171	152	32,830	
1965	0	0	0	0	0	0	0	0	0	44,105	0	0	44,105	93	729	44,927	
1966	0	0	0	0	0	0	0	0	0	67,928	0	0	67,928	0	1,746	69,674	
1967	0	0	11,538	0	0	0	11,538	11,538	0	53,605	0	0	65,143	8,328	4,212	77,683	
1968	550	0	109,900	77,350	0	3,700	191,500	171,709	121,534	14,777	866,926	0	1,174,946	498,926	117,906	1,791,778	
1969	620	0	98,700	163,075	0	5,000	267,395	193,020	72,397	18,829	794,374	0	1,078,620	510,614	72,196	1,661,430	
1970	700	0	114,200	202,000	0	5,700	322,600	233,993	133,024	38,080	759,759	0	1,164,856	23,947	2,435	1,191,238	
1971	890	0	116,200	251,800	0	6,700	375,590	357,340	296,019	44,119	778,362	8	1,475,848	7,853	5,812	1,489,513	
1972	970	0	118,300	413,066	0	209,423	741,759	611,801	423,964	66,638	817,398	6,489	1,926,290	100,274	53,062	2,079,626	
1973	1,100	0	120,400	383,652	0	481,100	986,252	694,388	296,416	42,511	800,743	1,155	1,835,213	204,638	53,798	2,093,649	
1974	1,230	0	122,400	460,650	0	597,920	1,182,200	874,077	417,676	46,224	911,613	2,118	2,251,708	237,554	10,657	2,499,919	
1975	1,610	0	124,500	545,809	0	714,950	1,386,869	1,223,990	622,902	63,793	862,218	3,377	2,776,280	103,352	(94,606)	2,785,026	
1976	1,990	0	126,500	543,417	0	836,480	1,508,387	1,373,002	580,110	115,217	946,440	1,745	3,016,514	61,122	(681,025)	2,396,611	
1977	2,420	0	128,600	581,400	0	954,901	1,667,321	574,155	0	389,065	581,994	1,111	1,546,325	0	(131,151)	1,415,174	
1978	1,850	0	130,700	635,900	0	1,049,584	1,818,034	1,452,699	16,914	121,225	786,517	1,691	2,379,046	64,443	717,370	3,160,859	
1979	2,130	0	132,700	702,685	0	1,190,573	2,028,088	1,659,896	648,389	187,630	882,549	1,766	3,380,230	12,302	(83,430)	3,309,102	
1980	1,810	500	134,800	758,100	1,946	1,317,614	2,214,770	1,529,749	404,557	46,459	875,045	2,131	2,857,941	0	(26,606)	2,831,335	
1981	1,940	650	137,000	818,000	2,813	1,432,065	2,392,468	1,909,562	908,428	279,161	838,557	4,688	3,940,396	0	(802,263)	3,138,133	
1982	1,970	800	139,200	876,500	5,626	1,550,449	2,574,545	1,750,024	215,873	154,882	776,330	4,646	2,901,755	0	480,752	3,382,507	
1983	2,000	950	141,400	867,118	8,439	1,681,257	2,701,164	1,184,869	13,019	181,453	602,905	7,849	1,990,095	0	(90,997)	1,899,098	
1984	3,630	1,100	143,600	979,211	12,698	1,744,098	2,884,337	1,588,619	262,917	381,024	832,332	7,040	3,071,932	0	(140,182)	2,931,750	
1985	3,760	1,250	145,800	1,019,049	21,138	1,864,849	3,055,846	1,995,453	307,672	404,842	870,008	4,033	3,582,008	0	92,885	3,674,893	
1986	4,190	1,400	148,100	1,091,946	28,210	1,983,890	3,257,736	1,995,636	36,620	193,606	791,737	3,865	3,021,464	0	284,380	3,305,844	
1987	4,620	1,550	150,300	1,188,500	35,204	2,103,941	3,484,115	2,130,086	114,907	377,592	831,947	7,672	3,462,204	0	(390,413)	3,071,791	
1988	5,060	15,471	152,500	1,246,100	43,722	2,225,482	3,688,335	2,385,122	0	507,076	794,834	4,889	3,691,921	0	(92,850)	3,599,071	
1989	5,500	24,615	156,700	1,290,400	56,342	2,424,633	3,958,190	2,853,747	0	474,559	830,500	8,135	4,166,941	0	447,917	4,614,858	
1990	6,040	28,190	160,900	1,313,450	70,486	2,500,600	4,079,666	2,582,151	90	424,697	875,099	9,262	3,891,299	0	(528,869)	3,362,430	
1991	11,880	29,590	166,400	1,338,011	70,486	2,510,200	4,126,567	549,113	3,521	551,051	565,395	4,879	1,673,959	0	167,435	1,841,394	
1992	11,920	32,010	171,900	1,342,300	70,486	2,510,200	4,138,816	1,471,454	1,156	144,789	613,978	2,605	2,233,982	0	(63,541)	2,170,441	
1993	11,960	34,620	177,400	1,342,300	70,486	2,510,200	4,146,966	2,315,235	0	254,854	822,589	2,609	3,395,287	0	726,123	4,121,410	
1994	12,000	37,215	182,000	1,342,300	70,486	2,510,200	4,154,201	1,749,351	112,625	236,739	874,018	8,200	2,980,933	0	(295,405)	2,685,528	
1995	12,050	44,030	184,000	1,342,300	70,486	2,510,200	4,163,066	1,967,093	64,330	78,425	860,077	2,575	2,972,500	0	69,536	3,042,036	
1996	12,100	48,225	186,000	1,301,630	70,486	2,492,900	4,111,341	2,514,825	28,647	251,391	934,997	3,907	3,733,767	86	491,550	4,225,403	
1997	12,150	49,315	188,000	1,297,300	45,201	2,492,900	4,084,866	2,325,775	21,432	322,000	993,211	4,146	3,666,564	527	(11,806)	3,655,285	
1998	12,200	50,420	188,000	1,272,300	45,201	2,517,900	4,086,021	1,725,519	20,288	134,682	872,738	2,108	2,755,335	0	(132,491)	2,622,844	
1999	12,250	51,500	188,000	1,272,300	70,486	2,519,900	4,114,436	2,738,891	158,070	85,312	1,108,672	4,324	4,095,269	0	(189,525)	3,905,744	
2000	14,000	55,945	210,000	1,205,300	70,486	2,565,900	4,121,631	3,200,677	308,785	332,654	1,085,886	4,030	4,932,032	0	(181,758)	4,750,274	
Total	179,090	509,346	4,906,638	29,465,219	940,914	52,025,409	88,026,616	51,894,559	6,612,282	7,204,246	27,439,748	123,053	93,273,888	1,834,310	(135,808)	94,972,390	

^a Values include amounts of deliveries to short-term contractors (Mustang Water District, 1970-72; Tracy Golf and Country Club, 1974, 1979, and 1980; Green Valley Water District, 1974, 1975, 1978, 1979, 1980, and 1985; Granite Construction Company, 1980).

^b Includes amounts of SWP non-Table A water and non-SWP water conveyed for SWP and non-SWP water contractors.

^c Includes amounts of water diverted under various water rights agreements.

^d Amounts reflect net effect of (1) operational losses from SWP transportation facilities; (2) changes in reservoir storage south of Delta; (3) storable local inflows to SWP reservoirs; (4) side inflow to San Luis Canal; and (5) inflow into California Aqueduct from Kern River Intertie.

water). Long-term water supply contractors who have not signed the Monterey Amendment receive unscheduled water.

Total SWP Water Delivered. Column 12 shows 3,522,933 acre-feet of total SWP water delivered in 2000. This includes total approved Table A water and Article 21 and unscheduled water.

Non-SWP Water Deliveries. Column 13 includes deliveries of nonproject water to long-term water contractors. Nonproject water is generally local and permit water that a SWP contractor has a water right to, or water purchased from, exchanged with, or transferred from non-SWP agencies. In 2000, nonproject water deliveries totaled 78,605 acre-feet.

Total Deliveries. Column 14 shows total amounts of water delivered to long-term contractors. In 2000, the SWP delivered 3,601,538 acre-feet to 27 long-term contractors. This amount included 3,199,907 acre-feet of approved Table A water, 308,785 acre-feet of Article 21 and unscheduled water, and 78,605 acre-feet of nonproject water.

Water Delivered in 2000, by Month

During 2000, the SWP provided water service to 44 agencies, including 27 long-term water contractors. Those agencies and the amounts of water delivered to them by month are listed in Table 9-2.

This section and the accompanying table summarize water deliveries for 2000. Information about those deliveries is categorized as SWP water and nonproject water.

SWP Water

SWP water delivered in 2000 is categorized as follows:

Long-term water supply contracts

Article 21
carryover Table A water

current year approved Table A amounts

flexible storage

transfer and exchange of approved Table A water

turnback pools A and B

Related water

Operational flood release

Recreation and fish and wildlife

In 2000, SWP water was delivered in the following classifications and amounts.

Approved Table A Water. A total of 2,977,570 acre-feet of 2000 approved Table A water was delivered to 27 long-term contractors and some delivered through transfers or exchanges to the Bureau and WWD. Also, 6,100 acre-feet of approved Table A advance water, 216,237 acre-feet of carryover water, and 10,770 acre-feet of flexible storage withdrawal water were delivered in 2000.

Exchanges and Transfers of Approved Table A Water. During 2000, a total of 300,892 acre-feet of approved Table A water was exchanged or transferred to SWP long-term contractors and non-SWP water agencies as follows:

- AVEK transferred 5,002 acre-feet to Littlerock
- Castaic transferred 1,200 acre-feet to WWD
- Dudley Ridge transferred 1,500 acre-feet to Kern
- Dudley Ridge exchanged 665 acre-feet with San Gabriel
- Dudley Ridge transferred 166 acre-feet to Tulare
- Kern transferred 35,847 acre-feet to WWD
- Kern exchanged 114,766 acre-feet with WWD
- Kern transferred 400 acre-feet to Tulare
- Kern exchanged 72,280 acre-feet with the Bureau

- Metropolitan exchanged 24,870 acre-feet with Kern
- Metropolitan exchanged 20,000 acre-feet with WWD
- Mojave transferred 1,361 acre-feet to AVEK
- Solano exchanged 2,245 acre-feet with Mojave
- Tulare transferred 3,000 acre-feet to WWD
- Tulare exchanged 20,500 acre-feet with WWD

1999 Carryover Approved Table A Water. In 2000, 216,237 acre-feet of 1999 approved Table A water were delivered that had been stored in SWP storage facilities in 1999; this amount does not include 1,500 acre-feet of carryover water transferred from Dudley Ridge to Kern.

Article 21 Water. The Article 21 water program allows a contractor to take delivery of water over the approved and scheduled Table A amounts for the current year. In 2000, thirteen contractors participated in the program. A total of 308,257 acre-feet of Article 21 water was delivered to Napa, Alameda-Zone 7, Alameda County, Santa Clara, Dudley Ridge, Kern, Tulare, Coachella, Desert, San Gabriel, Solano, and Metropolitan. Empire took delivery of 528 acre-feet of unscheduled water. (See page 114 for a description of the Article 21 Water Program.)

Water for Recreation and Fish and Wildlife.

A total of 4,030 acre-feet of SWP water was conveyed for recreational use and enhancement of fish and wildlife.

Recreational Use. The SWP delivered 677 acre-feet of water for facilities at Lake Oroville, Lake Del Valle, O'Neill Forebay, Silverwood Lake, and Lake Perris. In addition, 2,600 acre-feet were delivered to Castaic Lake and Castaic Lagoon, an impoundment downstream from Castaic Lake devoted entirely to recreation.

Wildlife Management. The SWP delivered 753 acre-feet of water to use in managing wildlife in the Pilibos Wildlife Area, located on

about 770 acres of land near O'Neill Forebay, 40 miles south of Los Banos.

Operational Flood Release Water

There was no operational flood water released in 2000.

Non-SWP Water

In 2000, the Department used SWP facilities to convey non-SWP water for various agencies according to the terms of water rights and water transfer and exchange agreements. Detailed information concerning those conveyances follows.

Alameda County Flood Control and Water Conservation District, Zone 7.

Under a contract executed July 28, 1995, between the Department and Alameda-Zone 7, the Department conveyed 1,000 acre-feet of non-SWP water for Alameda-Zone 7 during 2000. The Department conveyed this water in August directly from the Delta to Reach 2 of the South Bay Aqueduct. Alameda-Zone 7 transferred this water from BBID under a separate contract.

Metropolitan Water District of Southern California.

Under a letter agreement executed November 27, 2000, between the Department and Metropolitan, the Department conveyed 900 acre-feet of non-SWP water for Metropolitan during 2000. The Department conveyed this water to the Santa Margarita Water District through Metropolitan's delivery structures in Reach 26A of the California Aqueduct.

Tracy Golf and Country Club.

Under an agreement dated August 25, 2000, with the Tracy Golf and Country Club, the Department conveyed 54 acre-feet of transferred CVP water to Tracy Golf and Country Club for irrigation purposes.

Central Valley Project Water.

In 2000, the Department conveyed 301,146 acre-feet of CVP water through SWP facilities. Conveyance was made in accordance with agreements negotiated with the Bureau and contractors receiving water from the Bureau through the SWP as follows:

Arvin-Edison Water Storage District. An agreement between the Department and Tulare, dated December 15, 2000, approved the delivery to Tulare of 7,000 acre-feet of CVP water on behalf of AEWS. In exchange, Tulare is to return a like amount of water to AEWS from the Friant-Kern Canal. A total of 7,000 acre-feet of CVP water was conveyed to Tulare in 2000.

Bureau Level 4 Water. Between October and December 2000, the Department conveyed 21,666 acre-feet of Bureau-purchased Level 4 water to O'Neill Forebay. The water was purchased from Merced Irrigation District's Lake McClure.

Cross Valley Canal Contractors. Under five individual agreements between the Department and PID, LTRID, KTWD, RGWD, and County of Fresno, dated December 21, 1999, the Department conveyed 24,704, 26,008, 45,045, 10,678, and 2,100 acre-feet of CVP water for each district to WWD's turnouts in Reach 4 and Reach 5 of the California Aqueduct, respectively. Also, the Department conveyed for the County of Tulare, Hills Valley, and Tri Valley 3,605, 2,254, and 775 acre-feet, respectively, to the Bureau for wildlife refuge use.

Four CVP Contractors. An agreement between the Department and Kern provided for the delivery of nonproject water from four CVP contractors using 2000 CVP water supply. In exchange, Kern would return a like amount of its approved Table A water back to CVP by December 31, 2003. A total of 23,941 acre-feet of 2000 CVP water was conveyed to Kern in 2000.

Friant Water Users Authority. Under an agreement dated September 24, 1999, for 25,000 acre-feet, the Department conveyed 4,894 acre-feet of CVP water from the San Luis Canal at Kettleman City to the CVC turnout at Tupman in 2000.

Kern National Wildlife Refuge. Under Modification No. 009 to an agreement dated October 1, 1993, the Department conveyed 17,068 acre-feet of CVP water through the California Aqueduct to the Buena Vista Water Storage District for the

Kern National Wildlife Refuge. Another 679 acre-feet was conveyed for the Bureau to San Luis for wildlife use.

Musco Olive Products, Incorporated. In accordance with terms of a conveyance agreement with the Bureau, dated August 25, 2000, the Department conveyed 568 acre-feet of CVP water to Reach 2A of the California Aqueduct for Musco Olive Products, Inc.

The Bureau of Reclamation. Under an agreement, dated April 18, 2000, the Department conveyed 82,980 acre-feet of CVP water through the California Aqueduct to O'Neill Forebay to replace exports forgone at the Tracy Pumping Plant in January as a result of environmental protection action taken in 1999.

U.S. Department of Veterans Affairs. Under an annual agreement with the Bureau, dated August 25, 2000, the Department conveyed 33 acre-feet through SWP facilities to maintain the San Joaquin Valley National Cemetery near Santa Nella, California. The Department conveyed this water to Reach 2B of the California Aqueduct.

Westlands Water District. An agreement between the Department and Kern provided for the delivery of up to 20,000 acre-feet of Kern's 2000 approved Table A water to WWD, in exchange for a like amount of WWD's CVP water. A total of 20,000 acre-feet was conveyed to Kern and a total of 20,000 acre-feet was returned to WWD in 2000.

Westlands Water District. An agreement dated December 20, 2000, provided for the delivery of up to 4,167 acre-feet of Kern's 2000 approved Table A water to WWD, in exchange for a like amount of WWD's CVP water returned prior to December 2000. A total of 4,167 acre-feet was conveyed to Kern in 2000, and a total of 4,167 acre-feet was returned to WWD in 2000.

Westlands Water District. An agreement between the Department, Tulare, and WWD, provided for the delivery of up to 50,000 acre-feet of non-project water from WWD to Tulare between

December 2000 and April 15, 2001, in exchange for a like amount of Tulare's Table A water during the period from 2001 through 2003. A total of 2,981 acre-feet was delivered to Tulare in December 2000.

Floodwater. Occasionally, during wet years, the Department accepts floodwater from the Kern River into the California Aqueduct through the Kern River-California Aqueduct Intertie under an *Agreement among the State of California, Kern County Water Agency, and the Kern River Interests for Diversions of Floodwaters through the Kern River-California Aqueduct Intertie*, dated November 18, 1975. In 2000, the Department did not accept any floodwater into the California Aqueduct.

Water Rights Water. Water in this category is transported through SWP facilities to long-term SWP contractors and other agencies according to terms of various local water rights agreements. Some water simply passes through SWP transportation facilities; a portion is stored in SWP reservoirs for release at a later time. In 2000, 1,101,481 acre-feet of water in this category were delivered to the Feather River and South Bay and Southern California areas.

Feather River Area. Nine Feather River water right settlement agencies received a total of 1,085,886 acre-feet. Those agencies are

- Last Chance Creek Water District, 13,502 acre-feet
- Thermalito Irrigation District, 2,478 acre-feet
- Oroville-Wyandotte Irrigation District, 6,625 acre-feet
- Western Canal Water District, 313,435 acre-feet
- Joint Water Districts Board, 719,957 acre-feet
- Oswald Water District, 546 acre-feet
- Tudor Mutual Water Company, 4,280 acre-feet
- Garden Highway Water Company, 14,006 acre-feet
- Plumas Mutual Water Company, 11,057 acre-feet

South Bay Area. In the South Bay area, 15,331 acre-feet of local water were delivered to Alameda-Zone 7 and Alameda County. These two South Bay Aqueduct contractors hold water rights to runoff from Lake Del Valle watershed.

Southern California. In Southern California, 264 acre-feet of local runoff from the Houston Creek watershed were stored and delivered to Crestline under local water rights. These local water rights have been signed over to the Department as part of the contractual arrangements for storing and delivering this local runoff for Crestline.

Annual Table A Water and Water Delivered Since 1962

Information about annual Table A water and water conveyed for the past 39 years is contained in Table 9-3. The following discussion of Table A water conveyed is arranged according to column numbers.

Annual Table A. Columns 1 through 7 of Table 9-3 show the amount of long-term contractor's annual Table A water by area for years 1962 through 2000 as specified in the Table A schedules of the long-term water supply contracts.

In some instances Table A schedules—projections of each contractor's need for water to 2035—have been amended to meet the needs of individual contractors. The amounts of annual Table A water each contractor may request for years 1962 through 2035 can be found in Table B-4 in Appendix B.

Water Delivered. Columns 8 through 16 show water delivered or conveyed, including initial fill water and operational losses and storage changes.

Approved Table A Water. Column 8 shows amounts of approved Table A water delivered each year from 1962 through 2000.

Article 21 Water. Article 21 water is water in excess of that required to meet all demands for

the year's approved Table A water and water to be stored in SWP reservoirs.

Column 9 shows amounts of Article 21 water, as defined under *SWP Deliveries*, and unscheduled water delivered from 1962 through 2000.

Column 10 includes amounts of water classified as other water delivered in 2000, including nonproject water conveyed through SWP facilities and regulated delivery of local supply.

In 2000, a total of 333,424 acre-feet of other water was delivered.

Feather River Diversions. Column 11 includes amounts of water from the Feather River delivered according to agreements for water rights water. In 2000, a total of 1,085,886 acre-feet in this category was delivered to agencies in the Feather River area.

Recreation Water. Column 12 shows water conveyed for recreational use or to provide water to improve water quality for fish and

wildlife. In 2000, a total of 4,030 acre-feet of SWP water was conveyed for this purpose.

Initial Fill Water. The quantities listed in Column 14 represent the amounts used to initially fill the aqueducts and reservoirs south of the Delta to maximum operating capacities. Initial filling began in 1962 with the filling of the South Bay Aqueduct and was completed in 1979 when Lake Perris reached its maximum operating capacity of 127,000 acre-feet. In 1996 and 1997, the Coastal Aqueduct was initially filled.

Operational Losses. Column 15 includes the total amounts of water lost through evaporation and seepage, net storage changes in reservoirs south of the Delta, and amounts of inflow from local drainage areas, including inflows into San Luis Canal and from the Kern River Intertie.

Negative values are indicated for years when withdrawals and evaporation from reservoirs south of the Delta exceed the amounts of water added to the reservoirs.

Information for this chapter was provided by the State Water Project Analysis Office.

Chapter 10

Power Resources



Alamo Power Plant

Significant Events in 2000

- Energy used at the 25 State Water Project pumping and generating plants totaled 9.19 billion kWh.
- The Department sold 2.92 billion kWh of energy to 24 utilities and 16 power marketers for total revenue of \$167.02 million. The Department also received \$190.24 million from capacity sales, exchanges, and transmission arrangements. The combined revenue received was \$357.26 million.
- The Department purchased 2.94 billion kWh of energy at a cost of \$176.66 million. Associated capacity cost was \$19.90 million. Transmission and other costs were \$158.21 million.
- In June, Southern California Edison started curtailing return and additional energy under the combustion turbine provision of the 1979 Power Contract and the 1981 Capacity Exchange Agreement based on SCE's unilaterally imposed combustion turbine proxy. The Department is in arbitration proceedings due to the combustion turbine dispute.
- In the summer, due to a variety of factors in California's energy market, there was a temporary shortage of electricity and, in some instances, rolling blackouts.
- Energy prices in California started to escalate in midyear, developing into a financial crisis for the investor-owned utilities, the California Power Exchange, and the Independent System Operator by year's end, as all entities ran short of cash.

Long-term State Water Project contractors depend on the SWP to provide economical sources of power to deliver affordable water. Responding to that need, the Department developed and administers a comprehensive power resources program. Key elements of the program include the strategic timing of generation and pumping schedules, purchase of power resources and transmission services, short-term sales of power surpluses, and studies of power resources for future needs.

Power Resources Program

The goals of the SWP power resources program are to

- obtain reliable, environmentally sensitive, and competitively priced power sources and transmission services sufficient to operate the SWP;
- develop and manage power resources to minimize the cost of water deliveries to SWP contractors;
- minimize impacts on the SWP when major contractual power arrangements begin to expire in 2004;
- meet responsibilities and criteria of the Western Systems Coordinating Council; and
- conform with regulations of the California Energy Commission and the Federal Energy Regulatory Commission.

To achieve these goals, the Department constructed its own power facilities and contracted for long-term power resources with many electric utilities. In addition, the Department arranged for transmission service between SWP power resources and pumping loads and interconnected utilities. The power resources program takes advantage of SWP water storage and conveyance capacities that allow the Department to operate SWP cost effectively. This control of pumping loads and generation allows the Department to enter into advantageous agreements with other electric utilities that complement the use of SWP generation to meet SWP power requirements.

Reliability Management System

In 1996, electrical disturbances on local transmission networks led to two major outages of the interconnected transmission systems of several states, including California. In both instances, operation of the SWP, as well as that of numerous other major transmission-dependent systems, was adversely impacted.

The 1996 summer outages on the western grid focused attention on the need to take additional steps to ensure the reliability of the western interconnected grid. To address these concerns and ensure reliability, WSCC developed the voluntary Reliability Management System Program, implemented in September 1999.

The RMS criteria are based on existing WSCC and FERC reliability criteria; participants are subject to sanctions for noncompliance. Currently, there is no legal authority to require any entity to participate in a mandatory reliability program with sanctions.

Oroville Facilities Relicensing

The existing 50-year term FERC hydropower license, Project Number 2100 for operation of the Oroville facilities, will expire January 31, 2007. To obtain a new license the Department must file a new application by January 31, 2005.

FERC offers three relicensing procedures—traditional, hybrid, and alternative—that allow applicants to accommodate their unique interests and operations while seeking a license renewal. The traditional procedure involves

minimal FERC involvement while the alternative procedures allow for more FERC involvement and stakeholder interaction. The Department selected the alternative licensing procedure that encourages a collaborative stakeholder approach throughout the multiyear relicensing process.

On June 29, 2000, and November 15, 2000, the Department hosted public meetings in Oroville to present information about the alternative licensing procedure to interested parties. Other activities included mailings, presentations, and both formal and informal meetings with federal and State resource agencies, local Indian tribes, local governmental agencies and other organizations. Participants in these activities indicated support for the collaborative approach, and on November 16, 2000, the Department, as licensee, submitted a request to FERC to use the alternative licensing procedure in relicensing the Oroville facilities.

In December 2000, initial meetings with participants were held to establish a framework for a 3-tiered process to accomplish the work required for the relicensing. The three tiers consist of a plenary group, work groups, and task forces.

The general reference to Oroville Facilities Relicensing refer to Oroville Dam and Reservoir, the Hyatt Pumping-Generating Plant, the Thermalito Pumping-Generating Plant, the Thermalito Diversion Dam Power Plant, Thermalito Diversion Dam, the Fish Barrier Dam, the Feather River Fish Hatchery, Thermalito Power Canal, Thermalito Forebay, and the Thermalito Afterbay.

Sale of Reid Gardner Unit 4

On November 20, 2000, NRG Energy and Dynegy acquired Nevada Power Company's share of the Reid Gardner Generating Station. Under the terms of the sale, NRG was to operate the Station, with Dynegy serving as the power marketer and fuel supplier.

Restructuring of the Electric Utility Industry

On September 23, 1996, Assembly Bill 1890 was signed into law by the Governor. AB 1890 called for restructuring the electric utility industry in California and creating the California Independent System Operator and the separate California Power Exchange. To make the new California markets viable and to limit market power control of the investor-owned utilities (Pacific Gas and Electric Company, Southern California Edison Company, and San Diego Gas and Electric Company), the utilities were required to unbundle their transmission, generation, and distribution into separate business units and divest half of their thermal generation. The investor-owned utilities were granted full recovery of their stranded costs through a competition transition charge.

On March 31, 1998, ISO and CalPX began operation. ISO manages most of California's transmission grid and is responsible for overall system reliability. Scheduling coordinators were created to submit energy schedules to ISO. All loads and resources within the ISO-controlled grid, and resources imported or exported within California, must schedule through these coordinators. ISO operates the following three markets:

- *ancillary services market*, which consists of regulation, spinning, nonspinning, replacement reserves, voltage support, and black start. Regulation, spinning, nonspinning, and replacement reserves are acquired through day-ahead and hour-ahead markets. Voltage support and black start are purchased on a yearly contract basis;
- *congestion management market*, which uses adjustment bids to clear congestion on a transmission path; and
- *real-time imbalance market*, which uses supplemental energy bids to maintain grid integrity by adjusting generation to match constantly changing loads and system losses.

CalPX schedules the loads and resources to ISO as the scheduling coordinator for the three investor-owned utilities. CalPX also operates the day-ahead market and the hour-ahead market for the purchase and sale of energy by other market participants.

In 1998, the Department signed numerous agreements to participate in ISO markets, including the following agreements with ISO: (1) Scheduling Coordinator Agreement, (2) Meter Service Agreement for Scheduling Coordinators, (3) Participating Generator Agreement, and (4) Meter Service Agreement for ISO Metered Entities. The Department also signed the PX Participation Agreement with CalPX in 1998. In 2000, the Department signed the Participating Load Agreement with the ISO.

The Department participated in various “stakeholder” processes and intervened in numerous dockets before FERC to resolve ongoing issues of concern. Major issues included

- development of ISO’s transmission access charge and off-peak rates;
- conversion of existing transmission contracts to ISO service and receipt of financial and physical transmission rights from ISO as compensation;
- unbundling ISO’s grid management charge paid by scheduling coordinators to recover ISO’s costs;
- reaching conformity between the investor-owned utilities transmission owner’s tariffs and ISO’s tariff;
- numerous ISO tariff amendments covering operational and market issues;
- redesign of the ISO’s Ancillary Services markets to increase participation, reduce costs, and provide for proper cost allocation;
- revision of Reliability Must-Run contracts to reduce costs and prevent gaming by owners;
- firm transmission rights auction to purchase firm transmission capacity on congested interzonal and intertie transmission paths; and
- formulation of price cap policies to eventually end the use of price caps by establishing

market mechanisms to encourage competition.

The Department

- sells spinning, nonspinning, and replacement reserves to ISO;
- bids pump loads into nonspinning reserves to provide ISO more resources in case of system emergencies or contingencies; and
- buys and sells energy not purchased or sold through bilateral agreements in the CalPX’s day-ahead market.

During the second half of the year, the energy market became increasingly unstable, with numerous “price spikes.”

Existing SWP Power Facilities

Figure 10-1 shows the names, locations, and nameplate capacity of the Department’s primary power facilities.

Hydroelectric. Economic hydroelectric generation provides the largest share of SWP power resources. The combined 759-megawatt Hyatt Pumping-Generating Plant and Thermalito Pumping-Generating Plant (Hyatt-Thermalito) generate about 2.2 billion kWh of energy in a median water year, while the 3 MW from Thermalito Diversion Dam Power Plant add another 24 million kWh of energy a year.

Generation at SWP aqueduct recovery plants—Gianelli, Alamo, Devil Canyon, Warne, and Mojave Siphon—varies with the amount of water conveyed. These five plants generate about one-sixth of the total energy used by the SWP.

Coal. Since July 1983, under the “Participation Agreement Reid Gardner Unit No. 4” between the Department and Nevada Power Company, the Department has received energy from Reid Gardner Power Plant, a coal-fired facility near Las Vegas, Nevada. Reid Gardner consists of four units. The Department owned 67.8 percent of Unit 4, while NPC owned the remainder of



Figure 10-1. Names, Locations, and Nameplate Capacity of Primary Power Facilities

Unit 4 as well as all of units 1, 2, and 3. Under the Agreement, the Department received up to 235 MW (90.4 percent of 260 MW total capacity) from Reid Gardner Unit No. 4, subject to NPC's limited right to interrupt the Department's energy deliveries during specific periods. Whenever NPC interrupted the Department's scheduled energy, the Department received payment based on NPC's combustion turbine costs. On November 20, 2000, NPC sold its share of the Reid Gardner Generating Station to NRG Energy and Dynegy.

In addition, the Department receives 15 MW upgrade capacity completed in June 1990. Since September 1998, the Department has received all the upgrade capacity and associated energy and will continue receiving it through 2013.

Future SWP Power Facilities

To meet future SWP power requirements, the Department also considers and evaluates new power resources, including reviewing SWP power requirements and analyzing the type of resource and its cost. Factors considered include

- ability to meet anticipated power requirements for pumping;
- transmission access availability;
- anticipated water deliveries to contractors;
- cost of the resource;
- availability and cost of financing;
- environmental impacts and costs of mitigation; and
- operating characteristics.

The Department continues to consider several potential power resources. These include a second unit at Alamo Power Plant, a third unit at Warne Power Plant, and additional capacity at Hyatt-Thermalito.

Contractual Resource Arrangements

Through joint development, exchanges, and purchases the Department obtains a significant

amount of capacity and energy for SWP operations from other utilities throughout California, the Northwest, and the Southwest. Under these agreements, the Department can sell, buy, or exchange energy.

Some agreements allow the Department to sell, buy, and / or exchange short-term firm capacity and / or firm energy on an hourly, daily, weekly, or monthly basis. Those agreements permit more efficient use of the Department's generating resources and more efficient scheduling of energy deliveries.

Negotiations continue with various utilities in the Pacific Northwest to develop arrangements for purchases, sales, and exchanges to take advantage of the Department's 300 MW transmission capacity on the Extra-High Voltage Pacific Northwest Intertie.

Joint Developments. In 1966, the Department entered into a contract with the Los Angeles Department of Water and Power for the joint development of the West Branch of the California Aqueduct. LADWP constructed and operates Castaic Power Plant, which is connected to the LADWP transmission system at the Sylmar Substation.

The Department receives capacity and energy at the Sylmar Substation based on weekly water schedules through the West Branch.

Gianelli Pumping-Generating Plant is a joint SWP (222 MW) and Bureau of Reclamation (202 MW) facility.

Power Exchanges. The largest portion of the energy used by the SWP is provided by the 1979 Power Contract and the 1981 Capacity Exchange Agreement with SCE. Service began in April 1983 under the power contract and in April 1987 under CEA.

According to terms of the power contract, the Department provides SCE with up to

- 350 MW of capacity and approximately 40 percent of the energy from Hyatt-Thermalito;
- 120 MW of capacity and all the energy generated by Devil Canyon Power Plant Units 1 and 2; and
- 15 MW of capacity and all the energy generated by Alamo Power Plant.

In return, the Department receives off-peak energy from SCE equal to the amount of energy provided to SCE from Hyatt-Thermalito, Devil Canyon Power Plant, and Alamo Power Plant, plus an additional amount of energy as payment for the capacity. This additional amount of energy is determined annually, based on the Capacity-Energy Exchange Formula as defined in the 1979 Power Contract. The formula determines the value of capacity in dollars and converts the dollar amounts into an equivalent amount of off-peak energy.

According to terms of CEA, each year the Department must provide 412.5 million kWh of energy to SCE during on-peak periods at a maximum delivery rate of 225 MW. SCE returns approximately 110 percent of the energy the Department provides during mid-peak and off-peak periods. In addition, SCE waives 75 percent of its charges to the Department for specified firm transmission service provided to SWP pumping and generating facilities. SCE also makes an annual payment of \$900,000 to the Department.

Also, according to terms of the 1979 Power Contract, SCE receives energy from four of the Metropolitan Water District of Southern California power plants—Lake Mathews, Foothill Feeder, San Dimas, and Yorba Linda. In return, the Department receives off-peak energy from SCE averaging 107 percent of the total energy provided to SCE from those plants. All the energy from the fifth plant, Greg Avenue, is provided to LADWP according to a 1983 agreement between LADWP and the Department. The utility returns 98.8 percent of this energy to the Department during off-peak periods.

Purchases. The Department obtains a significant amount of energy through long-term and short-term purchase agreements with utilities in California, the Northwest, and the Southwest.

Long-Term Purchases. The Department purchases hydroelectric energy generated by other utilities. The output of the 165 MW Pine Flat Power Plant, owned and operated by Kings River Conservation District, supplies the SWP about 400 million kWh of energy in median water years.

The Department contracts for the energy output of five hydroelectric plants owned and operated by Metropolitan. The total capacity of those plants is 30 MW. To use this resource efficiently, the Department included it in the exchange arrangements with SCE.

The Department signed an agreement with PacifiCorp of Portland, Oregon, to purchase 100 MW of firm capacity and associated energy. That agreement became effective June 1, 1991, and will continue through 2004.

Short-Term Purchases. Additionally, according to terms of the 1988 Coordination Agreement between the Department and Metropolitan, the Department may purchase surplus energy from Metropolitan's Colorado River Aqueduct system. The Coordination Agreement provides for coordinated operation between the SWP and Metropolitan's Colorado River Aqueduct system. It also provides for

- monthly surplus firm energy sales to Metropolitan;
- economy energy sales to Metropolitan;
- surplus energy purchases from the Colorado River Aqueduct system; and
- energy exchanges between the Department and Metropolitan.

The Department also has the Western System Power Pool agreement with member utilities to purchase interruptible economy energy to satisfy unexpected, short-term energy shortages and to sell surplus short-term energy.

Contractual Transmission Arrangements

Although able to acquire transmission independently, the Department depends on other sources for transmission services. PG&E and SCE are the primary providers of transmission service between SWP power resources and pumping loads and interconnected utilities for purchases, sales, and exchanges of power.

Under the Comprehensive Agreement with PG&E, the Department receives 1,355 MW of firm transmission service over the PG&E transmission system between SWP pump loads and power resources in Northern and Central California. The agreement allows the Department to request and receive additional firm and interruptible transmission service if needed.

To interconnect the SWP loads and resources in Southern California, the Department receives transmission service from SCE over the SCE transmission system under the SCE-DWR Power Contract and Firm Transmission Service Agreement.

In August 1967, the Department contracted for 300 MW of transmission capacity on the Extra-High Voltage Pacific Northwest Intertie from the California-Oregon border to the Table Mountain, Tesla, Los Banos, and Midway substations. The Department retains its entire 300 MW share of EHV capacity for access to the Pacific Northwest through December 31, 2004; 100 MW of this capacity is committed to receiving the long-term purchase of 100 MW from PacifiCorp.

In December 1984, the Department signed a Memorandum of Understanding with many public and private California utilities. As implemented in the Interim Participation Agreement and the Long-Term Participation Agreement, the Department has an option (which can be exercised during a 5-year period beginning in January 2005) to purchase 97 MW of transmission capacity on the third 500 kV transmission line that connects California with the Pacific Northwest. The transmission line began operation March 17, 1993.

Other SWP transmission needs are met by contractual arrangements with California utilities.

Load Management

The SWP controls the timing of its pumping load through an extensive computerized network. That control system allows the Department to minimize the cost of power it purchases by maximizing pumping during off-peak periods, when power costs are lower—usually at night—and by selling power to other utilities during on-peak periods, when power values are high. By taking advantage of this flexibility in scheduling SWP pumping load and generation, the net cost of power needed for SWP water deliveries is reduced.

Sales of Excess Power. When generation from SWP power resources exceeds requirements, the excess power is sold on the open market. Currently, the Department contracts with utilities and marketers for short-term purchase, sale, or exchange of power. In addition to selling firm power, the Department may sell power on a day-to-day or hour-to-hour basis according to the terms of its interchange agreements and of the Western Systems Power Pool Agreement. These agreements provide the basis for making economical energy transactions, short-term capacity and energy sales or exchanges, unit commitments, and transmission service purchases. Through these contracts, the Department sells excess capacity and energy at market rates.

In 2000, the Department also bought and sold excess energy not sold through bilateral agreements through the CalPX market.

SWP Power Operation in 2000

Tables 10-1 through 10-4 present statistical information about SWP power operation for calendar year 2000, including energy consumed and generated, energy exchanged and purchased, and energy sold.

Table 10-1. Energy Used at Pumping Plants and Power Plants in 2000, by Month (Millions of Kilowatt-Hours)

Pumping Plants and Power Plants	Month												Total
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	
Hyatt-Thermalito Pumping-Generating Plant (pumpback and station service)	5.566	15.988	0.055	6.447	0.136	0.071	0.330	8.983	42.951	49.877	54.654	39.767	224.825
North Bay Interim Pumping Plant	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.013
Cordelia Pumping Plant	0.958	0.710	0.417	0.166	0.716	0.773	0.871	0.972	1.175	0.839	0.616	0.932	9.146
Barker Slough Pumping Plant	0.753	0.402	0.243	0.131	0.449	0.897	1.165	1.182	1.521	0.836	0.413	0.592	8.582
South Bay Pumping Plant	9.467	5.176	3.789	10.371	10.828	13.670	14.416	14.501	9.441	5.071	3.993	10.372	111.093
Bottle Rock Power Plant (station service)	0.053	0.049	0.047	0.040	0.038	0.033	0.033	0.032	0.031	0.035	0.039	0.040	0.470
Del Valle Pumping Plant	0.009	0.008	0.009	0.035	0.012	0.021	0.007	0.007	0.008	0.006	0.142	0.068	0.332
Banks Pumping Plant	113.300	101.030	73.246	52.000	28.354	72.228	94.446	101.797	111.111	81.759	87.532	83.651	1,000.455
Gianelli Pumping-Generating Plant (SWP share)	65.372	51.878	0.072	0.463	0.095	6.076	1.925	10.891	33.219	17.426	29.948	29.766	247.130
Dos Amigos Pumping Plant (SWP share)	23.848	28.021	33.492	33.684	38.635	55.901	59.988	54.819	36.877	31.449	34.974	32.076	463.764
Buena Vista Pumping Plant	30.396	23.923	32.109	41.956	37.134	42.301	42.796	43.016	37.962	37.955	43.200	42.358	455.108
Teerink Pumping Plant	33.535	25.469	33.838	44.688	37.783	41.672	42.065	43.660	41.032	41.728	47.974	46.676	480.121
Chrisman Pumping Plant	77.680	58.585	77.600	101.634	82.651	91.330	91.752	97.085	92.147	94.414	109.797	106.700	1,081.375
Edmonston Pumping Plant	278.917	210.713	277.067	363.765	294.084	321.541	325.110	346.645	331.545	342.394	402.169	392.359	3,886.309
Alamo Power Plant (station service)	0.001	0.021	0.011	0.001	0.004	0.005	0.005	0.007	0.005	0.006	0.004	0.003	0.072
Pearblossom Pumping Plant	45.484	38.801	50.124	45.901	46.458	45.729	46.255	49.550	45.270	46.239	50.830	59.877	570.517
Pine Flat Power Plant (station service)	0.268	0.239	0.125	0.000	0.000	0.000	0.000	0.000	0.000	0.125	0.222	0.235	1.214
Mojave Siphon Power Plant (station service)	0.003	0.002	0.001	0.028	0.003	0.000	0.000	0.003	0.000	0.001	0.000	0.002	0.043
Devil Canyon Power Plant (station service)	0.080	0.076	0.047	0.030	0.031	0.011	0.009	0.006	0.001	0.006	0.003	0.017	0.315
Oso Pumping Plant	13.377	8.103	10.967	22.209	12.942	15.298	15.397	16.334	17.525	18.982	25.105	20.856	197.094
Warne Power Plant (station service)	0.181	0.100	0.137	0.023	0.322	0.238	0.243	0.144	0.054	0.033	0.000	0.080	1.556
Las Perillas Pumping Plant	0.311	0.510	0.367	0.827	1.179	1.612	1.660	1.362	0.810	0.412	0.248	0.161	9.460
Badger Hill Pumping Plant	0.719	1.347	0.947	2.268	3.214	4.455	4.558	3.825	2.242	1.077	0.621	0.381	25.654
Devil's Den Pumping Plant	1.064	0.968	0.980	1.589	2.026	2.616	2.172	2.341	2.124	1.255	1.182	0.948	19.265
Bluestone Pumping Plant	1.004	0.915	0.926	1.507	1.953	2.559	2.096	2.251	2.036	1.183	1.117	0.901	18.449
Polonio Pass Pumping Plant	1.087	0.988	0.998	1.614	2.023	2.589	2.178	2.343	2.108	1.267	1.202	0.963	19.361
<i>Subtotal</i>	<i>703.432</i>	<i>574.023</i>	<i>597.618</i>	<i>731.376</i>	<i>601.069</i>	<i>721.627</i>	<i>749.478</i>	<i>801.757</i>	<i>811.197</i>	<i>774.379</i>	<i>895.986</i>	<i>869.780</i>	<i>8,831.723</i>
Deviation Adjustments	2.152	17.497	11.518	9.373	33.804	4.202	47.972	55.396	57.919	31.585	54.911	32.324	358.654
Total Energy Required for SWP	705.584	591.520	609.136	740.749	634.873	725.829	797.451	857.153	869.116	805.964	950.898	902.104	9,190.377

Table 10-2. Energy Generated and Purchased in 2000, by Month (Millions of Kilowatt-Hours)

Sources of Energy	Month												Total
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	
Hyatt-Thermalito Power Plant	108.827	259.837	369.124	175.572	245.297	281.055	384.404	308.198	175.189	165.647	150.533	133.188	2,756.871
Gianelli Pumping-Generating Plant (SWP share)	0.236	0.000	0.174	25.560	52.445	42.566	35.183	22.690	7.197	4.139	10.806	14.029	215.024
Alamo Power Plant	8.862	6.789	8.757	9.291	9.445	9.599	9.574	10.118	8.790	8.934	8.849	10.014	109.021
Mojave Siphon Power Plant	5.170	4.542	5.549	3.489	5.267	5.362	5.411	6.043	5.364	5.428	6.091	7.028	64.744
Devil Canyon Power Plant	80.002	73.745	89.167	84.192	85.825	83.570	85.459	91.015	81.735	84.414	94.862	96.352	1,030.338
Reid Gardner Unit 4 ^a	96.713	163.927	180.335	134.944	54.653	169.461	171.571	164.363	170.905	166.305	173.166	142.872	1,789.215
Warne Power Plant	27.555	18.021	23.863	45.623	26.423	31.154	31.168	33.608	36.601	38.741	51.850	41.851	406.459
Subtotal	327.366	526.861	676.970	478.671	479.356	622.766	722.770	636.036	485.780	473.608	496.156	445.334	6,371.673
Energy Sources from Long-Term Agreements:													
Castaic Power Plant	47.183	27.692	37.721	78.464	43.617	54.670	52.887	56.738	61.848	80.345	76.505	67.743	685.415
Metropolitan Water District Small Hydro Generation	17.319	13.201	13.051	16.206	15.585	14.907	16.233	14.192	11.329	12.054	15.090	16.161	175.327
Pine Flat Power Plant KRCD	0.000	0.000	6.384	27.634	83.797	130.255	120.941	57.358	11.093	4.731	0.000	0.000	442.195
Energy to MWD for CRA Pumping (07)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Energy from MWD for CRA (62)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Power Exchange Delivered to other entities ^b	(264.000)	(212.800)	(232.162)	(224.930)	(214.240)	(322.510)	(236.250)	(433.475)	(348.440)	(368.660)	(523.897)	(470.353)	(3,851.717)
Power Exchange Received from other entities ^b	264.000	212.800	232.162	224.930	213.440	322.510	236.250	433.475	348.440	368.660	523.897	470.271	3,850.835
Power Exchange Delivered to SCE	(159.685)	(200.298)	(276.112)	(192.246)	(229.354)	(252.351)	(282.528)	(257.313)	(169.183)	(183.321)	(170.894)	(167.733)	(2,541.017)
Power Exchange Received from SCE	436.271	338.188	348.905	317.091	313.050	289.640	318.070	312.365	506.188	614.939	501.350	372.738	4,668.796
Power System Imbalances cd99	0.000	0.000	0.000	0.000	0.000	0.000	(0.060)	(0.010)	0.000	0.000	(0.003)	0.000	(0.073)
Purchases:													
Arizona Electric Power	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	12.000	0.000	0.000	0.000	12.000
Amoco Energy Trading Corp.	11.200	1.600	0.000	2.400	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	15.200
Aquila Power Corp.	0.000	0.000	0.000	2.065	0.400	0.000	0.000	0.000	0.000	0.000	0.000	0.000	2.465
Bonneville Power Adm.	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	2.400	0.000	2.400
City and County of San Francisco	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.800	2.400	0.050	3.250
Duke Energy	2.860	0.000	96.000	80.850	83.200	83.200	120.000	129.600	120.000	83.200	0.000	24.800	823.710
Electric Clearing House, Inc.	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	33.200	33.200
Enron Power Marketing, Inc.	6.400	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.070	0.000	6.470
Idaho Power Co.	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	34.000	0.288	34.288
Los Angeles Dept. of Water and Power	0.446	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.446
Modesto Irrigation District	0.060	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.060
MIECO, INC.	0.000	0.000	1.600	0.800	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	2.400
Northern California Power Agency	0.180	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.025	0.205
PacifiCorp	50.053	49.600	53.590	49.589	52.000	49.200	49.600	50.000	48.053	49.600	54.284	57.464	613.033
PG&E Energy Trading	3.200	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	3.200
PacifiCorp Power Marketing, Inc. (PPM)	1.549	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	2.400	2.000	5.949
Puget Sound Energy	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	2.800	2.800
Powerex	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.064	0.000	0.000	0.064
California Power Exchange	61.640	11.217	12.944	35.075	2.205	22.421	1.265	127.908	58.228	9.758	68.811	71.192	482.664
Southern Company Energy Marketing, Inc.	0.000	0.000	0.280	0.050	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.330
Sempra Energy Trading, Inc.	40.560	8.000	0.178	1.600	0.000	4.000	60.000	4.320	0.000	0.000	26.000	86.416	231.074
Sacramento Municipal Utility District	0.640	0.000	0.000	1.230	0.000	0.150	0.000	0.000	0.000	0.011	0.000	0.000	2.031
City of Santa Clara Electric Dept.	0.114	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.114
Williams Energy Services Co.	9.432	0	0	0	0	0	0	0	0	0	1.6	22.44	33.472
Purchases Subtotal	188.334	70.417	164.592	173.659	137.805	158.971	230.865	311.828	238.281	143.433	191.965	300.675	2,310.825
Subtotal	529.422	249.200	294.542	420.809	363.700	396.092	456.408	495.158	659.557	672.182	614.013	589.502	5,740.586
Total Resources	856.787	776.061	971.511	899.480	843.056	1,018.859	1,179.178	1,131.194	1,145.337	1,145.790	1,110.170	1,034.836	12,112.259
Less Energy Sales	(151.203)	(184.541)	(362.375)	(158.731)	(208.183)	(293.030)	(381.727)	(274.041)	(276.221)	(339.826)	(159.272)	(132.732)	(2,921.882)
Total Energy Provided to the SWP^c	705.584	591.520	609.136	740.749	634.873	725.829	797.451	857.153	869.116	805.964	950.898	902.104	9,190.377

^aTotal upgrade energy of 83,261 MWh from Reid Gardner #4 is included.

^bPower exchanged with AEP, APCWES, APS, AZUSA, CORP, CPS1, DETM, ECI, EMMT, EPMI, EPPS, IPC, MIECO, PACIFIC, PGET, PSEI, PWX, SCEM, SETC, TEMI, and WESC.

^cAmounts show actual energy available for SWP use.

Table 10-3. Power, Transmission, and Other Services Purchased in 2000 and Costs of Purchase, by Area

Name of Supplier	Type of Service Purchased	Energy (kWh)	Energy Cost (Dollars)	Capacity Cost (Dollars)	Total Cost (Dollars)
Power and Transmission Purchases					
<i>Northwest Area</i>					
Bonneville Power Administration	Firm and nonfirm energy	2,400,000	225,600.00		225,600.00
PacifiCorp	Firm and nonfirm energy	618,982,000	11,680,523.26		11,680,523.26
	Capacity			19,903,574.50	19,903,574.50
BC Hydro, Powerex	Firm and nonfirm energy	64,000	9,600.00		9,600.00
Idaho Power Company	Firm and nonfirm energy	34,288,000	3,198,320.00		3,198,320.00
Puget Sound Energy	Firm and nonfirm energy	2,800,000	1,190,000.00		1,190,000.00
<i>Northern California Area</i>					
Kings River Conservation District	Hydroelectric energy	448,519,000	3,408,747.71		3,408,747.71
Sacramento Municipal Utility District	Firm, nonfirm energy	2,031,000	75,634.23		75,634.23
City and County of San Francisco	Firm and nonfirm energy	3,250,000	435,200.00		435,200.00
Modesto Irrigation District	Firm and nonfirm energy	60,000	2,100.00		2,100.00
City of Santa Clara	Firm and nonfirm energy	114,000	4,027.00		4,027.00
<i>Southern California Area</i>					
Metropolitan Water District of Southern California	Hydroelectric energy	175,327,000	7,556,052.65		7,556,052.65
California Power Exchange	Firm energy	482,664,000	50,474,731.59		50,474,731.59
Los Angeles Department of Water and Power	Firm and nonfirm energy	446,000	18,607.00		18,607.00
<i>Energy Marketers</i>	Firm and nonfirm energy	1,163,726,000	98,152,156.60		98,152,156.60
<i>Subtotal</i>		2,934,671,000	176,431,300.04	19,903,574.50	196,334,874.54
Transmission and Other Purchases					
California Independent System Operator	Ancillary and other services				90,183,545.23
Kings River Conservation District	Pine Flat operation and maintenance				2,086,927.00
	Pine Flat debt service				5,165,554.83
Los Angeles Department of Water and Power	Hydro power plant scheduling				1,150.00
	Castaic Line Transmission Service				53,674.39
Nevada Power Company	Reid Gardner Unit 4 firm transmission				1,685,496.00
	Operations and maintenance				16,795,464.00
	Coal and diesel fuel				20,979,923.00
	Insurance				580,539.00
	Property taxes				1,299,381.00
	Upgrade energy	9,894,000	231,408.76		231,408.76
Pacific Gas and Electric Company	EHV transmission				1,500,000.00
	Midway-Wheeler Ridge, transmission operation and maintenance				132,864.00
	Bottle Rock transmission				27,843.00
	Firm transmission				8,807,414.25
	Table Mountain—Tesla line credit				(2,731,936.65)
	Pine Flat firm and additions				373,983.14
	Castle Rock—Lakeville Line: Ownership charges				97,468.02
	Coastal Branch—ownership charge				156,463.00
	Reliability Service Charge				2,160,946.67
	Electric-related service charge				6,258.04
Southern California Edison Company	Firm transmission—power contracts				10,675,560.00
	Capacity exchange agreement transmission credit				(7,756,200.00)
	Additional facilities charges (D.C. and Mojave)				1,259,927.04
	Independent System Operator GMC charges—Vincent to Mead				69,484.25
	Southern California Edison share of Oroville				4,169,280.47
	Table A amounts to ISO				40,066.02
	Scheduling and dispatching				923.84
	Late payment charge—Mojave				
FERC charges for Oroville, Pine Flat, and southern facilities					206,687.45
Other FERC charges					175,635.22
Miscellaneous Fees					955.36
<i>Subtotal</i>		9,894,000	231,408.76		158,436,686.33
Total		2,944,565,000	176,662,708.80	19,903,574.50	354,771,560.87

Table 10-4. Energy Sold in 2000 and Revenue from Sales, by Area

Name of Supplier	Energy Sold (kWh)	Revenue from Energy Sales (Dollars)	Revenue from Capacity, Sales, Exchanges, and Transmission Arrangements (Dollars)	Total Power Sales (Dollars)
Power and Transmission Purchases				
<i>Pacific Northwest Area</i>				
Bonneville Power Administration	3,349,000	131,160.00		131,160.00
Idaho Power Company	7,080,000	456,272.00		456,272.00
PacifiCorp	19,950,000	618,650.00		618,650.00
Portland General Electric Company	1,005,000	59,350.00		59,350.00
Puget Sound Power and Light Company	20,310,000	804,886.00		804,886.00
Seattle City Light	1,640,000	79,009.00		79,009.00
<i>Northern California Area</i>				
CAISO—Ancillary and Other Services			179,947,143.49	179,947,143.49
City and County of San Francisco	38,998,000	3,185,336.17		3,185,336.17
City of Redding	9,436,000	240,021.00		240,021.00
City of Santa Clara	0	0.00	18,312.17	18,312.17
Modesto Irrigation District	1,029,000	25,109.00		25,109.00
Northern California Power Agency	31,907,000	1,241,585.12	93,928.44	1,335,513.56
Sacramento Municipal Utility District	75,918,000	4,682,047.04		4,682,047.04
Turlock Irrigation District	633,000	73,392.00		73,392.00
<i>Southern California Area</i>				
California Power Exchange	596,543,000	47,602,562.49		47,602,562.49
City of Azusa	4,332,000	276,722.63		276,722.63
City of Burbank	144,000	9,360.00		9,360.00
City of Glendale	55,925,000	2,754,607.25		2,754,607.25
City of Riverside	137,774,000	3,732,187.96	938,100.00	4,670,287.96
City of Vernon	2,200,000	65,760.00		65,760.00
Los Angeles Department of Water and Power	8,913,000	272,067.00	594,000.00	866,067.00
Metropolitan Water District of Southern California	200,000	7,000.00		7,000.00
San Bernardino Valley Municipal Water District	206,000	11,905.02 ^a		11,905.02
<i>Southwest Area</i>				
Arizona Public Service	9,071,000	682,805.78		682,805.78
Nevada Power Company	388,318,000	12,963,556.77	8,638,364.62	21,601,921.39
Miscellaneous			14,328.60	14,328.60
Energy Marketers				
Sixteen marketers	1,507,199,000	87,044,974.21		87,044,974.21
Total	2,922,088,000	167,020,326.44	190,244,177.32	357,264,503.76

^aReceived from San Bernardino Valley Municipal Water District due to generation lost by Southern California Edison, which was replaced by the Department.

Energy Consumed

Energy used at the 25 SWP pumping and generating plants totaled 9.19 billion kWh.

Table 10-1 shows the amount of energy used each month at SWP pumping and generating plants to operate the SWP in 2000.

According to terms and conditions of various water conveyance contracts and exchange agreements, some water belonging to the Central Valley Project is pumped through the SWP Banks Pumping Plant and through the CVP and SWP joint-use facilities at Dos Amigos Pumping Plant and Gianelli Pumping-Generating Plant. The Bureau furnishes the energy for pumping this water.

Energy Generated

Table 10-2 shows amounts of energy generated at SWP facilities in 2000, as well as energy purchased for SWP operations.

Hydroelectric and Coal. The Hyatt-Thermalito power complex in Oroville produces a large amount of SWP energy and generated 2.76 billion kWh of energy.

Energy generated at SWP recovery plants—Alamo, Devil Canyon, Mojave Siphon, and Warne—totaled 1.61 billion kWh.

The SWP share of energy generated at the coal-fired Reid Gardner Unit 4 totaled 1.79 billion kWh of energy.

Contractual Resource Arrangements

SWP power operations rely on contractual arrangements as well as SWP facilities. Those contractual arrangements include joint development projects, energy exchanges, purchases, and transmission.

Joint Development. Through the West Branch Cooperative Development Agreement with LADWP, the Department receives energy based on the amount of water scheduled through the West Branch. In 2000, LADWP provided 685 million kWh of energy for the Department's

share of energy generated at Castaic Power Plant.

The Department's share of Gianelli Pumping-Generating Plant used 247 million kWh and generated 215 million kWh of energy.

Energy Exchanges. The Department has two agreements with SCE to purchase and / or exchange power. According to terms of the 1979 Power Contract (in effect since April 1983), part of the output of Devil Canyon Power Plant and the Hyatt-Thermalito Complex and all output of Alamo Power Plant are delivered to SCE. According to the terms of the Capacity Exchange Agreement (in effect since April 1987), the Department delivers energy to SCE each year during on-peak periods and, in return, receives a greater amount of off-peak energy as well as transmission considerations. Those two exchange agreements resulted in a net of about 2.13 billion kWh of energy to the SWP in 2000.

In June, SCE started curtailing return and additional energy under the combustion turbine provision of the 1979 Power Contract and the 1981 Capacity Exchange Agreement based on SCE's unilaterally imposed combustion turbine proxy.

Purchases and Costs. Table 10-3 shows amounts of power, transmission, and other services purchased in 2000 and costs of purchases, by area. It also reflects the restructuring of the electric industry through transactions with CalPX and ISO and through new charges (grid management and ancillary services charges).

In 2000, the Department purchased 2.94 billion kWh of energy at a cost of \$176.66 million. Associated costs for capacity totaled \$19.90 million. Other SWP power costs, including transmission, operation, maintenance, and ISO ancillary services totaled \$158.44 million. This amount includes \$5.17 million and \$2.09 million for debt service and operations and maintenance costs, respectively, at Pine Flat Power Plant. It also includes \$39.66 million for costs associated with operations and maintenance, fuel, insurance, and property taxes at Reid Gardner Unit 4.

Long-Term Purchases. According to terms of the Kings River Conservation District contract, the Department receives the total output of the 165 MW Pine Flat Power Plant. In 2000, the power plant provided 448.52 million kWh of energy to the SWP at a total cost of \$10.66 million.

In 2000, the Department purchased 618.98 million kWh of energy at a cost of \$31.58 million, under a contract for firm energy with PacifiCorp.

Under the Metropolitan Small Hydro Contract, the Department purchased 175.33 million kWh of energy in 2000 from five small hydroelectric power plants on the Metropolitan system at a cost of \$7.56 million.

Short-Term Purchases. Existing resources and long-term power and transmission contracts ensure that the SWP has enough power to meet long-term needs. When SWP power requirements exceed resources during daily operations, short-term purchases meet the difference. In 2000, the SWP purchased short-term energy from 12 marketers. The short-term energy purchases totaled 1.16 billion kWh at a cost of \$98.15 million.

Sales of Excess Power

The Department sold 2.92 billion kWh of energy to 24 utilities and 16 power marketers for total revenues of \$167.02 million in 2000. The Department also received \$190.24 million in revenues for capacity, exchanges, and transmission arrangements, including \$179.95 million for transactions made through ISO. See Table 10-4 for information about energy and other services sold and revenue received, including those sold to CalPX and ISO.

Forecasting Power Operations

Each year, after reviewing the water contractors' water delivery requests and the construction schedule for future facilities, the

Department forecasts SWP power requirements through 2035, paying particular attention to forecasts through 2004, the year major power contracts expire.

Actual SWP power requirements may vary significantly from the amounts forecast. Those variations are due to the amount of water available and delivered in a given year. For example, dry conditions in Northern California could result in a reduction of the amount of water available for delivery. If full deliveries cannot be made, less power would be used than was originally forecasted. Power requirements could also decrease during a wet year because of the availability of local water in the San Joaquin Valley or Southern California.

Conversely, power requirements could exceed the amount originally forecasted if actual water deliveries were greater than the amounts estimated. For example, if additional pumping is needed to refill reservoirs south of the Delta after an unexpected dry year, more power would be used than was initially forecast.

Criteria

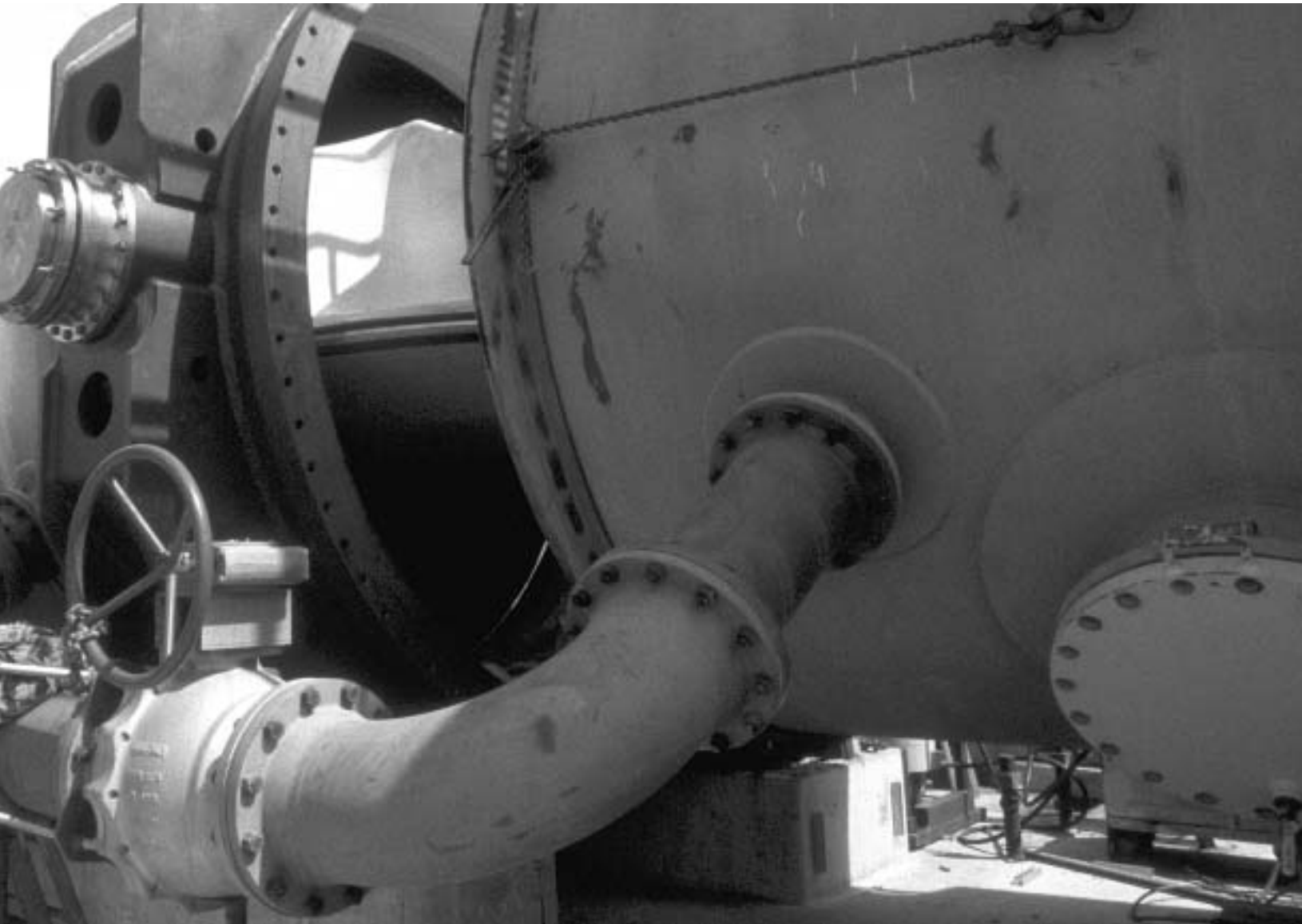
The Department bases its forecast of electric power primarily on SWP pumping power requirements to deliver water for SWP contractors' short-term and long-term water delivery requests. Requirements are based on the amount of energy necessary to deliver approved Table A water requested by water contractors, including losses in reservoirs and aqueducts, recreation water, and water to replace storage in reservoirs south of the Delta.

Short-term power requirements, based on the actual water supply and reservoir storage levels, are determined for the current and two ensuing years of operation. Long-term operational studies for the remaining years are based on median-year water-supply conditions and optimal reservoir storage levels.

Information for this chapter was provided by the State Water Project Analysis Office.

Chapter 11

Facilities Maintenance



Butterfly valve, Devil Canyon Power Plant

Significant Events in 2000

- On May 18, Division of Safety of Dams approved an alteration application submitted by the Division of Operations and Maintenance to strengthen 14 radial gates at Thermalito Diversion Dam.
- On December 27, DSOD approved an alteration application submitted by O&M to strengthen eight radial gates at Oroville Dam.
- In May, a Director's Safety Review Board met and evaluated Sisk, O'Neill Forebay, Los Banos Detention, and Little Panoche Detention Dams.
- In October, a Director's Safety Review Board met and evaluated Pyramid and Castaic Dams.
- In July and December, a Director's Safety Review Board met and evaluated the construction of Crafton Hills Dam in San Bernardino.

The Department of Water Resources, through the Division of Operations and Maintenance, monitors all State Water Project facilities to ensure safety and reliability. Staff also conduct biennial and quinquennial inspections and make reports on facilities to document any deficiencies. These inspections allow facilities to be maintained at the highest level possible with available staff and resources. Finally, the Department is required, under federal and State law, to contract periodically with independent consultants to review the safety of SWP dams and power facilities.

The Department conducts several types of inspections of SWP facilities. O&M staff collect and evaluate data about the performance of each facility. Engineers from Division of Safety of Dams review instrumentation data and inspect jurisdictional SWP dams annually to ensure that each dam is satisfactory for continued safe operation. The engineers evaluate proposed modifications to existing dams as well as the design and construction of new jurisdictional dams.

The Department is required to contract periodically with independent consultants to review the safety of SWP dams and power facilities, except Pearblossom Spill Basin. The four dams in the San Luis Field Division (San Luis, O'Neill Forebay, Los Banos Detention, and Little Panoche Detention) are used jointly with the Bureau of Reclamation, and are not currently under the jurisdiction of DSOD. However, a consulting board was also convened for the first time in 2000 for these jointly-owned dams. Pearblossom Spill Basin Dam was originally designed to be used during misoperation at the Pearblossom Pumping Plant. The spill basin was never fully completed and has never been used.

The Federal Energy Regulatory Commission inspects all licensed SWP facilities annually. These inspections include a review of significant events, instrumentation data, and visual

appearance of each dam, penstock, or power plant.

Inspecting and Maintaining Project Dams

During 2000, Department personnel inspected and performed routine and scheduled maintenance on SWP dams. DSOD inspects SWP dams annually with O&M personnel to ensure that each dam is safe for continued operation. Engineers from DSOD evaluate proposed modifications to existing dams. FERC engineers inspect FERC-licensed SWP facilities annually. In addition, under FERC and California Water Code requirements, consulting engineers are retained to evaluate SWP dam facilities every 5 years.

Routine Inspections

Routine inspections were conducted by O&M and DSOD staff at Frenchman, Antelope, and Grizzly Valley Dams in the Upper Feather River area; at Oroville, Bidwell Bar, Lime Saddle, Thermalito Diversion, Thermalito Forebay, Thermalito Afterbay, and Feather River Hatchery Dams in the Oroville Field Division; at Clifton Court Forebay, Bethany, Patterson, and Del Valle Dams in the Delta Field Division. At the request of O&M and the Bureau, the DSOD engineers participated in the inspections of Sisk, O'Neill, Los Banos, and Little Panoche Detention Dams in the San Luis Field Division; at Pyramid, Castaic, Cedar Springs, Devil Canyon

Power Plant First and Second Afterbays, and Perris Dams in the Southern Field Division.

Radial Gate Retrofitting

On May 18, 2000, DSOD approved an alteration application submitted by O&M to strengthen 14 radial gates at Thermalito Diversion Dam. The project will cost \$2.09 million. Construction work began in May 2000 and is scheduled for completion in October 2001.

On December 27, 2000, DSOD approved an alteration application submitted by O&M to strengthen eight radial gates at Oroville Dam. The project has been planned in two stages with a total cost of \$1.77 million. It is scheduled for completion in October 2002.

Independent Reviews

California Water Code Reviews. To comply with the California Water Code and the California Code of Regulations, the Department is required to retain a consulting board to review

- the adequacy of the design of any dam or reservoir the Department proposes to construct; and
- the safety of the completed construction, including the terms and conditions for the Certificate of Approval.

These provisions require the Department to retain a board of three consultants at least once every 5 years to review the operational performance of Department-owned dams. The board of consultants independently reviews and assesses safety conditions of SWP dams. For the first time, an independent consulting board was convened for the San Luis Field Division dams in 2000. These independent assessments include a review of significant events, instrumentation data, and visual appearance of each dam, penstock, or power plant. Consultants are selected based on their geotechnical, structural, and civil engineering knowledge and background as well as their expertise in evaluating the performance of dams.

In preparing their reports, consultants inspect facilities and review surveillance data and other information prepared by departmental staff. The Department then prepares action plans based on the consultants' recommendations.

In May 2000, a Director's Safety Review Board met and evaluated Sisk, O'Neill Forebay, Los Banos Detention, and Little Panoche Detention Dams. In October 2000, another Director's Safety Review Board met and evaluated Pyramid and Castaic Dams.

The board found that updated seismic stability and hydrology studies are needed at several of the Department's dams. This work is scheduled for completion within 5 years.

In July and December 2000, a Director's Safety Review Board met and evaluated the construction of Crafton Hills Dam in San Bernardino. Crafton Hills Dam, located on the East Branch of the SWP, is scheduled for completion in August 2001. The Crafton Hills Board found that the construction work was progressing satisfactorily.

FERC Reviews. To comply with FERC regulations, consultants review FERC-licensed dams and power generation facilities owned by the Department. They also inspect facilities and review surveillance data and other pertinent information prepared by Department staff. The Department then prepares action plans based on the consultants' recommendations. These reviews, which may be conducted by one or more consultants, are scheduled every 5 years. No board of consultants was convened in 2000.

Maintaining Other Project Facilities

The Department continually monitors all SWP facilities and performs repairs and modifications as necessary to ensure safe, reliable water delivery. Headquarters' staff conduct biennial inspections of project facilities and complete inspection reports for each field division. The Oroville and San Joaquin Field Divisions are inspected in spring and summer of

even-numbered years and the Delta, San Luis, and Southern Field Divisions are inspected in odd-numbered years. Each report lists action items to ensure that follow-up inspections and reports are made.

Arroyo Pasajero Program

The Arroyo Pasajero and its tributaries drain approximately 530 square miles of the Coast Mountains west of the California Aqueduct in Fresno County. The Arroyo Pasajero's downstream juncture with the California Aqueduct, also known as the San Luis Canal between San Luis Reservoir and Kettleman City, poses a particularly difficult operational and maintenance problem for the SWP.

During periods of heavy rainfall, high flows in the Arroyo Pasajero and its tributaries transport heavy sediment loads eroded from the mountains. Over many eons, sediment transported by Arroyo floods formed a 450-square-mile alluvial fan extending from its apex at the eastern margin of Pleasant Valley (Anticline Ridge) to the San Joaquin Valley trough. The California Aqueduct traverses the Arroyo's alluvial fan and forms a barrier to Arroyo flood flows. Flood control facilities include a detention basin designed to store storm runoff and sediment upstream of the Aqueduct, a culvert to release floodwaters east of the Aqueduct, and drain inlets to release floodwaters into the Aqueduct. The volume of runoff and sediment deposition is roughly 500 percent greater than was originally estimated during the design of the detention basin in the mid-1960s.

The Bureau designed and constructed the San Luis Canal segment of the California Aqueduct while the Department operates and maintains the facilities, with all costs being shared 45 and 55 percent, respectively. Since the floods of 1969, when nearly all of the detention basin's planned 50-year sediment storage capacity was filled by deposition from these floods, the Bureau and the Department have worked to minimize the effects of heavy flooding. In 1980, asbestos was discovered in the Metropolitan Water District of Southern California's water supply and traced

to runoff from the Arroyo Pasajero and other Diablo range streams. This discovery, in conjunction with the high cost of removing sediment from the Aqueduct, led the Department to adjust operating procedures to minimize runoff entering the Aqueduct.

Long-Term Programs. In 1990, the Department sought the assistance of the U.S. Army Corps of Engineers to identify viable long-term solutions to the Arroyo Pasajero flooding and sediment problems. In 1992, the Corps issued the *Arroyo Pasajero Reconnaissance Report*, which demonstrated a federal interest in flood control at Arroyo Pasajero. The feasibility study—started in 1994 as a joint effort among the Corps, the Department, and the Bureau—provides a more rigorous analysis of the flooding and sedimentation problems and evaluates potential solutions in greater detail. The Department, as local sponsor, is committed to 50 percent of the total study cost, with one-half of this commitment met by providing in-kind services for the study. Under the Department's agreement with the Bureau for the Joint-Use Facilities of the San Luis Unit, the Bureau pays 45 percent of the Department's study cost. The total cost of the joint Corps / Department / Bureau Arroyo Pasajero flood control study is now at \$8.1 million.

A draft Feasibility Report / Environmental Impact Statement / Environmental Impact Report was released to the public in March 1999. A public meeting on the document was held in April 1999. Two candidate plans demonstrating a federal interest were presented:

- an enlarged Westside Detention Basin as the Corps' national economic development plan (the plan with the greatest net benefits per the Corps), at an estimated cost of \$238 million and benefit-to-cost ratio of 1.7:1; and
- a Pasajero Gap Detention Dam as a possible locally preferred plan, at an estimated cost of \$225 million and a benefit-to-cost ratio of 1.2:1.

Compelling comments opposing both candidate plans were received from the public and from

agencies: (1) The enlarged Westside Detention Basin alternative was criticized for discharging floodwater taken across the Aqueduct to a location inconsistent with recent historical pre-Aqueduct flooding patterns and was determined to be an unacceptable solution; and (2) The U.S. Fish and Wildlife Service and the California Department of Fish and Game deemed that the adverse impacts to listed species in the vicinity of the Pasajero Gap Dam and Reservoir could not be mitigated. Consequently, the Gap Dam was determined to be unacceptable.

Since the demise of the two candidate plans presented in the March 1999 draft Feasibility Report, the investigation has focused on a new alternative made possible by the availability of relatively low productivity farmland in the western Tulare Lakebed. This plan would rely on some increased storage in the existing detention basin west of the Aqueduct to be used in conjunction with a reservoir that would be constructed in the western Tulare Lakebed down slope of the Aqueduct near Kettleman City. This plan would fully utilize the design philosophy of the San Luis Canal by taking significant flood flows into the canal and conveying them south to be evacuated from Pool 21 and into the Tulare Lakebed reservoir for later beneficial use. This plan has the added benefit of addressing the largely unregulated drain inlet inflows to the canal that are upstream of the Arroyo Pasajero by providing a much needed emergency floodwater outlet from Pool 21.

The Corps and the Department jointly authored the *Arroyo Pasajero Feasibility Investigation Information Paper* in November 2000. The paper described in detail the Tulare Lakebed plan, and demonstrated that this plan continued to show a federal interest at the Arroyo Pasajero with a benefit to cost ratio of 1.4:1 and an estimated project cost of \$233 million. The paper also showed that a significant enlargement of the existing detention basin (without an overchute) at the Aqueduct demonstrated a federal interest with a 1.1:1 benefit-to-cost ratio and an estimated cost of \$325 million. Both plans were presented as viable options to continue pursuing a Corps project at the Arroyo Pasajero.

While the Corps and the Department continued to develop and refine the two alternatives above, the Department independently began to evaluate a less costly version of the Tulare Lakebed plan that provided a lower, but acceptable, level of flood protection to the Aqueduct. This effort was in response to the State Water Contractors' proposal that the Department develop the least costly alternative that would provide 100-year level of protection to the Aqueduct. Feasibility investigations on both the Corps and Department/Bureau-only versions of the Tulare Lakebed plan are expected to be completed in 2002.

The Department, with the support of the State Water Contractors, has continued to provide funds and staff support to a Coordinated Resource Management Plan group called the Stewards of the Arroyo Pasajero Watershed. The mission of CRMP is "to improve the Arroyo Pasajero watershed through erosion and sediment control by implementing improved land management practices that will sustain and promote the aesthetics, environmental quality, and economic viability of the watershed." It is believed this watershed management program will increase watershed infiltration and decrease erosion, complementing any structural flood control improvements and reducing the threat Arroyo Pasajero poses to the California Aqueduct and surrounding communities.

The Department's feasibility investigation on the Tulare Lakebed plan is intended to work conjunctively with the interim flood control measures constructed at the Cantua and Salt Creek Detention Basins in 1999. Part of the feasibility investigation into the Tulare Lakebed plan includes the development of a full dynamic hydraulic model of the entire San Luis Canal. This model is intended to simulate flood operations for the San Luis Canal including inflow and transport of suspended and dissolved solids entering the canal at Cantua and Salt Creeks and other ungated drain inlets.

As a result of significant land use changes and altered topography upstream of the San Luis Canal on the Cantua Creek and Salt Creek

alluvial fans, flooding at the canal now occurs in areas not anticipated by the Bureau's original design. To address this current problem, the Department has identified roughly 700 acres of land most at risk immediately west of the canal, with the expectation that flood easements will be acquired in these areas during 2001.

Repairs and Modifications

Table 11-1 presents information, arranged chronologically, about significant scheduled and unscheduled outages at SWP pumping and power plants in 2000. The table includes information about incidents resulting in outages exceeding 14 days.

Table 11-1. Outages for Maintenance and Repair of Facilities in 2000, by Month

Month	Facility	Units Out of Service
January	Pearblossom Pumping Plant	Unit 4 from January 3 to August 26 to repair pump casing.
	Hyatt Power Plant	Unit 5 from January 12 to February 10 for annual maintenance.
	Thermalito Pumping-Generating Plant	Unit 3 from January 12 to March 2 for annual maintenance.
	Devil Canyon Power Plant	Unit 4 from January 18 to March 14 for annual maintenance and turbine wheel warranty work.
	Buena Vista Pumping Plant	Unit 6 from January 27 to November 29 for annual maintenance and discharge valve repair.
February	Edmonston Pumping Plant	Unit 13 from February 1 to March 29 to retrofit unit circuit breaker.
	South Bay Pumping Plant	Unit 8 from February 7 to March 24 to replace motor.
	Barker Slough Pumping Plant	Unit 7 from February 7 to April 18 to refurbish pump.
	Warne Power Plant	Unit 1 from February 7 to February 25 for Peace Valley Pipeline inspection, annual maintenance, and transformer KY1 work.
	Hyatt Power Plant	Unit 3 from February 14 to March 1 for annual maintenance.
	South Bay Pumping Plant	Unit 2 from February 22 to August 26 to refurbish pump.
	Pearblossom Pumping Plant	Unit 8 from February 24 to April 4 to repair shaft seal.
March	South Bay Pumping Plant	Unit 7 from March 6 to April 12 to replace pump motor.
	Gianelli Pumping-Generating Plant	Unit 7 from March 6 to April 20 to install capacitors for new unit circuit breaker.
	Gianelli Pumping-Generating Plant	Unit 8 from March 6 to April 28 to install capacitors for new unit circuit breaker.
	Edmonston Pumping Plant	Unit 11 from March 7 to repair discharge valve. Completion expected in 2001.
	Hyatt Power Plant	Unit 6 from March 22 to April 20 for annual maintenance and to clean and refurbish exciter.
	Thermalito Pumping-Generating Plant	Unit 4 from March 22 to May 18 for annual maintenance and unit voltage regulator replacement.
	Banks Pumping Plant	Unit 10 from March 24 to October 4 for annual maintenance, discharge valve overhaul, and work on No. 5 penstock gate.
	Banks Pumping Plant	Unit 11 from March 24 to July 3 for annual maintenance, discharge valve overhaul, and work on No. 5 penstock gate.
April	Dos Amigos Pumping Plant	Unit 3 from April 5 to May 25 for biennial maintenance.
	Devil Canyon Power Plant	Unit 1 from April 5 to April 19 for work on transformers KY1A and KY2A.
	Devil Canyon Power Plant	Unit 2 from April 5 to June 2 for annual maintenance, unit circuit breaker replacement, and work on transformers KY1A and KY2A.
	Mojave Siphon Power Plant	Unit 2 from April 17 to May 2 to test generator efficiency.
	Hyatt Power Plant	Unit 1 from April 24 to May 25 for annual maintenance and to clean and refurbish exciter.
May	Gianelli Pumping-Generating Plant	Unit 7 from May 7 to June 6 to repair butterfly valve linkage pins.
	Gianelli Pumping-Generating Plant	Unit 8 from May 7 to June 7 to repair butterfly valve linkage pins.
June	Banks Pumping Plant	Unit 5 from June 1 to June 15 to repair motor reactor.
July	Chrisman Pumping Plant	Unit 6 from July 3 to December 2 to repair leaking packing box.

Table 11-1. Outages for Maintenance and Repair of Facilities in 2000, by Month (Continued)

Month	Facility	Units Out of Service
August	Pearblossom Pumping Plant	Unit 2 from August 28 to repair pump casing and rewind stator. Completion expected in 2001.
September	Gianelli Pumping-Generating Plant	Unit 1 from September 5 to October 11 for biennial maintenance, and pump/turbine repair.
	Dos Amigos Pumping Plant	Unit 2 from September 5 to replace impeller and install new field poles. Completion expected in 2001.
	Gianelli Pumping-Generating Plant	Unit 2 from September 25 to November 9 for biennial maintenance and repair of pump/turbine and butterfly valve seat.
	South Bay Pumping Plant	Unit 2 from September 26 to balance motor and pump. Completion expected in 2001.
October	Hyatt Power Plant	Unit 6 from October 2 to October 25 for annual maintenance and turbine shutoff valve downstream seat repair.
	Cordelia Pumping Plant	Unit 2 from October 16 to December 1 to refurbish pump and motor.
	South Bay Pumping Plant	Unit 3 from October 26 to refurbish motor, and repair pump and discharge valve. Completion expected in 2001.
	Hyatt Power Plant	Unit 1 from October 29 to December 19 for annual maintenance.
November	Mojave Siphon Power Plant	Unit 2 from November 1 to November 30 for annual maintenance.
	Banks Pumping Plant	Unit 8 from November 2 to December 9 for work on Unit 9 and work on No. 4 penstock gate.
	Banks Pumping Plant	Unit 9 from November 2 to overhaul discharge valve and work on No. 4 penstock gate. Completion expected in 2001.
December	Gianelli Pumping-Generating Plant	Unit 5 from December 1 to install new impeller nut cover. Completion expected in 2001.
	Mojave Siphon Power Plant	Unit 3 from December 2 for annual maintenance. Completion expected in 2001.

Information for this chapter was provided by the Division of Operations and Maintenance and the Division of Safety of Dams.

Chapter 12

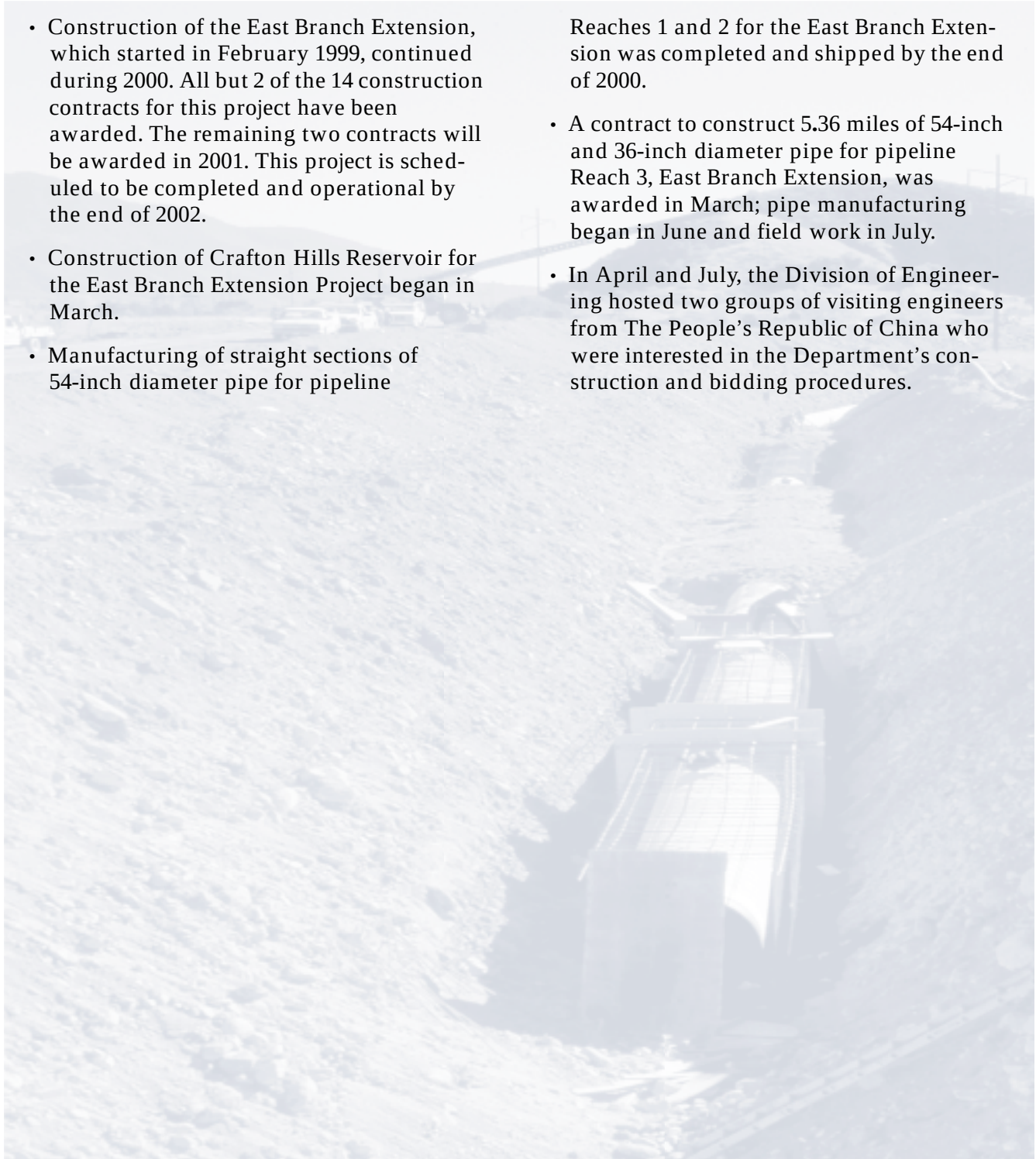
Engineering and Right of Way



Segment of the East Branch Extension Phase I, Reach 1,
winding its way to the Crafton Hills Reservoir

Significant Events in 2000

- Construction of the East Branch Extension, which started in February 1999, continued during 2000. All but 2 of the 14 construction contracts for this project have been awarded. The remaining two contracts will be awarded in 2001. This project is scheduled to be completed and operational by the end of 2002.
- Construction of Crafton Hills Reservoir for the East Branch Extension Project began in March.
- Manufacturing of straight sections of 54-inch diameter pipe for pipeline Reaches 1 and 2 for the East Branch Extension was completed and shipped by the end of 2000.
- A contract to construct 5.36 miles of 54-inch and 36-inch diameter pipe for pipeline Reach 3, East Branch Extension, was awarded in March; pipe manufacturing began in June and field work in July.
- In April and July, the Division of Engineering hosted two groups of visiting engineers from The People's Republic of China who were interested in the Department's construction and bidding procedures.



Construction of the initial facilities of the State Water Project began in 1957 with the relocation of the Western Pacific Railroad yards and Highway 70 near Oroville. Following the start of the South Bay Aqueduct facilities in 1960, the first water delivery through the SWP was made in 1965. In 1963, work began on the California Aqueduct, and by 1968 the SWP was delivering water to long-term contractors in the San Joaquin Valley. The SWP delivered water to Lake Perris, its southernmost point, with the 1973 completion of its facilities.

SWP water was delivered to Napa County in 1968 through the first phase of the North Bay Aqueduct, and to Solano County in 1988 by the second phase. The first SWP water delivery through the Coastal Branch, Phase I into Kings and Kern Counties, was made in 1968. With completion of the Phase II facilities, water was delivered to San Luis Obispo and Santa Barbara Counties in 1997.

Even before completion of the initial facilities in 1973, work had begun in the early 1970s on building power plants and adding pumping units and turbine-generators deferred from the initial construction of the SWP; enlarging or extending aqueduct reaches; and providing facilities to ensure water quality in the Delta.

In the 1990s, design and construction activities focused on repairing and replacing components of existing facilities, constructing the Devil Canyon Second Afterbay, constructing Phase II of the Coastal Branch to deliver water to San Luis Obispo and Santa Barbara Counties, and extending the SWP to the San Geronio Pass service area, which is scheduled for completion at the end of 2002.

Design Activities

Projects

DOE worked on 44 design projects in 2000. Table 12-1 lists these projects along with

expected or actual design completion dates (see table at end of chapter). In addition to designing projects, Division staff conducted preliminary design and / or special deficiency studies of dams, canal embankments, and other SWP facilities. Some of the studies and activities included

- Gap Dam exploration drilling
- MP 62 monitoring / South Bay landslide repair
- Perris Dam foundation exploration drilling
- backfilling of an observation well and slope indicator holes at Cedar Springs Dam
- developing drawdown criteria for San Luis Dam
- preliminary studies for a Grant Line Canal rubber dam alternative
- performing Gorman Creek flood studies
- assisting with the steady-state flow test on the East Branch
- preparing an inundation plan for Butte County
- preparing a report on Antelope Dam spillway repair
- reviewing hydraulic studies of Hyatt Discharge Tunnel prepared by a consultant
- Gorman Creek Bridge Model Study
- Los Banos / Little Panoche Creek PMG and spillway alternatives
- Castaic Dam Spillway Slab Uplift Study
- Pyramid Dam Hot Spots Study

- Oroville Terminal—S-flange installation
- final construction reports on all completed SWP aqueduct repairs
- groundwater monitoring at Oroville Operations and Maintenance Center
- South Bay Enlargement, Phase I Study
- Hesperia Master Drainage Plan
- Battle Creek Fish Ladder and Passage Project
- Los Vaqueros Reservoir Enlargement and Storage Alternatives
- Delta Wetlands Project
- Bypass facilities California Aqueduct to Pacheco Reservoir Enlargement
- seismic issues related to Stoney Gorge Dam
- continued work on Federal Energy Regulatory Commission requirements pertaining to operating the SWP
- continued studies and analysis of the Byron Road Bridge deterioration problem

DOE staff also completed the following studies:

- Cedar Springs Dam and Castaic Dam Inundation Study
- Quail Canal Inundation Study
- Cross-Drainage Hydrology and Capacity Evaluation Studies

Construction Activities

DOE worked on 53 construction contracts in 2000, listed in Table 12-2 (see table at end of chapter). It shows contract title, specification number, date the contractor received the Notice to Begin Work, the expected or actual acceptance date (completion date discussed in text), and the actual or estimated contract cost (including change orders for added work). Resolution of contract claims may extend the actual contract closeout beyond the completion or acceptance date.

Tables 12-1 and 12-2 are organized geographically north to south according to construction divisions. Within each division, facilities in

which design or construction activities occurred are listed alphabetically, and activities at each facility are listed chronologically.

Oroville Division

Feather River Channel Enhancement, Oroville Wildlife Area. Construction of a reinforced levee notch in the south levee of the Feather River began in September 1999 and was completed in December 1999 (Specification No. 99-07). However, added work to remove construction debris downstream of the Feather River Fish Barrier Dam, rebuild the levee embankment, chemically analyze an existing landfill, and provide a clay cap extended the completion date to October 2000. The contract was accepted in November 2000.

Hyatt Power Plant. Refurbishment of turbine Units 1, 3, and 5 started in February 1999 (Specification No. 98-22) and continued during this reporting period with approximately 10 percent of the work completed. Completion is estimated for March 2004.

Renovation of electrical controls for intake gantry cranes at Hyatt Power Plant began in April 2000 (Specification No. 00-02) and is scheduled to be complete in February 2002. The work consists of

- designing, manufacturing, and installing complete control systems;
- removing and disposing of existing equipment;
- installing a control cabinet air conditioning system; and
- setup and testing of crane operating systems and training

Work to remove mineral residue and to control seepage between the ceiling and roof at Hyatt Power Plant began in September 2000 with a projected completion date in June 2001 (Specification No. 00-18). The work consists of

- disposal of dirt, rust, mineral residue, and foreign materials

- cleaning
- providing seepage control
- providing air monitoring and testing services

Renovation of electrical controls for bridge cranes and an intake shutter gantry crane began in December 2000 and is scheduled for completion in February 2002 (Specification No. 00-21). The work consists of

- designing, manufacturing, and installing control systems for two power plant bridge cranes and the intake shutter gantry crane;
- removing and disposing of existing motor-generator sets and crane control systems;
- installing a control cabinet air conditioning system; and
- providing spare parts, testing, and training.

Hyatt Power Plant and Thermalito Pumping-Generating Plant. Furnishing governor replacements for the Hyatt and Thermalito plants continued during 2000 (Specification No. 99-19). By the end of 2000, the work was approximately 60 percent complete. Completion is expected by October 2002.

Lake Oroville. Construction of Lime Saddle Campground facilities began in September 2000 (Specification No. 00-14). Completion is scheduled for December 2001. The work consists of

- constructing access and campground roads, tent and recreational vehicle campsites, water and electrical facilities, a kiosk, comfort stations, ramada structures, fencing and gates; and
- constructing sewage collection and disposal systems and an evaporation pond.

Oroville Dam and Thermalito Diversion Dam. Fabrication and rehabilitation of stop logs for these facilities began in January 2000 (Specification No. 99-30) with completion scheduled for July 2001. The work consists of

- fabricating and installing stop log appurtenant guide systems and leaves;
- rehabilitating existing stop log leaves and lifting beam;
- fabricating and installing stop log storage racks;
- providing rubber seal work and applying protective coatings; and
- providing environmental protection.

Thermalito Diversion Dam. Rehabilitation of existing radial gates at Thermalito Diversion Dam began in July 2000 and is expected to be complete by October 2001 (Specification No. 00-12). The work consists of

- removing and installing Department-furnished stop logs and stop log guide rails;
- bracing plates, welding repairs, and magnetic particle testing;
- grouting;
- dewatering at 14 radial gate locations;
- removing and replacing slope protection;
- excavating, removing concrete, and backfilling; and
- rehabilitating 14 existing radial gates, including protective coatings and cathodic protection.

Thermalito Pumping-Generating Plant. Automatic voltage regulators for Units 1 through 4 were delivered in March 1999 for installation. The work was accepted in December 2000 (Specification No. 98-12).

A contract to replace expansion joints on the pumping-generating plant roof and in the switchyard began in August 2000 (Specification No. 00-15). Due to asbestos in existing roofing materials, the roofing expansion joint work was amended by contract change order. Completion is expected in April 2002. The amended work consists of

- providing built-up roofing materials, insulation, and accessories to form a watertight

seal over the existing expansion joints and joint roofing materials;

- removal, disposal, and replacement of existing sealant and metal expansion joint covers for the switchyard concrete deck expansion joints; and
- repairing existing aluminum roof gutters as needed.

Delta Facilities

South Delta. Construction of fish screens for agricultural diversions on Sherman Island began in July 1998 and is scheduled for completion in October 2001 (Specification No. 98-07).

Dredging to improve conditions for local agricultural diverters and navigation in the South Delta (Specification No. 00-16) began in August 2000 and was completed in December 2000 at the following sites: Del's Harbor Marina, Mendota Yacht Club, Livermore Yacht Club, Little Hawaii Island, Hammer Island, Middleton Island, Tracy Oasis Marina, and a Grant Line Canal agricultural diversion. Contract acceptance is expected in February 2001.

Work on the multiyear (1998 through 2000) contract for the installation and removal of seasonal, temporary rock barriers in designated South Delta waterways (Middle River, Old River, and Grant Line Canal) began in January 1998 (Specification No. 97-23). Completion is scheduled for May 2001. These temporary barriers are installed to enhance water levels and circulation in the South Delta for local agricultural diversion, assistance to fish migration, and hydraulic data for the design of future permanent barriers. A new contract will be awarded in 2001 for years 2001, 2002, and 2003.

North San Joaquin Division

North Bay Aqueduct. Work on a contract for sediment removal at Cordelia Pumping Plant Forebay began in March 2000 and was completed in April 2000 and accepted in July 2000 (Specification No. 00-01). The work consisted of removing accumulated sediment from the fore-

bay to prevent interference with the pumping operations.

South Bay Pumping Plant. Work on a contract for modifications at South Bay Pumping Plant was started in August 1999 and was completed in February 2000 and accepted in March 2000 (Specification No. 99-02).

San Luis Division

California Aqueduct. Work on flood easement restoration and flood weirs began in July 1999 and was completed in November 1999 and accepted in February 2000 (Specification No. 99-08).

Gianelli Pumping-Generating Plant. Work on a contract to furnish electrical field poles and materials for the generating unit at Gianelli began in September 2000 with an expected completion date in July 2004 (Specification No. 00-17). The work consists of

- designing, manufacturing, factory testing, and delivering a set of 48 new field poles;
- manufacturing new insulated laminations and end-plates;
- refurbishing and factory testing field poles removed from the plant; and
- providing an erecting engineer and liaison services.

O&M Facilities

A contract to seal and pave roads and parking areas at various locations of the San Luis Division was awarded and work started in August 2000 (Specification No. 00-13). The work was completed in December and final acceptance is expected in February 2001. The work consisted of

- performing earthwork and road subgrade compaction;
- placing asphalt concrete pavement and asphaltic emulsion (tack coat) at the various locations;

- recycling existing asphaltic pavement and relaying and compacting recycled materials;
- applying seal coat and fog seal to designated paved areas; and
- installing traffic stripes and pavement markings.

Coastal Branch

Phase II. The three remaining contracts were accepted in March 2000. Acceptance of these contracts was delayed due to design modifications and added work as follows:

- furnishing and installing pump units (Specification No. 93-25), completed in March 1997;
- ball valves (Specification No. 93-34), completed in August 1998; and
- butterfly valves (Specification No. 94-06) for Devil's Den, Bluestone, and Polonio Pass Pumping Plants, completed in December 1996.

Contract Administration. All of the outstanding claims regarding the Coastal Branch Project-Phase II were resolved during this reporting period.

South San Joaquin Division

Teerink Pumping Plant. Work on furnishing spare coils and materials for Teerink Pumping Plant was completed in December 1999 and accepted in February 2000 (Specification No. 97-02).

Tehachapi Division

Edmonston Pumping Plant. Work on furnishing 15 kV circuit breakers for this facility continued during 2000 (Specification No. 97-01). The completion date for this work has been extended to May 2002 because breakers for Gianelli Pumping-Generating Plant and Devil Canyon Power Plant have been added by contract change order.

West Branch

Oso Pumping Plant. Work on a contract to furnish automatic voltage regulators began in May 2000 and is scheduled for completion in June 2002 (Specification No. 00-06). This work consists of

- furnishing automatic voltage regulators for pumping Units 1 through 8 and spare parts; and
- providing erecting engineer services and a training program.

Mojave Division

California Aqueduct. Work on a contract for repairs to the canal lining and culvert, milepost 320 to milepost 350 (Specification No. 99-29), began in September 1999, was completed in December 1999, and accepted in August 2000.

Mojave Siphon Power Plant. The contract to furnish and install turbines, generators, and governors began in August 1989 and was completed in July 1996 (Specification No. 89-13). Acceptance has been delayed until February 2001 due to equipment performance issues.

The contract to furnish acoustic flowmeters for the plant started in October 1993 and was completed in April 2000 and accepted in August 2000 (Specification No. 93-18).

Work on a contract to construct valve vaults and to furnish and install turbine shutoff valves for Units 1 and 2 at this facility began in April 1998 and was completed in December 1999 (Specification No. 97-25). Additional work has been ordered by contract change orders.

Pearblossom Pumping Plant. The contract to manufacture, furnish, install, and test three 375-cfs vertical centrifugal pump units at Pearblossom Pumping Plant (Specification No. 87-04) started in May 1987 and was completed in 1999. However, a large amount of remedial warranty work has to be performed

before the units can be accepted. Completion of warranty work is anticipated in December 2002.

Santa Ana Division

San Bernardino Tunnel Intake. The contract to reconstruct the San Bernardino Tunnel Intake Structure (Specification No. 95-07) started in July 1995 and was completed in June 1999. Remedial warranty work on the gate hydraulic operating system has to be completed before the contract can be accepted.

Santa Ana Pipeline. Work on a contract to perform modifications and repairs to the Santa Ana Pipeline at milepost 433.06 (Specification No. 98-20) started in October 1998 and was completed in July 1999. A second contract to perform repair work to Sugarloaf Mountain Road and drainage facilities (Specification No. 99-18) began in September 1999 and was completed in January 2000.

East Branch Extension

Construction of Phase I of the East Branch Extension began with the issuance of a Notice to Begin Work on February 26, 1999, for pipeline Reaches 1 and 2. The project is being constructed to convey 8,650 acre-feet of SWP water annually to the San Geronio Pass Water Agency service area, with provisions to provide San Bernardino Valley Municipal Water District deliveries to the Yucaipa Valley. Located in San Bernardino and Riverside Counties, the project facilities will consist of existing pipelines, three new pipeline reaches, three new pump stations, and a new reservoir. The official groundbreaking ceremony for site work took place in Yucaipa on August 23, 1999. The following is a brief description of construction contracts already awarded and in progress.

Crafton Hills Reservoir. A contract to construct a 125 acre-foot capacity reservoir and dam was awarded in February 2000 (Specification No. 99-31). Work began in March 2000 with a scheduled completion date in February 2001. The work consists of

- constructing an earth dam embankment, reinforced concrete inlet and outlet structures, a concrete block control building, and gravel access roads;
- providing and installing a sluice gate assembly and mechanical and electrical work as needed; and
- installing geotechnical instrumentation and Department-furnished equipment and materials.

Pipeline Reaches. A contract for pipeline Reaches 1 and 2 (Specification No. 98-24), which start at Mill Creek in San Bernardino County and extend through the cities of Yucaipa and Calimesa to Garden Air Creek in Riverside County, was awarded in February 1999, with expected completion in July 2002.

Work on a contract for pipeline Reach 3 (Specification No. 99-32), Garden Air Creek to Noble Creek, started in March 2000 and is scheduled for completion in July 2002. The work consists of

- 3.5 miles of 54-inch and 1.8 miles of 36-inch diameter buried steel pipeline;
- a 300-foot jacked ridge crossing;
- asphalt pavement removal and replacement; and
- construction of reinforced concrete structures and control building.

Pump Stations. Work started in March 1999 on a contract to furnish power circuit breakers and switchyard equipment for Greenspot and Crafton Hills Pump Stations (Specification No. 98-16) and is scheduled for completion in September 2002.

A second contract to furnish power transformers for these facilities (Specification No. 98-18) started in May 1999, with a scheduled completion date in September 2002.

Work started in October 1999 on a contract to design, manufacture, test and deliver 5 kV switchgear for Greenspot and Crafton Hills

Pump Stations (Specification No. 99-15). This contract also includes the design, manufacture, testing, and delivery of programmable logic controllers for the Cherry Valley Pump Station. The completion date is scheduled for September 2002.

Work began in November 1999 on a contract to design, manufacture, shop test, and deliver three 4,500 gpm and one 9,000 gpm vertical turbine pumps for Greenspot Pump Station, two 4,500 gpm and one 9,000 gpm vertical turbine pumps for the Crafton Hills Pump Station, and two 3,600 gpm vertical turbine pumps for the Cherry Valley Pump Station (Specification No. 99-17). It also calls for electric motors, variable frequency drives, appurtenant equipment, and associated training programs. Completion of this contract is scheduled for September 2002.

A contract to construct Greenspot, Crafton Hills, and Cherry Valley Pump Stations (Specification No. 99-27) was awarded in May and work started in June 2000 with completion scheduled for September 2002. The work consists of

- constructing reinforced concrete and reinforced concrete masonry structures;
- erecting steel structures and constructing a 3-million gallon prestressed concrete water tank;
- performing earthwork for roads, pipelines, switchgear, and structures;
- performing necessary asphalt paving;
- constructing an electrical switchyard;
- providing a septic system; and
- installing Department-furnished equipment and materials.

Valve Facilities. A contract to construct a new valve facilities at Carter Street and enlarge and reconstruct an existing valve facility in the Morton Canyon (Specification No. 00-07) was awarded in November 2000, with work beginning in November 2000. Completion of the work is scheduled for March 2002. The work consists of

- performing earthwork for pipelines and structures, site grading with drainage facilities;
- constructing reinforced concrete structures, reinforced masonry structures, and asphalt concrete pavements; and
- performing architectural, metalwork, mechanical, and electrical work.

Valves. Three separate contracts were awarded to furnish different types of valves. In October 1999, work began on a contract to furnish ANSI ball valves (Specification No. 99-20) and a contract to furnish AWWA butterfly valves (Specification No. 99-22). The contract to furnish ANSI butterfly valves began in November 1999 (Specification No. 99-23). All three contracts are scheduled for completion in September 2002.

Future Contracts. A contract to install fiber optic cable from the Greenspot Pump Station to the Crafton Hills Pump Station and a contract to furnish and install control and communication systems are scheduled to be awarded in 2001.

East Branch Enlargement

Devil Canyon Power Plant. Remedial warranty work by the turbine manufacturer was completed. Work on this contract (Specification No. 87-15) started in July 1987 and is scheduled to be completed in January 2001.

Devil Canyon Power Plant Second Afterbay.

A contract to provide the Inland Feeder Connection at the Devil Canyon Power Plant Second Afterbay was awarded in December 2000 (Specification No. 00-22). Work is scheduled to be completed in May 2002. The work will consist of

- removing existing steel bulkheads and 144-inch diameter pipe sections to accommodate installation of a Department furnished 132-inch butterfly valve;
- providing and installing steel pipe and appurtenance for 132-inch butterfly valve installation;
- constructing reinforced concrete where required;

- providing 30-inch diameter bypass valves, air vents, and piping; and
- performing mechanical and electrical work and testing as required.

Construction Activities in Multiple Divisions

Power Plants

The contract to furnish butterfly valves for Mojave Siphon and Devil Canyon Power Plants started in August 1991 and is scheduled for completion in June 2002 (Specification No. 91-15).

Electrical equipment work continues on a contract to furnish spare coils and associated materials for Pearblossom and Oso Pumping Plants (Specification No. 98-27). This work was started in March 1999 and is scheduled to be complete in September 2002.

A contract to furnish spare coils for Banks Pumping Plant and Gianelli Pumping-Generating Plant (Specification No. 00-19) started in September 2000 with completion scheduled for April 2002. The work consists of

- design, manufacturing, factory testing, and delivery of 13.8/13.2 kV stator coils for a 34,500 hp and an 11,250 hp unit at Banks Pumping Plant and for a 63,000 hp/53MVA synchronous unit at Gianelli Pumping-Generating Plant;
- furnishing and delivering specified rewind materials necessary for each set of stator coils; and
- providing liaison services at each location.

Roads and Paved Areas. In August 1999 work started on a contract to apply an asphalt seal coat and asphalt slurry seal to the paved areas at the Oroville, Delta, San Luis, San Joaquin, and Southern Field Divisions (Specification No. 99-13). The contract was completed in May 2000 and accepted in August 2000.

Site Revegetation. Work continues on a contract for revegetation of disturbed areas at Mojave Siphon Power Plant and Devil Canyon Second Afterbay (Specification No. 99-21). This work, which started in November 1999, fulfills FERC permit requirements and is scheduled for completion in July 2003.

Miscellaneous Construction Activity

The following non-SWP construction activity is categorized as “miscellaneous.”

Levee Raising

Work was started on a contract to raise portions of the levee on the Eastside Bypass on the San Joaquin River in Merced County in August 2000 (Specification No. 00-03) and was completed in December 2000. The work consisted of

- raising the levee at designated locations, extending drainage culverts, and constructing reinforced concrete endwalls and aprons;
- placing aggregate base for levee road surfaces and applying hydroseeding; and
- removing and reinstalling utility poles, entry gates, and adjacent fencing.

Environmental Activities

Environmental issues have concerned the Department since the inception of the SWP. These issues have increased in magnitude with the increased enactment of laws at both the federal and State level. To comply with these laws, the Department has incorporated improved management practices into its design activities and most construction activities. A specific section dealing with environmental requirements and protection has become an integral part of the specification for construction contracts. Contracts being developed are reviewed carefully by the DOE environmental scientist to ensure compliance with all the requirements outlined in the environmental permits.

In addition to contracts that went out to construction, DOE staff oversaw work on the following projects during 2000:

- *Radial Gate Rehabilitation, Oroville Dam Spillway.* Netting was installed around the radial gates to deter nesting activities of migrating cliff swallows (*Petrochelidon pyrrhonota*) during construction activities.
- *Radial Gate Rehabilitation, Thermalito Diversion Dam.* Netting was installed to deter nesting activities of the cliff swallows.
- *Dredging, South Delta.* More than 90,000 cubic yards of dredge spoils from four areas in the Sacramento-San Joaquin Delta were dredged. The general scope of the work included dredging to a depth of -6 to -9 feet below sea level, as defined by the National Geodetic Vertical Datum of 1929. The disposal of dredge spoils were from Del's Harbor Marina, Mendota and Livermore Yacht Clubs, Little Hawaii, Hammer and Middleton Islands, Tracy Marina, and the agricultural diversion on Grant Line Canal.

Dredged material disposal sites were revegetated using a native seed mix in order to reestablish maximum wildlife habitat.

Right of Way Activities

The Department has spent a net total of \$246.9 million to acquire rights of way and recreation and mitigation land for the SWP from its inception to December 31, 2000. From January 1 to December 31, 2000, the Department

- acquired property rights over 23 parcels (17.79 acres permanent easement and 34.54 acres temporary easement) for a total

cost of \$705,082 for the East Branch Extension, Phase I Project;

- acquired fee title to 3.11 acres for \$62,000 at the North Bay Aqueduct, Travis Surge Tank for spoil sediment;
- acquired fee title to 17.39 acres for \$243,000 at the South Bay Aqueduct, Patterson Pass Reservoir for spoil sediment;
- managed 72 leases for a total revenue of \$821,968;
- obtained 2 temporary entry permits for Clifton Court Forebay expansion studies; 5 for Arroyo Pasajero studies; 10 for installation of CIMIS weather stations; 80 for Delta monitoring well decommissioning; 1 for East Branch Extension; 1 for Grant Line Canal Tidal Barrier; 1 for Interim South Delta facilities; 1 for Lower Colusa Basin Conjunctive Use Project; 2 for Merced River Gravel Restoration Project; 1 for Middle River Seasonal Tide Barriers; 1 for North Fork Cache Creek; 2 for Old River-Delta Mendota Canal barrier; 1 for studies at San Luis Reservoir; 2 for South Bay Aqueduct terminal facilities; 12 for South Delta Improvement Program; 3 for South Delta temporary barriers at Old River; 3 for Suisun Marsh facilities; and 82 for West Side reservoir studies;
- processed 38 encroachment permit applications; issued 23 encroachment permits; terminated 1 encroachment permit; and collected fees of \$21,435 for review and inspection costs;
- received 6 encroachment reviews where the applicant had prior property rights; completed 4; and
- coordinated review of 31 tentative tract map developments within 1 mile of the Aqueduct.

Table 12-1. Design Activities, January 1, 2000, through December 31, 2000, by Division

Construction Division and Facility	Construction Contract	Date Design Began	Design Estimated Completion Date
<i>Oroville Division</i>			
Hyatt Power Plant	Renovate electrical controls for intake gate and gantry cranes	March 1999	January 2000
	Mineral residue removal and seepage control	June 1999	June 2000
	Pump/turbine refurbishment Units 2, 4, and 6	March 2000	November 2001
	Renovate electrical controls for bridge cranes and intake shutter gantry gates	March 2000	September 2000
Lake Oroville	Lime Saddle Campground	September 1999	June 2000
Oroville Dam Spillway	Radial gate rehabilitation	April 1999	August 2000
Thermalito Diversion Dam	Radial gate rehabilitation	April 1999	March 2000
Thermalito Pumping - Generating Plant	Expansion joint replacement	February 2000	May 2000
<i>Suisun Marsh Facilities</i>			
Morrow Island Distribution System	Fish screens	September 2000	March 2001
<i>South Delta Facilities</i>			
Rock Barriers	Dredging Temporary rock barriers—2001, 2002, and 2003 Middle River, Old River, and Grant Line Canal	March 2000 September 2000	June 2000 January 2001
<i>South Bay Aqueduct Pipelines</i>			
	Modifications: Altamont Pipeline	December 2000	May 2001
	Pipeline rehabilitation—access structures and valves	December 2000	July 2001
	Isolation system	December 2000	May 2001
Santa Clara Terminal Facilities	Seismic retrofit Santa Clara Terminal tank, and isolation system	November 2000	May 2001
<i>North San Joaquin Division</i>			
Banks Pumping Plant	Automatic voltage regulators, Units 1 through 7	October 1998	New Schedule Pending
<i>San Luis Division</i>			
Gianelli Pumping-Generating Plant	Furnish field poles and materials	March 2000	June 2000
O&M Center	Seal and pave roads and parking areas	March 2000	June 2000
	Isolation system	December 2000	May 2001
Santa Clara Terminal Facilities	Seismic retrofit Santa Clara Terminal tank, and isolation system	November 2000	May 2001
<i>North San Joaquin Division</i>			
Banks Pumping Plant	Automatic voltage regulators, Units 1 through 7	October 1998	New Schedule Pending
<i>San Luis Division</i>			
Gianelli Pumping-Generating Plant	Furnish field poles and materials	March 2000	June 2000
O&M Center	Seal and pave roads and parking areas	March 2000	June 2000
<i>South San Joaquin Division</i>			
Edmonston Pumping Plant modification	Pump inlet and first stage	February 2000	July 2000
	Refurbishment of pump Units W2, W4, W6, and W8	February 2000	August 2001
Tehachapi Surge Tank	Access road slide repair	November 2000	July 2001

Table 12-1. Design Activities, January 1, 2000, through December 31, 2000, by Division (Continued)

Construction Division and Facility	Construction Contract	Date Design Began	Design Estimated Completion Date
<i>Mojave Division</i>			
Pearblossom Pumping Plant	Furnish Automatic Voltage Regulators, Units 1 through 6	April 2000	February 2001
<i>Santa Ana Division</i>			
East Branch Extension	Pipeline Reach 3, Garden Air Creek to Noble Creek	May 1997	February 2000
	Furnish and install control and communications system	January 1998	July 2001
	Valve vaults, Morton Canyon and Carter Street	November 1998	August 2000
	Install fiber optic cable - Greenspot Pump Station to Crafton Hills Pump Station	June 1999	August 2000
Devil Canyon Power Plant Second Afterbay	Inland feeder connection	July 2000	October 2000
<i>West Branch</i>			
Castaic Lake	Recreation facilities renovation - East Ramp Area	October 1998	April 2000
Oso Pumping Plant	Replacement doors for suction elbow, Units 1 through 8	January 2000	June 2000
Warne Power Plant	Penstock Cooling Water Transient Study	August 1999	July 2000
	Soffit and fascia replacement	October 2000	May 2001
<i>Multiple Divisions</i>			
Banks Pumping Plant and Gianelli Pumping-Generating Plant	Furnish spare coils and materials	July 1999	March 2000
San Luis and San Joaquin Field Divisions	Stair addition, ADA modifications, and atrium enclosure	March 2000	August 2001
Warne and Devil Canyon Power Plants	Furnishing spare stator coils and materials	December 2000	June 2001
San Joaquin, Oroville, and Southern Field Divisions	Reroof O&M buildings	August 2000	June 2001
State Water Project	Seal and pave roads and parking areas	March 1999	March 2001
<i>Miscellaneous</i>			
Sacramento River	Willow Slough Bypass levee raising	November 1999	December 2001
Battle Creek	Salmon and steelhead restoration project	September 2000	May 2002
Kern River	Schaeffer Fish Barrier, South Fork	October 2000	January 2002

Table 12-2. Construction Activities, January 1, 2000, through December 31, 2000, by Division

Construction Division and Facility	Construction Contract (Specification Number)	Starting Date (NTBW)	Acceptance Date (Expected or Actual)	Contract Costs (in Thousands of dollars)
<i>Oroville Division</i>				
Feather River	Construct reinforced levee notch (remove construction debris downstream of Feather River Fish Barrier Dam by CCO) (99-07)	September 1999	November 2000	880
Hyatt Power Plant	Refurbish turbine Units 1, 3, and 5 (98-22)	February 1999	May 2004	10,150
	Renovate electrical controls for intake gate gantry cranes (00-02)	April 2000	April 2002	265
	Remove mineral residue and control seepage (00-18)	September 2000	July 2001	558
	Renovate electrical controls for bridge cranes and intake shutter gantry crane (00-21)	December 2000	April 2002	1,535
Hyatt Power Plant and Thermalito Pumping-Generating Plant	Furnish governor replacement (99-19)	November 1999	December 2002	1,570
Lake Oroville	Construct Lime Saddle Campground (00-14)	September 2000	May 2002	5,876
Oroville Dam and Thermalito Diversion Dam	Fabricate/rehabilitate stop logs (99-30)	January 2000	January 2002	1,734
Thermalito Diversion Dam	Rehabilitate radial gate (00-12)	July 2000	December 2001	2,181
Thermalito Pumping-Generating Plant	Furnish automatic voltage regulators—Units 1 through 4 (98-12)	September 1998	December 2000	464
	Replace expansion joint (00-15)	August 2000	June 2002	76
<i>Delta Facilities</i>				
South Delta Facilities	Construct fish screens—Sherman Island (98-07)	July 1998	December 2001	3,025
	Dredging (00-16)	August 2000	February 2001	3,163
Temporary Rock Barriers	Construct temporary rock barriers—1998, 1999, and 2000: Middle River, Old River, and Grant Line Canal (97-23)	January 1998	June 2001	3,843
<i>North San Joaquin Division</i>				
North Bay Aqueduct	Remove sediment at Cordelia Forebay (00-01)	March 2000	July 2000	319
South Bay Pumping Plant	Plant modification (99-02)	August 1999	March 2000	207
<i>San Luis Division</i>				
California Aqueduct	Construct flood weirs and restore flood easement (99-08)	July 1999	February 2000	1,140
Gianelli Pumping-Generating Plant	Furnish field poles and materials (00-17)	September 2000	September 2004	5,140
O&M Facilities	Seal and pave roads and parking areas (00-13)	August 2000	February 2001	757
<i>Coastal Branch</i>				
Phase II				
Pumping Plants: Devil's Den, Blue-stone, and Polonio Pass	Furnish pump units (93-25)	December 1993	March 2000	4,070
Valves	Furnish ball valves (93-34)	April 1994	March 2000	4,622

Table 12-2. Construction Activities, January 1, 2000, through December 31, 2000, by Division (Continued)

Construction Division and Facility	Construction Contract (Specification Number)	Starting Date (NTBW)	Acceptance Date (Expected or Actual)	Contract Costs (in Thousands of dollars)
Valves (continued)	Furnish butterfly valves and turbine bypass valve, Devil's Den Pumping Plant to Vandenberg AFB (94-06)	July 1994	March 2000	4,319
<i>South San Joaquin Division</i>				
Teerink Pumping Plant	Furnish spare coils and materials (97-02)	August 1997	February 2000	175
<i>Tehachapi Division</i>				
Edmonston Pumping Plant	Furnish 15kV circuit breakers (circuit breakers for Gianelli and Devil Canyon by CCO) (97-01)	April 1997	June 2002	10,672
<i>West Branch</i>				
Oso Pumping Plant	Furnish automatic voltage regulators (00-06)	May 2000	August 2002	1,102
<i>Mojave Division</i>				
California Aqueduct	Repair canal lining and culvert—milepost 320 to milepost 350 (99-29)	September 1999	August 2000	4,036
Mojave Siphon Power Plant	Furnish and install turbines, generators, and governors (89-13)	August 1989	February 2001	14,750
	Furnish and install acoustic velocity flowmeters (93-18)	October 1993	August 2000	411
	Construct valve vaults (97-25)	April 1998	April 2002	3,116
Pearblossom Pumping Plant	Furnish and install vertical centrifugal pumps (87-04)	May 1987	February 2003	2,303
<i>Santa Ana Division</i>				
San Bernardino Tunnel	Reconstruct intake (95-07)	July 1995	Deferred	25,531
Santa Ana Pipeline	Modify pipeline—milepost 433.06 (98-20)	October 1998	April 2001	1,232
	Repair Sugarloaf Mountain Road and drainage (99-18)	September 1999	May 2000	252
<i>East Branch Extension</i>				
Crafton Hills Reservoir	Construct reservoir (99-31)	March 2000	March 2002	5,775
Pipeline Reaches	Construct pipeline Reaches 1 and 2, Mill Creek to Garden Air Creek (98-24)	February 1999	October 2002	20,649
	Construct pipeline Reach 3, Garden Air Creek to Noble Creek (99-32)	March 2000	August 2002	14,943
Pump Stations: Greenspot and Crafton Hills	Furnish power circuit breakers and switchgear equipment (98-16)	March 1999	December 2002	300
	Furnish power transformers (98-18)	May 1999	December 2002	660
Pump Stations: Greenspot, Crafton Hills and Cherry Valley	Furnish 5kV switchgear and furnish PLC cubicle, Cherry Valley Pump Station (99-15)	October 1999	December 2002	628
	Furnish pumps, motors, and variable frequency drives (99-17)	November 1999	December 2002	3,111
	Construct pump stations (99-27)	June 2000	November 2002	21,800
Valve Facilities: Carter Street and Morton Canyon	Construct valve facilities (00-07)	November 2000	May 2002	2,740
Valves	Furnish ANSI ball valves (99-20)	October 1999	December 2002	1,200

Table 12-2. Construction Activities, January 1, 2000, through December 31, 2000, by Division (Continued)

Construction Division and Facility	Construction Contract (Specification Number)	Starting Date (NTBW)	Acceptance Date (Expected or Actual)	Contract Costs (in Thousands of dollars)
	Furnish AWWA butterfly valves (99-22)	October 1999	December 2002	862
	Furnish ANSI butterfly valves (99-23)	November 1999	December 2002	1,460
<i>East Branch Enlargement</i>				
Devil Canyon Power Plant	Furnish and install turbines, governors, and valves (87-15)	July 1987	March 2001	10,527
Devil Canyon Second Afterbay	Inland feeder connection (00-22)	January 2001	July 2002	1,192
<i>Multiple Divisions</i>				
	Furnish butterfly valves, Mojave Siphon and Devil Canyon Power Plants (91-15)	August 1991	August 2002	6,464
	Furnish butterfly valves, Mojave Siphon and Devil Canyon Power Plants (91-15)	August 1991	August 2002	6,464
	Furnish spare coils and materials—Pearblossom and Oso Pumping Plants (98-27)	March 1999	November 2002	614
	Seal and pave roads—Oroville, Delta, San Luis, San Joaquin, and Southern Field Divisions (Emergency Repairs to Byron Road Bridge by CCO) (99-13)	August 1999	August 2000	2,325
	Revegetation—Mojave Siphon Power Plant and Devil Canyon Second Afterbay (99-21)	November 1999	September 2003	500
	Furnish spare coils—Banks Pumping Plant and Gianelli Pumping-Generating Plant (00-19)	September 2000	June 2002	1,530
<i>Miscellaneous Activities</i>				
Eastside Bypass	Raise Levee—San Joaquin River (00-03)	August 2000	February 2001	1,766

Information for this chapter was provided by the Division of Engineering and the Division of Land and Right of Way.

Chapter 13

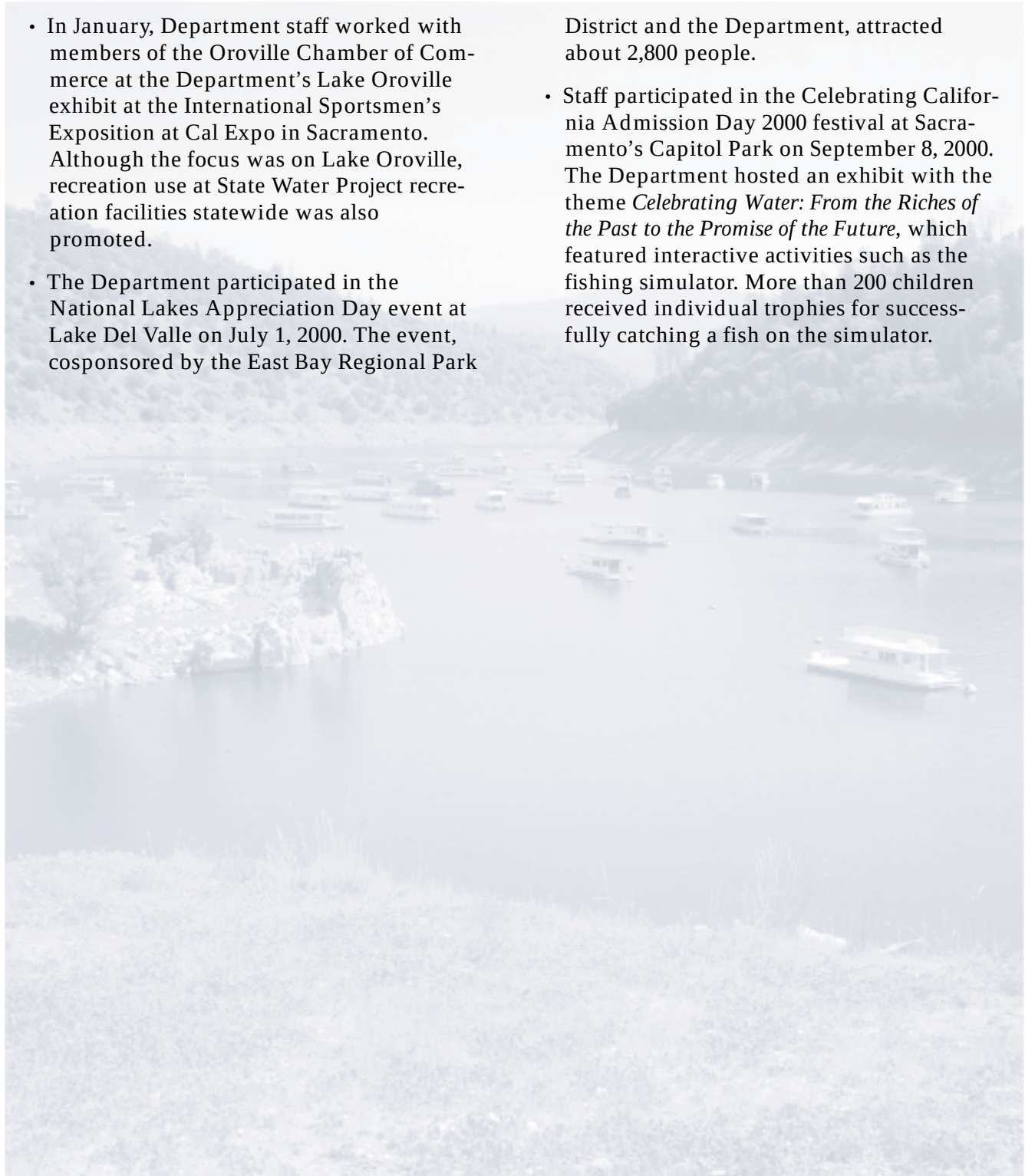
Recreation



Houseboats near Lime Saddle State
Recreation Area, Lake Oroville

Significant Events in 2000

- In January, Department staff worked with members of the Oroville Chamber of Commerce at the Department's Lake Oroville exhibit at the International Sportsmen's Exposition at Cal Expo in Sacramento. Although the focus was on Lake Oroville, recreation use at State Water Project recreation facilities statewide was also promoted.
- The Department participated in the National Lakes Appreciation Day event at Lake Del Valle on July 1, 2000. The event, cosponsored by the East Bay Regional Park District and the Department, attracted about 2,800 people.
- Staff participated in the Celebrating California Admission Day 2000 festival at Sacramento's Capitol Park on September 8, 2000. The Department hosted an exhibit with the theme *Celebrating Water: From the Riches of the Past to the Promise of the Future*, which featured interactive activities such as the fishing simulator. More than 200 children received individual trophies for successfully catching a fish on the simulator.



The State Water Project is a multipurpose project that benefits millions of Californians. In addition to providing water supply, flood control, and habitat for fish and wildlife, the SWP offers extensive and varied recreational opportunities—tours, sightseeing, fishing, hunting, camping, boating, water skiing, bicycling, and swimming.

Recreation Areas

The SWP has 37 developed recreation areas or sites throughout California, including 18 developed fishing access sites. Figure 13-1 shows the names and locations of each area.

Recreation Days

In 2000, SWP facilities received 4.82 million recreation days of use (Table 13-1), a 17 percent increase from the 4.11 million recreation days recorded in 1999. Recreational use at the fishing access sites and along the California Aqueduct Bikeway nearly equaled that of 1999. A recreation day is defined as one individual user visiting a recreation site along the SWP during a 1-day period.

Most SWP recreation and visitor use is concentrated at the major reservoirs. Nearly 50 percent of the total SWP recreational use in 2000 occurred at the four major reservoirs in Southern California: Pyramid Lake, Castaic Lake, Silverwood Lake, and Lake Perris. Since the SWP began delivering water in 1962, more than 160 million recreation days have been recorded at SWP recreational facilities.

Facilities

Planning

During 2000, the Department of Boating and Waterways completed plans for the following projects:

- Preliminary plans were prepared for a boating instruction and safety center at Castaic Lake Lagoon. This project is a partnership between DBW, Los Angeles County Department of Parks and Recreation, and California State University at Northridge; the goal is to promote boating safety and instruction.
- Working drawings were completed for improvements at the Emigrant Landing area of Pyramid Lake.
- Working drawings were prepared for a major renovation of the Spillway Launch area at Lake Oroville.

New Facilities

Frenchman Lake. Two boarding floats and anchors were installed by DBW at Frenchman Lake.

Lake Oroville. Construction began on the Lime Saddle Campground and work was completed on the following activities:

- American Disabilities Act access for the disabled was provided at the Feather River Fish Hatchery.
- Overflow parking areas were added at the Bidwell Canyon area and at the Monument Hill area of Thermalito Afterbay.
- A fish-cleaning station was added at the Lime Saddle area.

Improvements to Facilities

The following improvements were made by DBW during 2000 to help meet recreational demands:



1. Antelope Lake Recreation Area	20. Three Rocks Fishing Access Site
2. Frenchman Lake Recreation Area	21. Huron Fishing Access Site
3. Lake Davis Recreation Area	22. Avenal Cutoff Fishing Access Site
4. Lake Oroville State Recreation Area	23. Kettleman City Fishing Access Site
5. White Slough Wildlife Area	24. Lost Hills Fishing Access Site
6. Bethany Reservoir	25. Buttonwillow Fishing Access Site
7. Lake Del Valle State Recreation Area	26. Pyramid Lake State Recreation Area
8. Bikeway from Bethany Reservoir to O'Neill Forebay (70 miles)	27. Castaic Lake State Recreation Area
9. Grant Line Road Fishing Access Site	28. Munz Ranch Road Fishing Access Site
10. Niels Hansen Fishing Access Site	29. Bikeway from Quail Lake to Silverwood Lake (107 miles, not all accessible)
11. Orestimba Fishing Access Site	30. 70th Street West Fishing Access Site
12. Access Walk-in Fishing (63 miles)	31. Access Walk-in Fishing (83 miles)
13. Cottonwood Road Fishing Access Site	32. Avenue S Fishing Access Site
14. San Luis Reservoir State Recreation Area	33. 77th Street East Fishing Access Site
15. Los Banos Reservoir	34. Longview Road Fishing Access Site
16. Canyon Road Fishing Access Site	35. Silverwood Lake State Recreation Area
17. Mervel Avenue Fishing Access Site	36. Lake Perris State Recreation Area
18. Fairfax Fishing Access Site	37. San Jacinto Wildlife Area
19. Access to Walk-in Fishing (208 miles accessible along the aqueduct)	

Figure 13-1. Names and Locations of SWP Recreation Areas

Table 13-1. Recreation Days Recorded in 2000, by Field Division and Facility

Field Division	Number of Recreation Days
Oroville Field Division	
Frenchman Lake	240,000
Antelope Lake	70,000
Lake Davis	145,000
Lake Oroville and Thermalito Forebay	482,200
Thermalito Afterbay and Oroville Wildlife Area	260,000
<i>Subtotal</i>	<i>1,197,200</i>
Delta Field Division	
Lake Del Valle	318,000
Bethany Reservoir	28,400
Fishing Access Sites:	
Neils Hansen	100
California Aqueduct:	
Walk-In Fishing	700
Bikeway	100
White Slough Wildlife Area	12,000
<i>Subtotal</i>	<i>359,300</i>
San Luis Field Division	
San Luis Reservoir, including O'Neill Forebay and Los Banos Reservoir	835,200
California Aqueduct:	
Walk-In Fishing	12,000
Wildlife Areas	11,000
<i>Subtotal</i>	<i>858,200</i>
San Joaquin Field Division	
Fishing Access Sites:	
Kettleman City	1,300
Lost Hills	1,100
Buttonwillow	1,300
California Aqueduct:	
Walk-In Fishing	6,800
<i>Subtotal</i>	<i>10,500</i>
Southern Field Division	
Silverwood Lake	379,400
Lake Perris	1,050,700
Pyramid Lake	185,100
Castaic Lake	773,600
Fishing Access Sites:	
Quail Lake	1,300
77th Street East	100
Longview Road	100
California Aqueduct:	
Walk-In Fishing	2,700
Bikeway	600
<i>Subtotal</i>	<i>2,393,600</i>
Total	4,818,900

- Paving overlay of the parking area adjacent to the launch ramps was completed at the North Thermalito Forebay area of Lake Oroville.
- Shoreline improvements, including a promenade, bulkhead walls, landscaping, and an irrigation system were completed at the Sawpit Canyon area of Silverwood Lake.

The following improvements were made at Lake Del Valle:

- 600 linear feet of riprap added to the boat ramp area
- 250 wheel stops installed in campground parking pads
- 150 tabletops and benches replaced in the park
- 65 new trees planted in the campground and park interior
- 1,300 feet of fencing installed to prevent cattle from migrating into reservable group campsites
- restrooms at Oak Point and east concession refurbished with plastic materials to reduce graffiti, and low flow toilets and urinals replaced to conserve water

Oroville Recreation Plan

FERC issued Order 2100-052 on October 1, 1992. This order required the Department to prepare a revised recreation plan for Lake Oroville, replacing the original *Oroville Reservoir, Thermalito Forebay, and Afterbay Recreation Report* (Bulletin 117-6), which was prepared in December 1966. Another new plan, FERC Order 2100-054, submitted June 1, 1993, and approved September 22, 1994, includes additional recreation facilities and addresses concerns raised by local residents regarding recreation and fishery-related issues.

In 1995, the Lake Oroville Recreation Advisory Committee was established. This committee, comprised of local government, citizens' groups, and State agencies, was formed to advise the Department on recreation plan implementation. The following elements are either being developed or are already completed:

- Ten floating campsites were constructed and moored at various locations on the lake.
- An en route RV camping area was added at the North Thermalito Forebay area.
- Construction began on a duck brood pond and restroom and picnic facilities at Thermalito Afterbay.

- Buoys were deployed around the water-ski slalom course.
- Construction was completed on the 41-mile bike trail main loop.
- Construction was completed on the Lime Saddle Boat Ramp improvements, an equestrian campground at Loafer Creek Recreation area, and lighting on Oroville Dam.
- Fishery and fishing improvements were completed, including development of a fish management and stocking plan, stocking Chinook salmon, and development of fish shelters.

Most recreation and fish facilities were completed by 2000; certain elements of the plan may require time extensions to complete.

Fish Plantings

In 2000, the Department of Fish and Game continued its fish-planting activities at 12 SWP facilities. Total plantings of trout and Chinook salmon decreased by nearly two-thirds in 2000 (see Table 13-2).

Recreation Financing

Recreational facilities are financed in accordance with several legislative provisions, specifically, the Davis-Dolwig Act (Water Code Sections 11925 *et seq.*), Assembly Bill 12 (Water Code Sections 11912, 11915, and 11915.1), and the Environmental Water Act, Assembly Bills 1441 and 1442 (Water Code Sections 12929 *et seq.*).

The Davis-Dolwig Act declared that providing for the enhancement of fish and wildlife and for recreation in connection with State water projects benefits all the people of California and that the costs attributable to such enhancement should be borne by them. (The costs of these recreation activities are not borne by the water supply contractors.) The act also provided a procedure where the State's General Fund would reimburse the Department for those project costs allocated to recreation and fish and wildlife enhancement and for costs of acquiring property for recreation development.

In addition, Federal Energy Regulatory Commission License Numbers 2100 and 2426 require the Department to plan for recreational and associated activities at licensed SWP facilities.

The reimbursements were included in the Department's budget as appropriations from the General Fund and are used by the Department to pay for operations, maintenance, power, and replacement costs associated with operating the SWP for fish and wildlife enhancement and recreation.

Assembly Bill 12 provides for a \$5-million annual appropriation from tideland oil and gas revenues to fund joint capital costs of State water projects allocated to recreation, enhancement of fish and wildlife, and purchases of land for recreational uses. Through the 1985-86 fiscal year, the Department received \$90 million from tideland oil and gas revenues for this funding.

Assembly Bill 1442, known as the "Offset Legislation," offsets monies owed the California Water Fund by the SWP with reimbursements owed the project by the General Fund under the Davis-Dolwig Act. Monies owed the California Water Fund by the SWP were fully offset in 1998.

Appendix D to Bulletin 132, *Costs of Recreation and Fish and Wildlife Enhancement*, contains specific information about capital costs allocated to fish and wildlife enhancement and recreational enhancement and recreational development. This report to the Legislature is published annually by the Department.

Table 13-2. Fish Planted in 2000 (Thousands)

Location and Size	Eagle Lake Trout	Brook Trout	Rainbow Trout	Brown Trout	Chinook Salmon	Total
Antelope Reservoir Catchables		9.6	9.0			18.6
Lake Davis Broodstock Catchables	60.0		0.1			1.2
Fingerling				1.1		60.0
Frenchman Reservoir Fingerling	224.6					224.6
Lake Oroville Fingerling				155.7		155.7
Yearlings					28.6	28.6
Thermalito Forebay Yearlings						23.4
Catchables		8.9	24.7		23.4	33.6
Lake Del Valle Catchables	13.4		25.8			39.2
Los Banos Reservoir Catchables			10.1			10.1
Pyramid Lake Catchables			23.2			23.2
Castaic Lake Catchable			40.0			40.0
Castaic Lake Lagoon Catchables			38.0			38.0
Silverwood Lake Catchables			36.0			36.0
Lake Perris Subcatchables			20.4			20.4
Catchables			44.0			44.0
Lake Skinner ^a Catchables			No Fish Planted			
California Aqueduct			No Fish Planted			
Total	298.0	18.5	271.3	156.8	52.0	796.6

^aIncluded in SWP fish planting program but not an SWP facility.

Information for this chapter was provided by the Division of Planning and Local Assistance, Central District, the Office of Water Education, and the State Water Project Analysis Office.

Chapter 14

Financial Analysis



Spillway structure for Crafton Hills Reservoir
of the East Branch Extension

Significant Events in 2000

- The State Water Project was financially viable and was indirectly paid for by the approximately 23 million water users served by the project. Direct payment was through the 29 long-term water contractors. The Department continued to pay bondholders as scheduled. The Department handled approximately \$660 million in income for the SWP and approximately \$660 million in expenses.
- The Department continued with the implementation of the Systems Application Products program. SAP is an integrated software system used to run the various business functions of the Department. SAP provides most of the accounting and financing data required for financial analysis.



This chapter presents both a summary and a detailed explanation of State Water Project current financial analysis, capital costs and requirements, revenues and expenses, and bond activities for years 2001 through 2015.

The Department performs financial analysis annually to ensure that the SWP financing program will have sufficient funds to meet construction obligations; project operation, maintenance, power, and replacement costs; and debt service payments for bonds expended for construction. The results of the current financial analysis, dated December 31, 2000, are presented in Table 14-1 on page 187 and Table 14-2 on page 188.

Future contingencies may change the financial analysis, some of which are

- alterations in schedules of currently planned construction for future facilities;
- changes in economic conditions, including changes in interest rates and in SWP contractor Table A amounts due to changes in amounts of water needed, conserved, or reclaimed;
- completion of Delta transfer facilities;
- development of additional sources of water not foreseen at this time;
- deviations from the assumptions regarding actual rates of price escalations for future construction from those currently assumed for cost estimates;
- increases in capital costs related to additional conservation facilities; and
- outcome of lawsuits now pending before the courts.

Capital Requirements and Financing

In conducting the current analysis, the Department projected that future construction and Davis-Grunsky Act Program costs through the year 2015 will total \$358 million. Special capital requirements for revenue bond financing of these construction costs are projected at \$40 million for a total capital requirement of \$398 million. This projection includes construction and financing costs for the following significant SWP facilities planned for completion by 2015:

- Interim South Delta facilities;
- Gorman Creek Channel modifications on the West Branch of the California Aqueduct; and
- extension of the East Branch of the California Aqueduct.

Most of these capital requirements will be financed from the projected sale of \$299 million of revenue bonds. The remaining \$99 million will be financed from current bond proceeds, capital resources revenues, and the transfer of excess revenues not needed for operation costs or debt service.

The analysis of capital requirements and financing presented in Table 14-1 does not include the costs and financing of all facilities needed to develop the remaining yield necessary to meet the total 4.2 million acre-feet contractual commitment to long-term SWP water contractors. Also, Table 14-1 does not include costs of associated work essential for realizing full benefits

from the SWP but financed and constructed by local interests or State agencies other than the Department. Those facilities include on-shore recreational developments at SWP facilities and local distribution facilities.

The allocation of capital expenditures among various SWP purposes is detailed in Table 14-3.

Capital Requirements

Lines 1 through 19 in Table 14-1 show actual and projected SWP capital requirements through 2015. Estimates of future capital expenditures include allowances for construction costs escalation of 3 percent per year from 2001 through 2002 and 4 percent per year from 2003 through 2015. Right-of-way costs are escalated at 4 percent per year from 2001 through 2015. Capital expenditures for the SWP also include requirements other than those for construction, such as disbursements made as part of the Davis-Grunsky Act Program (Line 15) and special capital requirements under revenue bond financing (Line 16). The Department will decide whether to construct facilities only after examining alternatives and completing environmental documentation and other review processes.

Line 1, Initial Project Facilities, includes only those facilities completed before 1974 (see Bulletin 132-74, Chapter 2). Additional costs after 1973 and estimated costs of remaining work on the initial SWP facilities are not included.

Line 2, North Bay Aqueduct, Phase II, consists of pipelines, pumping plants, and a small reservoir necessary to divert water from the western Delta to Napa and Solano Counties for urban use. Phase II is connected with the Phase I facilities which were completed in 1968 (Phase I costs are included in the initial project facilities discussed in Line 1). Phase II became operational in May 1988.

Line 3, Delta and Suisun Marsh Facilities, shows historical costs in Column 1 that include planning costs for general Delta facilities and historical costs associated with the previously planned

peripheral canal and overland water delivery facilities for the western Delta.

Also included are historical planning costs for Suisun Marsh as well as construction costs for the Suisun Marsh Salinity Control Gates and an access road. The projected amounts include projected planning costs plus projected costs for constructing four permanent barriers in the Delta and an additional intake at Clifton Court Forebay.

Line 4, Final Four Units at Banks Pumping Plant, includes costs of the final four 1,067-cfs units, which became operational in spring 1992.

Line 5, Coastal Branch Aqueduct, Phase II, includes all costs for the planning, design, and construction of Phase II of the Coastal Branch of the California Aqueduct. Phase II construction began in October 1993 and was completed in 1997. Water deliveries from Phase II facilities began in July 1997.

Line 6, West Branch Aqueduct, shows costs for all facilities on the West Branch except Warne Power Plant. Warne Power Plant costs are included in Line 10.

Line 7, East Branch Enlargement, includes expenditures for first-stage construction of the East Branch Enlargement, including the enlargement share of power plant costs at Mojave Siphon and Devil Canyon. (The remaining power plant costs are included in Line 10.) East Branch Enlargement costs, by facility, are presented in Table 14-4. Costs for Alamo Power Plant consist of expenditures for Unit 1 facilities allocated to enlargement. Construction of Unit 2 has been deferred.

All costs in Line 7 are allocated to and repaid by the seven Southern California contractors participating in the East Branch Enlargement.

Line 8, East Branch Improvements, shows all aqueduct costs on the East Branch not allocated to the enlargement project. Those costs include improvements constructed concurrently with the enlargement work and the reconstruction of

Table 14-3. Allocation of Capital Expenditures (Thousands of Dollars)

Facilities and Construction Divisions	Expenditures Incurred Through 2000	Future Expenditures	Total	Preliminary Allocation Among Project Purposes			
				Water Supply and Power Generation	Flood Control ^a	Recreation and Fish and Wildlife Enhancement	Other ^b
Project Construction Expenditures							
Upper Feather Division	17,950	0	17,950	1,395	0	16,555	0
Oroville Division	569,334	0	569,334	477,971	70,661	20,702	0
Delta Facilities Division	378,567	83,022	461,589	413,703	0	47,886	0
North Bay Aqueduct	94,149	0	94,149	94,149	0	0	0
South Bay Aqueduct	80,989	5,301	86,290	64,617	7,532	14,141	0
California Aqueduct							
North San Joaquin Division	267,762	4,001	271,763	262,474	0	9,289	0
San Luis Division	276,988	12,269	289,257	275,084	0	14,173	0
South San Joaquin Division	308,983	478	309,461	292,753	0	16,708	0
Tehachapi Division	326,612	1,530	328,142	309,814	0	18,328	0
Mojave Division	320,024	3,343	323,367	285,421	0	37,946	0
Santa Ana Division	313,768	908	314,676	282,644	0	32,032	0
West Branch	539,837	6,283	546,120	512,174	0	33,946	0
Coastal Branch	509,309	2,858	512,167	512,167	0	0	0
Subtotal, California Aqueduct	2,863,283	31,670	2,894,953	2,732,531	0	162,422	0
Other Project Facilities							
Small Hydroelectric Power							
Generating Facilities	104,050	0	104,050	104,050	0	0	0
Off-Aqueduct Power Generating Facilities	446,796	38,100	484,896	484,896	0	0	0
East Branch Enlargement	448,870	0	448,870	448,870	0	0	0
East Branch Extension	11,879	110,122	122,001	122,001	0	0	0
San Joaquin Drainage Facilities	59,617	40,500	100,117	69	0	0	100,048
Planning and Preoperations	11,788	49,500	61,288	61,288	0	0	0
Unassigned	320	0	320	15	0	0	305
Subtotal, Project Construction Expenditures	5,087,592	358,215	5,445,807	5,005,555	78,193	261,706	100,353
Other Capital Expenditures							
Davis-Grunsky Act Program	130,000	0	130,000	0	0	0	130,000
Total Capital Expenditures	5,217,592	358,215	5,575,807	5,005,555	78,193	261,706	230,353

^aReflects the Department's allocation to this purpose, irrespective of federal payments.

^bIncludes 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.

the San Bernardino Tunnel Intake. Costs for power plant construction at Alamo, Mojave Siphon, and Devil Canyon are not included in this line.

Line 9, East Branch Extension, shows expenditures for Phase I of the extension of the East Branch of the California Aqueduct. The East Branch Extension will extend the California Aqueduct east from the Devil Canyon Power Plant to a terminus at Noble Creek near Beaumont in Riverside County. The extension will provide water service to the San Gorgonio Pass Water Agency and the San Bernardino Valley Municipal Water District. Construction began in October 1998 and is scheduled for completion in 2002. All costs in Line 9 will be allocated to and repaid by the two participating contractors.

Line 10, Power Generation and Transmission Facilities, does not include the East Branch Enlargement share of costs for Alamo, Mojave Siphon, and Devil Canyon Power Plants shown in Line 7 of Table 14-1. The capital costs for facilities included in Line 10 are shown in Table 14-5.

Line 11, Additional Conservation Facilities, shows projected costs to plan and study additional conservation facilities. Specific planning activities and projected spending amounts for 2001 through 2015 are shown in Table 14-6. Expenditures for these items are being reviewed. Construction costs of additional conservation facilities are not included in the financial analysis.

Line 11 does not include CALFED program costs. CALFED expenditures for preliminary planning and environmental impact report preparation are currently financed by appropriations from the General Fund. The Department assumes that future costs of the CALFED program will continue to be financed from the General Fund.

Line 12, San Joaquin Drainage Facilities, includes projected costs of the San Joaquin Valley Drainage Monitoring Program. The activities in this program are monitoring, evaluating, reducing,

and treating drainage, and investigating evaporation ponds.

The Department assumes that future costs of the drainage program will be financed by revenue transfers (Line 31).

Line 13, Other Costs, includes items such as general design and construction costs, costs of completing operation and maintenance facilities, and costs of other completion activities for the initial facilities of the California Aqueduct. Portions of those costs ultimately will be allocated to Aqueduct units described in the preceding paragraphs.

Line 14, Total Project Construction Expenditures, is the total of Lines 1 through 13.

Line 15, Davis-Grunsky Act Program Costs, shows costs of the Davis-Grunsky Act Program, a financial assistance program to provide grants and loans to public agencies for constructing local water projects.

As of December 31, 2000, the Department had disbursed \$130 million (including \$8.5 million for administration) in grants and loans for local agencies throughout the State.

Line 16, Special Capital Requirements under Revenue Bond Financing, presents special capital requirements at the time revenue bonds are sold. The financial analysis assumes that proceeds from any future revenue bonds will be used to pay for bond discounts, bond issuance costs, and debt service reserve requirements.

Information about the application of proceeds to these special requirements for actual and assumed revenue bond sales is presented in Table 14-7.

Line 17, Total Capital Requirements, is the total of Lines 14, 15, and 16.

Line 18, Power Facilities Capital Requirements, shows the total capital requirements for power facilities included in Line 17.

Table 14-1. Capital Requirements and Financing, December 31, 2000 (Thousands of Dollars)

Line Number	Line Item	1952-2000	2001	2002	2003	2004	2005	Calendar Year						2012	2013	2014	2015	2001-2015	1952-2015
								2006	2007	2008	2009	2010	2011						
Capital Requirements																			
1.	Initial Project Facilities	2,202,316	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2,202,316
2.	North Bay Aqueduct, Phase II	90,419	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	90,419	
3.	Delta and Suisun Marsh Facilities	255,885	35,404	17,730	14,506	13,354	1,307	721	0	0	0	0	0	0	0	0	83,022	338,907	
4.	Final 4 Units at Banks Delta Pumping Plant	43,673	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	43,673	
5.	Coastal Branch Aqueduct, Phase II	488,980	788	2,070	0	0	0	0	0	0	0	0	0	0	0	0	2,858	491,838	
6.	West Branch Aqueduct	190,679	6,283	0	0	0	0	0	0	0	0	0	0	0	0	0	6,283	196,962	
7.	East Branch Enlargement	448,870	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	448,870	
8.	East Branch Improvements	150,676	4,251	0	0	0	0	0	0	0	0	0	0	0	0	0	4,251	154,927	
9.	East Branch Extension	11,879	55,061	55,061	0	0	0	0	0	0	0	0	0	0	0	0	110,122	122,001	
10.	Power Generation and Transmission Facilities	682,787	2,100	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	0	0	38,100	720,887
11.	Additional Conservation Facilities	144,978	3,300	3,300	3,300	3,300	3,300	3,300	3,300	3,300	3,300	3,300	3,300	3,300	3,300	3,300	3,300	49,500	194,478
12.	San Joaquin Drainage Facilities	53,102	2,700	2,700	2,700	2,700	2,700	2,700	2,700	2,700	2,700	2,700	2,700	2,700	2,700	2,700	2,700	40,500	93,602
13.	Other Costs	323,348	10,768	9,978	1,381	454	597	401	0	0	0	0	0	0	0	0	23,579	346,927	
14. Total Project Construction Expenditures		5,087,592	120,655	93,839	24,887	22,808	10,904	10,122	9,000	9,000	9,000	9,000	9,000	9,000	9,000	6,000	6,000	358,215	5,445,807
15.	Davis-Grunsky Act Program Costs	130,000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	130,000	
16.	Special Capital Requirements Under Revenue Bond Financing	581,007	5,325	21,646	0	9,585	0	0	1,400	0	0	1,400	0	0	800	0	0	40,156	621,163
17. Total Capital Requirements		5,798,599	125,980	115,485	24,887	32,393	10,904	10,122	10,400	9,000	9,000	10,400	9,000	9,000	9,800	6,000	6,000	398,371	6,196,970
18.	Power Facilities Capital Requirements	1,270,490	2,100	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	0	0	38,100	1,308,590
19.	Water Facilities Capital Requirements	4,528,109	123,880	112,485	21,887	29,393	7,904	7,122	7,400	6,000	6,000	7,400	6,000	6,000	6,800	6,000	6,000	360,271	4,888,380
Financing of Capital Requirements																			
Power Revenue Bond Proceeds																			
20.	Power Revenue Bonds through Series H	1,162,458	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,162,458
Water Revenue Bond Proceeds																			
21.	East Branch Enlargement, Current Bonds	485,274	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	485,274
22.	East Branch Extension, Current Bonds	17,992	41,968	0	0	0	0	0	0	0	0	0	0	0	0	0	0	41,968	59,960
23.	East Branch Extension, Future Bonds	0	0	79,000	0	0	0	0	0	0	0	0	0	0	0	0	0	79,000	79,000
24.	Water System Facilities, Current Bonds	1,399,589	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,399,589
25.	Water System Facilities, Future Bonds	0	45,200	77,000	0	70,000	0	0	10,000	0	0	10,000	0	0	8,000	0	0	220,200	220,200
26.	Subtotal, Water Revenue Bonds	1,902,855	87,168	156,000	0	70,000	0	0	10,000	0	0	10,000	0	0	8,000	0	0	341,168	2,244,023
Other Capital Financing																			
27.	Initial Project Facilities Bond Proceeds	1,452,452	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,452,452
28.	Davis-Grunsky Act Program Bond Proceeds	130,000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	130,000
29.	Application of California Water Fund Monies (Tideland Oil Revenues)	508,056	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	508,056
30.	Interim Financing	24,669	38,812	(44,387)	18,887	(43,607)	4,904	4,122	(5,600)	3,000	3,000	(5,600)	3,000	3,000	(4,200)	0	0	(24,669)	0
31.	Application of Capital Resources Revenues to Construction	573,617	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3,617
32.	Revenue Transfers Applied	56,190	0	3,872	6,000	6,000	6,000	6,000	6,000	6,000	6,000	6,000	6,000	6,000	6,000	6,000	6,000	81,872	138,062
33.	Subtotal, Other Capital Financing	2,744,984	38,812	(40,515)	24,887	(37,607)	10,904	10,122	400	9,000	9,000	400	9,000	9,000	1,800	6,000	6,000	57,203	2,802,187
34. Total Financing of Capital Requirements		5,798,599	125,980	115,485	24,887	32,393	10,904	10,122	10,400	9,000	9,000	10,400	9,000	9,000	9,800	6,000	6,000	398,371	6,196,970

Table 14-2. State Water Project Revenues and Expenditures, December 31, 2000 (Thousands of Dollars)

		Calendar year																	
Line Number	Line Item	1952-2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2000-2015	1952-2015
Project Revenues																			
1.	Capital resources revenues	814,701	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	814,701
Water Contractor Payments																			
2.	Transportation capital	2,820,574	135,819	140,200	143,838	145,345	145,298	144,184	144,206	144,206	144,206	144,206	144,206	144,206	142,756	141,672	139,893	2,144,241	4,964,815
3.	Transportation minimum	3,742,283	211,773	247,093	262,732	230,387	243,958	238,555	240,929	259,839	260,528	260,215	261,744	261,738	198,604	166,060	153,882	3,498,037	7,240,320
4.	Transportation variable	1,184,459	323,182	176,771	350,027	246,050	269,969	285,358	276,587	246,150	258,788	285,743	280,454	304,315	351,809	381,979	393,819	4,431,001	5,615,460
5.	Delta Water Charge	1,519,094	101,007	100,272	101,963	102,630	103,235	103,854	104,075	104,532	104,747	104,967	105,191	105,203	105,214	105,226	105,247	1,557,363	3,076,457
6.	East Branch Enlargement payments	338,875	45,992	46,500	45,943	44,509	44,487	45,101	45,134	44,221	44,276	44,351	44,549	44,611	44,629	44,068	44,536	672,907	1,011,782
7.	East Branch Extension payments	4,136	4,799	4,801	6,861	10,129	10,127	10,128	10,128	10,127	10,124	10,137	10,128	10,127	10,266	10,262	10,262	138,406	142,542
8.	Coastal Extension payments	5,717	2,260	2,260	2,260	2,260	2,260	2,260	3,216	3,215	3,216	3,215	3,215	3,215	3,214	3,214	3,215	42,496	48,213
9.	Water Revenue bond surcharge	227,375	54,965	56,072	55,768	57,044	57,348	56,448	56,251	56,985	57,102	57,190	57,309	57,409	57,081	59,222	57,954	854,148	1,081,523
10.	Subtotal water contractor payments	9,842,513	879,797	773,969	969,392	838,354	876,682	885,888	880,526	869,275	882,987	910,024	906,796	930,825	913,573	911,703	908,808	33,084,334	23,181,112
11.	Revenue bond cover adjustments	0	(40,868)	(40,711)	(38,253)	(38,112)	(39,726)	(39,680)	(39,836)	(43,565)	(43,584)	(43,609)	(43,687)	(43,781)	(35,689)	(35,212)	(32,936)	(599,249)	(599,249)
12.	Rate management adjustments	(95,523)	(40,470)	(40,470)	(40,500)	(40,500)	(40,500)	(40,500)	(40,500)	(40,500)	(40,500)	(40,500)	(40,500)	(40,500)	(40,500)	(40,500)	(40,500)	(607,440)	(702,963)
Other Revenues																			
13.	Federal payments for project operating costs	176,125	8,300	8,000	11,827	11,827	11,827	11,827	11,827	11,827	11,827	11,827	11,839	11,839	11,839	11,839	11,839	170,111	346,236
14.	Appropriations for operating costs allocated to recreation	16,657	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16,657
15.	Davis-Grunsky loan repayments	42,913	1,400	1,400	1,400	1,400	1,400	1,400	1,400	1,400	1,400	1,400	1,400	1,400	1,400	1,400	1,400	21,000	63,913
16.	Revenue bond proceeds	652,977	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	652,977
17.	Interest earnings on operating revenue	557,066	4,306	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000	60,306	617,372
18.	Oroville-Thermalito payments	249,279	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	249,279
19.	Miscellaneous revenues	160,017	7,442	5,000	1,173	1,173	1,173	1,173	1,173	1,173	1,173	1,173	1,161	1,161	1,161	1,161	1,161	27,631	187,648
20.	Subtotal, other revenues	1,855,034	21,448	18,400	18,400	18,400	18,400	18,400	18,400	18,400	18,400	18,400	18,400	18,400	18,400	18,400	18,400	3,957,502	2,134,082
21.	Total operating revenues	11,602,024	819,907	711,188	909,039	778,142	814,856	824,108	818,590	803,610	817,303	844,315	841,009	864,944	855,784	854,391	853,772	12,410,958	24,012,982
22.	Total operating revenues and capital resources revenues	12,416,725	819,907	711,188	909,039	778,142	814,856	824,108	818,590	803,610	817,303	844,315	841,009	864,944	855,784	854,391	853,772	12,410,958	24,827,683
Project Expenses																			
23.	Project operations, maintenance, and power costs	4,981,215	741,187	413,976	573,380	517,776	532,755	534,755	533,169	499,988	508,070	539,744	537,975	549,405	590,230	587,251	601,925	8,261,586	13,242,801
24.	Deposits to replacement reserves	97,208	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	97,208
25.	Deposits to special reserves	372,333	(139,908)	41,100	60,900	0	0	0	0	0	0	0	0	0	0	0	0	(37,908)	334,425
26.	Capital resources expenditures	605,773	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	605,773
Payments of Debt Service																			
27.	Principal repayments on bonds sold through																		
	December 31, 2000 (current bonds)	1,430,491	83,063	112,089	94,240	98,894	110,095	114,860	120,600	141,520	148,915	155,900	162,935	170,715	147,175	149,655	139,870	1,950,525	3,381,016
28.	Interest on bonds sold through																		
	December 31, 2000 (current bonds)	4,468,323	148,427	194,689	160,724	155,779	150,714	144,992	139,250	133,091	125,808	118,215	110,262	101,589	92,494	85,307	77,907	1,939,247	6,407,570
29.	Future water bond principal repayments	0	0	0	1,985	3,285	4,275	4,500	4,735	5,115	5,270	5,430	5,775	6,095	6,425	6,885	7,170	66,945	66,945
30.	Future water bond interest payments	0	0	0	3,712	10,685	15,308	15,091	14,855	15,209	15,059	14,903	15,348	15,034	14,683	15,047	14,771	179,705	179,705
31.	Total principal	1,430,491	83,063	112,089	96,225	102,179	114,370	119,360	125,335	146,635	154,185	161,330	168,710	176,810	153,600	156,540	147,040	2,017,470	3,447,961
32.	Total interest	4,468,323	148,427	194,689	164,436	166,464	166,022	160,083	154,105	148,300	140,867	133,118	125,610	116,623	107,177	100,354	92,678	2,118,952	6,587,275
33.	Subtotal debt service	5,898,814	231,489	306,777	260,661	268,643	280,392	279,443	279,440	294,935	295,052	294,448	294,320	293,433	260,777	256,894	239,718	4,136,422	10,035,236
Net Revenues																			
34.	Total Operating Expenses and Debt Service	11,955,343	832,768	761,853	894,941	786,419	813,147	814,198	812,609	794,923	803,122	834,192	832,295	842,838	851,007	844,145	841,643	12,360,100	24,315,443
35.	Net system revenues	461,382	(12,861)	(50,665)	14,098	(8,277)	1,709	9,910	5,981	8,687	14,181	10,123	8,714	22,106	4,777	10,246	12,129	50,858	512,240
Application of Net System Revenues																			
36.	California Water Fund repayment	297,970	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	297,970
37.	Revenues used for capital expenditures	56,190	0	3,872	6,000	6,000	6,000	6,000	6,000	6,000	6,000	6,000	6,000	6,000	6,000	6,000	6,000	81,872	138,062

Table 14-10. Operations, Maintenance, Power, and Replacement Costs, by Facility, Composition, and Purpose (Thousands of Dollars)

Feature	Calendar year																	
	1962-2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016-2035	Total
Project Facility																		
Feather River facilities	162,405	47,142	10,689	17,674	16,973	16,966	16,950	10,258	10,258	10,260	10,254	10,378	10,380	10,392	10,411	10,411	208,238	590,039
North Bay Aqueduct	23,818	3,708	2,217	3,463	3,197	3,343	3,383	3,369	3,262	3,311	3,374	3,394	3,447	3,585	3,707	3,759	77,395	151,732
Delta facilities	389	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	389
Suisun Marsh	22,505	1,983	2,615	2,615	2,606	2,606	2,606	2,606	2,606	2,606	2,606	2,107	2,107	2,107	2,107	2,107	42,139	100,634
South Bay Aqueduct	152,633	17,575	8,983	13,353	12,132	13,036	13,245	13,436	12,549	12,748	13,015	13,015	13,045	13,869	14,377	14,495	289,120	640,626
California Aqueduct																		
Delta to Edmonston	1,959,275	371,709	156,065	228,164	204,802	207,178	211,223	213,436	203,602	201,674	220,233	218,587	218,008	250,360	252,767	262,566	5,450,517	10,830,166
Edmonston to Perris	1,631,282	220,463	152,001	225,463	191,053	212,570	218,394	221,879	199,937	209,668	222,585	226,771	232,633	261,396	286,695	290,906	6,054,841	11,058,537
West Branch	22,947	(12,452)	792	(6,173)	523	(7,332)	(10,188)	(11,442)	(11,895)	(11,912)	(11,921)	(12,845)	(11,503)	(11,131)	(11,674)	(11,323)	(251,753)	(369,282)
Coastal Branch	93,207	18,865	5,607	10,012	10,353	9,256	8,928	8,971	9,013	9,059	8,942	8,942	13,662	14,425	15,058	15,201	303,561	563,062
Off-Aqueduct power generating facilities	818,273	51,828	52,974	55,983	53,941	53,941	53,941	53,941	53,941	53,941	53,941	53,941	53,941	31,542	118	118	0	1,496,305
Recreation, planning, and CVP negotiations	0	582	667	683	683	683	683	683	683	683	683	683	683	683	683	683	13,669	23,797
Water quality monitoring	239,151	22,073	23,332	23,950	21,193	20,188	15,270	15,712	15,712	15,712	15,712	12,683	12,683	12,683	12,683	12,683	240,255	731,675
Davis-Grunsky Act Program	5,552	140	312	320	320	320	320	320	320	320	320	319	319	319	319	319	6,379	16,538
Subtotal	5,131,437	743,616	416,254	575,507	517,776	532,755	534,755	533,169	499,988	508,070	539,744	537,975	549,405	590,230	587,251	601,925	12,434,361	25,834,218
Payments to/credits from PG&E under Comprehensive Agreement	(53,014)	(2,429)	(2,278)	(2,127)	0	0	0	0	0	0	0	0	0	0	0	0	0	(59,848)
Total OMP&R Costs	5,078,423	741,187	413,976	573,380	517,776	532,755	534,755	533,169	499,988	508,070	539,744	537,975	549,405	590,230	587,251	601,925	12,434,361	25,774,370
Composition																		
Salaries and expenses of headquarters personnel	1,162,636	102,305	112,895	103,733	79,100	94,493	84,990	84,781	84,896	83,853	84,741	82,579	83,613	86,070	84,452	84,286	1,433,861	3,933,283
Salaries and expenses of field personnel	2,042,494	119,293	124,544	114,473	94,096	113,556	108,414	108,543	108,690	107,357	108,491	107,589	108,935	112,134	110,029	109,811	2,505,744	6,204,194
Pumping power																		
Used by pumping plants	2,172,865	503,193	198,500	301,959	325,509	347,676	366,393	367,611	334,295	345,646	376,145	379,414	387,436	446,959	480,664	496,186	10,350,975	18,181,426
Produced by generation plants	(1,054,072)	(33,266)	(72,936)	(918)	(35,147)	(77,188)	(79,260)	(81,984)	(82,111)	(83,004)	(83,851)	(85,825)	(84,797)	(86,752)	(88,289)	(88,753)	(1,861,759)	(3,979,912)
Payments to/credits from PG&E under Comprehensive Agreement	(50,433)	(2,429)	(2,278)	(2,127)	0	0	0	0	0	0	0	0	0	0	0	0	0	(57,267)
Off-Aqueduct power generating facilities requirement	818,273	51,828	52,974	55,983	53,941	53,941	53,941	53,941	53,941	53,941	53,941	53,941	53,941	31,542	118	118	0	1,496,305
Oroville-Thermalito insurance premiums	10,503	263	277	277	277	277	277	277	277	277	277	277	277	277	277	277	5,540	20,184
Less: Portion of costs incurred during construction	(121,051)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	(121,051)
Subtotal	4,981,215	741,187	413,976	573,380	517,776	532,755	534,755	533,169	499,988	508,070	539,744	537,975	549,405	590,230	587,251	601,925	12,434,361	25,677,162
Deposits to replacement reserves	97,208	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	97,208
Total OMP&R Costs	5,078,423	741,187	413,976	573,380	517,776	532,755	534,755	533,169	499,988	508,070	539,744	537,975	549,405	590,230	587,251	601,925	12,434,361	25,774,370
Project Purpose																		
Water supply and power generation	4,870,398	717,791	393,065	551,979	494,547	509,558	512,683	510,738	477,647	485,694	517,427	516,028	527,515	568,190	565,155	579,957	11,994,007	24,792,379
Payments to/credits from PG&E under Comprehensive Agreement	(53,014)	(2,429)	(2,278)	(2,127)	0	0	0	0	0	0	0	0	0	0	0	0	0	(59,848)
Recreation and fish and wildlife enhancement	100,132	12,887	10,732	10,761	10,461	10,430	9,307	9,666	9,575	9,610	9,552	9,169	9,111	9,260	9,313	9,185	184,700	433,851
Flood control	3,127	297	315	325	326	325	323	323	324	324	323	324	325	326	329	329	6,574	14,539
Miscellaneous purposes																		
Federal share, San Luis, and Delta facilities	150,332	11,984	11,542	11,827	11,827	11,827	11,827	11,827	11,827	11,827	11,827	11,839	11,839	11,839	11,839	11,839	236,780	564,449
Other (Davis-Grunsky, drainage, City of Los Angeles)	7,448	657	600	615	615	615	615	615	615	615	615	615	615	615	615	615	12,300	29,000
Total OMP&R Costs	5,078,423	741,187	413,976	573,380	517,776	532,755	534,755	533,169	499,988	508,070	539,744	537,975	549,405	590,230	587,251	601,925	12,434,361	25,774,370

Table 14-11. Annual Debt Service on Bonds Sold through December 31, 2000 (Thousands of Dollars)

Calendar Year	Series A through Y Water Bonds		Oroville Revenue Bonds ^a		Pyramid Project Revenue Bonds ^b		Small Hydro Project Revenue Bonds ^b		Alamo Project Revenue Bonds ^b		Water System Facilities Water System Revenue Bonds		Subtotal		Devil Canyon-Castaic Project Revenue Bonds		Reid Gardner Project Revenue Bonds ^b		South Geysers Project Revenue Bonds ^b		Bottle Rock Project Revenue Bonds ^b		East Branch Enlargement Project Water System Revenue Bond		Coastal Extension Facilities Water System Revenue Bonds		East Branch Extension Facilities Water System Revenue Bonds		Grand Total	
	Principal	Interest	Principal	Interest	Principal	Interest	Principal	Interest	Principal	Interest	Principal	Interest	Principal	Interest	Principal	Interest	Principal	Interest	Principal	Interest	Principal	Interest	Principal	Interest	Principal	Interest	Principal	Interest	Principal	Interest
1964	0	3,333	0	0	0	0	0	0	0	0	0	0	0	3,333	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3,333
1965	0	11,114	0	0	0	0	0	0	0	0	0	0	0	11,114	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11,114
1966	0	18,764	0	0	0	0	0	0	0	0	0	0	0	18,764	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	18,764
1967	0	26,911	0	0	0	0	0	0	0	0	0	0	0	26,911	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	26,911
1968	0	37,761	0	3,876	0	0	0	0	0	0	0	0	0	41,637	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	41,637
1969	0	47,460	0	10,448	0	0	0	0	0	0	0	0	0	57,908	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	57,908
1970	0	53,290	0	13,145	0	0	0	0	0	0	0	0	0	66,435	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	66,435
1971	0	63,035	0	13,145	0	0	0	0	0	0	0	0	0	76,180	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	76,180
1972	0	69,149	1,260	13,112	0	0	0	0	0	0	0	0	1,260	82,261	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,260	82,261
1973	1,200	69,347	1,330	13,042	0	0	0	0	0	0	0	0	2,530	82,389	0	7,708	0	0	0	0	0	0	0	0	0	0	0	0	2,530	90,097
1974	3,000	69,533	1,400	12,969	0	0	0	0	0	0	0	0	4,400	82,502	0	7,708	0	0	0	0	0	0	0	0	0	0	0	0	4,400	90,210
1975	5,000	69,366	1,475	12,893	0	0	0	0	0	0	0	0	6,475	82,259	0	7,708	0	0	0	0	0	0	0	0	0	0	0	0	6,475	89,967
1976	7,000	69,657	1,555	12,811	0	0	0	0	0	0	0	0	8,555	82,468	0	7,708	0	0	0	0	0	0	0	0	0	0	0	0	8,555	90,176
1977	10,200	69,298	1,635	12,727	0	0	0	0	0	0	0	0	11,835	82,025	0	7,708	0	0	0	0	0	0	0	0	0	0	0	0	11,835	89,733
1978	12,700	69,286	5,775	12,537	0	0	0	0	0	0	0	0	18,475	81,823	0	7,708	0	0	0	0	0	0	0	0	0	0	0	0	18,475	89,531
1979	13,650	68,660	11,585	12,275	0	0	0	0	0	0	0	0	25,235	80,935	0	7,708	0	0	0	0	0	0	0	0	0	0	0	0	25,235	88,643
1980	16,050	67,941	3,265	11,739	0	7,900	0	0	0	0	0	0	19,315	87,580	0	7,708	0	0	0	0	0	0	0	0	0	0	0	0	19,315	95,288
1981	18,050	67,078	4,885	11,444	0	7,292	0	0	0	0	0	0	22,935	85,814	0	7,708	0	5,312	0	0	0	0	0	0	0	0	0	0	22,935	98,834
1982	19,250	66,130	17,920	10,968	0	7,292	0	0	0	0	0	0	37,170	84,390	0	7,708	0	14,347	0	0	0	0	0	0	0	0	0	0	37,170	106,445
1983	20,520	65,111	21,110	10,147	0	7,292	0	3,727	0	2,449	0	0	41,630	88,726	900	7,708	0	35,719	0	4,777	0	6,017	0	0	0	0	0	0	42,530	142,947
1984	21,785	64,036	10,005	9,013	640	7,292	0	3,727	0	4,198	0	0	32,430	88,266	955	7,647	0	35,719	0	5,647	0	10,315	0	0	0	0	0	0	33,385	147,594
1985	22,555	62,892	12,700	8,628	675	7,238	0	3,727	0	4,198	0	0	35,930	86,683	1,010	7,583	9,425	27,209	0	5,647	0	10,315	0	0	0	0	0	0	46,365	137,437
1986	23,830	61,705	11,435	7,859	715	7,377	0	3,537	0	4,263	0	0	35,980	84,741	1,070	7,515	3,805	32,882	0	5,516	1,240	10,315	0	4,021	0	0	0	42,095	144,990	
1987	25,495	60,452	11,715	7,188	790	7,513	0	3,348	265	4,329	0	4,952	38,265	87,782	1,135	7,442	4,860	32,605	0	5,386	1,305	10,253	0	9,651	0	0	0	45,565	153,119	
1988	26,770	59,120	6,685	6,664	830	7,447	345	3,348	280	4,314	710	11,037	35,620	91,930	1,205	7,366	5,065	32,295	580	5,521	1,390	10,849	995	9,875	0	0	0	44,855	157,836	
1989	28,145	57,790	33,705	5,513	875	7,378	365	3,328	295	4,298	1,148	14,373	64,533	92,680	1,275	7,284	7,820	27,557	709	5,646	1,565	11,592	1,078	10,104	0	0	0	76,980	154,863	
1990	29,385	56,436	10,385	4,301	930	7,305	405	3,304	320	4,279	1,227	19,555	42,652	95,180	1,355	7,198	6,675	29,781	761	5,596	1,678	11,491	1,134	10,048	0	0	0	54,255	159,294	
1991	30,365	55,034	12,055	3,922	980	7,227	430	3,276	335	4,257	2,129	27,569	46,294	101,285	1,435	7,107	7,170	29,302	818	5,535	1,791	11,376	1,197	16,856	0	0	0	58,705	171,461	
1992	31,745	54,193	14,135	2,985	2,395	5,308	960	2,553	1,260	3,086	5,108	28,411	55,603	96,536	1,520	7,010	8,950	27,188	1,934	4,136	4,575	7,942	2,583	22,241	0	0	0	75,165	165,053	
1993	33,390	52,670	13,755	2,237	1,525	5,688	445	2,640	755	3,300	4,577	29,965	54,447	96,500	1,610	6,907	8,820	26,953	901	4,256	3,264	8,385	3,039	21,428	0	0	0	72,081	164,429	
1994	35,075	51,231	35,225	934	1,580	5,634	695	2,569	780	3,274	5,910	38,223	79,265	101,865	1,705	6,799	78,457	26,273	1,588	4,072	3,374	8,270	4,567	20						

Table 14-4. East Branch Enlargement Capital Costs by Facility

Facility	Dollar Amounts (in millions)
Aqueduct and siphons	115.3
Pearblossom Pumping Plant	70.1
Alamo Power Plant	5.0
Mojave Siphon Power Plant	54.4
Devil Canyon Power Plant and Second Afterbay	204.1
Total	448.9

Table 14-5. Estimated Capital Costs for Power Generation and Transmission Facilities

Facility	Dollar Amounts (in millions)
<i>Power Plants</i>	
Reid Gardner, Unit 4	307.5
Bottle Rock	120.9
South Geysers	49.6
Devil Canyon	36.8
Warne	84.5
Alamo	44.9
Mojave Siphon	45.0
Thermalito Diversion Dam	14.1
<i>Subtotal</i>	<i>703.3</i>
<i>Transmission Lines</i>	
Midway-Wheeler Ridge	10.7
Geysers-Lakeville	6.9
Total	720.9

Table 14-6. Estimated Future Costs for Planning Additional Conservation Facilities

Activity	Project Expenditures (in millions)
Future Water Supply	40.5
Other Planning Costs	9.0
Total	49.5

Table 14-7. Application of Revenue Bond Proceeds (Millions of Dollars)

Bond Series ^a	Construction Expenditure	Other Capital Requirements				Subtotal	Total Principal Amount of Bonds
		Reimbursement of General Fund	Capitalized Interest	Capitalized Operating Costs	Bond Financing and Refunding Costs ^b		
Oroville	218.0	2.6	19.9	1.5	3.0	27.0	245.0
Devil Canyon-Castaic	126.4	0.0	10.0	0.7	2.1	12.8	139.2
Pyramid Series A	74.0	0.0	19.2	1.0	1.6	21.8	95.8
Reid Gardner Series B	146.1	0.0	41.9	0.0	12.0	53.9	200.0
Reid Gardner Series C	91.1	0.0	17.9	7.9	8.1	33.9	125.0
Small Hydro-South Geysers Series D	49.6	0.0	19.9	0.0	5.5	25.4	75.0
Bottle Rock Series E	96.9	0.0	22.0	3.7	2.4	28.1	125.0
Alamo-South Geysers Series F	59.1	0.0	14.2	0.0	1.7	15.9	75.0
Reid Gardner Series G	1.6	0.0	0.0	0.0	237.9	237.9	239.5
Power Facilities Series H	22.2	0.0	0.0	0.0	184.5	184.5	206.7
East Branch Enlargement Series A	108.3	0.0	12.6	0.0	11.1	23.7	132.0
Water System Facilities Series B	97.4	0.0	0.0	0.0	2.6	2.6	100.0
Water System Facilities Series C	0.6	0.0	0.0	0.0	8.4	8.4	9.0
Water System Facilities Series D	95.9	0.0	2.9	0.0	1.2	4.1	100.0
Water System Facilities Series E	0.4	0.0	0.0	0.0	8.6	8.6	9.0
Water System Facilities Series F	0.0	0.0	0.0	0.0	160.0	160.0	160.0
Water System Facilities Series G	86.8	0.0	4.6	0.0	8.6	13.2	100.0
Water System Facilities Series H	85.5	0.0	5.7	0.0	8.8	14.5	100.0
Water System Facilities Series I	158.9	0.0	5.8	0.0	15.3	21.1	180.0
Water System Facilities Series J	0.0	0.0	0.0	0.0	649.8	649.8	649.8
Water System Facilities Series K	88.6	0.0	3.1	0.0	8.3	11.4	100.0
Water System Facilities Series L	0.0	0.0	0.0	0.0	537.8	537.8	537.8
Water System Facilities Series M	166.3	0.0	9.9	0.0	13.8	23.7	190.0
Water System Facilities Series N	137.4	0.0	6.0	0.0	8.6	14.6	152.0
Water System Facilities Series O	156.5	0.0	8.4	0.0	170.1	178.5	335.0
Water System Facilities Series P	141.6	0.0	5.2	0.0	13.2	18.4	160.0
Water System Facilities Series Q	135.0	0.0	8.0	0.0	123.6	131.6	266.6
Water System Facilities Series R	0.0	0.0	0.0	0.0	20.7	20.7	20.7
Water System Facilities Series S	78.2	0.0	5.8	0.0	116.2	122.0	200.2
Water System Facilities Series T	0.0	0.0	0.0	0.0	135.7	135.7	135.7
Water System Facilities Series U	98.7	0.0	5.3	0.0	103.2	108.5	207.2
Water System Facilities Series V	0.0	0.0	0.0	0.0	20.6	20.6	20.6
<i>Subtotal</i>	<i>2,521.1</i>	<i>2.6</i>	<i>248.3</i>	<i>14.8</i>	<i>2,605.0</i>	<i>2,870.7</i>	<i>5,391.8</i>
Future East Branch Extension Bonds	68.0	0.0	4.7	0.0	6.3	11.0	79.0
Future Water System Facilities Bonds	189.4	0.0	13.2	0.0	17.6	30.8	220.2
Total	2,778.5	2.6	266.2	14.8	2,628.9	2,912.5	5,691.0^c

^aActual bond issue for all except future water system facilities and future East Branch Enlargement bonds.

^bBond financing and refunding costs include funds applied to debt service reserve requirements.

^cIncludes \$2,215 million of refunded principal, leaving a net principal obligation of \$3,476 million.

Line 19, Water Facilities Capital Requirements, shows the total capital requirements for water facilities included in Line 17.

Capital Financing

The SWP was constructed with three general types of financing: Burns-Porter Act, revenue bonds, and capital resources. Lines 20 through 33 of Table 14-1 present specific information about those sources of financing.

Burns-Porter Act. Burns-Porter financing is derived from the sale of California Water Resources Development Bonds (general obligation bonds) and State Tideland Oil Revenues deposited in the California Water Fund as authorized by the Burns-Porter Act (California Water Code Sections 12930-12944), approved by voters in November 1960. The Burns-Porter Act authorized an issue of \$1.75 billion of general obligation State bonds, which are repaid by revenues received according to the water supply contracts. Of that authorization, \$130 million were reserved specifically for the Davis-Grunsky Act Program.

Proceeds from the sale of general obligation bonds were deposited in the California Water Resources Development Bond Fund-Bond Proceeds Account, from which monies were expended only for the construction of SWP facilities and for the Davis-Grunsky Act Program. Approximately 30 percent of the expenditures through 2000 for construction and the Davis-Grunsky Act Program were financed with general obligation bonds.

Monies deposited in the California Water Fund were appropriated for purposes outlined in the Burns-Porter Act. Such deposits were derived from a portion of the State Tideland Oil Revenues according to a continuing authorization. The California Water Fund was used to finance \$508 million, or approximately 10 percent, of the construction expenditures through 2000.

Revenue Bonds. Revenue bond financing is derived from the sale of revenue bonds as authorized by the Central Valley Project Act

(California Water Code Sections 11100-11925). The Department's authority to issue revenue bonds was confirmed by a decision of the California Supreme Court in 1963 (*Warne v. Harkness*, 60 Cal. 2d 579).

Proceeds from the sale of revenue bonds are deposited in the Central Valley Water Project Construction Fund, from which money is expended only for purposes specified in the resolution authorizing each bond sale. Those purposes, in addition to paying construction, planning, and right-of-way costs, may include funding the Debt Service Reserve Account, paying interest on bonds, and paying water system operating expenses during a specified period.

As of December 31, 2000, the Department had sold \$5.4 billion of revenue bonds. That amount includes \$2.2 billion of refunded bonds, leaving a total principal obligation of \$3.2 billion.

Capital Resources. Capital resources financing is derived from payments and appropriations (including a portion of the State Tideland Oil Revenues) authorized by a variety of special contracts, cost-sharing agreements, and legislative actions concerning the SWP, plus accrued interest on these funds.

Capital resources revenues are deposited in the Central Valley Water Project Construction Fund and may be expended for interest on general obligation bonds and costs of constructing SWP facilities.

According to the Department's financial management policy, the capital resources revenues are used first to cover any general obligation bond debt service that exceeds available revenues.

Capital Financing Sources

Capital financing sources include power revenue bonds, East Branch Enlargement bonds, East Branch Extension bonds, water system facilities bonds, initial project facilities bonds, proceeds from the Davis-Grunsky Act Program,

California Water Fund monies, and capital resources revenues.

Line 20, Power Revenue Bonds through Series H, includes the proceeds applied from power revenue bonds for Oroville, Devil Canyon, Castaic, Warne, Reid Gardner, Bottle Rock, Alamo, South Geysers, and small hydro projects.

No future power revenue bond sales are projected for the financial analysis.

Line 21, East Branch Enlargement, Current Bonds, shows that \$485 million of Water System Revenue Bond proceeds have been applied to the East Branch Enlargement project through December 31, 2000. Of this total amount, \$416 million were used for construction expenditures and \$69 million for bond discounts, interest costs, and debt service reserves.

No future East Branch Enlargement revenue bond sales are projected for the financial analysis.

Line 22, East Branch Extension, Current Bonds, shows that \$60 million of Water System Revenue Bond proceeds were available for the East Branch Extension project. Of this total, \$18 million had been spent through December 31, 2000. The remaining \$42 million will be used to pay future construction costs.

Line 23, East Branch Extension, Future Bonds, shows the Department's estimate of additional bonds required to complete construction of the East Branch Extension and to pay for bond discounts, capitalized interest, and debt service reserve requirements.

Line 24, Water System Facilities, Current Bonds, shows that through December 31, 2000, \$1.4 billion of proceeds from Water System Revenue Bonds, Series A through Series V, were applied to SWP projects other than the East Branch Enlargement and the East Branch Extension. Of this total amount, \$1.2 billion were used to pay for construction expenditures and \$0.2 billion to pay for bond discounts, capitalized interest, and debt service reserve requirements.

Line 25, Water System Facilities, Future Bonds, shows that \$220 million of future water revenue bonds are needed to provide \$191 million for construction of SWP water system facilities and \$29 million for bond discounts, interest costs, and debt service reserve requirements.

Line 26, Subtotal, Water Revenue Bonds, is the total of Lines 21 through 25.

Line 27, Initial Project Facilities Bond Proceeds, shows the amount of general obligation bonds sold to provide initial financing costs for SWP facilities and for costs of planning certain additional conservation facilities.

Financing initial facilities from general obligation bonds was completed in mid-1972 and totaled \$1.444 billion—\$1.750 billion Burns-Porter Act authorization less \$130 million reserved for the Davis-Grunsky Act Program and \$176 million “offset” for additional conservation facilities. (The Burns-Porter Act provides that to the extent California Water Fund monies are expended, an equal amount of general obligation bonds are reserved [offset] for financing the construction of additional conservation facilities in certain watersheds.)

In mid-1972, the reservation of offset bonds was effectively limited to \$176 million, the total amount of California Water Fund monies expended up to that time. By mid-1972, all general obligation bonds authorized by the Burns-Porter Act had been offset, reserved for the Davis-Grunsky Act Program, or used for SWP construction.

Approximately \$8.5 million of the offset bonds were used to finance planning studies of the Middle Fork Eel River Development. This financial analysis is not based on the use of any offset bond proceeds to meet capital requirements. If, at some time, the State constructs an additional conservation facility, as specified in Water Code Section 12938, the remaining offset bonds could be sold.

Line 28, Davis-Grunsky Act Program Bond Proceeds, shows, for simplification, the entire

\$130 million of capital expenditures authorized for the Davis-Grunsky Act Program according to the Burns-Porter Act as being funded by proceeds from the sale of general obligation bonds. In fact, \$28 million from the California Water Fund was used for the program in lieu of bond proceeds prior to 1969.

Line 29, Application of California Water Fund Monies, shows the amount of SWP costs financed under the Burns-Porter Act. The Act provides that any available money in the California Water Fund must be used for construction in lieu of proceeds from the sale of general obligation bonds.

When the Burns-Porter Act became effective in late 1960, approximately \$97 million had been accumulated in the fund. That balance plus subsequent appropriations, interest earnings, and other miscellaneous income to the fund through December 31, 2000, was used to finance a total of \$508 million of SWP costs.

Line 30, Interim Financing, shows the net annual amounts of funds flowing into and out of the Water Revenue Commercial Paper Notes program. The note program was established in March 1993 to provide an ongoing source of interim financing for Water System Projects prior to permanent financing from the sale of long-term revenue bonds. The Department has authority to issue up to \$94.4 million of Water Revenue Commercial Paper Notes. A positive number indicates money borrowed from the program to finance construction costs. A negative number indicates money repaid into the program. The financial analysis assumes that all funds borrowed from the program will be repaid before the end of the analysis period.

Line 31, Application of Capital Resources Revenues to Construction, presents the Capital Resources Revenues applied for capital expenditures.

Line 32, Revenue Transfers Applied, shows monies assumed to be transferred to the California Water Fund according to provisions of the Burns-Porter Act and subsequently reappropri-

ated to construction (see Line 37 in Table 14-2). Projected amounts for 2001 through 2015 include funds to finance expenditures for San Joaquin drainage facilities, as indicated in Line 12 of Table 14-1, and expenditures for additional conservation facilities, as indicated in Line 11.

Line 33, Subtotal, Other Capital Financing, is the total of Lines 27 through 32.

Line 34, Total Financing of Capital Requirements, totals Lines 20, 26, and 33.

Annual Revenues and Expenditures

After financial analysis of SWP operations, the Department concluded that projected payments by contractors and other revenues will be adequate to pay annual operations, maintenance, power, and replacement costs and meet all repayment obligations on funds used to finance SWP construction and other authorized costs during the period 2001 through 2015. Data on annual revenues and expenditures are presented in Table 14-2. A detailed discussion of each line item is presented below.

Project Revenues

SWP revenues consist primarily of SWP contractor payments required under their individual long-term water supply contracts. Those revenues are deposited in two funds: the Central Valley Water Project Revenue Fund, where all revenues pledged to revenue bonds are placed, and the California Water Resources Development Bond Fund-Systems Revenue Account, where all other SWP operating revenues are placed. Use of those funds is limited to paying operating costs and debt service, except that revenues in excess of those costs may be deposited to a reserve for future SWP construction since the California Water Fund has been repaid (see Line 36).

Line 1, Capital Resources Revenues, includes

- federal payments for SWP capital expenditures;

- appropriations for capital costs allocated to recreation;
- appropriations for SWP capital expenditures prior to passage of the Burns-Porter Act and according to Senate Bill 261 (1968);
- payments from Los Angeles Department of Water and Power for Castaic power development;
- advances from water contractors for construction of requested works;
- investment earnings on the Capital Resources Account; and
- investment earnings on unexpended revenue bond proceeds.

Historically, appropriations for capital costs allocated to recreation and fish and wildlife enhancement have amounted to \$5 million per year, which have been appropriated by the California Legislature from the State Tideland Oil Revenues. There have been no appropriations since 1985, and no appropriations are indicated in the financial analysis for the period 2001-2015. Legislation enacted in 1989 offset a portion of the amount owed to the SWP by the State for costs allocated to recreation and fish and wildlife enhancement against the amount the SWP owed to the California Water Fund (see Line 36).

Lines 2 through 9, Water Contractor Payments, show amounts of the separate elements of water contractor payments.

Amounts in Line 4 also include revenues sufficient to cover costs associated with sales of excess power. Appendix B of this bulletin presents a detailed explanation of payments identified in Lines 2 through 9.

Operations, maintenance, power, and replacement costs are repaid as they are incurred as part of the Transportation Charge; therefore, no interest charges are included. Construction costs included in the Transportation Charge and all construction and annual OMP&R costs included in the Delta Water Charge are to be repaid with interest at the Project Interest Rate.

The Project Interest Rate, as defined in Article 1(r) of the standard provisions for water supply contracts, is the weighted average of the rates paid on certain securities issued and loans obtained to finance SWP facilities, as described below.

According to the original contract provisions, the basis for determining the Project Interest Rate was the weighted average of rates paid on general obligation bond sales only. In 1969, after Oroville Revenue Bonds were issued, the contract was amended to expand the basis to include rates on all other securities sold and loans obtained thereafter for financing SWP facilities, including revenue bonds (see Bulletin 132-70, page 28).

However, not all proceeds from the sale of revenue bonds are melded into the calculation of the Project Interest Rate. Only those proceeds applied to construction costs (the only application of general obligation bonds permitted by law) and those consumed by the bond discount (a component of the total interest cost of a revenue bond issue) are included in the calculation (see Table 14-8).

Calculations for determining the Project Interest Rate do not include proceeds from the sale of revenue bonds for Off-Aqueduct Power Facilities, the East Branch Enlargement facilities, or water system facilities defined in the Water Revenue Bond Amendment. Table 14-9 lists all bond sales by date and presents basic information used in the calculation of the Project Interest Rate.

Information about contractor water charges in Appendix B is based on known conditions and substantiates the Department's determination of 2002 water charges to be billed July 1, 2001. However, information about significant differences between the sum of future charges included in Lines 2 through 9 of Table 14-2 and the substantiation of 2001 charges included in Appendix B are as described below.

Table 14-8. Effect of Revenue Bond Proceeds on Project Interest Rate (Millions of Dollars)

Project	Proceeds Included in Project Interest Rate					
	Applied to Construction Costs	Less Portion of Proceeds Derived from Interest Earnings Prior to Delivery of Bonds	Plus Bond Discount and Financing Costs	Subtotal, Proceeds Included in Calculating Project Interest Rate	Total Principal Amount of Bonds	Percentage of Total Amount Included in Calculating Project Interest Rate
Devil Canyon-Castaic Project Revenue Bonds	125.3	1.5	1.4	125.2	139.2	90.0
Pyramid Project Revenue Bonds (Series A)	71.2	0.5	1.1	71.8	95.8	75.0
Alamo Project Bond Anticipation Note	16.8	0.1	0.3	17.0	24.4	70.0
Small Hydro Project I Revenue Bonds (Series D)	25.4	0.2	1.5	26.7	37.5	71.0
Alamo Project Revenue Bonds (Series F)	38.9	0.3	0.7	39.3	50.0	79.0
Power Facilities						
Revenue Bonds (Series H)						
Facility						
Pyramid Project	5.0	0.0	0.1	5.1	5.1	100.0
Alamo Project	1.7	0.0	0.0	1.7	1.7	100.0
Small Hydro Project I	25.2 ^a	0.2	0.4	25.4	35.6	71.0
Water System Revenue Bonds (Series J)						
Facility						
Pyramid Project	0	0	75.9 ^b	75.9	99.2 ^b	77.0
Alamo Project	0	0	45.6 ^b	45.6	57.1 ^b	80.0
Small Hydro Project I	0	0	27.8 ^b	27.8	38.8 ^b	72.0
Water System Revenue Bonds (Series L)						
Facility						
Small Hydro Project I	0	0	1.5 ^b	1.5	2.1 ^b	71.0
Water System Revenue Bonds (Series Q)						
Facility						
Pyramid Project	0	0	3.0 ^b	3.0	3.9 ^b	77.0
Alamo Project	0	0	4.8 ^b	4.8	6.0 ^b	80.0
Water System Revenue Bonds (Series S)						
Facility						
Pyramid Project	0	0	8.0 ^b	8.0	10.4 ^b	77.0
Alamo Project	0	0	7.6 ^b	7.6	9.5 ^b	80.0
Water System Revenue Bonds (Series U)						
Facility						
Pyramid Project	0	0	2.4 ^b	2.4	3.2 ^b	75.0
Alamo Project	0	0	3.2 ^b	3.2	4.0 ^b	80.0

^aAmount consists of 71 percent of proceeds deposited in escrow account to refund portion of Series D bonds (\$35.1 million plus deposits to construction account [\$0.3 million]).

^bRepresents amount of principal used to refund portions of prior bond issues.

Table 14-9. Actual Bond Sales and Project Interest Rates, by Date of Sale

Bond Sales	Date of Sale	Dollar-Years ^a (Thousands)	Interest Cost (Thousands)	Issue Interest Rate ^b (Percent)	Project Interest Rate ^c (Percent)
\$ 50,000,000 Bond Anticipation Notes	11/21/63	26,944	531	1.971	1.971
\$100,000,000 Series A Water Bonds	2/18/64	3,402,000	119,750	3.520	3.508
\$ 50,000,000 Series B Water Bonds	5/05/64	1,726,000	60,986	3.533	3.516
\$100,000,000 Series C Water Bonds	10/07/64	3,452,000	123,764	3.585	3.544
\$100,000,000 Series D Water Bonds	2/16/65	3,497,900	122,403	3.499	3.531
\$100,000,000 Series E Water Bonds	11/23/65	3,497,900	130,029	3.717	3.573
\$100,000,000 Series F Water Bonds	6/08/66	3,497,900	137,359	3.927	3.638
\$100,000,000 Series G Water Bonds	11/22/66	3,497,900	143,788	4.111	3.711
\$100,000,000 Series H Water Bonds	3/21/67	3,497,900	129,261	3.695	3.709
\$100,000,000 Series J Water Bonds	7/18/67	3,497,900	143,199	4.094	3.754
\$100,000,000 Series K Water Bonds	11/14/67	3,497,900	163,887	4.685	3.853
\$150,000,000 Revenue Bonds, Oroville Division, Series A	4/03/68	5,228,700	270,289	5.169	
\$100,000,000 Series L Water Bonds	7/11/68	3,497,900	166,918	4.772	3.941
\$100,000,000 Series M Water Bonds	10/22/68	3,497,900	169,989	4.860	4.021
\$ 94,995,000 Revenue Bonds, Oroville Division, Series B	4/01/69	3,423,460	195,902	5.722	
\$ 46,761,000 Cumulative 1970 General Fund Borrowing, repaid 7/10/70	-	4,938	346	7.007	
\$200,000,000 Series N and P Bond Anticipation Notes	6/16/70	200,000	11,660	5.830	4.030
\$100,000,000 Series N Water Bonds	2/02/71	3,447,900	190,292	5.519	4.148
\$100,000,000 Series Q Bond Anticipation Notes	3/10/71	100,000	2,349	2.349	4.143
\$100,000,000 Series P Water Bonds	4/21/71	3,397,900	193,377	5.691	4.255
\$150,000,000 Series Q and R Water Bonds	11/09/71	5,171,850	265,734	5.138	4.342
\$ 40,000,000 Series S Water Bonds	3/28/72	1,399,160	76,509	5.468	4.371
\$139,165,000 Devil Canyon-Castaic Revenue Bonds	8/08/72	4,776,204	258,839	5.419	4.457
\$ 10,000,000 Series T Water Bonds	3/20/73	185,265	9,491	5.123	4.459
\$ 10,000,000 Series U Water Bonds	1/13/76	158,750	8,731	5.500	4.462
\$ 10,000,000 Series V Water Bonds	11/15/77	158,750	7,573	4.770	4.462
\$ 95,800,000 Pyramid Hydroelectric Revenue Bonds	12/30/79	2,260,072	172,495	7.632	4.584
\$150,000,000 Reid Gardner Project, Series A Bond Anticipation Notes	7/1/81	347,906	29,572	8.500	
\$ 75,600,000 Bottle Rock Project, Bond Anticipation Notes	12/1/81	264,600	25,137	9.500	
\$ 24,400,000 Alamo Project, Bond Anticipation Notes	12/1/81	24,266	2,305	9.499	4.589
\$200,000,000 Reid Gardner Project, Series B Revenue Bonds	7/07/82	4,623,137	553,793	11.979	
\$125,000,000 Reid Gardner Project, Series C Revenue Bonds	11/16/82	2,720,045	255,744	9.402	
\$ 37,500,000 Small Hydro Project I, Series D Revenue Bonds	11/16/82	837,769	84,587	10.097	4.666
\$ 37,500,000 South Geysers Project, Series D Revenue Bonds	11/16/82	930,325	90,021	9.676	
\$125,000,000 Bottle Rock Project, Series E Revenue Bonds	4/27/83	2,624,805	225,102	8.576	
\$ 50,000,000 Alamo Project, Series F Revenue Bonds	4/27/83	1,190,763	100,836	8.468	4.727
\$ 25,000,000 South Geysers Project, Series F Revenue Bonds	4/27/83	608,550	52,578	8.640	
\$239,505,000 Reid Gardner Project, Series G Revenue Bonds	3/15/85	4,524,136	425,840	9.413	
\$206,690,000 Power Facilities Series H Revenue Bonds	6/20/86	4,430,520	347,745	7.849	4.713
\$132,000,000 East Branch Enlargement, Series A Water System Revenue Bonds	7/15/86	3,427,165	254,915	7.438	
\$100,000,000 Series B Water System Revenue Bonds	5/05/87	2,564,012	194,817	7.598	
\$ 9,000,000 Series C Water System Revenue Bonds	12/01/87	324,000	31,995	9.875	
\$100,000,000 Series D Water System Revenue Bonds	6/14/88	2,640,510	201,253	7.622	
\$ 9,000,000 Series E Water System Revenue Bonds	11/29/88	324,000	31,995	9.875	
\$160,030,000 Series F Water System Revenue Bonds	3/15/89	2,779,838	189,261	6.808	
\$100,000,000 Series G Water System Revenue Bonds	3/06/90	2,434,175	172,277	7.077	
\$100,000,000 Series H Water System Revenue Bonds	1/10/91	2,459,172	168,857	6.866	
\$180,000,000 Series I Water System Revenue Bonds	5/14/91	4,366,680	294,090	6.735	
\$649,835,000 Series J Water System Revenue Bonds	1/16/92	12,422,222	745,198	5.999	
\$100,000,000 Series K Water System Revenue Bonds	5/12/92	2,366,783	147,064	6.214	
\$ 9,000,000 Series W Water Bonds	8/19/92	95,250	6,172	6.480	4.621
\$537,830,000 Series L Water System Revenue Bonds	5/19/93	11,414,859	640,518	5.611	4.620
\$ 2,000,000 Series X Water Bonds	9/01/93	26,000	1,247	4.796	
\$ 1,400,000 Series Y Water Bonds	11/30/94	19,483	1,249	6.411	
\$190,000,000 Series M Water System Revenue Bonds	12/19/93	3,911,846	194,981	4.984	
\$152,000,000 Series N Water System Revenue Bonds	3/03/95	2,241,606	122,658	5.472	
\$335,000,000 Series O Water System Revenue Bonds	12/05/95	7,528,890	375,667	4.990	
\$160,000,000 Series P Water System Revenue Bonds	5/07/96	3,553,823	204,524	5.755	
\$266,630,000 Series Q Water System Revenue Bonds	11/05/96	5,481,815	299,846	5.470	
\$ 20,700,000 Series R Water System Revenue Bonds	3/10/97	564,125	36,627	6.493	
\$200,205,000 Series S Water System Revenue Bonds	7/30/97	4,093,110	203,755	4.978	4.615
\$135,665,000 Series T Water System Revenue Bonds	7/30/97	1,310,620	66,942	5.108	
\$207,180,000 Series U Water System Revenue Bonds	12/01/98	4,032,075	200,759	4.979	
\$ 20,580,000 Series V Water System Revenue Bonds	12/01/98	525,100	32,819	6.250	
Total		174,034,974	10,288,196		
Portion allocated to Project Interest Rate		63,856,942	2,946,804	4.615	4.615

^aA unit equivalent to one dollar of principal amount outstanding for 1 year.^bThe total interest cost (without regard to discounts paid or premiums received) divided by the total dollar-years, expressed as a percent.^cDetermined by dividing cumulative interest costs by cumulative dollar-years, expressed as a percent. Excludes Oroville Field Division bonds and revenue bonds for off-aqueduct power facilities, the East Branch Enlargement facilities, East Branch Extension facilities, or water system facilities as defined in the Water Revenue Bond Amendment.

- Future capital costs in Appendix B are based on the prevailing prices as of December 31, 2000. Those costs presented in the financial analysis include allowances for price escalation.
- Pre-2001 charges in Appendix B represent charges as they should have been according to currently known conditions. Pre-2001 charges included in Table 14-2 are those actually paid as part of previously determined bills.
- Charges in Appendix B are unadjusted for past overpayments or underpayments. Charges included in Table 14-2 for 2001 and thereafter have been adjusted for any apparent overpayments or underpayments of pre-2001 charges.
- Charges in Appendix B for East Branch Enlargement costs include the amounts for debt service and 25 percent cover for the East Branch Enlargement share of the Series A through Series V bonds. Charges in Table 14-2 also include amounts of the debt service and cover for assumed future bonds.
- The water revenue bond surcharge in Appendix B applies only to the Series B through Series V bonds. Surcharge values included in Table 14-2 apply to Series B through Series V bonds and to assumed future issues required to finance SWP construction costs included in Table 14-1.
- minimum OMP&R component of the Transportation Charge for Off-Aqueduct Power Facilities;
- Water System Revenue Bond Surcharge;
- capital cost component of the Transportation Charge for East Branch Enlargement Facilities;
- capital cost component of the Transportation Charge for Coastal Branch Extension Facilities; and
- capital cost component of the Transportation Charge for East Branch Extension Facilities.

Line 12, Rate Management Adjustments, shows the projected amount of revenue reductions allocated to SWP contractors after repayment of the California Water Fund (see Line 36). Under provisions of the Monterey Amendment, the reduction amount allocated to agricultural contractors is deposited into a trust fund to stabilize payments in water-short years. The urban contractor allocation is applied as a direct reduction in charges.

Line 13, Federal Payments for Project Operating Costs, shows federal payments made according to the December 31, 1961, agreement between California and the United States providing for the Department to operate and maintain the San Luis Joint-Use Facilities. According to the January 12, 1972, supplement to the agreement, the Bureau of Reclamation initially paid 45 percent of OM&R costs for those activities. (The percentage does not apply to power costs; the Bureau and the Department provide their own power to pump water through the joint facilities.)

The percentage paid by the Bureau is periodically reviewed by the Bureau and the Department. The most recent review of the percentage paid by the Bureau was completed in 1987 and resulted in a federal share of 44.09 percent. The amounts in Line 13 are based on the assumption that the federal share will continue at 44.09 percent for calendar years 2001 through 2015. Line 14, Appropriations for Operating Costs Allocated to Recreation, shows appropriations made under the Davis-Dolwig Act. In passing the Davis-Dolwig Act, the California Legislature

Line 10, Subtotal, Water Contractor Payments, is the total of Lines 2 through 9.

Line 11, Revenue Bond Cover Adjustments, represents the credit to contractors resulting from the cover of 25 percent of 1 year's debt service for Off-Aqueduct Power Facility Bonds and Water System Revenue Bonds. Cover is collected as required by the bond resolutions to provide security to the bondholders. If not needed to meet annual bond service, the cover is credited to the contractors in the following year. The annual charges for the following cost components include an amount for bond cover:

declared its intent that except for funds provided according to Assembly Bill 12 (1966), the Department budget will include appropriations of monies from the General Fund necessary for enhancement of fish and wildlife and recreation in connection with State water projects.

Annual OMP&R costs allocated to recreation and fish and wildlife enhancement are to be paid by annual appropriations from the General Fund. For fiscal years 1983-84 through 1998-99, no funds were appropriated for recreation and fish and wildlife enhancement purposes. No appropriations are indicated for 2001 through 2015.

Legislation enacted in 1989 offset a portion of the amount owed to the SWP by the State for costs allocated to recreation and to fish and wildlife enhancement against the amount the SWP owed to the California Water Fund (see line 36).

Line 15, Local Agency Payments under Davis-Grunsky Loan Repayment Contracts, shows repayment for \$52.5 million of loans disbursed as of December 31, 2000. Repayment on any future loans was assumed to be beyond the period covered by the financial analysis.

Line 16, Revenue Bond Proceeds, includes bond proceeds classified as special reserves according to the description of revenue bond financing in Line 16 of Table 14-1. Those proceeds, used for capitalized OMP&R costs, revenue bond debt service, and debt service reserves, are not classified as revenue but are included in this line to simplify the financial presentation.

Line 17, Interest Earnings on Operating Revenues, includes interest earnings on unexpended proceeds from the sale of general obligation bonds, interest on operating reserves, and other short-term investment earnings on SWP revenues.

Line 18, Payments under Oroville-Thermalito Power Sale Contract, shows payments from Pacific Gas and Electric Company, Southern California Edison Company, and San Diego Gas and Electric

Company. Those utilities purchased all power generation from Hyatt and Thermalito Power Plants before April 1, 1983, according to a power sale contract dated November 29, 1967. The 1952-2000 entry includes amounts of final settlement of payments made according to the contract.

Line 19, Miscellaneous Revenues, includes all other operating revenues not included in Lines 2 through 18.

Line 20, Subtotal, Other Revenues, is the total of Lines 13 through 19.

Line 21, Total Operating Revenues, is the total of Lines 10, 11, 12, and 20.

Line 22, Total Operating Revenues and Capital Resources Revenues, is the total of Lines 1 and 21.

Project Expenses

Project expenses include

- operations, maintenance, and power costs
- deposits to replacement reserves
- deposits to special reserves
- capital resources expenditures
- debt service

Revenue bond proceeds earmarked for debt service during construction and the first year's operating expenses are deposited in the Central Valley Water Project Construction Fund and disbursed according to resolutions authorizing the issuance of such bonds.

Water contractor revenues associated with operating costs and debt service attributable to projects financed by revenue bonds are deposited in the Central Valley Water Project Revenue Fund for appropriate disbursement. All other operating revenues are deposited in the California Water Resources Development Bond Fund-Systems Revenue Account and are disbursed according to the following four priorities of use as specified in the Burns-Porter Act:

- (1) SWP operations, maintenance, power, and replacement costs;
- (2) general obligation bond debt service;
- (3) repayment of expenditures from the California Water Fund; and
- (4) deposits to a reserve for future SWP construction.

Project expenses are presented in Lines 23 through 33 of Table 14-2.

Line 23, Project Operations, Maintenance, and Power Costs, shows the OM&P portion of the historical and projected costs presented in Table 14-10 on page 189.

Table 14-10 and Line 23 of Table 14-2 also include amounts of the operations and maintenance costs for the federal share of joint facilities and those OM&P costs allocated to recreation, which are intended to be offset by revenues listed in Lines 13 and 14.

Allowances for cost escalations are included in OM&P costs through the year 2003. Allowances for additional long-term price escalations in the future are not included in these estimates because changes in OM&P costs do not substantially affect the overall results of the financial analysis. (For the most part, changes in OM&P costs cause direct offsetting changes in operating revenues.)

Power costs make up the major item of annual operating expenses for the SWP. Assumptions about future power sources and costs are discussed in Chapter 10, "Power Resources." Line 23 also includes costs associated with power transactions that result in the sale of power not required for the delivery of water.

Line 24, Deposits to Replacement Reserves, shows funds set aside as required by contract for replacing existing SWP facilities. By December 31, 2000, \$60.2 million had been spent for replacement costs; the balance of the replacement reserve as of that date was \$20.1 million. Replacement reserve amounts are also included in Table 14-10.

Line 25, Deposits to Special Reserves Under Revenue Bond Financing, includes two significant components: special reserve deposits related to revenue bonds and capital resources revenue carryover from prior years used for construction in the current year. Special reserve deposits are the net of several income and expenditure items. Income items related to revenue bonds are as follows:

- proceeds set aside to pay bond interest during construction (capitalized interest)
- proceeds set aside for first year operating costs (capitalized operations and maintenance)
- water contractor payments or bond proceeds set aside for debt service reserves
- water contractor payments for revenue bond cover requirements
- deposits to and withdrawals from operating reserves to meet day-to-day cash flow requirements

The 1952-2000 column also includes advances to the Department's revolving fund for working funds to purchase mobile equipment and to meet day-to-day operating expenses.

The expenditure items related to revenue bonds are as follows:

- debt service cover payments returned to water contractors
- debt service reserve interest payments returned to water contractors
- surplus account funds returned to water contractors or applied to meet expenses
- total capitalized interest paid out
- total capitalized operations and maintenance paid out

Special reserves, reduced over time as reserved amounts, are used for their respective purposes. The amount indicated each year in Line 25 indicates the change from the previous year. A negative number indicates a withdrawal of special reserves to meet expenses, while a positive number indicates a deposit.

Line 26, Capital Resources Expenditures, includes the amount of capital resources revenues applied to construction that is shown in Line 31 of Table 14-1. In Table 14-2, these expenditures are funded out of withdrawals from the reserves in Line 25 and do not affect net revenues shown in Line 35.

Lines 27 and 28, Payment of Debt Service on Bonds Sold through December 31, 2000, show the total principal and interest payments on bonds sold to date. Table 14-11 on page 190 summarizes payments on general obligation bonds (Series A through Y water bonds), power revenue bonds by project, and water system revenue bonds (Series A through V).

Lines 29 and 30, Payments on Projected Future Water Bonds, include the projected annual debt service amounts for future water revenue bonds included on Lines 23 and 25 of Table 14-1 for the East Branch Extension and other water system facilities. Assumptions about the service on these future bonds are that

- interest costs for the water revenue bonds average 6.0 percent
- bonds are to be repaid within 35 years of sale with maturities commencing in the year following the date of sale and with equal annual bond service for the principal repayment period

Lines 31 and 32, Total Payments of Bond Debt Service, show the total of principal payments indicated on Lines 27 and 29 and the total of interest repayments indicated on Lines 28 and 30.

Line 33, Subtotal, Debt Service, is the total of Lines 31 and 32.

Line 34, Total Operating Expenses and Debt Service, is the total of Lines 23, 24, 25, 26, and 33.

Line 35, Net System Revenues, shows the annual amounts of revenues remaining after the payment of operating costs and bond debt service costs.

Line 36, California Water Fund Repayment, shows the total amount of repayments made to the California Water Fund to reimburse the fund for monies expended for construction of the State Water Resources Development System.

Repayment of the California Water Fund was completed in 1998 after reimbursements totaling \$508 million. In addition to the \$297 million of repayments shown in Line 36, \$211 million of reimbursement were credited to the SWP as off-sets for recreation and fish and wildlife enhancement expenditures.

Line 37, Revenues Used for Capital Expenditures, includes the amounts required annually for financing scheduled capital expenditures. Revenues not needed for operating costs or debt service are available for financing SWP capital expenditures.

Future Costs of Water Service

Estimates of future water costs are useful to SWP contractors for short-range and long-range planning of water needs, operations, and budgets. Unit water charges shown in Table 14-12 represent both unescalated and escalated costs of water according to service areas for years 2002 and 2007. The unit rates include costs of existing and future SWP facilities accounted for in Table 14-1 and Table 14-7. The unit charges are based on the assumption that in 2002 and 2007, the SWP will be able to deliver the entire amounts of water requested by contractors. The unit water charges included in Table 14-12 are listed both as unescalated 2000 dollars and as escalated rates reflecting assumed future inflation.

The Department's estimates of future capital expenditures include allowances for escalation of construction costs at 3 percent per year for 2001 through 2002 and at 4 percent per year for 2003 through 2015. The escalation rates for future power sources vary, depending on the source of energy.

Table 14-12. Estimated Unit Water Charges for 2002 and 2007, by Service Area (Dollars per Acre-Foot)

Service Area and Charge	2002		2007	
	Unescalated	Escalated	Unescalated	Escalated
<i>Feather River Area</i>				
Capital; Operations, Maintenance, and Replacement (OM&R)	27	27	27	27
<i>North Bay Area</i>				
Capital; OM&R	156	155	140	142
Power	26	26	20	21
Total	181	181	160	163
<i>South Bay Area</i>				
Capital; OM&R	95	95	91	92
Power	51	51	43	45
Total	146	146	134	137
<i>Coastal Area</i>				
Capital; OM&R	477	477	478	479
Power	141	141	119	125
Total	618	618	597	604
<i>San Joaquin Area</i>				
Capital; OM&R	52	52	53	55
Power	26	26	20	21
Total	78	78	73	76
<i>Southern California Area</i>				
Capital; OM&R	137	137	127	129
Power	168	168	131	137
Total	305	305	258	266

Information for this chapter was provided by the State Water Project Analysis Office in conjunction with the Division of Fiscal Services.

Chapter 15

SWP Education and Information



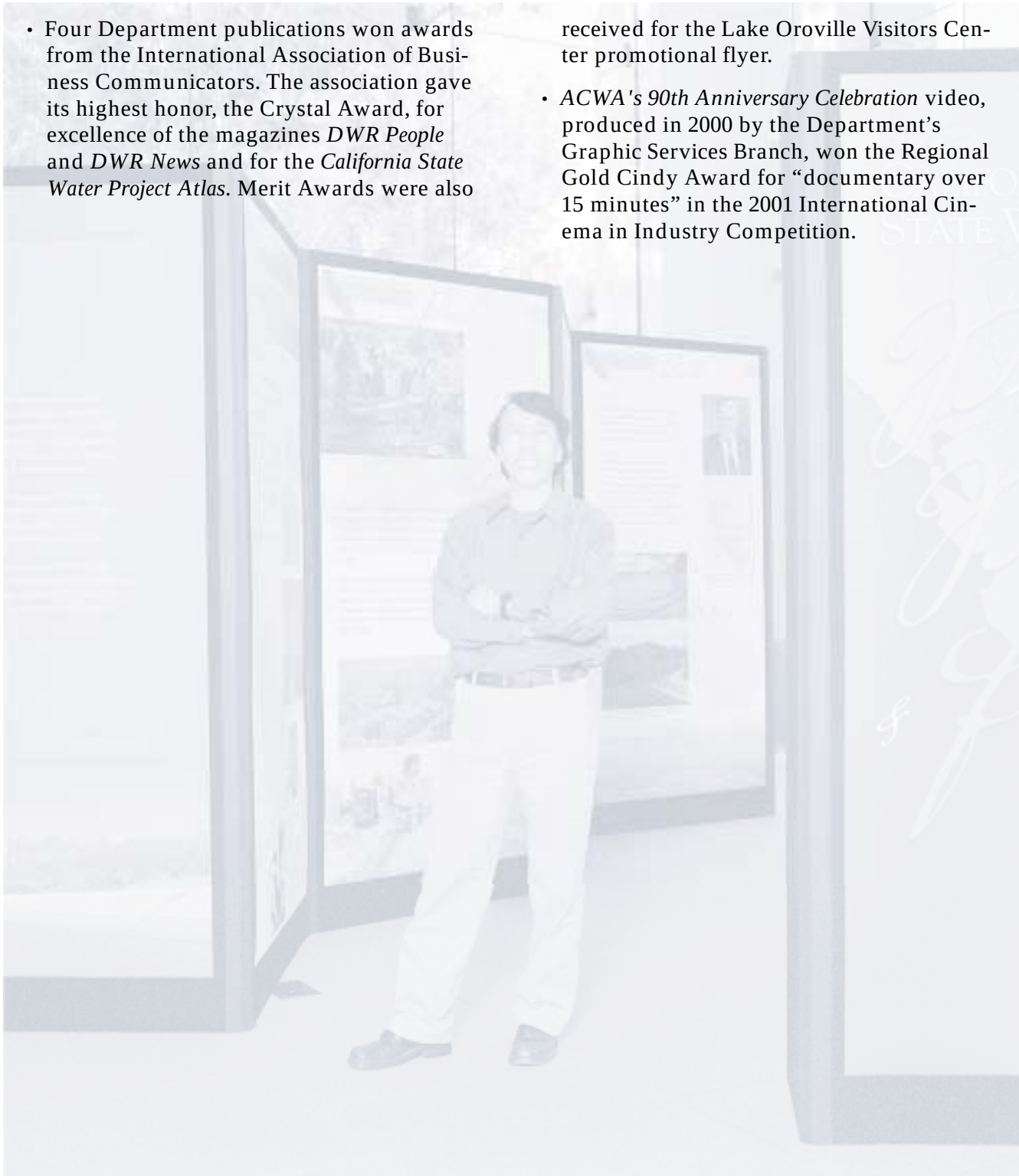
Graphic Designer Xiaojun Li stands next to his State Water Project exhibit, created for the 40th anniversary of the 1960 bond act funding the SWP

Significant Events in 2000

- Four Department publications won awards from the International Association of Business Communicators. The association gave its highest honor, the Crystal Award, for excellence of the magazines *DWR People* and *DWR News* and for the *California State Water Project Atlas*. Merit Awards were also

received for the Lake Oroville Visitors Center promotional flyer.

- *ACWA's 90th Anniversary Celebration* video, produced in 2000 by the Department's Graphic Services Branch, won the Regional Gold Cindy Award for "documentary over 15 minutes" in the 2001 International Cinema in Industry Competition.



The Office of Water Education most often represents the Department to the public. OWE has developed sophisticated graphics, video, and photography units that provide tools for their varied functions. OWE deals directly with the news media to communicate the Department's activities and policies and with the public via educational programs that demonstrate the Department's role in providing a reliable, high quality water supply for the State.

Media Outreach

Flood Preparedness

OWE assisted in the development of improved briefings and tours of the Flood Center and publicized flood season meetings and planning. An Internet site provided the public and news media with information on flood preparedness and emergency work. The flood update site continued in 2000 with maps of the Sacramento and San Joaquin River systems and the State's hydrologic regions. During winter 2000, the news media was informed of Web sites where they could retrieve Department reports of reservoir conditions and river flows. Many television stations used graphs generated by California Data Exchange Center and interpreted by Department information officers.

Snow Surveys

OWE provided media outreach for the Division of Flood Management's Snow Surveys Section in 2000.

Drought Panel

OWE issued news releases, posted a new Web page, provided audio-video assistance, briefed State Water Contractors, and distributed a Department report in support of the Governor's new Advisory Drought Planning Panel.

California State Water Project Atlas

With funding provided by State Water Project Contractors, OWE arranged promotions of the *California State Water Project Atlas*.

CALFED

OWE assisted CALFED in a number of media outreach activities, including communicating the importance of its Record of Decision, a framework for managing California's water.

News Events

The Department notified news media of the following water-related highlights of 2000:

- announcements to SWP contractors for (1) a 10 percent reduction from anticipated full deliveries due to dry hydrology and current SWP water supplies, resulting in anticipated deliveries of about 3.4 million acre-feet, and (2) 60 million acre-feet since deliveries began in 1962;
- an October agreement between DFM and the National Weather Service to change flood terminology from "warning stage" to "monitor stage;"
- public scoping meetings to initiate preparation of the next *California Water Plan Update* in 2003;
- Water Bond 2000 Web site providing information on the Department and other agency programs using \$1.97 million approved by voters in March 2000;

- Governor's Advisory Drought Planning Panel that will develop a plan to reduce the impacts of critical water shortages in California;
- continuation of a series of public meetings to gather information and comments for the updated Department bulletin on the State's groundwater resources, scheduled for completion in 2002; and
- dedication of Diamond Valley Lake in Riverside County, a Metropolitan Water District of Southern California reservoir, for storage of SWP and Colorado River water.

Community Relations

Oroville

OWE staff assisted in preparation and media outreach for Oroville community meetings regarding the Department's license renewal application to the Federal Energy Regulatory Commission for Oroville's hydroelectric and ancillary facilities, groundbreaking for construction of the new Lime Saddle Campground, and the Department's operations at Oroville Dam. OWE maintained the Lake Oroville recreation Internet site, www.dwr.water.ca.gov/LakeOroville, which provides information for tourists about the lake's recreational opportunities and other area facilities and attractions. In addition, the Department provided photography support to the City of Oroville and the Oroville Area Chamber of Commerce for various community events.

State Sesquicentennial

Commemoration of California's 150th year of statehood was a special focus of OWE during 2000. Exhibits and booths showing "150 Years of Water History" were displayed in dozens of California communities. OWE photographed and videotaped portions of a September 8-10 celebration at Capitol Park, including a speech by the Governor and a new U.S. postage stamp honoring California's admission to the Union.

OWE visited the Sacramento River Discovery Center in Red Bluff and the visitor facility at Lake Mendocino to view displays and to evaluate information programs as part of the Department's partnership outreach on water and environmental issues.

OWE participated in the SWP Recreation Coordinating Committee meetings in July in San Diego concerning SWP lake management, new boating facilities, SWP activities, water quality, and recreation for the disabled.

Publications

SWP Brochures. OWE's new brochures included the State Water Project Publications catalog, State Water Contractors' service areas pamphlet, the Water Safety Materials catalog, *California State Water Project Atlas*, and the Vista Del Lago Visitors Center promotional card. The publications catalog provides photos and text descriptions of all SWP-related publications.

Revisions continued in 2000 on the 26 individual publications in the State Water Project Brochure Series, including a new color version of the SWP brochure, revised Lake Oroville promotional card, Pyramid Lake brochure, and Vista Del Lago Visitors Center guide (Spanish and English). New full-color brochures promoting sales of the *California State Water Project Atlas* were published and distributed at the Association of California Water Agencies spring conference.

DWR News. A 76-page *DWR News Special Edition* marked the fortieth anniversary of passage of the \$1.75 billion SWP bond issue in 1960 and was distributed at the ACWA spring conference in Anaheim. The *DWR News* Web site was placed on the Department's home page.

E-News. For the past several years, OWE has made a daily e-mail distribution to Department management of the *California Water News*, a compilation of major newspaper articles of interest to the Department. Distribution has widened to include nearly 4,000 individuals and agencies throughout the State, SWP contractors,

municipal and private water agencies, other government departments, and educators and librarians.

The Department went online in May with a water bond Web site providing the public and interested agencies with information on the Department's implementation of programs funded by passage of Proposition 13. The Web site is coordinated with DFM and Division of Planning and Local Assistance.

OWE administered the *Recent News* at www.dwr.water.ca.gov/, posted news releases, news advisories, and new Web sites involving Proposition 13, Governor's Advisory Drought Planning Panel, DWR News Online, Flood Update, FERC relicensing of Oroville, Monterey Agreement, and water bonds.

DWR People. The Department's employee newsletter continued as a quarterly publication during 2000. Stories spotlight individual and team accomplishments, skills, awards, promotions, retirements, and other news items.

The winter issue of *DWR People* featured work on fish grates at Lake Davis. The spring issue featured the Integrated Storage Investigations program, Sacramento Maintenance Yard's Safety Award, the 1999 United California State Employees Campaign results, and the Department's annual awards. The summer issue focused on the Department's retirements, gubernatorial appointments, and the work of education and employment office counselors.

Video

Lake Oroville. To promote attendance at Oroville's Feather Fiesta Days, a public service announcement was created and airtime purchased on six Northern California television stations (one Spanish language).

SWP Construction and Related Projects. The Department took aerial footage of the South Delta Dredging Project, habitat growth at Twitchell Island, Decker Island Habitat Project, and berming of levees on Webb Tract.

OWE staff provided support to Central Valley flood preparedness efforts by producing and distributing public service announcements to local television stations on how to prepare sandbags. This was supplemented by community outreach efforts in Oroville and Los Banos with local emergency service coordinators.

OWE staff worked with ACWA to develop videos for ACWA's 90th anniversary conference in Southern California in November.

Photography

The Department's photography unit provided photographs for an article in the *San Jose Mercury News* on benefits provided to the Santa Clara Valley by the South Bay Aqueduct. The unit also provided photographs for an article on the California Aqueduct in *California Construction Link* magazine, documented Admission Day 2000, and provided images to a publisher of State textbooks on the earth sciences.

Visitors Centers Program and Promotion

During 2000, 568,435 visitors were welcomed at the SWP visitors centers and field division facilities listed in Table 15-1.

Table 15-1. Visitor-Days Recorded in 2000, by Location

Field Division	Visitor-Days
Oroville	268,260
Delta	1,269
San Luis	156,557
San Joaquin	3,838
Southern	138,511
Total	568,435

Promotional brochures for Vista del Lago, San Luis, and Oroville Visitors Centers were placed in hotels and travel agencies. Newspaper and magazine ads were also prepared to promote Oroville recreation. Figure 15-1 shows visitors centers on the SWP.

Travel planners were encouraged to schedule trips for senior groups to SWP visitors centers. Tabletop displays were set up at travel



Figure 15-1. Visitors Centers on the SWP

conferences and promotional items, such as tote bags and sports bottles, were distributed. OWE briefed the State Water Contractors Public Affairs Advisory Committee on media outreach activities and on plans to freshen exhibits at Vista Del Lago Visitors Center in 2000-01 to stimulate public interest on current water issues.

SWP Tours

During 2000, the Department welcomed 985 visitors, both foreign and domestic, including visitors from the following countries: China, Chile, Japan, India, the Philippines, and Portugal. The Department gave tours to students and representatives of the United Nations, U.S. Department of Agriculture, Americorp, the California State Legislature, and Congress.

Water Safety Education

The Department distributed a Spanish version of the *Albert and Einstein Water Safety Activity* coloring book, designed to increase children's awareness of the dangers of playing near the California Aqueduct.

The English and Spanish Aqueduct safety radio messages, "Warning! Danger Lurking in California" and "Notorious Killer," were broadcast to appeal to young adult males. The announcements were targeted during early summer to listeners in the lower San Joaquin and Antelope Valleys. OWE provided a summary of the Department's water safety education materials to the *Fresno Bee*.

Water safety video messages also were played to visitors at the annual Cal Expo Boat Show and Sportsmen's Expo in Sacramento.

Displays and Exhibits

During 2000, the Department created the following items related to the SWP:

- an exhibit at the Golden State Museum featuring the history of the SWP and celebrat-

ing the fortieth anniversary of the 1960 bond act funding its construction;

- the State Water Contractors' display at Vista Del Lago Visitors Center, consisting of diagrams and descriptions of the counties the SWP flows through and the effects of its delivery;
- SWP maps designed for educational institutions and water contractors and detailed maps for maintenance and emergency response in the Department's Southern Field Division;
- design of SWP Web site and a 2000 calendar;
- printed materials and upgraded displays for the Feather River Fish Hatchery, including 3-dimensional fish displays for the visually impaired;
- exhibits, videos, and informational materials for use at the ACWA spring and fall conferences, including artwork for an exhibit and pamphlet featuring State Water Contractors' service areas;
- film documentation of SWP Aqueduct repair;
- League of California Cities conference exhibit providing information on sources of California water, emphasizing the SWP;
- exhibits and materials promoting recreation along the SWP for the Sportsmen's Expo;
- exhibits featuring recreation at Lake Oroville and FERC relicensing of Oroville power facilities; and
- display for the Abilities Expo, held in San Mateo, produced by the Graphic Services design team and the Department of Parks and Recreation.

School Education Program

The program's goal is to provide students and educators with a statewide perspective on water issues and concepts. The Department develops and promotes high quality materials, provided free to schools, educators, and water districts.

Key projects for 2000 included:

- a single video that combined the productions, *The Water Cycle and Water: Who Needs It?*, and a 30-second water safety animation for children in grades Kindergarten through 6 was demonstrated to elementary school children and presented at various local events. The packet provides instructors with materials that can be easily reproduced at low cost;
- teacher's guide and student passport for the Lake Oroville Visitors Center and a promotional flyer for the Water Wise Badge for Vista del Lago;
- an updated *Water Facts and Fun* catalog and order form for education materials;
- coordination and participation in Water Education Committee meetings sponsored by the Municipal Water District of Orange County, Metropolitan, East Bay Municipal Utilities District, Farm Water Coalition, and Westlands Water District;
- participation in environmental education activities including the California Department of Education's Environmental Education Advisory Committee, the California Environmental Education Interagency Network, and the second annual Environmental Awareness Day on May 24 in San Francisco, sponsored by the California Public Utilities Commission;
- cosponsorship of the Environmental Campaign for fifth grade students, with the State of California and the Walt Disney Corporation;
- assistance to the Department of Education's Regional Environmental Education Coordinators and the Aquatic Outreach Institute's Educator Conference on creeks, wetlands, and watersheds; and
- presentation of the Grand Prize for Environmental Challenge and a trip to Disneyland to the winning elementary school in Los Banos.

Water Awareness Month Activities

During May 2000, the Department celebrated Water Awareness Month for the thirteenth consecutive year. The theme was *Use Water Wisely: It's a Way of Life*.

As part of Water Awareness Month, the Department's news releases highlighted the public sale of the *California State Water Project Atlas* as well as activities at SWP visitors centers. The Department's public information officers answered media inquiries regarding Water Awareness Month and special events marking the annual observance. OWE also provided four children's exhibits to the Central Valley Water Awareness Committee for an event May 5 through 7 in Fresno.

The Department and water agencies throughout the State distributed approximately 4,000 water education teachers' kits for grades Kindergarten through 6.

Information for this chapter was provided by the Office of Water Education.

Table 14-7. Application of Revenue Bond Proceeds (Millions of Dollars)

Bond Series ^a	Construction Expenditure	Other Capital Requirements				Subtotal	Total Principal Amount of Bonds
		Reimbursement of General Fund	Capitalized Interest	Capitalized Operating Costs	Bond Financing and Refunding Costs ^b		
Oroville	218.0	2.6	19.9	1.5	3.0	27.0	245.0
Devil Canyon-Castaic	126.4	0.0	10.0	0.7	2.1	12.8	139.2
Pyramid Series A	74.0	0.0	19.2	1.0	1.6	21.8	95.8
Reid Gardner Series B	146.1	0.0	41.9	0.0	12.0	53.9	200.0
Reid Gardner Series C	91.1	0.0	17.9	7.9	8.1	33.9	125.0
Small Hydro-South Geysers Series D	49.6	0.0	19.9	0.0	5.5	25.4	75.0
Bottle Rock Series E	96.9	0.0	22.0	3.7	2.4	28.1	125.0
Alamo-South Geysers Series F	59.1	0.0	14.2	0.0	1.7	15.9	75.0
Reid Gardner Series G	1.6	0.0	0.0	0.0	237.9	237.9	239.5
Power Facilities Series H	22.2	0.0	0.0	0.0	184.5	184.5	206.7
East Branch Enlargement Series A	108.3	0.0	12.6	0.0	11.1	23.7	132.0
Water System Facilities Series B	97.4	0.0	0.0	0.0	2.6	2.6	100.0
Water System Facilities Series C	0.6	0.0	0.0	0.0	8.4	8.4	9.0
Water System Facilities Series D	95.9	0.0	2.9	0.0	1.2	4.1	100.0
Water System Facilities Series E	0.4	0.0	0.0	0.0	8.6	8.6	9.0
Water System Facilities Series F	0.0	0.0	0.0	0.0	160.0	160.0	160.0
Water System Facilities Series G	86.8	0.0	4.6	0.0	8.6	13.2	100.0
Water System Facilities Series H	85.5	0.0	5.7	0.0	8.8	14.5	100.0
Water System Facilities Series I	158.9	0.0	5.8	0.0	15.3	21.1	180.0
Water System Facilities Series J	0.0	0.0	0.0	0.0	649.8	649.8	649.8
Water System Facilities Series K	88.6	0.0	3.1	0.0	8.3	11.4	100.0
Water System Facilities Series L	0.0	0.0	0.0	0.0	537.8	537.8	537.8
Water System Facilities Series M	166.3	0.0	9.9	0.0	13.8	23.7	190.0
Water System Facilities Series N	137.4	0.0	6.0	0.0	8.6	14.6	152.0
Water System Facilities Series O	156.5	0.0	8.4	0.0	170.1	178.5	335.0
Water System Facilities Series P	141.6	0.0	5.2	0.0	13.2	18.4	160.0
Water System Facilities Series Q	135.0	0.0	8.0	0.0	123.6	131.6	266.6
Water System Facilities Series R	0.0	0.0	0.0	0.0	20.7	20.7	20.7
Water System Facilities Series S	78.2	0.0	5.8	0.0	116.2	122.0	200.2
Water System Facilities Series T	0.0	0.0	0.0	0.0	135.7	135.7	135.7
Water System Facilities Series U	98.7	0.0	5.3	0.0	103.2	108.5	207.2
Water System Facilities Series V	0.0	0.0	0.0	0.0	20.6	20.6	20.6
<i>Subtotal</i>	<i>2,521.1</i>	<i>2.6</i>	<i>248.3</i>	<i>14.8</i>	<i>2,605.0</i>	<i>2,870.7</i>	<i>5,391.8</i>
Future East Branch Extension Bonds	68.0	0.0	4.7	0.0	6.3	11.0	79.0
Future Water System Facilities Bonds	189.4	0.0	13.2	0.0	17.6	30.8	220.2
Total	2,778.5	2.6	266.2	14.8	2,628.9	2,912.5	5,691.0^c

^aActual bond issue for all except future water system facilities and future East Branch Enlargement bonds.

^bBond financing and refunding costs include funds applied to debt service reserve requirements.

^cIncludes \$2,215 million of refunded principal, leaving a net principal obligation of \$3,476 million.

Line 19, Water Facilities Capital Requirements, shows the total capital requirements for water facilities included in Line 17.

Capital Financing

The SWP was constructed with three general types of financing: Burns-Porter Act, revenue bonds, and capital resources. Lines 20 through 33 of Table 14-1 present specific information about those sources of financing.

Burns-Porter Act. Burns-Porter financing is derived from the sale of California Water Resources Development Bonds (general obligation bonds) and State Tideland Oil Revenues deposited in the California Water Fund as authorized by the Burns-Porter Act (California Water Code Sections 12930-12944), approved by voters in November 1960. The Burns-Porter Act authorized an issue of \$1.75 billion of general obligation State bonds, which are repaid by revenues received according to the water supply contracts. Of that authorization, \$130 million were reserved specifically for the Davis-Grunsky Act Program.

Proceeds from the sale of general obligation bonds were deposited in the California Water Resources Development Bond Fund-Bond Proceeds Account, from which monies were expended only for the construction of SWP facilities and for the Davis-Grunsky Act Program. Approximately 30 percent of the expenditures through 2000 for construction and the Davis-Grunsky Act Program were financed with general obligation bonds.

Monies deposited in the California Water Fund were appropriated for purposes outlined in the Burns-Porter Act. Such deposits were derived from a portion of the State Tideland Oil Revenues according to a continuing authorization. The California Water Fund was used to finance \$508 million, or approximately 10 percent, of the construction expenditures through 2000.

Revenue Bonds. Revenue bond financing is derived from the sale of revenue bonds as authorized by the Central Valley Project Act

(California Water Code Sections 11100-11925). The Department's authority to issue revenue bonds was confirmed by a decision of the California Supreme Court in 1963 (*Warne v. Harkness*, 60 Cal. 2d 579).

Proceeds from the sale of revenue bonds are deposited in the Central Valley Water Project Construction Fund, from which money is expended only for purposes specified in the resolution authorizing each bond sale. Those purposes, in addition to paying construction, planning, and right-of-way costs, may include funding the Debt Service Reserve Account, paying interest on bonds, and paying water system operating expenses during a specified period.

As of December 31, 2000, the Department had sold \$5.4 billion of revenue bonds. That amount includes \$2.2 billion of refunded bonds, leaving a total principal obligation of \$3.2 billion.

Capital Resources. Capital resources financing is derived from payments and appropriations (including a portion of the State Tideland Oil Revenues) authorized by a variety of special contracts, cost-sharing agreements, and legislative actions concerning the SWP, plus accrued interest on these funds.

Capital resources revenues are deposited in the Central Valley Water Project Construction Fund and may be expended for interest on general obligation bonds and costs of constructing SWP facilities.

According to the Department's financial management policy, the capital resources revenues are used first to cover any general obligation bond debt service that exceeds available revenues.

Capital Financing Sources

Capital financing sources include power revenue bonds, East Branch Enlargement bonds, East Branch Extension bonds, water system facilities bonds, initial project facilities bonds, proceeds from the Davis-Grunsky Act Program,

California Water Fund monies, and capital resources revenues.

Line 20, Power Revenue Bonds through Series H, includes the proceeds applied from power revenue bonds for Oroville, Devil Canyon, Castaic, Warne, Reid Gardner, Bottle Rock, Alamo, South Geysers, and small hydro projects.

No future power revenue bond sales are projected for the financial analysis.

Line 21, East Branch Enlargement, Current Bonds, shows that \$485 million of Water System Revenue Bond proceeds have been applied to the East Branch Enlargement project through December 31, 2000. Of this total amount, \$416 million were used for construction expenditures and \$69 million for bond discounts, interest costs, and debt service reserves.

No future East Branch Enlargement revenue bond sales are projected for the financial analysis.

Line 22, East Branch Extension, Current Bonds, shows that \$60 million of Water System Revenue Bond proceeds were available for the East Branch Extension project. Of this total, \$18 million had been spent through December 31, 2000. The remaining \$42 million will be used to pay future construction costs.

Line 23, East Branch Extension, Future Bonds, shows the Department's estimate of additional bonds required to complete construction of the East Branch Extension and to pay for bond discounts, capitalized interest, and debt service reserve requirements.

Line 24, Water System Facilities, Current Bonds, shows that through December 31, 2000, \$1.4 billion of proceeds from Water System Revenue Bonds, Series A through Series V, were applied to SWP projects other than the East Branch Enlargement and the East Branch Extension. Of this total amount, \$1.2 billion were used to pay for construction expenditures and \$0.2 billion to pay for bond discounts, capitalized interest, and debt service reserve requirements.

Line 25, Water System Facilities, Future Bonds, shows that \$220 million of future water revenue bonds are needed to provide \$191 million for construction of SWP water system facilities and \$29 million for bond discounts, interest costs, and debt service reserve requirements.

Line 26, Subtotal, Water Revenue Bonds, is the total of Lines 21 through 25.

Line 27, Initial Project Facilities Bond Proceeds, shows the amount of general obligation bonds sold to provide initial financing costs for SWP facilities and for costs of planning certain additional conservation facilities.

Financing initial facilities from general obligation bonds was completed in mid-1972 and totaled \$1.444 billion—\$1.750 billion Burns-Porter Act authorization less \$130 million reserved for the Davis-Grunsky Act Program and \$176 million “offset” for additional conservation facilities. (The Burns-Porter Act provides that to the extent California Water Fund monies are expended, an equal amount of general obligation bonds are reserved [offset] for financing the construction of additional conservation facilities in certain watersheds.)

In mid-1972, the reservation of offset bonds was effectively limited to \$176 million, the total amount of California Water Fund monies expended up to that time. By mid-1972, all general obligation bonds authorized by the Burns-Porter Act had been offset, reserved for the Davis-Grunsky Act Program, or used for SWP construction.

Approximately \$8.5 million of the offset bonds were used to finance planning studies of the Middle Fork Eel River Development. This financial analysis is not based on the use of any offset bond proceeds to meet capital requirements. If, at some time, the State constructs an additional conservation facility, as specified in Water Code Section 12938, the remaining offset bonds could be sold.

Line 28, Davis-Grunsky Act Program Bond Proceeds, shows, for simplification, the entire

\$130 million of capital expenditures authorized for the Davis-Grunsky Act Program according to the Burns-Porter Act as being funded by proceeds from the sale of general obligation bonds. In fact, \$28 million from the California Water Fund was used for the program in lieu of bond proceeds prior to 1969.

Line 29, Application of California Water Fund Monies, shows the amount of SWP costs financed under the Burns-Porter Act. The Act provides that any available money in the California Water Fund must be used for construction in lieu of proceeds from the sale of general obligation bonds.

When the Burns-Porter Act became effective in late 1960, approximately \$97 million had been accumulated in the fund. That balance plus subsequent appropriations, interest earnings, and other miscellaneous income to the fund through December 31, 2000, was used to finance a total of \$508 million of SWP costs.

Line 30, Interim Financing, shows the net annual amounts of funds flowing into and out of the Water Revenue Commercial Paper Notes program. The note program was established in March 1993 to provide an ongoing source of interim financing for Water System Projects prior to permanent financing from the sale of long-term revenue bonds. The Department has authority to issue up to \$94.4 million of Water Revenue Commercial Paper Notes. A positive number indicates money borrowed from the program to finance construction costs. A negative number indicates money repaid into the program. The financial analysis assumes that all funds borrowed from the program will be repaid before the end of the analysis period.

Line 31, Application of Capital Resources Revenues to Construction, presents the Capital Resources Revenues applied for capital expenditures.

Line 32, Revenue Transfers Applied, shows monies assumed to be transferred to the California Water Fund according to provisions of the Burns-Porter Act and subsequently reappropri-

ated to construction (see Line 37 in Table 14-2). Projected amounts for 2001 through 2015 include funds to finance expenditures for San Joaquin drainage facilities, as indicated in Line 12 of Table 14-1, and expenditures for additional conservation facilities, as indicated in Line 11.

Line 33, Subtotal, Other Capital Financing, is the total of Lines 27 through 32.

Line 34, Total Financing of Capital Requirements, totals Lines 20, 26, and 33.

Annual Revenues and Expenditures

After financial analysis of SWP operations, the Department concluded that projected payments by contractors and other revenues will be adequate to pay annual operations, maintenance, power, and replacement costs and meet all repayment obligations on funds used to finance SWP construction and other authorized costs during the period 2001 through 2015. Data on annual revenues and expenditures are presented in Table 14-2. A detailed discussion of each line item is presented below.

Project Revenues

SWP revenues consist primarily of SWP contractor payments required under their individual long-term water supply contracts. Those revenues are deposited in two funds: the Central Valley Water Project Revenue Fund, where all revenues pledged to revenue bonds are placed, and the California Water Resources Development Bond Fund-Systems Revenue Account, where all other SWP operating revenues are placed. Use of those funds is limited to paying operating costs and debt service, except that revenues in excess of those costs may be deposited to a reserve for future SWP construction since the California Water Fund has been repaid (see Line 36).

Line 1, Capital Resources Revenues, includes

- federal payments for SWP capital expenditures;

- appropriations for capital costs allocated to recreation;
- appropriations for SWP capital expenditures prior to passage of the Burns-Porter Act and according to Senate Bill 261 (1968);
- payments from Los Angeles Department of Water and Power for Castaic power development;
- advances from water contractors for construction of requested works;
- investment earnings on the Capital Resources Account; and
- investment earnings on unexpended revenue bond proceeds.

Historically, appropriations for capital costs allocated to recreation and fish and wildlife enhancement have amounted to \$5 million per year, which have been appropriated by the California Legislature from the State Tideland Oil Revenues. There have been no appropriations since 1985, and no appropriations are indicated in the financial analysis for the period 2001-2015. Legislation enacted in 1989 offset a portion of the amount owed to the SWP by the State for costs allocated to recreation and fish and wildlife enhancement against the amount the SWP owed to the California Water Fund (see Line 36).

Lines 2 through 9, Water Contractor Payments, show amounts of the separate elements of water contractor payments.

Amounts in Line 4 also include revenues sufficient to cover costs associated with sales of excess power. Appendix B of this bulletin presents a detailed explanation of payments identified in Lines 2 through 9.

Operations, maintenance, power, and replacement costs are repaid as they are incurred as part of the Transportation Charge; therefore, no interest charges are included. Construction costs included in the Transportation Charge and all construction and annual OMP&R costs included in the Delta Water Charge are to be repaid with interest at the Project Interest Rate.

The Project Interest Rate, as defined in Article 1(r) of the standard provisions for water supply contracts, is the weighted average of the rates paid on certain securities issued and loans obtained to finance SWP facilities, as described below.

According to the original contract provisions, the basis for determining the Project Interest Rate was the weighted average of rates paid on general obligation bond sales only. In 1969, after Oroville Revenue Bonds were issued, the contract was amended to expand the basis to include rates on all other securities sold and loans obtained thereafter for financing SWP facilities, including revenue bonds (see Bulletin 132-70, page 28).

However, not all proceeds from the sale of revenue bonds are melded into the calculation of the Project Interest Rate. Only those proceeds applied to construction costs (the only application of general obligation bonds permitted by law) and those consumed by the bond discount (a component of the total interest cost of a revenue bond issue) are included in the calculation (see Table 14-8).

Calculations for determining the Project Interest Rate do not include proceeds from the sale of revenue bonds for Off-Aqueduct Power Facilities, the East Branch Enlargement facilities, or water system facilities defined in the Water Revenue Bond Amendment. Table 14-9 lists all bond sales by date and presents basic information used in the calculation of the Project Interest Rate.

Information about contractor water charges in Appendix B is based on known conditions and substantiates the Department's determination of 2002 water charges to be billed July 1, 2001. However, information about significant differences between the sum of future charges included in Lines 2 through 9 of Table 14-2 and the substantiation of 2001 charges included in Appendix B are as described below.

Table 14-8. Effect of Revenue Bond Proceeds on Project Interest Rate (Millions of Dollars)

Project	Proceeds Included in Project Interest Rate					
	Applied to Construction Costs	Less Portion of Proceeds Derived from Interest Earnings Prior to Delivery of Bonds	Plus Bond Discount and Financing Costs	Subtotal, Proceeds Included in Calculating Project Interest Rate	Total Principal Amount of Bonds	Percentage of Total Amount Included in Calculating Project Interest Rate
Devil Canyon-Castaic Project Revenue Bonds	125.3	1.5	1.4	125.2	139.2	90.0
Pyramid Project Revenue Bonds (Series A)	71.2	0.5	1.1	71.8	95.8	75.0
Alamo Project Bond Anticipation Note	16.8	0.1	0.3	17.0	24.4	70.0
Small Hydro Project I Revenue Bonds (Series D)	25.4	0.2	1.5	26.7	37.5	71.0
Alamo Project Revenue Bonds (Series F)	38.9	0.3	0.7	39.3	50.0	79.0
Power Facilities						
Revenue Bonds (Series H)						
Facility						
Pyramid Project	5.0	0.0	0.1	5.1	5.1	100.0
Alamo Project	1.7	0.0	0.0	1.7	1.7	100.0
Small Hydro Project I	25.2 ^a	0.2	0.4	25.4	35.6	71.0
Water System Revenue Bonds (Series J)						
Facility						
Pyramid Project	0	0	75.9 ^b	75.9	99.2 ^b	77.0
Alamo Project	0	0	45.6 ^b	45.6	57.1 ^b	80.0
Small Hydro Project I	0	0	27.8 ^b	27.8	38.8 ^b	72.0
Water System Revenue Bonds (Series L)						
Facility						
Small Hydro Project I	0	0	1.5 ^b	1.5	2.1 ^b	71.0
Water System Revenue Bonds (Series Q)						
Facility						
Pyramid Project	0	0	3.0 ^b	3.0	3.9 ^b	77.0
Alamo Project	0	0	4.8 ^b	4.8	6.0 ^b	80.0
Water System Revenue Bonds (Series S)						
Facility						
Pyramid Project	0	0	8.0 ^b	8.0	10.4 ^b	77.0
Alamo Project	0	0	7.6 ^b	7.6	9.5 ^b	80.0
Water System Revenue Bonds (Series U)						
Facility						
Pyramid Project	0	0	2.4 ^b	2.4	3.2 ^b	75.0
Alamo Project	0	0	3.2 ^b	3.2	4.0 ^b	80.0

^aAmount consists of 71 percent of proceeds deposited in escrow account to refund portion of Series D bonds (\$35.1 million plus deposits to construction account [\$0.3 million]).

^bRepresents amount of principal used to refund portions of prior bond issues.

Table 14-9. Actual Bond Sales and Project Interest Rates, by Date of Sale

Bond Sales	Date of Sale	Dollar-Years ^a (Thousands)	Interest Cost (Thousands)	Issue Interest Rate ^b (Percent)	Project Interest Rate ^c (Percent)
\$ 50,000,000 Bond Anticipation Notes	11/21/63	26,944	531	1.971	1.971
\$100,000,000 Series A Water Bonds	2/18/64	3,402,000	119,750	3.520	3.508
\$ 50,000,000 Series B Water Bonds	5/05/64	1,726,000	60,986	3.533	3.516
\$100,000,000 Series C Water Bonds	10/07/64	3,452,000	123,764	3.585	3.544
\$100,000,000 Series D Water Bonds	2/16/65	3,497,900	122,403	3.499	3.531
\$100,000,000 Series E Water Bonds	11/23/65	3,497,900	130,029	3.717	3.573
\$100,000,000 Series F Water Bonds	6/08/66	3,497,900	137,359	3.927	3.638
\$100,000,000 Series G Water Bonds	11/22/66	3,497,900	143,788	4.111	3.711
\$100,000,000 Series H Water Bonds	3/21/67	3,497,900	129,261	3.695	3.709
\$100,000,000 Series J Water Bonds	7/18/67	3,497,900	143,199	4.094	3.754
\$100,000,000 Series K Water Bonds	11/14/67	3,497,900	163,887	4.685	3.853
\$150,000,000 Revenue Bonds, Oroville Division, Series A	4/03/68	5,228,700	270,289	5.169	
\$100,000,000 Series L Water Bonds	7/11/68	3,497,900	166,918	4.772	3.941
\$100,000,000 Series M Water Bonds	10/22/68	3,497,900	169,989	4.860	4.021
\$ 94,995,000 Revenue Bonds, Oroville Division, Series B	4/01/69	3,423,460	195,902	5.722	
\$ 46,761,000 Cumulative 1970 General Fund Borrowing, repaid 7/10/70	-	4,938	346	7.007	
\$200,000,000 Series N and P Bond Anticipation Notes	6/16/70	200,000	11,660	5.830	4.030
\$100,000,000 Series N Water Bonds	2/02/71	3,447,900	190,292	5.519	4.148
\$100,000,000 Series Q Bond Anticipation Notes	3/10/71	100,000	2,349	2.349	4.143
\$100,000,000 Series P Water Bonds	4/21/71	3,397,900	193,377	5.691	4.255
\$150,000,000 Series Q and R Water Bonds	11/09/71	5,171,850	265,734	5.138	4.342
\$ 40,000,000 Series S Water Bonds	3/28/72	1,399,160	76,509	5.468	4.371
\$139,165,000 Devil Canyon-Castaic Revenue Bonds	8/08/72	4,776,204	258,839	5.419	4.457
\$ 10,000,000 Series T Water Bonds	3/20/73	185,265	9,491	5.123	4.459
\$ 10,000,000 Series U Water Bonds	1/13/76	158,750	8,731	5.500	4.462
\$ 10,000,000 Series V Water Bonds	11/15/77	158,750	7,573	4.770	4.462
\$ 95,800,000 Pyramid Hydroelectric Revenue Bonds	12/30/79	2,260,072	172,495	7.632	4.584
\$150,000,000 Reid Gardner Project, Series A Bond Anticipation Notes	7/1/81	347,906	29,572	8.500	
\$ 75,600,000 Bottle Rock Project, Bond Anticipation Notes	12/1/81	264,600	25,137	9.500	
\$ 24,400,000 Alamo Project, Bond Anticipation Notes	12/1/81	24,266	2,305	9.499	4.589
\$200,000,000 Reid Gardner Project, Series B Revenue Bonds	7/07/82	4,623,137	553,793	11.979	
\$125,000,000 Reid Gardner Project, Series C Revenue Bonds	11/16/82	2,720,045	255,744	9.402	
\$ 37,500,000 Small Hydro Project I, Series D Revenue Bonds	11/16/82	837,769	84,587	10.097	4.666
\$ 37,500,000 South Geysers Project, Series D Revenue Bonds	11/16/82	930,325	90,021	9.676	
\$125,000,000 Bottle Rock Project, Series E Revenue Bonds	4/27/83	2,624,805	225,102	8.576	
\$ 50,000,000 Alamo Project, Series F Revenue Bonds	4/27/83	1,190,763	100,836	8.468	4.727
\$ 25,000,000 South Geysers Project, Series F Revenue Bonds	4/27/83	608,550	52,578	8.640	
\$239,505,000 Reid Gardner Project, Series G Revenue Bonds	3/15/85	4,524,136	425,840	9.413	
\$206,690,000 Power Facilities Series H Revenue Bonds	6/20/86	4,430,520	347,745	7.849	4.713
\$132,000,000 East Branch Enlargement, Series A Water System Revenue Bonds	7/15/86	3,427,165	254,915	7.438	
\$100,000,000 Series B Water System Revenue Bonds	5/05/87	2,564,012	194,817	7.598	
\$ 9,000,000 Series C Water System Revenue Bonds	12/01/87	324,000	31,995	9.875	
\$100,000,000 Series D Water System Revenue Bonds	6/14/88	2,640,510	201,253	7.622	
\$ 9,000,000 Series E Water System Revenue Bonds	11/29/88	324,000	31,995	9.875	
\$160,030,000 Series F Water System Revenue Bonds	3/15/89	2,779,838	189,261	6.808	
\$100,000,000 Series G Water System Revenue Bonds	3/06/90	2,434,175	172,277	7.077	
\$100,000,000 Series H Water System Revenue Bonds	1/10/91	2,459,172	168,857	6.866	
\$180,000,000 Series I Water System Revenue Bonds	5/14/91	4,366,680	294,090	6.735	
\$649,835,000 Series J Water System Revenue Bonds	1/16/92	12,422,222	745,198	5.999	
\$100,000,000 Series K Water System Revenue Bonds	5/12/92	2,366,783	147,064	6.214	
\$ 9,000,000 Series W Water Bonds	8/19/92	95,250	6,172	6.480	4.621
\$537,830,000 Series L Water System Revenue Bonds	5/19/93	11,414,859	640,518	5.611	4.620
\$ 2,000,000 Series X Water Bonds	9/01/93	26,000	1,247	4.796	
\$ 1,400,000 Series Y Water Bonds	11/30/94	19,483	1,249	6.411	
\$190,000,000 Series M Water System Revenue Bonds	12/19/93	3,911,846	194,981	4.984	
\$152,000,000 Series N Water System Revenue Bonds	3/03/95	2,241,606	122,658	5.472	
\$335,000,000 Series O Water System Revenue Bonds	12/05/95	7,528,890	375,667	4.990	
\$160,000,000 Series P Water System Revenue Bonds	5/07/96	3,553,823	204,524	5.755	
\$266,630,000 Series Q Water System Revenue Bonds	11/05/96	5,481,815	299,846	5.470	
\$ 20,700,000 Series R Water System Revenue Bonds	3/10/97	564,125	36,627	6.493	
\$200,205,000 Series S Water System Revenue Bonds	7/30/97	4,093,110	203,755	4.978	4.615
\$135,665,000 Series T Water System Revenue Bonds	7/30/97	1,310,620	66,942	5.108	
\$207,180,000 Series U Water System Revenue Bonds	12/01/98	4,032,075	200,759	4.979	
\$ 20,580,000 Series V Water System Revenue Bonds	12/01/98	525,100	32,819	6.250	
Total		174,034,974	10,288,196		
Portion allocated to Project Interest Rate		63,856,942	2,946,804	4.615	4.615

^aA unit equivalent to one dollar of principal amount outstanding for 1 year.^bThe total interest cost (without regard to discounts paid or premiums received) divided by the total dollar-years, expressed as a percent.^cDetermined by dividing cumulative interest costs by cumulative dollar-years, expressed as a percent. Excludes Oroville Field Division bonds and revenue bonds for off-aqueduct power facilities, the East Branch Enlargement facilities, East Branch Extension facilities, or water system facilities as defined in the Water Revenue Bond Amendment.

- Future capital costs in Appendix B are based on the prevailing prices as of December 31, 2000. Those costs presented in the financial analysis include allowances for price escalation.
- Pre-2001 charges in Appendix B represent charges as they should have been according to currently known conditions. Pre-2001 charges included in Table 14-2 are those actually paid as part of previously determined bills.
- Charges in Appendix B are unadjusted for past overpayments or underpayments. Charges included in Table 14-2 for 2001 and thereafter have been adjusted for any apparent overpayments or underpayments of pre-2001 charges.
- Charges in Appendix B for East Branch Enlargement costs include the amounts for debt service and 25 percent cover for the East Branch Enlargement share of the Series A through Series V bonds. Charges in Table 14-2 also include amounts of the debt service and cover for assumed future bonds.
- The water revenue bond surcharge in Appendix B applies only to the Series B through Series V bonds. Surcharge values included in Table 14-2 apply to Series B through Series V bonds and to assumed future issues required to finance SWP construction costs included in Table 14-1.
- minimum OMP&R component of the Transportation Charge for Off-Aqueduct Power Facilities;
- Water System Revenue Bond Surcharge;
- capital cost component of the Transportation Charge for East Branch Enlargement Facilities;
- capital cost component of the Transportation Charge for Coastal Branch Extension Facilities; and
- capital cost component of the Transportation Charge for East Branch Extension Facilities.

Line 12, Rate Management Adjustments, shows the projected amount of revenue reductions allocated to SWP contractors after repayment of the California Water Fund (see Line 36). Under provisions of the Monterey Amendment, the reduction amount allocated to agricultural contractors is deposited into a trust fund to stabilize payments in water-short years. The urban contractor allocation is applied as a direct reduction in charges.

Line 13, Federal Payments for Project Operating Costs, shows federal payments made according to the December 31, 1961, agreement between California and the United States providing for the Department to operate and maintain the San Luis Joint-Use Facilities. According to the January 12, 1972, supplement to the agreement, the Bureau of Reclamation initially paid 45 percent of OM&R costs for those activities. (The percentage does not apply to power costs; the Bureau and the Department provide their own power to pump water through the joint facilities.)

The percentage paid by the Bureau is periodically reviewed by the Bureau and the Department. The most recent review of the percentage paid by the Bureau was completed in 1987 and resulted in a federal share of 44.09 percent. The amounts in Line 13 are based on the assumption that the federal share will continue at 44.09 percent for calendar years 2001 through 2015. Line 14, Appropriations for Operating Costs Allocated to Recreation, shows appropriations made under the Davis-Dolwig Act. In passing the Davis-Dolwig Act, the California Legislature

Line 10, Subtotal, Water Contractor Payments, is the total of Lines 2 through 9.

Line 11, Revenue Bond Cover Adjustments, represents the credit to contractors resulting from the cover of 25 percent of 1 year's debt service for Off-Aqueduct Power Facility Bonds and Water System Revenue Bonds. Cover is collected as required by the bond resolutions to provide security to the bondholders. If not needed to meet annual bond service, the cover is credited to the contractors in the following year. The annual charges for the following cost components include an amount for bond cover:

declared its intent that except for funds provided according to Assembly Bill 12 (1966), the Department budget will include appropriations of monies from the General Fund necessary for enhancement of fish and wildlife and recreation in connection with State water projects.

Annual OMP&R costs allocated to recreation and fish and wildlife enhancement are to be paid by annual appropriations from the General Fund. For fiscal years 1983-84 through 1998-99, no funds were appropriated for recreation and fish and wildlife enhancement purposes. No appropriations are indicated for 2001 through 2015.

Legislation enacted in 1989 offset a portion of the amount owed to the SWP by the State for costs allocated to recreation and to fish and wildlife enhancement against the amount the SWP owed to the California Water Fund (see line 36).

Line 15, Local Agency Payments under Davis-Grunsky Loan Repayment Contracts, shows repayment for \$52.5 million of loans disbursed as of December 31, 2000. Repayment on any future loans was assumed to be beyond the period covered by the financial analysis.

Line 16, Revenue Bond Proceeds, includes bond proceeds classified as special reserves according to the description of revenue bond financing in Line 16 of Table 14-1. Those proceeds, used for capitalized OMP&R costs, revenue bond debt service, and debt service reserves, are not classified as revenue but are included in this line to simplify the financial presentation.

Line 17, Interest Earnings on Operating Revenues, includes interest earnings on unexpended proceeds from the sale of general obligation bonds, interest on operating reserves, and other short-term investment earnings on SWP revenues.

Line 18, Payments under Oroville-Thermalito Power Sale Contract, shows payments from Pacific Gas and Electric Company, Southern California Edison Company, and San Diego Gas and Electric

Company. Those utilities purchased all power generation from Hyatt and Thermalito Power Plants before April 1, 1983, according to a power sale contract dated November 29, 1967. The 1952-2000 entry includes amounts of final settlement of payments made according to the contract.

Line 19, Miscellaneous Revenues, includes all other operating revenues not included in Lines 2 through 18.

Line 20, Subtotal, Other Revenues, is the total of Lines 13 through 19.

Line 21, Total Operating Revenues, is the total of Lines 10, 11, 12, and 20.

Line 22, Total Operating Revenues and Capital Resources Revenues, is the total of Lines 1 and 21.

Project Expenses

Project expenses include

- operations, maintenance, and power costs
- deposits to replacement reserves
- deposits to special reserves
- capital resources expenditures
- debt service

Revenue bond proceeds earmarked for debt service during construction and the first year's operating expenses are deposited in the Central Valley Water Project Construction Fund and disbursed according to resolutions authorizing the issuance of such bonds.

Water contractor revenues associated with operating costs and debt service attributable to projects financed by revenue bonds are deposited in the Central Valley Water Project Revenue Fund for appropriate disbursement. All other operating revenues are deposited in the California Water Resources Development Bond Fund-Systems Revenue Account and are disbursed according to the following four priorities of use as specified in the Burns-Porter Act:

- (1) SWP operations, maintenance, power, and replacement costs;
- (2) general obligation bond debt service;
- (3) repayment of expenditures from the California Water Fund; and
- (4) deposits to a reserve for future SWP construction.

Project expenses are presented in Lines 23 through 33 of Table 14-2.

Line 23, Project Operations, Maintenance, and Power Costs, shows the OM&P portion of the historical and projected costs presented in Table 14-10 on page 189.

Table 14-10 and Line 23 of Table 14-2 also include amounts of the operations and maintenance costs for the federal share of joint facilities and those OM&P costs allocated to recreation, which are intended to be offset by revenues listed in Lines 13 and 14.

Allowances for cost escalations are included in OM&P costs through the year 2003. Allowances for additional long-term price escalations in the future are not included in these estimates because changes in OM&P costs do not substantially affect the overall results of the financial analysis. (For the most part, changes in OM&P costs cause direct offsetting changes in operating revenues.)

Power costs make up the major item of annual operating expenses for the SWP. Assumptions about future power sources and costs are discussed in Chapter 10, "Power Resources." Line 23 also includes costs associated with power transactions that result in the sale of power not required for the delivery of water.

Line 24, Deposits to Replacement Reserves, shows funds set aside as required by contract for replacing existing SWP facilities. By December 31, 2000, \$60.2 million had been spent for replacement costs; the balance of the replacement reserve as of that date was \$20.1 million. Replacement reserve amounts are also included in Table 14-10.

Line 25, Deposits to Special Reserves Under Revenue Bond Financing, includes two significant components: special reserve deposits related to revenue bonds and capital resources revenue carryover from prior years used for construction in the current year. Special reserve deposits are the net of several income and expenditure items. Income items related to revenue bonds are as follows:

- proceeds set aside to pay bond interest during construction (capitalized interest)
- proceeds set aside for first year operating costs (capitalized operations and maintenance)
- water contractor payments or bond proceeds set aside for debt service reserves
- water contractor payments for revenue bond cover requirements
- deposits to and withdrawals from operating reserves to meet day-to-day cash flow requirements

The 1952-2000 column also includes advances to the Department's revolving fund for working funds to purchase mobile equipment and to meet day-to-day operating expenses.

The expenditure items related to revenue bonds are as follows:

- debt service cover payments returned to water contractors
- debt service reserve interest payments returned to water contractors
- surplus account funds returned to water contractors or applied to meet expenses
- total capitalized interest paid out
- total capitalized operations and maintenance paid out

Special reserves, reduced over time as reserved amounts, are used for their respective purposes. The amount indicated each year in Line 25 indicates the change from the previous year. A negative number indicates a withdrawal of special reserves to meet expenses, while a positive number indicates a deposit.

Line 26, Capital Resources Expenditures, includes the amount of capital resources revenues applied to construction that is shown in Line 31 of Table 14-1. In Table 14-2, these expenditures are funded out of withdrawals from the reserves in Line 25 and do not affect net revenues shown in Line 35.

Lines 27 and 28, Payment of Debt Service on Bonds Sold through December 31, 2000, show the total principal and interest payments on bonds sold to date. Table 14-11 on page 190 summarizes payments on general obligation bonds (Series A through Y water bonds), power revenue bonds by project, and water system revenue bonds (Series A through V).

Lines 29 and 30, Payments on Projected Future Water Bonds, include the projected annual debt service amounts for future water revenue bonds included on Lines 23 and 25 of Table 14-1 for the East Branch Extension and other water system facilities. Assumptions about the service on these future bonds are that

- interest costs for the water revenue bonds average 6.0 percent
- bonds are to be repaid within 35 years of sale with maturities commencing in the year following the date of sale and with equal annual bond service for the principal repayment period

Lines 31 and 32, Total Payments of Bond Debt Service, show the total of principal payments indicated on Lines 27 and 29 and the total of interest repayments indicated on Lines 28 and 30.

Line 33, Subtotal, Debt Service, is the total of Lines 31 and 32.

Line 34, Total Operating Expenses and Debt Service, is the total of Lines 23, 24, 25, 26, and 33.

Line 35, Net System Revenues, shows the annual amounts of revenues remaining after the payment of operating costs and bond debt service costs.

Line 36, California Water Fund Repayment, shows the total amount of repayments made to the California Water Fund to reimburse the fund for monies expended for construction of the State Water Resources Development System.

Repayment of the California Water Fund was completed in 1998 after reimbursements totaling \$508 million. In addition to the \$297 million of repayments shown in Line 36, \$211 million of reimbursement were credited to the SWP as offsets for recreation and fish and wildlife enhancement expenditures.

Line 37, Revenues Used for Capital Expenditures, includes the amounts required annually for financing scheduled capital expenditures. Revenues not needed for operating costs or debt service are available for financing SWP capital expenditures.

Future Costs of Water Service

Estimates of future water costs are useful to SWP contractors for short-range and long-range planning of water needs, operations, and budgets. Unit water charges shown in Table 14-12 represent both unescalated and escalated costs of water according to service areas for years 2002 and 2007. The unit rates include costs of existing and future SWP facilities accounted for in Table 14-1 and Table 14-7. The unit charges are based on the assumption that in 2002 and 2007, the SWP will be able to deliver the entire amounts of water requested by contractors. The unit water charges included in Table 14-12 are listed both as unescalated 2000 dollars and as escalated rates reflecting assumed future inflation.

The Department's estimates of future capital expenditures include allowances for escalation of construction costs at 3 percent per year for 2001 through 2002 and at 4 percent per year for 2003 through 2015. The escalation rates for future power sources vary, depending on the source of energy.

Table 14-12. Estimated Unit Water Charges for 2002 and 2007, by Service Area (Dollars per Acre-Foot)

Service Area and Charge	2002		2007	
	Unescalated	Escalated	Unescalated	Escalated
<i>Feather River Area</i>				
Capital; Operations, Maintenance, and Replacement (OM&R)	27	27	27	27
<i>North Bay Area</i>				
Capital; OM&R	156	155	140	142
Power	26	26	20	21
Total	181	181	160	163
<i>South Bay Area</i>				
Capital; OM&R	95	95	91	92
Power	51	51	43	45
Total	146	146	134	137
<i>Coastal Area</i>				
Capital; OM&R	477	477	478	479
Power	141	141	119	125
Total	618	618	597	604
<i>San Joaquin Area</i>				
Capital; OM&R	52	52	53	55
Power	26	26	20	21
Total	78	78	73	76
<i>Southern California Area</i>				
Capital; OM&R	137	137	127	129
Power	168	168	131	137
Total	305	305	258	266

Information for this chapter was provided by the State Water Project Analysis Office in conjunction with the Division of Fiscal Services.

Appendix B

Data and Computations

Used to

Determine 2002 Water Charges

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Appendix B Data and Computations Used to Determine 2002 Water Charges

The Department of Water Resources annually furnishes Statements of Charges to the 29 long-term State Water Project water supply contractors. Article 29(e) of the Standard Provisions for Water Supply Contracts, approved August 3, 1962, describes those statements:

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.

To comply with Article 29(e), the Department performs an annual comprehensive review and redetermination of all water supply and financial aspects of the SWP for the entire project repayment period. This annual redetermination is performed in accordance with Article 22(f) and Article 28 of the water contracts, which concern the Delta Water Rate and annual transportation charges, respectively.

Appendix B includes data used to document the redetermination of water charges to be paid by contractors during calendar year 2002. The information is based on established data about the SWP, both known and projected, as of June 30, 2001.

The computational procedures and interrelationships between tabulations in this appendix are outlined in Figure B-1 and Figure B-2. All tables referenced in Figures B-1 and B-2 follow this text.

Types of Water Charges

Charges to SWP water supply contractors include the costs of facilities for the conservation and development of a water supply and the conveyance of such supply to SWP service areas. These facilities are classified as “Project

Conservation Facilities” and “Project Transportation Facilities” in the Standard Provisions for Water Supply Contract. The names of the main facilities in each classification follow.

Project Conservation Facilities

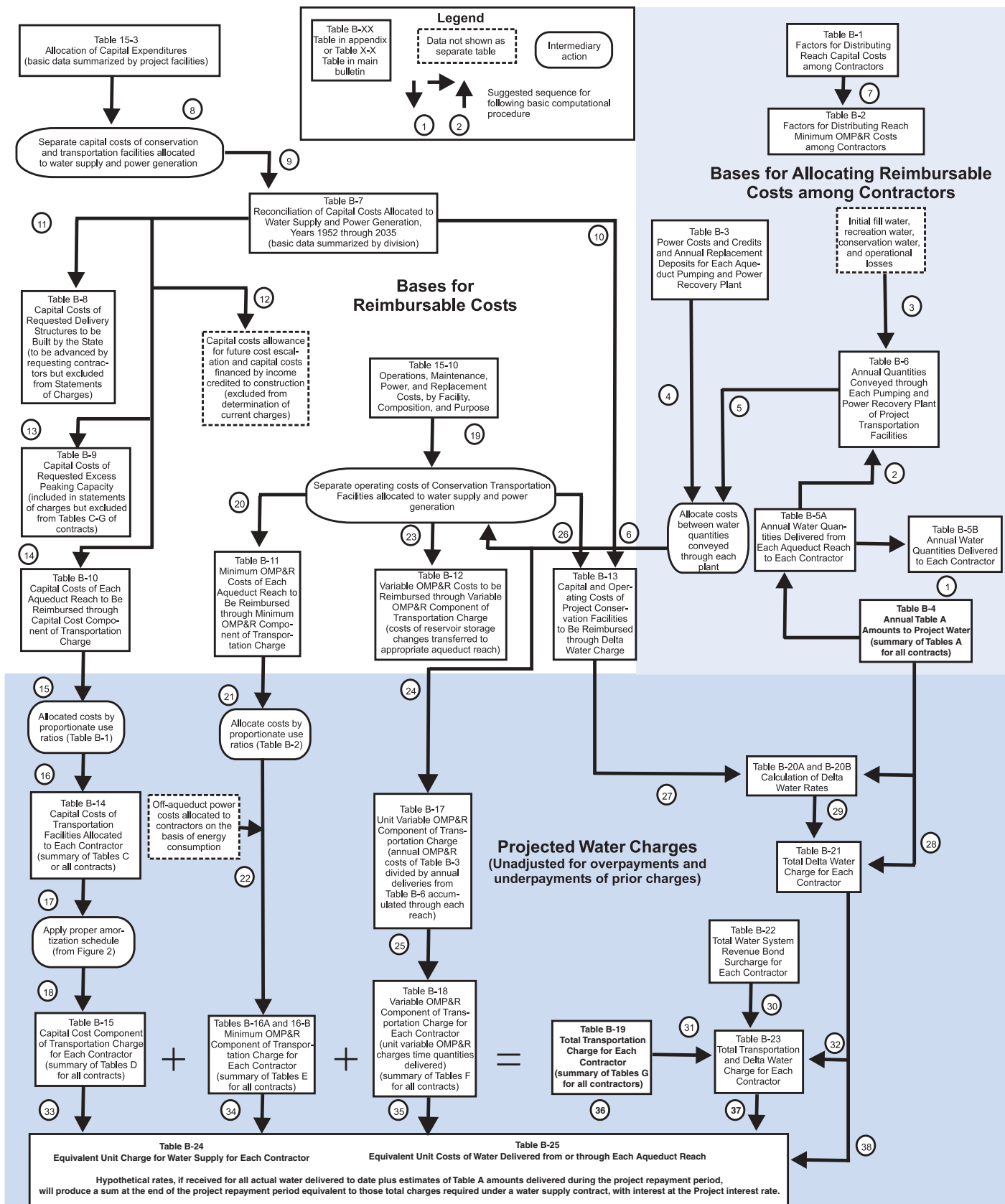
- Frenchman Dam and Lake
- Grizzly Valley Dam and Lake Davis
- Antelope Dam and Lake
- Oroville Dam and Lake Oroville
- Oroville power facilities
- Delta Facilities
- A portion of the California Aqueduct from the Delta to Dos Amigos Pumping Plant
- Sisk Dam, San Luis Reservoir, and Gianelli Pumping-Generating Plant

Project Transportation Facilities

- Grizzly Valley Pipeline
- North Bay Aqueduct
- South Bay Aqueduct, including Del Valle Dam and Lake Del Valle
- Remainder of the California Aqueduct from the Delta to Dos Amigos Pumping Plant and all facilities south, including dams and lakes in Southern California
- Off-Aqueduct Power Facilities (Reid Gardner Unit No. 4, Bottle Rock Power Plant, and South Geysers Power Plant)

The standard provisions provide for a Delta Water Charge and a Transportation Charge for project water.

The Delta Water Charge is a unit charge applied to each acre-foot of SWP water the contractors are to receive according to their contracts. The unit charge, if applied to each acre-foot of all such Table A amounts for the remainder of the



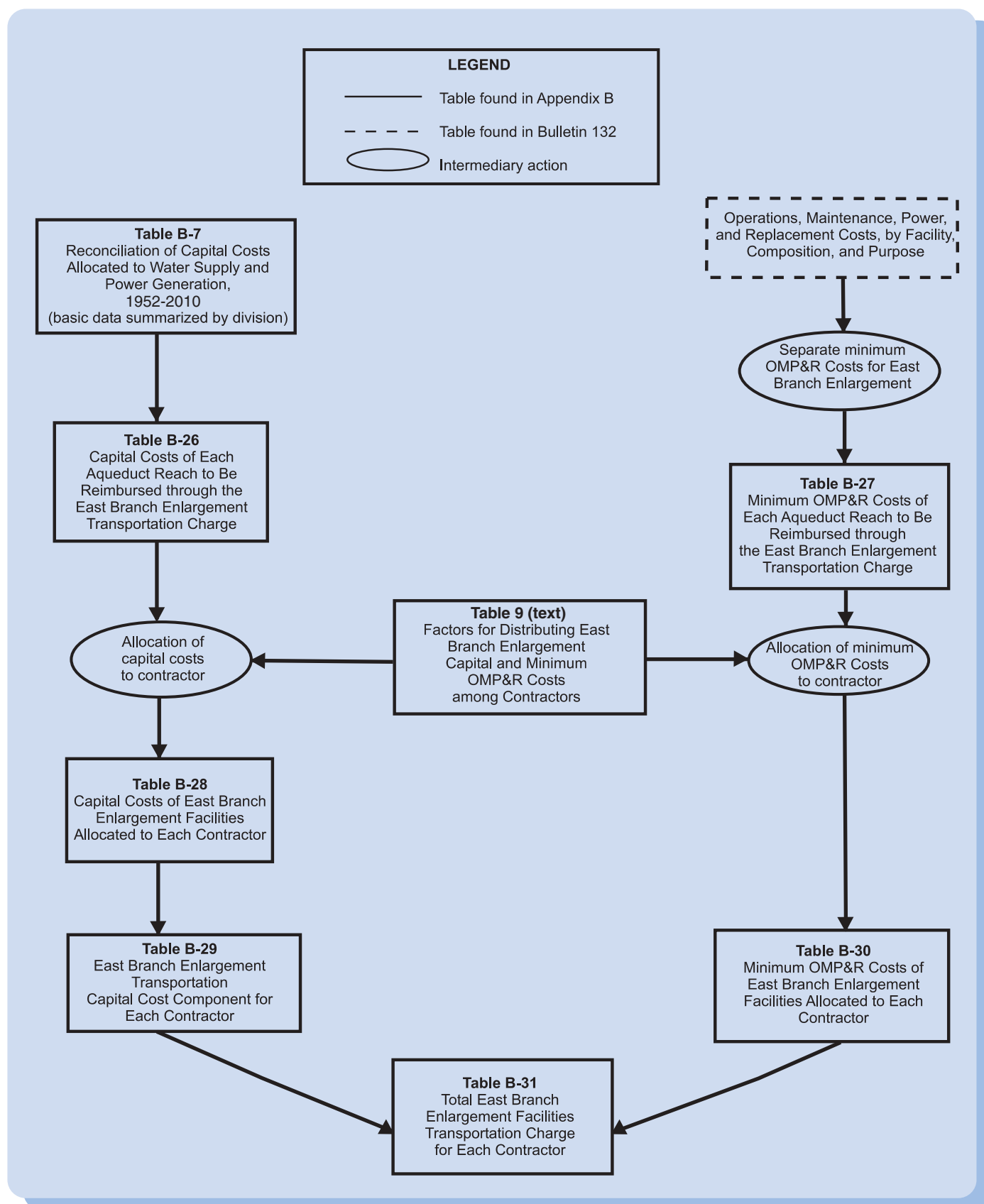


Figure B-2. Relationships of Data Used to Substantiate East Branch Enlargement Charges

project repayment period, is calculated to result in repayment of all outstanding reimbursable costs of the Project Conservation Facilities, with appropriate interest, by the end of the repayment period (2035).

The Transportation Charge is for use of facilities to transport water to the vicinity of each contractor's turnout. Generally, the annual charge represents each contractor's proportionate share of the reimbursable capital costs and operating costs of the Project Transportation Facilities.

Each contractor's allocated share of those reimbursable capital costs is amortized for repayment to the State; and certain variations are allowed in the amortization methods. Essentially, the contractors' shares of reimbursable operating costs are repaid in the year such costs are incurred by the State.

The East Branch Enlargement Transportation Charge is paid by the seven Southern California contractors participating in the enlargement. San Bernardino Valley Municipal Water District advanced funds to pay the district's allocated capital costs for the East Branch Enlargement. The remaining six contractors pay an allocated share of the debt service on revenue bonds sold to finance the enlargement. Each contractor also will pay an allocated share of the minimum operation, maintenance, power, and replacement (OMP&R) costs of the East Branch Enlargement.

Composition and Timing of Water Charges

As shown in Figure B-3, the Delta Water Charge and the Transportation Charge consist of the following three components:

- (1) Conservation and Transportation capital cost components, which will return to the State all reimbursable capital costs;
- (2) Conservation and Transportation minimum OMP&R components, which will return to the State all reimbursable operating costs that do not depend on or vary with quanti-

ties of water actually delivered to the contractors; and

- (3) A Transportation variable OMP&R component, which will return to the State all reimbursable operating costs that depend on, and vary with, quantities of water actually delivered to the contractors.

The formula for computing the Delta Water Rate, Article 22(f) of the Standard Provisions for Water Supply Contract, was designed to ensure that all adjustments for prior overpayments or underpayments of the Delta Water Charge are accounted for in a redetermination of the rate. Since the redetermined rate applies to all future Table A amounts, such adjustments are amortized during the remainder of the project repayment period. This appendix includes a redetermination of the Delta Water Rate for 2002.

Article 28 of the standard provisions stipulates that Transportation Charges be redetermined each year. The tables in Appendix B include the numerical data used in this redetermination. Transportation Charges for prior years through 2000 included in those tables are the redetermined amounts and do not equal the amounts actually paid by contractors.

As provided under the Water System Revenue Bond Amendment to the water supply contracts, differences between actual payments under the Transportation capital cost component and amounts computed in this redetermination are accumulated with interest and amortized during the remaining years of the contract repayment period. All computations for adjustments are included in the attachments accompanying each contractor's Statement of Charges and are reflected in revised copies of Table C through Table G of the contract, which are also furnished to each long-term water supply contractor in the annual Statements of Charges.

These redeterminations exclude four charges associated with water service other than the Delta Water Charge and the Transportation

Delta Water Charge*Capital Cost Component*

1. Planning, design, right-of-way, and construction costs of Conservation Facilities
2. Operations and maintenance costs for newly constructed Conservation Facilities prior to initial operations
3. Activation costs for newly constructed Conservation Facilities
4. Power costs allocated to initial filling of San Luis Reservoir
5. Capitalized O&M costs (major repair work and so forth) for Conservation Facilities.
6. Program costs (portion) to mitigate impacts on current Delta fishery population due to SWP pumping prior to 1986 (Department of Water Resources-Department of Fish and Game agreement)

Minimum OMP&R Component

1. Direct O&M costs of Conservation Facilities
 - a. Headquarters and field divisions (portion)
 - b. Insurance and FERC costs (portion)
2. General O&M costs allocated to Conservation Facilities
 - a. Contractor Accounting Office (portion)
 - b. Financial and contract administration (portion)
 - c. Water rights
 - d. Power planning for SWP facilities (portion)
3. Replacement deposits for SWP control centers (portion)
4. Credits for a portion of Hyatt-Thermalito power generation
5. Power costs and credits related to pumping water to San Luis Reservoir for project operations (storage changes)
6. Value of power used and generated by Gianelli Pumping-Generating Plant
7. Program costs (portion) to offset annual fish losses resulting from pumping at Banks Pumping Plant (Department of Water Resources-Department of Fish and Game agreement)

Transportation Charge*Capital Cost Component*

1. Planning, design, right-of-way, and construction costs of Transportation Facilities
2. O&M costs for newly constructed Transportation Facilities prior to initial operation
3. Activation costs for newly constructed Transportation Facilities
4. Power costs allocated to initial filling of Southern California reservoirs
5. Capitalized O&M costs (major repair work and so forth) for Transportation Facilities
6. Program costs (portion) to mitigate impacts on current Delta fishery population due to SWP pumping prior to 1986 (Department of Water Resources-Department of Fish and Game agreement)

Minimum OMP&R Component

1. Direct O&M costs of Transportation Facilities
 - a. Headquarters and field divisions (portion)
 - b. Insurance and FERC costs (portion)
2. General O&M costs related to Transportation Facilities
 - a. Contractor Accounting Office (portion)
 - b. Financial and contract administration (portion)
 - c. Power planning for SWP facilities (portion)
3. Power costs and credits related to pumping water to Southern California reservoirs for project operations (storage changes)
4. Power costs for pumping water to replenish losses from Transportation Facilities
5. Other power costs
 - a. Station service at Transportation Facility power and pumping plants
 - b. Transmission service costs related to "backbone" Transportation Facilities
6. Replacement deposits for SWP control centers (portion)
7. Off-Aqueduct Power Facility costs—bond service, bond cover costs (25 percent of bond service), bond reserves, transmission costs to provide service to "backbone," fuel costs taxes, and O&M-less power sales allocated to Off-Aqueduct Power Facilities
8. Program costs (portion) to offset annual fish losses resulting from pumping at Banks Pumping Plant (Department of Water Resources-Department of Fish and Game agreement)

Variable OMP&R Component

1. Power purchase costs
 - a. Capacity
 - b. Energy
 - c. Pine Flat bond service, O&M, and transmission costs allocated to aqueduct pumping plants
2. Alamo, Devil Canyon, Warne, and Castaic power generation credited at the power plant reach and charged to aqueduct pumping plants
3. Hyatt-Thermalito Diversion Dam power plant generation charged to aqueduct pumping plants (credits for this generation are reflected in the Delta Water Rate)
4. Replacement deposits for equipment at pumping plants and power plants
5. Credits from sale of excess SWP system power
6. Program costs (portion) to offset annual fish losses resulting from pumping at Banks Pumping Plant (Department of Water Resources-Department of Fish and Game agreement)

Note: Excludes costs recovered under the East Branch Enlargement Transportation Charge.

Figure B-3. Composition of Delta Water Charge and Transportation Charge

Charge. The excluded charges (and the manner in which such excluded charges are treated in this appendix) are

- (1) Advances of funds pursuant to Article 24(d) of the standard provisions for excess capacity constructed by the State at the request of contractors;
- (2) 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 concerning actual and projected capital costs of such delivery structures is included in this appendix. Statements concerning these costs and data are furnished to the appropriate contractors at various times and are not part of the annual statements;
- (3) Payments for sale and service of surplus water to entities other than contractors, pursuant to Article 21 of the standard provisions, are also excluded. Those payments are generally based on the unit rates shown in Table B-25. Net revenues resulting from non-contractor service are applied as indicated on page 24 of Bulletin 132-71; and
- (4) Payments under the Devil Canyon-Castaic contract for costs of the Devil Canyon-Castaic facilities allocable to power generation. Charges billed as a result of the contract are billed separately from those billed as a result of the water supply contract. Information about the treatment of such charges in relation to redetermined Transportation Charges is included in special attachments to the bills of the six participating contractors.

The time and method of payment for corresponding components of the Delta Water Charge and the Transportation Charge are as follows:

- (1) The capital cost components of the Delta Water Charge and the Transportation Charge are paid in two semiannual installments, due January 1 and July 1 of each year, based on statements furnished by the State on or before July 1 of the preceding year;

- (2) The minimum OMP&R components of the Delta Water Charge and the Transportation Charge are paid in 12 equal installments, due the first of each month and based on statements furnished by the State on or before July 1 of the preceding year; and
- (3) The variable OMP&R component of the Transportation Charge is paid in varying monthly amounts and is due the fifteenth day of the second month following actual water delivery. The charges are projected based on a unit charge per acre-foot established on or before July 1 of the preceding year. Those unit charges may be revised during the year to reflect current power costs and revenues. The unit charges are applied to actual monthly delivery quantities as determined by the State on or before the fifteenth day of the month following actual delivery.

Bases for Allocating Reimbursable Costs Among Contractors

This section describes the procedures for allocating reimbursable costs of Project Transportation Facilities among contractors (see upper right portion of Figure B-1). Those costs do not include annual costs of Off-Aqueduct Power Facilities, which are explained in the section “Project Water Charges.”

Capital and Minimum OMP&R Costs

Figure B-4 includes information about the repayment reaches that form the basis for allocating reimbursable costs of the Project Transportation Facilities among contractors.

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 development.

The derivation of ratios that represent the proportionate maximum use of each aqueduct reach by the respective contractors was first reported in Bulletin 132-70. The ratios in

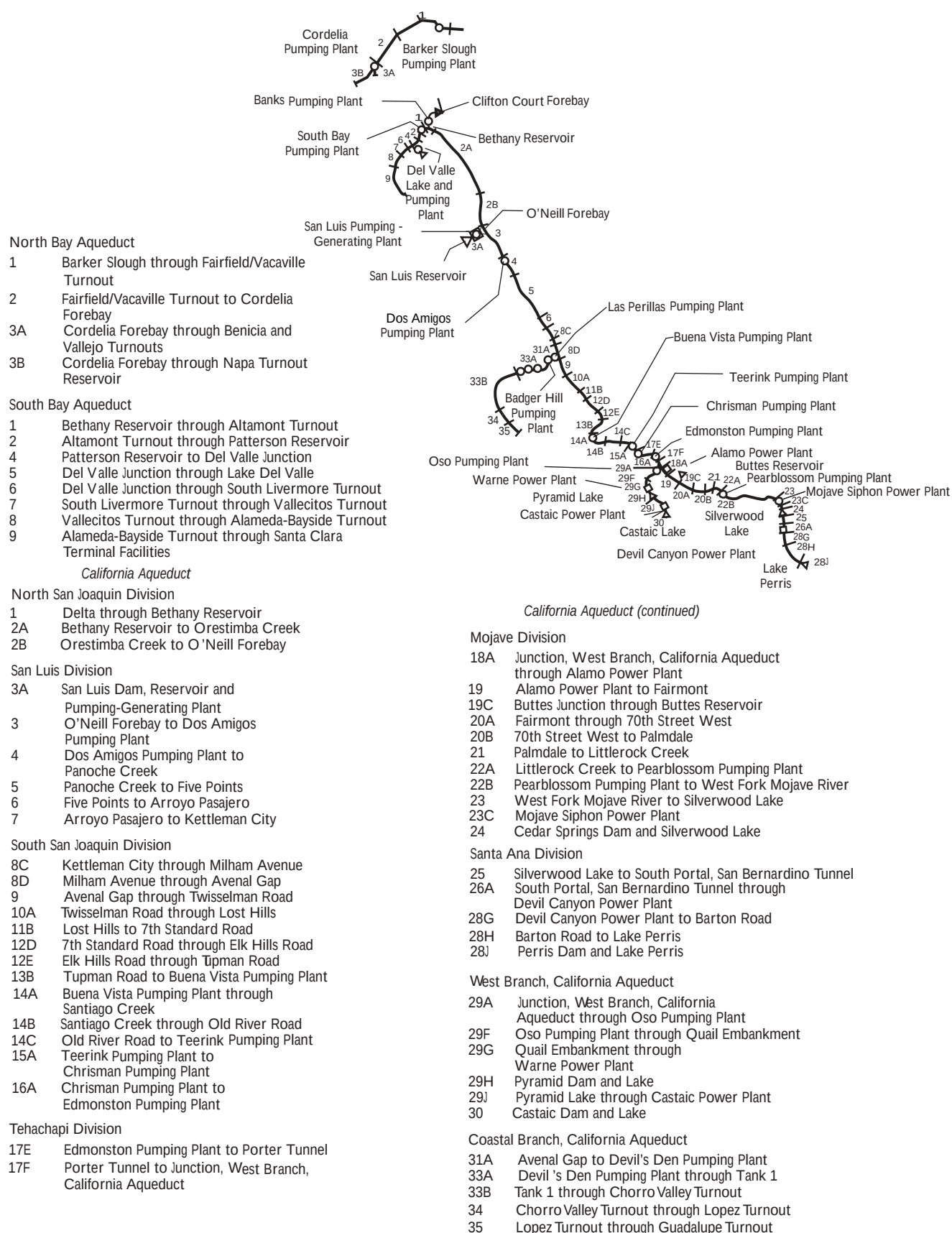


Figure B-4. Repayment Reaches and Descriptions

Bulletin 132-70 were subsequently revised for the North Bay Aqueduct, the South Bay Aqueduct, the California Aqueduct from the Delta to Castaic Lake, and the Coastal Branch.

All the revisions reported in previous bulletins regarding the derivation of ratios that represent the proportionate maximum use of each aqueduct reach by the respective contractors were last reported in Tables B-1 and B-2 of Bulletin 132-91. In 1998, under Article 53 of the Monterey Amendment, Kern County Water Agency began to permanently transfer some of their agricultural capacity to other state water contractors. In 1998, 25,000 acre-feet of capacity were transferred to Mojave. In 2000, Castaic Lake Water Agency acquired 41,000 acre-feet of capacity from the Delta to Castaic Lake, Palmdale acquired 4,000 acre-feet from the Delta to Reach 20B, and Alameda County Flood Control and Water Conservation District-Zone 7 acquired 7,000 acre-feet and 15,000 acre-feet in two separate transfers for a total of 22,000 acre-feet of capacity from the Delta to Reach 10A and the South Bay Aqueduct. In 2001, three additional transfers went into effect, ACFCWCD increased their Table A capacity by 10,000 acre-feet, Napa and Solano both acquired aqueduct capacity of 4,02 acre-feet and 5,756 acre-feet respectively, from the Delta to Reach 11B and through the North Bay Aqueduct.

Table B-1 presents the reach ratios currently applicable to reimbursable capital costs.

Table B-2 presents corresponding ratios for allocating 2001 and after reimbursable minimum OMP&R costs among contractors. Requested excess capacity is omitted when deriving ratios applicable to capital costs because the capital costs for the excess capacity are paid on an incremental-cost basis and not a proportionate-use basis. However, requested excess capacity is accounted for in the ratios applicable to minimum OMP&R costs.

Variable OMP&R Costs

Article 26(a) includes provisions to ensure that the variable OMP&R component of the Trans-

portation Charge will result in a return to the State of those costs that depend on and vary with the amount of SWP water deliveries. (The minimum OMP&R component results in a return of those operating costs that do not vary with deliveries.) Under Article 26(a) all such costs for a reach for a given year will be allocated among contractors in proportion to the actual annual use of that reach by the respective contractors.

Table B-3 summarizes the total power costs and credits for each aqueduct pumping and power recovery plant. Those variable costs consist of:

- 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); and
- Payments for replacement of major plant machinery components having economic lives shorter than the project repayment period. In 1997, the Department discontinued charging for a sinking fund for replacements. Replacement costs for 1999 and thereafter are to be paid on an annual basis as the costs are incurred.

Table B-3 excludes plant capacity and energy costs associated with surplus and unscheduled water service after May 1, 1973. Prior to that date, surplus water service was charged the same unit variable OMP&R component as *Table A* water service. An amendment to the long-term water supply contracts in 1973 significantly changed the rate structure for surplus water service. Capacity and energy costs for pumping surplus and unscheduled water were allocated directly to those water contractors receiving surplus and unscheduled water service. A contract amendment in 1991 again revised the rate structure to provide for payment of costs through a melded power rate. These revisions to charges for surplus and unscheduled water are effective from the date of

the amendments and are not applied to past charges.

An Article 21 water program was established in 1994. This program is based on individual annual contracts; costs for Article 21 water actually delivered are included in Table B-3.

Water Conveyance

The water conveyance quantities that form the basis for allocating costs are presented in Tables B-4, B-5A, B-5B, and B-6.

Table B-4 presents the schedules of annual Table A amounts as set forth in Table A and Article 6(a) of each water supply contract.

Table B-5A shows amounts of actual and projected Table A water quantities delivered from each aqueduct reach to each contractor. Projected deliveries for years 2001 through 2035 are based on contractors' requests for future water deliveries. The quantities included in Table B-5A also include nonproject water delivered to contractors and surplus water deliveries prior to May 1, 1973, and actual Article 21 water deliveries in 1994 and after.

Table B-5B presents a summary of actual and projected annual Table A water quantities delivered or to be delivered to each contractor. The quantities also include amounts of nonproject water and surplus water delivered prior to May 1, 1973, and actual deliveries of Article 21 water in 1994 and after.

Table B-6 summarizes the annual Table A water quantities conveyed or to be conveyed through each aqueduct pumping plant or power plant for each of the following functions:

Deliveries-Water Supply. Water made available to contractors at down-aqueduct delivery structures, including certain hypothetical quantities to facilitate cost allocations, for those years when deliveries are made from net annual storage withdrawals. The net annual amounts of storage withdrawals are hypothetically added to the actual amounts conveyed from the Delta

to the reservoirs, since deliveries made from storage withdrawals bear the same variable OMP&R costs per acre-foot as they would if the deliveries were actually conveyed from the Delta in that year. The hypothetical increases in the 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.

- *Initial Fill Water.* Water required for initial filling of down-aqueduct reaches and reservoirs or for repayment of pre-consolidation water used during construction.
- *Deliveries-Recreation.* Water delivered to down-aqueduct recreation developments or used for fish and wildlife mitigation or enhancement.
- *Operational Losses.* Water lost through evaporation and seepage from all down-aqueduct reaches.
- *Reservoir Storage Changes.* Water placed in down-aqueduct reservoir storage after initial filling of the reservoirs, including 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. With the exception of Banks Pumping Plant, "Reservoir Storage Changes" also includes SWP water placed into Southern California groundwater storage from 1978 through 1982 (as positive amounts); and water withdrawn from storage and delivered to contractors in 1979, 1982, 1987, 1988, and 1989 (as negative amounts). At Banks Pumping Plant, groundwater additions and withdrawals are included in "Conservation Water."

Table B-6 also summarizes the following two amounts under the heading "Conservation Water" (Column 25):

- (1) Net annual water amounts stored and projected to be stored in San Luis Reservoir; and
- (2) Water lost and projected to be lost through evaporation and seepage from San Luis Reservoir and from the water conservation portion of the California Aqueduct.

“Conservation Water” includes initial fill water, operational losses, and net annual storage changes associated with San Luis Reservoir and the portion of the California Aqueduct that is allocated to conservation. The same allocation procedure outlined above for Transportation Facilities also applies to water delivered from storage in Conservation Facilities, except that the hypothetical cost increases are added to the variable OMP&R cost to be reimbursed through the Transportation Charge and deducted from the minimum OMP&R costs to be reimbursed through the Delta Water Charge.

San Luis Reservoir is operated to conserve water for future delivery to downstream contractors. To account for costs associated with reservoir storage, those power and replacement costs of Banks Pumping Plant (a joint Transportation-Conservation Facility) that are allocated 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 of net storage withdrawal from San Luis Reservoir, a portion of the minimum OMP&R cost of the reservoir is transferred to the variable OMP&R cost of Banks Pumping Plant. That transfer is equal to the variable OMP&R cost per acre-foot of delivery through Banks Pumping Plant for that year, multiplied by the acre-feet of deliveries derived from San Luis Reservoir storage for that year. Table B-6 also includes amounts of nonproject water and surplus water delivered prior to May 1, 1973, and actual deliveries of Article 21 water in 1994 and after.

Bases for Reimbursable Costs

This section describes the methods used to derive the costs allocated by the procedures outlined in the preceding section. A diagram of the cost derivation process is shown in the upper-left quadrant of Figure B-1.

First, the capital and minimum OMP&R costs of all SWP facilities are allocated among the various project purposes according to the allocation percentages in Table 1. Those percentages may be subject to revision in the future.

The redeterminations in this appendix involve only the SWP costs that are allocated to water supply and power generation.

Capital Costs

Capital costs used in the redeterminations in this appendix reflect prices prevailing on December 31, 2000; future cost escalation will be reflected in subsequent bulletins.

Table B-7 presents a reconciliation of estimated total capital costs of each Project Conservation Facility and each Project Transportation Facility. This table shows the relationship of Project Conservation and Transportation costs allocated to contractors (Tables B-8, B-9, B-10, and B-13) to the total SWP capital costs projected by the Department.

Table B-8 shows costs incurred and projected to be incurred by the State in connection with each contractor’s turnouts. Costs incurred by the State for both State-constructed and contractor-constructed delivery structures are paid directly by the contractors for which the structures are built. (The State incurs design review and construction inspection costs in connection with contractor-constructed turnouts.)

Table B-9 lists costs and payments for excess capacity built into SWP Transportation Facilities according to amendments to contracts with Metropolitan Water District of Southern California, San Gabriel Valley Municipal Water District,

Table 1. Project Purpose Cost Allocation Factors (Percentages)

Project Facilities	Water Supply and Power Generation		All Other Purposes (Nonreimbursable)	
	Capital Costs	Minimum OMP&R Costs	Capital Costs	Minimum OMP&R Costs
Project Conservation Facilities				
Frenchman Dam and Lake	21.5	0.0	78.5	100.0
Antelope Dam and Lake	0.0	0.0	100.0	100.0
Grizzly Valley Dam and Lake Davis	1.0	1.8	99.0	98.2
Oroville Division ^a	97.1	99.5	2.9	0.5
California Aqueduct, Delta to Dos Amigos Pumping Plant	96.6	96.7	3.4	3.3
Delta Facilities	86.0	86.0	14.0	14.0
Transportation Facilities				
Grizzly Valley Pipeline	100.0	100.0	0.0	0.0
North Bay Aqueduct	100.0	100.0	0.0	0.0
South Bay Aqueduct				
Del Valle Dam and Lake Del Valle	25.2	22.0	74.8 ^b	78.0 ^c
Remainder of South Bay Aqueduct	100.0	100.0	0.0	0.0
California Aqueduct				
Delta to Dos Amigos Pumping Plant	96.6	96.7	3.4	3.3
Dos Amigos Pumping Plant to termini (excluding Coastal Branch)	94.3	96.9	5.7	3.1
Coastal Branch	100.0	100.0	0.0	0.0

^aPercentages indicated are applicable to the remaining costs of division after excluding costs allocated to flood control that are reimbursed by the federal government (22 percent of capital costs) and excluding specific power costs of Hyatt and Thermalito power plants and switchyards.

^bPercentage indicated consists of 48.8 percent of costs allocated to recreation and 26.8 percent to flood control.

^cPercentage indicated consists of 44.9 percent of costs allocated to recreation and 33.1 percent to flood control.

and Antelope Valley-East Kern Water Agency as follows:

- (1) Additional costs incurred by the State for requested excess capacity;
- (2) Advances by water contractors of funds for such costs; and
- (3) Credits for advances in excess of costs, which were applied to respective contractors' installments of the capital cost component of the Transportation Charge in 1981.

Under Amendment 2 of MWD's contract, 809 cfs of excess capacity was originally constructed in reaches of the West Branch at MWD's request. That capacity was reclassified as basic capacity of SWP Transportation Facilities under Amendment 7. MWD paid \$16.3 million as a prepayment of the capital cost component of the Transportation Charge in lieu

of advancing funds for the original requested capacity.

Amendment 5 to MWD's contract requires that additional costs for modifications to the Santa Ana Pipeline (required for enlargement of Lake Perris) will be allocated to MWD and returned to the State through payments of the Transportation Charge. The additional costs to be repaid through MWD's capital cost component for the aqueduct reach from Devil Canyon Power Plant to Barton Road total about \$6.7 million (see Bulletin 132-72, page 98).

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 contractors payments of the capital cost component of the Transportation

Charge and payment of debt service under the Devil Canyon-Castaic contracts.

Annual Operating Costs

Annual operating costs allocable to water supply and power generation are returned to the State through the minimum and variable OMP&R components of Delta Water and Transportation Charges and through a portion of the revenues from energy sales. All reimbursable operating costs of Conservation Facilities are included in the minimum OMP&R component of the Delta Water Charge.

Transportation and Devil Canyon-Castaic Contract Costs

Table B-11 shows the amounts of the actual and projected costs to be reimbursed through payments of the minimum OMP&R component of the Transportation Charge and allocated operating costs under the Devil Canyon-Castaic contract. The table includes the following seven types of operating costs incurred annually that do not vary with water quantities delivered to the contractors:

- (1) All direct labor charges for field operation and maintenance personnel, including associated indirect costs;
- (2) A distributed share of general operating costs that cannot be identified solely with one facility or aqueduct reach;
- (3) Electric power transmission and station service costs allocable to aqueduct pumping and power recovery plants;
- (4) All costs for equipment, materials, and supplies;
- (5) 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 lost to evaporation and seepage from respective aqueduct reaches or placed into storage in respective reservoirs of the Project Transportation Facilities (after initial fill);

- (6) Credits, which offset those costs in (5) above, for deliveries drawn from reservoir storage; and
- (7) Escalation of projected operating costs at 5 percent per year for 2001, 2002, and 2003.

Table B-12 shows the portions of variable OMP&R costs in Table B-3 that are allocable to the water supply delivery quantities included in Table B-6 and reimbursed through payments of the variable OMP&R component of the Transportation Charge.

The following five adjustments are made to the Table B-3 costs to derive the Table B-12 costs:

- (1) Part of the variable OMP&R costs of each plant is allocated to recreation. The allocation to recreation is in proportion to the quantity of water conveyed through each plant each year for delivery to on-shore recreational developments.
- (2) That portion of variable plant costs attributable to the initial fill of aqueduct reaches is allocated to the joint capital costs of respective down-aqueduct reaches and reservoirs.
- (3) That portion of costs attributable to evaporation and seepage is allocated to the joint minimum OMP&R costs of respective down-aqueduct reaches and reservoirs.
- (4) Adjustments are made for additions or withdrawals from storage in aqueduct reservoirs. In years when water is added to storage in aqueduct reservoirs, the cost of conveying this water into storage is charged to the minimum OMP&R costs of the corresponding reservoir. In years when storage in aqueduct reservoirs is decreased for the purpose of making deliveries, a credit is applied to the minimum OMP&R costs of the reservoir from which the storage is released. This credit is equal to the number of acre-feet of storage reduction times the variable OMP&R unit rate for the year storage is released. The unit rate is equal to the variable OMP&R unit rate for the year the water is taken from storage.

- (5) That portion of costs attributable to pumping water to replace evaporation and seepage losses and for additions or withdrawals from storage in San Luis Reservoir is charged to the minimum OMP&R component of the Delta Water Rate.

The remaining costs are allocated to Transportation water supply and repaid by the contractors.

Conservation Capital and Operating Costs

Table B-13 is a summary of actual and projected capital and operating costs of the initial Project Conservation Facilities. These costs are reimbursed through payments by contractors under the Delta Water Charge, Oroville power sales, and Gianelli Generating Plant credits. *Table B-13* also shows credits applied to the reimbursable capital costs of the Project Conservation Facilities according to negotiated settlements concerning incurred planning costs for the period from 1952 through 1978.

Project Water Charges

This section describes the redetermination of past and projected components of the Transportation Charge for annual revision of Tables C through G of each water supply contract. This section also describes the derivation of the unit Delta Water Rates and the Water System Revenue Bond Surcharge.

A summary of equivalent unit charges for each acre-foot of *Table A* water service is also included for each contractor and each aqueduct reach. A diagram of all calculations may be found in the lower half of *Figure B-1*.

Transportation Charges

The accumulation of allocated costs of each aqueduct reach to each contractor is the basis for the Transportation Charge components.

Table B-14 summarizes each contractor's share of the capital costs of aqueduct reaches presented in *Table B-10*. Those amounts are determined by

applying proportionate-use ratios set forth in *Table B-1* to the costs in *Table B-10*. The resulting allocated costs are set forth in *Table C* of the respective water supply contracts.

Prepayments of the capital cost component, required under MWD's Amendment 7, are included as negative capital costs in *Table B-14* and *Table C* of MWD's Statement of Charges. Solano County Water Agency, Empire West Side Irrigation District, and Castaic Lake Water Agency also prepaid capital costs (see *Table B-14* footnotes). *Table B-14* includes costs of the planned East Branch Extension to provide water service to San Bernardino Valley Municipal Water District and San Geronio Pass Water Agency.

Both *Table B-14* and *Table C* of the six contractors for project water service below Devil Canyon Power Plant and Castaic Power Plant include the capital costs reimbursable under the Devil Canyon-Castaic contract.

Table B-15 summarizes capital cost components of the Transportation Charge for each contractor for each year of the project repayment period. By the year 2035, the capital cost components shown in *Table B-15* will recover the costs shown in *Table B-14*, with interest at the Project Interest Rate of 4.615 percent per annum and based on the amortization schedules included in *Table 2*.

Those estimated components, subsequently adjusted for prior overpayments or underpayments, are included in *Table D* of the water supply contracts. Costs of excess capacity are billed separately and are not included in *Table B-15*.

Table B-15 includes the debt service payments due from the six contractors down-aqueduct from Devil Canyon Power Plant and Castaic Power Plant according to terms of the Devil Canyon-Castaic contract.

Table B-16A summarizes the minimum OMP&R components of the Transportation Charge for each year of the project repayment period. Those estimated components, subsequently

Table 2. Criteria for Amortizing Capital Costs of Transportation Facilities

Contractor	Year of Initial Payment ^a
Alameda County Flood Control and Water Conservation District - Zone 7	1963 ^b
Alameda County Water District	1963
Antelope Valley-East Kern Water Agency	1963
Castaic Lake Water Agency	1964
City of Yuba City ^c	
Coachella Valley Water District	1964
County of Butte ^c	
County of Kings	1968
Crestline-Lake Arrowhead Water Agency	1964
Desert Water Agency	1963 ^d
Dudley Ridge Water District	1968 ^e
Empire West Side Irrigation District	1968 ^e
Kern County Water Agency	
Agricultural Use	1968 ^e
Municipal and Industrial Use	1965
Littlerock Creek Irrigation District	1964
Metropolitan Water District of Southern California	1963
Mojave Water Agency	1964
Napa County Flood Control and Water Conservation District	1966
Oak Flat Water District	1968 ^e
Palmdale Water District	1964
Plumas County Flood Control and Water Conservation District	1970
San Bernardino Valley Municipal Water District	1963
San Gabriel Valley Municipal Water District	1963 ^d
San Geronio Pass Water Agency	1963 ^d
San Luis Obispo County Flood Control and Water Conservation District	1964 ^f
Santa Barbara County Flood Control and Water Conservation District	1964
Santa Clara Valley Water District	1963
Solano County Water Agency	1973
Tulare Lake Basin Water Conservation District	1968 ^e
Ventura County Flood Control District	1964

^aAllocated capital costs of transportation facilities amortized in equal annual installments unless otherwise noted.

^bPrincipal payments on each annual capital cost prior to 1971 delayed until calendar year 1972, except payments for 1963.

^cFor Yuba City and Butte County payments for Delta Water Charge only.

^dPayment deferred for 1963 and added to 1964 payment with accrued interest.

^eFor Dudley Ridge Water District, Empire West Side Irrigation District, Kern County Water Agency (agricultural use), Oak Flat Water District, and Tulare Lake Basin Water Conservation District, according to Article 45 of the contracts for supply of agricultural water, capital costs of transportation facilities allocated to agricultural water supply are amortized by using an equivalent unit rate per acre-foot applied to the annual Table A amounts (Table B-4) through the project repayment period.

^fFor San Luis Obispo Flood Control and Water Conservation District and Santa Barbara County Flood Control and Water Conservation District, all principal and interest payments for costs of the Coastal Stub were deferred until 1976.

adjusted for prior overpayments or underpayments, are included in Table E of the respective contracts.

The total amounts included in Table B-16A are determined by applying the proportionate-use ratios in Table B-2 to the reach costs in Table B-11. Table B-16A excludes charges for Off-Aqueduct Power Facilities, which are included separately in Table B-16B. Both Table B-16A and Table E for the six contractors down-aqueduct from Devil Canyon Power Plant and Castaic Power Plant include the portion of operating costs payable under the Devil Canyon-Castaic contract.

Prior to 1997, as part of operating agreements with the Department, Kern County Water Agency was billed for any additional operating costs caused by early installation of units in Las Perillas and Badger Hill Pumping Plants by Berrenda Mesa Water Storage District (see Bulletin 132-71, page 7). Under those agreements, a portion of minimum OMP&R costs of Reach 31A were assigned directly to KCWA, with the remaining reach costs allocated by application of the proportionate-use ratios shown in Table 3. The Department purchased Unit No. 6 at Las Perillas and Badger Hill pumping plants in early 1997 to provide pumping capacity for deliveries to Coastal Area contractors, which began in 1997.

Table B16-B summarizes the annual charges for Off-Aqueduct Power Facilities allocated to each water contractor, adjusted for prior overpayments or underpayments of charges. Those charges are to repay all Off-Aqueduct Power costs, including bond service, deposits for reserves, operation and maintenance costs, fuel costs, taxes, and insurance.

Adopted October 1, 1979, the General Bond Resolution requires that sufficient revenues be collected each year to repay all of those costs. In addition, an amount totaling 25 percent of the annual bond service is collected each year to ensure that sufficient funds are available to cover all annual costs. Any revenues collected

Table 3. Minimum OMP&R Costs of Reach 31A Assigned Directly to Kern County Water Agency

Year	Direct Charges
1969	46,511
1970	46,302
1971	140,074
1972	95,017
1973	72,454
1974	100,692
1975	127,456
1976	138,504
1977	120,753
1978	157,652
1979	121,231
1980	150,728
1981	75,866
1982	82,805
1983	90,007
1984	107,468
1985	159,406
1986	137,241
1987	127,073
1988	130,924
1989	128,468
1990	138,234
1991	139,527
1992	185,370
1993	219,344
1994	364,196
1995	272,341
1996	322,123
Total	3,997,767

and not needed during the year are refunded to the contractors in the next year.

Table 4 summarizes Off-Aqueduct Power Facility charges and credits related to deliveries for 2000.

Table 4. Summary of Off-Aqueduct Power Facility Charges and Credits

2000 Charges	
Reid Gardner Power Plant	\$74,601,476
Bottle Rock Power Plant	\$15,689,830
South Geysers Power Plant	\$6,777,333
<i>Subtotal</i>	\$97,068,639
2000 Credits	
Power sales	\$19,970,929
Miscellaneous water (wheeling)	0
<i>Subtotal</i>	\$19,970,929
Grand Total	\$77,097,710

Table 5 shows projected charges for Off-Aqueduct Power Facilities and an amount equal to 25 percent of annual bond service for 2001 and each year thereafter.

Table 5. Projected Charges for Off-Aqueduct Power Facilities

Year	Total Annual Cost	25% Bond Service
2001	99,364,939	9,507,294
2002	100,534,077	9,511,981
2003	91,633,883	7,130,139
2004	89,635,308	7,138,840
2005	98,015,708	8,814,920
2006	98,069,307	8,825,639
2007	98,054,807	8,822,739
2008	116,848,885	12,581,555
2009	116,773,272	12,566,433
2010	116,715,631	12,558,305
2011	116,798,984	12,574,976
2012	117,098,251	12,634,829
2013	54,425,583	4,576,804
2014	19,042,610	3,784,922
2015	8,464,610	1,669,322
2016	5,430,860	1,062,572
2017	3,598,485	696,097
2018	3,618,110	700,022
2019	3,630,172	702,434
2020	3,659,673	708,335
2021	2,280,297	432,459
2022	2,285,704	433,541
2023	3,617,204	699,841
2024	3,616,641	699,728

The annual charges for Off-Aqueduct Power Facilities are allocated among contractors in proportion to the electrical energy required to pump Table A water for the year. The initial allocation for the Statements of Charges is based on estimates of energy to pump requested Table A water deliveries.

An interim adjustment in the allocation of Off-Aqueduct Power costs may be made in May of each year based on updated cost estimates and April revisions in water delivery schedules. An additional adjustment is made the following year based on actual water deliveries and actual costs for the year.

The energy required to pump each contractor's water is calculated using the kilowatt-hour per acre-foot factors (shown in Table 6) for the pumping plants upstream from the delivery turnouts. The amounts include transmission losses.

Table 6. Kilowatt-Hour Per Acre-Foot Factors for Allocating Off-Aqueduct Power Facility Costs

Pumping Plant	kWh per acre-foot ^a	
	At Plant	Cumulative from Delta
Barker Slough	223	223
Cordelia-Benicia	434	657
Cordelia-Vallejo	178	401
Cordelia-Napa	563	786
Banks	296	296
South Bay (including Del Valle)	869	1,165
Dos Amigos	138	434
Buena Vista	242	676
Teerink	295	971
Chrisman	639	1,610
Edmonston	2,236	3,846
Pearblossom	703	4,549
Oso	280	4,126
Las Perillas	77	511
Badger Hill	200	711
Devil's Den	705	1,416
Bluestone	705	2,121
Polonio Pass	705	2,826

^aIncludes transmission losses

Table B-17 presents a summary of actual and projected total variable OMP&R costs for each acre-foot of water conveyed through each aqueduct pumping plant and power plant for each year of the project repayment period. Those data are derived according to the following procedure specified in Article 26(a) of the Standard Provisions 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 the projected variable OMP&R costs to be incurred for each reach will be returned to the State.

- 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.

The data summarized in Table B-17 are derived by dividing the costs shown in Table B-3 by the quantities of water shown in Table B-6. However, certain costs included in Table B-3 for extra peaking service, which would otherwise constitute variable OMP&R costs, are assigned directly to contractors requesting this type of service (see Bulletin 132-71, page 21, and Water Service Contractors Council Memo No. 593, July 10, 1970). Those costs are excluded from the unit charges shown in Table B-17. Peaking charges based on additional capacity ceased in 1983. Since 1984, costs are based on market energy rates. The amounts of extra peaking charges for additional power costs are shown in Table 7 and Table 8.

The unit rates shown in Table B-17 constitute the rates for the pumping plants and power plants listed. The cumulative rates constitute the total rates, cumulative from the Sacramento-San Joaquin Delta, and are applicable to deliveries from or downstream of the pumping plants and power plants. Extra peaking service costs are excluded.

Table B-18 shows the variable OMP&R components of the Transportation Charge for each contractor for each year of the project repayment period. Table B-18 is developed from the costs per acre-foot included in Table B-17 and the delivery quantities for each contractor from each reach as indicated in Table B-5A, plus any costs for extra peaking service. Those estimated components, subsequently adjusted for prior overpayments or underpayments, are included in Table F of the respective water supply contracts.

Table B-19 summarizes the annual Transportation Charges for each contractor (the sums of the corresponding amounts included in Tables B-15, B-16A, B-16B, and B-18). Those estimated

Table 7. Extra Peaking Charges for Additional Power, by Pumping Plant (Dollars)

Year	Cordelia Napa	Cordelia Solano	Barker Slough	South Bay	Banks	Dos Amigos	Las Perillas and Badger Hill	Buena Vista	Teerink	Chrisman	Edmonston	Pearblossom	Oso	Total
1972	0	0	0	0	0	10,579	24,700	0	0	0	0	0	0	35,279
1973	0	0	0	0	0	0	6,016	0	0	0	0	0	0	6,016
1974	0	0	0	0	0	0	7,140	0	0	0	0	0	0	7,140
1975	0	0	0	0	0	494	6,397	0	0	0	0	0	0	6,891
1976	0	0	0	0	0	0	1,981	0	0	0	0	0	0	1,981
1977	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1978	0	0	0	0	0	45,145	3,680	0	0	0	0	0	0	48,825
1979	0	0	0	0	0	0	3,306	0	0	0	0	0	0	3,306
1980	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1981	0	0	0	0	0	12,126	0	0	0	0	0	0	0	12,126
1982	0	0	0	0	0	89,339	0	0	0	0	0	0	0	89,339
1983	0	0	0	35	7,594	3,534	152	0	0	0	0	0	0	11,315
1984	0	0	0	2,096	84,396	38,607	7,203	11,173	3,823	3,593	0	0	0	150,891
1985	0	0	0	1,480	19,612	8,841	763	4,488	4,412	8,929	28,353	0	0	76,878
1986	0	0	0	0	1,864	863	0	291	354	766	2,683	0	0	6,821
1987	0	0	0	604	17,129	7,838	835	2,295	1,806	3,460	11,058	0	0	45,025
1988	639	39	287	894	43,475	20,082	2,213	5,792	4,367	8,272	25,886	0	0	111,946
1989	2,491	566	1,483	70	40,251	18,642	1,935	3,401	1,531	2,058	3,793	0	0	76,221
1990	45	0	18	343	19,524	9,044	0	150	145	314	643	0	0	30,226
1991	903	0	281	0	21	8	0	15	17	39	139	41	0	1,464
1992	208	117	203	0	7,070	2,502	0	182	190	435	0	0	0	10,907
1993	0	681	889	4,483	123,080	54,741	0	8,898	5,458	10,900	35,068	11,139	0	255,337
1994	0	366	393	679	6,566	2,795	454	1,083	155	357	1,121	0	132	14,101
1995	0	0	0	1,717	24,464	9,422	27	1,865	3,475	782	1,104	400	0	43,256
1996	4	0	1	1,983	10,031	4,976	0	391	432	1,015	3,404	1,160	0	23,397
1997	0	1,780	2,152	3,107	337,357	165,774	1,753	34,604	12,296	15,910	21,028	0	0	595,761
1998	0	0	0	20,966	235,693	106,251	2,354	697	848	1,836	6,426	0	0	375,071
1999	0	0	0	0	63,196	26,235	0	3,394	4,136	8,959	31,350	7,740	0	145,010
2000	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	4,290	3,549	5,707	38,457	1,041,323	637,838	70,909	78,719	43,445	67,625	172,056	20,480	132	2,184,530

Table 8. Extra Peaking Charges for Additional Power, by Contractor (Dollars)

Year	Napa	Solano	Alameda Zone 7	ACWD ^a	SCVWD ^b	Dudley Ridge	Empire West Side	Kern County	County of Kings	Oak Flat	Tulare	AVEK ^c	Castaic Lake	Coachella Valley	Desert Water Agency	LCID ^d	Palmdale	SGVMWD ^e	Total
1972	0	0	0	0	0	0	0	35,629	0	0	10	0	0	0	0	0	0	0	35,279
1973	0	0	0	0	0	0	0	6,016	0	0	0	0	0	0	0	0	0	0	6,016
1974	0	0	0	0	0	0	0	7,140	0	0	0	0	0	0	0	0	0	0	7,140
1975	0	0	0	0	0	0	0	6,891	0	0	0	0	0	0	0	0	0	0	6,891
1976	0	0	0	0	0	0	0	1,981	0	0	0	0	0	0	0	0	0	0	1,981
1977	0	0	0	0	0	0	0		0	0	0	0	0	0	0	0	0	0	0
1978	0	0	0	0	0	2,035	0	44,484	42	0	0	2,264	0	0	0	0	0	0	48,825
1979	0	0	0	0	0	0	0	2,821	0	0	0	0	485	0	0	0	0	0	3,306
1980	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1981	0	0	0	0	0	0	0	11,951	0	0	0	0	0	0	0	175	0	0	12,126
1982	0	0	0	0	0	2,173	0	80,945	0	0	0	4,671	1,128	0	0	0	0	422	89,339
1983	0	0	0	0	48	9,511	0	0	1,365	0	0	0	391	0	0	0	0	0	11,315
1984	0	0	0	0	2,874	0	0	144,021	281	809	0	0	2,906	0	0	0	0	0	150,891
1985	0	0	0	2,029	0	0	64	25,664	0	98	0	48,767	256	0	0	0	0	0	76,878
1986	0	0	0	0	0	0	0	0	0	13	2,194	4,614	0	0	0	0	0	0	6,821
1987	0	0	229	0	599	313	84	24,141	0	95	0	18,207	545	0	0	812	0	0	45,025
1988	892	73	665	561	0	1,853	1,404	58,905	0	72	2,368	44,526	627	0	0	0	0	0	111,946
1989	3,478	1,062	96	0	0	13	403	55,085	0	239	8,278	0	1,043	0	0	1,035	5,489	0	76,221
1990	63	0	470	0	0	0	0	28,587	0	0	0	0	0	0	0	81	1,025	0	30,226
1991	1,184	0	0	0	0	0	0	0	0	0	0	0	0	0	0	280	0	0	1,464
1992	271	257	0	0	0	0	49	10,109	221	0	0	0	0	0	0	0	0	0	10,907
1993	0	1,570	6,122	0	0	0	3,757	97,812	504	0	74,577	0	0	24,983	41,156	0	4,856	0	255,337
1994	0	759	896	0	0	0	7	9,933	0	0	0	0	2,450	0	0	56	0	0	14,101
1995	0	0	2,353	0	0	10,197	0	28,085	310	0	0	0	27	0	0	0	2,284	0	43,256
1996	5	0	81	2,612	0	334	205	4,552	969	0	7,809	0	0	0	0	0	3,598	3,232	23,397
1997	0	3,932	3,999	0	0	6,190	0	546,733	0	40	0	0	0	0	0	0	34,867	0	595,761
1998	0	0	19,666	8,442	0	22,631	1	312,626	0	651	0	0	0	0	0	0	11,054	0	375,071
1999	0	0	0	0	0	0	0	76,425	0	0	6,922	0	0	0	0	0	11,576	50,087	145,010
2000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	5,893	7,653	34,577	13,644	3,521	55,250	5,974	1,620,176	3,692	2,017	102,158	123,049	9,858	24,983	41,156	2,439	74,749	53,741	2,184,530

^aAlameda County Water Agency^bSanta Clara Valley Water District^cAntelope Valley East Kern Water Agency^dLittle Rock Creek Irrigation District^eSan Gabriel Valley Municipal Water District

payments, subsequently adjusted for prior overpayments or underpayments, are set forth in Table G of the respective water supply contracts.

Both Table B-19 and Table G for the six contractors down-aqueduct from Devil Canyon Power Plant and Castaic Power Plant include amounts of debt service and operating cost payments due according to provisions of the Devil Canyon-Castaic contract.

Delta Water Charges

Table B-20A presents the calculation of the Delta Water Rate for the initial Conservation Facilities applicable in 2002 according to the amended Articles 22(e) and 22(g) of all 29 contracts. The Delta Water Rate was calculated at a Project Interest Rate of 4.615 percent based on Conservation Facility costs shown in Table B-13. That Delta Water Rate is used to compute projected Delta Water Charges under Article 53(i) for the contractors who have executed the Monterey Amendment. Included in Table B-20A is the Delta Water Rate for the two contractors who have not executed the Monterey Amendment (Plumas County and Empire).

Table B-20B shows each component of the 2002 Delta Water Rate from Table B-20A.

Table B-21 summarizes the annual Delta Water Charge for each contractor. The projected charges in Table B-21 are developed by multiplying the total rate per acre-foot, as shown in Table B-20A, by the amount of Table A water for each contractor as shown in Table B-4.

Water System Revenue Bond Surcharge

Table B-22 summarizes the Water System Revenue Bond Surcharge to the Delta Water Charge and the Transportation capital cost component of each contractor. The surcharge shown in Table B-22 includes the financing costs of WSRB Series B through W. This surcharge is levied according to an amendment to the water supply contracts for repaying Water System Revenue

Bond financing costs. All long-term water supply contractors signed that amendment.

Total Water Charges

Table B-23 summarizes the total annual charges to each contractor (the sum of the Transportation Charge in Table B-19, the Delta Water Charge in Table B-21, and the Water System Revenue Bond Surcharge in Table B-22). The charges do not reflect past payments by contractors and are unadjusted for prior overpayments or underpayments.

Equivalent Total Water Charges

Table B-24 presents the Transportation Charge and Delta Water Charge in terms of the equivalent unit charge for each acre-foot of Table A water now projected for delivery 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 as part of the Delta Water Charge and Transportation Charge, plus interest at the Project Interest Rate, if applied to each acre-foot of Table A water delivered to date; all surplus water delivered prior to May 1, 1973; all Article 21 water deliveries in 1994 and after; and all Table A water now projected to be delivered during the remainder of the project repayment period (Table B-5B).

The equivalent unit Delta Water Charges included in Table B-24 are greater than those in Table B-20A because current projections of Table A water service are less for most contractors than the amounts shown in Table A.

Equivalent Water Costs by Reach

Table B-25 presents a summary of the equivalent unit Transportation cost of conveying Table A water through respective aqueduct reaches of the Project Transportation Facilities.

Those unit costs provide the basis of charges assessed for extra service (such as for delivery of Table A amounts down-aqueduct from a

contractor's turnout) and for wheeling service to entities other than the long-term water supply contractors.

The cumulative unit conveyance costs indicated for reaches in Table B-25 do not necessarily equal the equivalent unit Transportation Charges to contractors served from such reaches. The unit charges in Table B-24 account for the rate of water demand buildup and cost allocation factors of the individual contractors; however, the unit costs included in Table B-25 reflect the effect of melding the respective buildups and allocation criteria of all contractors whose Table A amounts are conveyed through a given reach. Table B-25 also includes surplus water delivered prior to May 1, 1973, and Article 21 water deliveries in 1994 and after.

East Branch Enlargement Facility Charges

Table B-26 reflects the Department's projection of annual capital costs of the East Branch Enlargement Facilities for each aqueduct reach. Those projections will be redetermined in future bulletins to include:

- A reallocation of costs of constructing the present East Branch facilities between Alamo Power Plant and Silverwood Lake;
- A reallocation of costs of Silverwood Lake to reflect additional use as a result of East Branch Enlargement operation;
- Reallocation of costs of San Bernardino Tunnel to reflect redistribution of flow capacities necessary for the East Branch Enlargement Facilities; and
- Actual construction costs of the enlargement.

These costs will be recovered with interest from the seven Southern California water contractors participating in the enlargement, according to their amended water supply contracts (see Table 9).

Table B-27 lists the projected minimum OMP&R costs for each reach of the enlargement to be

repaid by the seven contractors participating in the East Branch Enlargement. Currently, this table includes only the amounts of estimated incremental minimum OMP&R costs attributable to the East Branch Enlargement. According to Article 49 (e)(1), the contractors participating in the East Branch Enlargement will also share in the remaining minimum OMP&R costs of the affected reaches according to a formula to be developed by the Department in consultation with the affected contractors. Once the formula is developed, subsequent versions of this table will reflect the transfer of a share of the minimum OMP&R costs now included in Table B-11.

Table B-28 shows each participating contractor's share of the estimated capital costs of the East Branch Enlargement shown in Table B-26.

Table B-29 shows the amounts of the annual capital cost components of the East Branch Enlargement Transportation Charge for each participating contractor. This component consists of each contractor's allocated share of debt service on bonds sold to finance the enlargement.

Table B-30 shows the minimum OMP&R components of the East Branch Enlargement Transportation Charge for each participating contractor for each year of the project repayment period. The amounts shown in Table B-30 will recover the minimum OMP&R costs shown in Table B-27.

Table B-31 shows the annual East Branch Enlargement Transportation charges for each participating contractor (the sums of the corresponding amounts included in Table B-29 and B-30).

Short-Term Agreements

The long-term water supply contractors and the Department have executed a short-term agreement that affects the contractors' charges. A 5-year agreement was executed in late 1997 between the Department and 16 Municipal and Industrial contractors, who agreed to pay their

Table 9. Determination of Factors for Distributing Capital and Minimum OMP&R Costs of East Branch Enlargement Facilities Among Participating Contractors

Reach Number	Description						
18A	Junction, West Branch, California Aqueduct, through Alamo Power Plant						
19	Alamo Power Plant to Fairmont						
20A	Fairmont through 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						
23B	West Fork Mojave River to Silverwood Lake (excluding Mojave Siphon Power Plant facilities)						
23C	Mojave Siphon Power Plant facilities						
24	Cedar Springs Dam and Silverwood Lake						
25	Silverwood Lake to South Portal, San Bernardino Tunnel						
26A	South Portal, San Bernardino Tunnel through Devil Canyon Power Plant						
26B	Devil Canyon Power Plant Bypass						

Share of Enlargement Capacity (cfs)								
Reach Number	Antelope Valley-East Kern Water Agency	Coachella Valley Water District	Desert Water Agency	Mojave Water Agency	Palmdale Water District	San Bernardino Valley Municipal Water District	Metropolitan Water District of Southern California	Total
18A		151	13	136	6		1,200	1,506
19		151	13	136	6		1,200	1,506
20A	35	151	13	136	6		1,200	1,541
20B	35	151	13	136	6		1,200	1,541
21	35	151	13	136			1,200	1,535
22A	35	151	13	136			1,200	1,535
22B		151	13	136			1,200	1,500
23B		184	67	212			1,200	1,663
23C		184	67				1,200	1,451
24		190	78				1,200	1,468
25		193	83			63	1,200	1,539
26A		193	83			63	1,200	1,539
26B							300	300

Factors for Distributing Capital and Minimum OMP&R Costs of East Branch Enlargement Facilities (flow ratios)								
Reach Number	Antelope Valley-East Kern Water Agency	Coachella Valley Water District	Desert Water Agency	Mojave Water Agency	Palmdale Water District	San Bernardino Valley Municipal Water District	Metropolitan Water District of Southern California	Total
18A	0.00000000	0.10026560	0.00863214	0.09030544	0.00398406	0.00000000	0.79681276	1.00000000
19	0.00000000	0.10026560	0.00863214	0.09030544	0.00398406	0.00000000	0.79681276	1.00000000
20A	0.02271252	0.09798832	0.00843608	0.08825438	0.00389358	0.00000000	0.77871512	1.00000000
20B	0.02271252	0.09798832	0.00843608	0.08825438	0.00389358	0.00000000	0.77871512	1.00000000
21	0.02280130	0.09837134	0.00846906	0.08859935	0.00000000	0.00000000	0.78175895	1.00000000
22A	0.02280130	0.09837134	0.00846906	0.08859935	0.00000000	0.00000000	0.78175895	1.00000000
22B	0.00000000	0.10066667	0.00866667	0.09066667	0.00000000	0.00000000	0.79999999	1.00000000
23B	0.00000000	0.11064342	0.04028863	0.12748046	0.00000000	0.00000000	0.72158749	1.00000000
23C	0.00000000	0.12680910	0.04617505	0.00000000	0.00000000	0.00000000	0.82701585	1.00000000
24	0.00000000	0.12942779	0.05313351	0.00000000	0.00000000	0.00000000	0.81743870	1.00000000
25	0.00000000	0.12540611	0.05393112	0.00000000	0.00000000	0.04093567	0.77972710	1.00000000
26A	0.00000000	0.12540611	0.05393112	0.00000000	0.00000000	0.04093567	0.77972710	1.00000000
26B	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	1.00000000	1.00000000

allocated shares of Municipal Water Quality Investigations costs. The MWQI charges under this agreement are included in the Transportation minimum OMP&R components shown in Table B-16A.

Nine contractors have executed short-term agreements to participate in the feasibility study for the American Basin conjunctive use program. The costs of the feasibility study are included in Table B-16A.

Tables B-1 through B-31 Follow

Table B-1

Factors for Distributing Reach Capital Costs Among Contractors

Sheet 1 of 2

Reach No.	Reach Description	North Bay Area		South Bay Area				Total
		Napa County FC&WCD	Solano County Water Agency	Alameda County FC&WCD, Zone 7	Alameda County Water District	Santa Clara Valley Water District	Future Contractor	
	North Bay Aqueduct							
1	Barker Slough thru Fairfield/Vacaville Turnout	0.29667896	0.70332104					1.00000000
2	Fairfield/Vacaville Turnout to Cordelia Forebay	0.38414552	0.61585448					1.00000000
3A	Cordelia Forebay thru Benicia and Vallejo Turnouts		1.00000000					1.00000000
3B	Cordelia Forebay thru Napa Turnout Reservoir	1.00000000						1.00000000
	South Bay Aqueduct							
1	Bethany Reservoir thru Altamont Turnout			0.22599612	0.20663021	0.49237700	0.07499667	1.00000000
2	Altamont Turnout thru Patterson Reservoir			0.22599658	0.20663059	0.49237783	0.07499500	1.00000000
4	Patterson Reservoir to Del Valle Junction			0.19504795	0.21450017	0.51113249	0.07931939	1.00000000
5	Del Valle Junction thru Lake Del Valle			0.14436367	0.12972254	0.33715573	0.38875806	1.00000000
6	Del Valle Junction thru South Livermore Turnout			0.14599918	0.21144710	0.50574745	0.13680627	1.00000000
7	South Livermore Turnout thru Vallecitos Turnout				0.25176680	0.60218448	0.14604872	1.00000000
8	Vallecitos Turnout thru Alameda-Bayside Turnout				0.27934645	0.72065355		1.00000000
9	Alameda-Bayside Turnout thru Santa Clara Terminal Facilities					1.00000000		1.00000000
	California Aqueduct							
1	Delta thru Bethany Reservoir			0.00954737	0.00872917	0.02080118	0.00342507	N/A

Reach No.	Reach Description	Central Coastal Area		Southern California Area				
		San Luis Obispo County FC&WCD	Santa Barbara County FC&WCD	Antelope Valley- East Kern Water Agency	Castaic Lake Water Agency	Coachella Valley Water District	Crestline- Lake Arrowhead Water Agency	Desert Water Agency
	California Aqueduct							
1	Delta thru Bethany Reservoir	0.00533010	0.00983337	0.02939084	0.01285827	0.00528315	0.00133612	0.00871300
2A	Bethany Reservoir to Orestimba Creek	0.00557213	0.01027988	0.03072531	0.01343201	0.00552068	0.00139620	0.00910474
2B	Orestimba Creek to O'Neill Forebay	0.00557824	0.01029119	0.03075915	0.01345351	0.00552831	0.00139814	0.00911733
3	O'Neill Forebay to Dos Amigos Pumping Plant	0.00557719	0.01028923	0.03075332	0.01345294	0.00552772	0.00139798	0.00911637
4	Dos Amigos Pumping Plant to Panoche Creek	0.00557607	0.01028717	0.03074719	0.01345233	0.00552710	0.00139784	0.00911536
5	Panoche Creek to Five Points	0.00557467	0.01028462	0.03073954	0.01345157	0.00552633	0.00139763	0.00911409
6	Five Points to Arroyo Pasajero	0.00557257	0.01028074	0.03072799	0.01345042	0.00552517	0.00139733	0.00911216
7	Arroyo Pasajero to Kettleman City	0.00557189	0.01027949	0.03072428	0.01345006	0.00552480	0.00139723	0.00911154
8C	Kettleman City thru Milham Avenue	0.00557103	0.01027792	0.03071961	0.01344960	0.00552432	0.00139712	0.00911076
8D	Milham Avenue thru Avenal Gap	0.00568611	0.01049020	0.03135418	0.01373353	0.00563986	0.00142632	0.00930130
9	Avenal Gap thru Twisselman Road			0.03426625	0.01356094	0.00616886	0.00156011	0.01017373
10A	Twisselman Road thru Lost Hills			0.03481391	0.01377767	0.00626946	0.00158556	0.01033963
11B	Lost Hills to 7th Standard Road			0.03835043	0.01517717	0.00691699	0.00174933	0.01140749
12D	7th Standard Road thru Elk Hills Road			0.04031661	0.01595523	0.00727790	0.00184059	0.01200265
12E	Elk Hills Road thru Tupman Road			0.04037074	0.01597665	0.00728878	0.00184332	0.01202059
13B	Tupman Road to Buena Vista Pumping Plant			0.04379882	0.01733322	0.00791595	0.00200194	0.01305492
14A	Buena Vista Pumping Plant thru Santiago Creek			0.04599268	0.01820137	0.00831952	0.00210399	0.01372049
14B	Santiago Creek thru Old River Road			0.04682530	0.01853084	0.00847388	0.00214303	0.01397505
14C	Old River Road to Wheeler Ridge Pumping Plant			0.04825217	0.01909545	0.00873768	0.00220973	0.01441013
15A	Wheeler Ridge Pumping Plant to Chrisman Pumping Plant			0.04905609	0.01941356	0.00888679	0.00224744	0.01465600
16A	Chrisman Pumping Plant to Edmonston Pumping Plant			0.05089794	0.02014241	0.00922722	0.00233351	0.01521742
17E	Edmonston Pumping Plant to Porter Tunnel			0.05329388	0.02109050	0.00967107	0.00244575	0.01594937
17F	Porter Tunnel to Junction, West Branch, Calif. Aqueduct			0.05340725	0.02113537	0.00969176	0.00245098	0.01598349
18A	Junction, West Branch, Calif. Aqueduct thru Alamo Pwp.			0.13238112		0.02399391	0.00606795	0.03957043
19	Alamo Power Plant to Fairmont			0.13237766		0.02399451	0.00606811	0.03957141
19C	Buttes Junction thru Buttes Reservoir			1.00000000				
20A	Fairmont thru 70th Street West			0.06847931		0.02576425	0.00651573	0.04249001
20B	70th Street West to Palmdale			0.02276024		0.02702917	0.00683555	0.04457607
21	Palmdale to Littlerock Creek			0.02318952		0.02754716	0.00696651	0.04543034
22A	Littlerock Creek to Pearblossom Pumping Plant			0.01181870		0.02794143	0.00706621	0.04608043
22B	Pearblossom Pumping Plant to West Fork Mojave River					0.02827552	0.00715074	0.04663153
23	West Fork Mojave River to Silverwood Lake					0.00324449	0.00818122	0.00535117
24	Cedar Springs Dam and Silverwood Lake					0.01024605	0.01251569	0.01690478
25	Silverwood Lake to South Portal San Bernardino Tunnel							
26A	South Portal, San Bernardino Tunnel thru Devil Canyon Pwp.							
28G	Devil Canyon Power Plant to Barton Road							
28H	Barton Road to Lake Perris							
28J	Perris Dam and Lake Perris							
29A	Junction, West Branch, Calif. Aqueduct thru Oso Pumping P.				0.03544337			
29F	Oso Pumping Plant thru Quail Embankment				0.03544339			
29G	Quail Embankment thru Warne Power Plant				0.03544339			
29H	Pyramid Dam and Lake				0.02817144			
29J	Pyramid Lake thru Castaic Power Plant				0.03544338			
30	Castaic Dam and Lake				0.02927284			
31A	Avenal Gap to Devil's Den Pumping Plant	0.10560301	0.19482503		0.07364766			
33A	Devil's Den Pumping Plant thru Tank 1	0.10101221	0.89898779					
33B	Tank 1 through Chorro Valley Turnout	0.09912818	0.90087182					
34	Chorro Valley Turnout through Lopez Turnout	0.05479573	0.94520427					
35	Lopez Turnout through Guadalupe Turnout	0.00000000	1.00000000					

Note: Proportionate use factors **do not** reflect permanent water transfer as a result of the Monterey Amendment.

Table B-1
Factors for Distributing Reach Capital Costs Among Contractors

Sheet 2 of 2

Reach No.	San Joaquin Valley Area							
	Dudley Ridge Water District	Empire West Side Irrigation District	Future Contractor San Joaquin Valley	Kern County Water Agency		County of Kings	Oak Flat Water District	Tulare Lake Basin Water Storage District
				Municipal and Industrial	Agricultural			
	California Aqueduct							
1	0.01707770	0.00088678	0.00254693	0.02741768	0.30629913	0.00090695	0.00167121	0.03504975
2A	0.01781031	0.00092482	0.00266258	0.02864263	0.31945188	0.00094747	0.00174288	0.03655331
2B	0.01785838	0.00092731	0.00266550	0.02868743	0.32030556	0.00094896		0.03665201
3	0.01786337	0.00092757	0.00266499	0.02868589	0.32039254	0.00094892		0.03666225
4	0.01786863	0.00092785	0.00266446	0.02868428	0.32048398	0.00094886		0.03667303
5	0.01787517	0.00092819	0.00266380	0.02868227	0.32059816	0.00094879		0.03668649
6	0.01788508	0.00092870	0.00266279	0.02867923	0.32077093	0.00094868		0.03670685
7	0.01788826	0.00092887	0.00266246	0.02867825	0.32082633	0.00094864		0.03671338
8C	0.01789228	0.00092909	0.00266205	0.02867702	0.32089625	0.00094859		0.03672162
8D	0.01828779		0.00271703	0.02928147	0.32798200			0.01820857
9				0.03204523	0.32739538			
10A				0.03257442	0.31658608			
11B				0.03597398	0.24684668			
12D				0.03787171	0.20804762			
12E				0.03793198	0.20695175			
13B				0.01458796	0.16600071			
14A				0.00620338	0.13319181			
14B				0.00632023	0.11741558			
14C				0.00651962	0.09039633			
15A				0.00663252	0.07516317			
16A				0.00688973	0.04028829			
17E				0.00212516				
31A			0.05046240		0.57546190			

Reach No.	Southern California Area (Continued)								Total
	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	Metropolitan Water District of Southern California	Ventura County Flood Control District	
1	0.00049180	0.01101147	0.00369131	0.02362857	0.00650354	0.00398392	0.43929350	0.00429212	1.00000000
2A	0.00051413	0.01151136	0.00385891	0.02469101	0.00679699	0.00416304	0.45921072	0.00448701	1.00000000
2B	0.00051469	0.01152409	0.00386317	0.02472511	0.00680570	0.00416880	0.45973548	0.00449194	1.00000000
3	0.00051461	0.01152193	0.00386244	0.02472246	0.00680478	0.00416835	0.45965407	0.00449108	1.00000000
4	0.00051451	0.01151965	0.00386167	0.02471968	0.00680380	0.00416787	0.45956848	0.00449019	1.00000000
5	0.00051440	0.01151681	0.00386070	0.02471620	0.00680259	0.00416730	0.45946161	0.00448907	1.00000000
6	0.00051419	0.01151251	0.00385926	0.02471095	0.00680076	0.00416640	0.45929991	0.00448738	1.00000000
7	0.00051413	0.01151113	0.00385879	0.02470927	0.00680016	0.00416612	0.45924807	0.00448685	1.00000000
8C	0.00051405	0.01150938	0.00385821	0.02470716	0.00679941	0.00416576	0.45918261	0.00448616	1.00000000
8D	0.00052466	0.01174718	0.00393793	0.02522383	0.00694100	0.00425288	0.46868533	0.00457883	1.00000000
9	0.00057339	0.01283841	0.00430367	0.02758959	0.00758975	0.00465175	0.51227887	0.00500407	1.00000000
10A	0.00058254	0.01304366	0.00437246	0.02803943	0.00771262	0.00472760	0.52049091	0.00508405	1.00000000
11B	0.00064171	0.01436906	0.00481665	0.03093503	0.00850448	0.00521581	0.57349473	0.00560046	1.00000000
12D	0.00067463	0.01510596	0.00506361	0.03254889	0.00894541	0.00548790	0.60297374	0.00588755	1.00000000
12E	0.00067553	0.01512626	0.00507040	0.03259749	0.00895830	0.00549608	0.60379667	0.00589546	1.00000000
13B	0.00073290	0.01641098	0.00550099	0.03540212	0.00972547	0.00596896	0.65516902	0.00639604	1.00000000
14A	0.00076961	0.01723325	0.00577656	0.03720681	0.01021819	0.00627322	0.68807273	0.00671639	1.00000000
14B	0.00078354	0.01754538	0.00588113	0.03789703	0.01040613	0.00638960	0.70057530	0.00683798	1.00000000
14C	0.00080743	0.01808019	0.00606036	0.03907670	0.01072763	0.00658850	0.72199174	0.00704634	1.00000000
15A	0.00082089	0.01838154	0.00616135	0.03974336	0.01090913	0.00670088	0.73406357	0.00716371	1.00000000
16A	0.00085171	0.01907194	0.00639271	0.04126559	0.01132404	0.00695754	0.76170731	0.00743264	1.00000000
17E	0.00089182	0.01997003	0.00669365	0.04325018	0.01186455	0.00729213	0.79767940	0.00778251	1.00000000
17F	0.00089372	0.02001251	0.00670788	0.04334270	0.01188988	0.00730773	0.79937767	0.00779906	1.00000000
18A	0.00221525	0.04960424	0.01662680	0.10730448	0.02944860	0.01809192	0.57469530		1.00000000
19	0.00221522	0.04960300	0.01662640	0.10730707	0.02944876	0.01809230	0.57469556		1.00000000
19C									1.00000000
20A	0.00237800	0.05324853	0.01784830	0.11522152	0.03161798	0.01942666	0.61700971		1.00000000
20B	0.00249470	0.05586076	0.01872390	0.12087843	0.03316986	0.02038045	0.64729087		1.00000000
21	0.00254199	0.05692053		0.12319480	0.03380324	0.02077093	0.65963498		1.00000000
22A		0.05773082		0.12495766	0.03428605	0.02106816	0.66905054		1.00000000
22B		0.05842136		0.12645207	0.03469614	0.02132008	0.67705256		1.00000000
23				0.14467451	0.03969010	0.02439237	0.77446614		1.00000000
24				0.22243002	0.04339444	0.02843498	0.66607404		1.00000000
25				0.14947726	0.03997502	0.02520426	0.78534346		1.00000000
26A				0.14947726	0.03997502	0.02520426	0.78534346		1.00000000
28G				0.05126137			0.94873863		1.00000000
28H							1.00000000		1.00000000
28J							1.00000000		1.00000000
29A							0.95147783	0.01307880	1.00000000
29F							0.95147785	0.01307876	1.00000000
29G							0.95147785	0.01307876	1.00000000
29H							0.96278381	0.00904475	1.00000000
29J							0.95147787	0.01307875	1.00000000
30							0.96212388	0.00860328	1.00000000
31A									1.00000000
33A									1.00000000
34									1.00000000
35									1.00000000

Table B-2

Factors for Distributing Reach Minimum OMP&R Costs Among Contractors

Sheet 1 of 2

Reach No.	Reach Description	North Bay Area		South Bay Area				Total
		Napa County FC&WCD	Solano County Water Agency	Alameda County FC&WCD, Zone 7	Alameda County Water District	Santa Clara Valley Water District	Future Contractor	
	North Bay Aqueduct							
1	Barker Slough thru Fairfield/Vacaville Turnout	0.28558412	0.71441588					1.00000000
2	Fairfield/Vacaville Turnout to Cordelia Forebay	0.40208418	0.59791582					1.00000000
3A	Cordelia Forebay thru Benicia and Vallejo Turnouts		1.00000000					1.00000000
3B	Cordelia Forebay thru Napa Turnout Reservoir	1.00000000						1.00000000
	South Bay Aqueduct							
1	Bethany Reservoir thru Altamont Turnout			0.33210523	0.19743326	0.47046151	0.00000000	1.00000000
2	Altamont Turnout thru Patterson Reservoir			0.33209377	0.19743668	0.47046955	0.00000000	1.00000000
4	Patterson Reservoir to Del Valle Junction			0.30784679	0.20460347	0.48754974	0.00000000	1.00000000
5	Del Valle Junction thru Lake Del Valle			0.53312173	0.12972254	0.33715573	0.00000000	1.00000000
6	Del Valle Junction thru South Livermore Turnout			0.31697267	0.20137347	0.48165386	0.00000000	1.00000000
7	South Livermore Turnout thru Vallecitos Turnout			0.14604872	0.25176680	0.60218448	0.00000000	1.00000000
8	Vallecitos Turnout thru Alameda-Bayside Turnout				0.27934645	0.72065355		1.00000000
9	Alameda-Bayside Turnout thru Santa Clara Terminal Facilities					1.00000000		1.00000000
	California Aqueduct							
1	Delta thru Bethany Reservoir	See Sheet 2 of 2	See Sheet 2 of 2	See Sheet 2 of 2	0.00870771	0.02075009	0.00000000	N/A

Reach No.	Reach Description	Central Coastal Area		Southern California Area				
		San Luis Obispo County FC&WCD	Santa Barbara County FC&WCD	Antelope Valley-East Kern Water Agency	Castaic Lake Water Agency	Coachella Valley Water District	Crestline-Lake Arrowhead Water Agency	Desert Water Agency
	California Aqueduct							
1	Delta thru Bethany Reservoir	0.00531848	0.00981194	0.02932078	0.02544606	0.00527067	0.00133296	0.00869242
2A	Bethany Reservoir to Orestimba Creek	0.00557113	0.01027807	0.03071362	0.02661052	0.00551860	0.00139567	0.00910129
2B	Orestimba Creek to O'Neill Forebay	0.00557724	0.01028936	0.03074740	0.02666791	0.00552622	0.00139760	0.00911388
3	O'Neill Forebay to Dos Amigos Pumping Plant	0.00557618	0.01028740	0.03074158	0.02667112	0.00552562	0.00139744	0.00911291
4	Dos Amigos Pumping Plant to Panoche Creek	0.00557506	0.01028534	0.03073545	0.02667451	0.00552500	0.00139730	0.00911190
5	Panoche Creek to Five Points	0.00557366	0.01028278	0.03072781	0.02667874	0.00552423	0.00139709	0.00911062
6	Five Points to Arroyo Pasajero	0.00557156	0.01027890	0.03071623	0.02668513	0.00552306	0.00139679	0.00910868
7	Arroyo Pasajero to Kettleman City	0.00557088	0.01027765	0.03071253	0.02668719	0.00552269	0.00139669	0.00910806
8C	Kettleman City thru Milham Avenue	0.00551500	0.01017457	0.03040437	0.02635629	0.00546377	0.00138180	0.00901092
8D	Milham Avenue thru Avenal Gap	0.00562723	0.01038159	0.03102308	0.02691608	0.00557626	0.00141023	0.00919642
9	Avenal Gap thru Twisselman Road			0.03375071	0.02794644	0.00607170	0.00153553	0.01001351
10A	Twisselman Road thru Lost Hills			0.03427859	0.02840899	0.00616853	0.00156001	0.01017317
11B	Lost Hills to 7th Standard Road			0.03756539	0.03126178	0.00676937	0.00171196	0.01116406
12D	7th Standard Road thru Elk Hills Road			0.03939027	0.03285855	0.00710391	0.00179656	0.01171576
12E	Elk Hills Road thru Tupman Road			0.03944038	0.03291451	0.00711396	0.00179912	0.01173237
13B	Tupman Road to Buena Vista Pumping Plant			0.04268432	0.03572032	0.00770627	0.00194889	0.01270915
14A	Buena Vista Pumping Plant thru Santiago Creek			0.04474621	0.03733316	0.00808475	0.00204460	0.01333331
14B	Santiago Creek thru Old River Road			0.04538655	0.03356461	0.00820524	0.00207506	0.01353200
14C	Old River Road to Wheeler Ridge Pumping Plant			0.04655171	0.03234313	0.00842141	0.00212973	0.01388846
15A	Wheeler Ridge Pumping Plant to Chrisman Pumping Plant			0.04723444	0.03281744	0.00854788	0.00216172	0.01409703
16A	Chrisman Pumping Plant to Edmonston Pumping Plant			0.04881440	0.03391509	0.00883917	0.00223540	0.01457742
17E	Edmonston Pumping Plant to Porter Tunnel			0.05078156	0.03528173	0.00920240	0.00232724	0.01517649
17F	Porter Tunnel to Junction, West Branch, Calif. Aqueduct			0.05088413	0.03535299	0.00922107	0.00233196	0.01520727
18A	Junction, West Branch, Calif. Aqueduct thru Alamo Pwp.			0.13238112		0.02399390	0.00606795	0.03957043
19	Alamo Power Plant to Fairmont			0.13237766		0.02399451	0.00606811	0.03957141
19C	Buttes Junction thru Buttes Reservoir			1.00000000				
20A	Fairmont thru 70th Street West			0.06847931		0.02576425	0.00651573	0.04249001
20B	70th Street West to Palmdale			0.02276024		0.02702917	0.00683555	0.04457607
21	Palmdale to Littlerock Creek			0.02318952		0.02754717	0.00696651	0.04543034
22A	Littlerock Creek to Pearblossom Pumping Plant			0.01181870		0.02794143	0.00706621	0.04608044
22B	Pearblossom Pumping Plant to West Fork Mojave River					0.02827552	0.00715074	0.04663153
23	West Fork Mojave River to Silverwood Lake					0.00324449	0.00818122	0.00535117
24	Cedar Springs Dam and Silverwood Lake					0.01024605	0.01251569	0.01690478
25	Silverwood Lake to South Portal San Bernardino Tunnel							
26A	South Portal, San Bernardino Tunnel thru Devil Canyon Pwp.							
28G	Devil Canyon Power Plant to Barton Road							
28H	Barton Road to Lake Perris							
28J	Perris Dam and Lake Perris							
29A	Junction, West Branch, Calif. Aqueduct thru Oso Pumping P.			0.00296720	0.05726734			
29F	Oso Pumping Plant thru Quail Embankment			0.00296796	0.05726649			
29G	Quail Embankment thru Warne Power Plant				0.05742327			
29H	Pyramid Dam and Lake				0.03349572			
29J	Pyramid Lake thru Castaic Power Plant				0.05740996			
30	Castaic Dam and Lake				0.03248607			
31A	Avenal Gap to Devil's Den Pumping Plant	0.10560302	0.19482546		0.07364766			
33A	Devil's Den Pumping Plant thru San Luis Obispo Power Plant	0.35150790	0.64849210					
33B	Tank 1 through Chorro Valley Turnout	0.24688802	0.75311198					
34	Chorro Valley Turnout through Lopez Turnout	0.18022524	0.81977476					
35	Lopez Turnout through Guadalupe Turnout		1.00000000					

Note: Proportionate use factors reflect permanent water transfer as a result of the Monterey Amendment.

Table B-2

Factors for Distributing Reach Minimum OMP&R Costs Among Contractors

Sheet 2 of 2

Reach No.	North Bay Area		South Bay Area	San Joaquin Valley Area							
	Napa County FC&WCD	Solano County Water Agency	Alameda County FC&WCD-Zone 7	Dudley Ridge Water District	Empire West Side Irrigation District	Future Contractor San Joaquin Valley	Kern County Water Agency		County of Kings	Oak Flat Water District	Tulare Lake Basin Water Storage District
							Municipal and Industrial	Agricultural			
	California Aqueduct										
1	0.00133448	0.00195806	0.02259514	0.01704119	0.00088489	0.00254137	0.02735615	0.27441158	0.00090498	0.00166765	0.03497485
2A	0.00139567	0.00204749	0.00803309	0.01780588	0.00092459	0.00266210	0.02863477	0.28672076	0.00094728	0.00174244	0.03654423
2B	0.00139860	0.00205203	0.00804767	0.01785391	0.00092708	0.00266502	0.02867953	0.28749702	0.00094877		0.03664281
3	0.00139875	0.00205230	0.00804783	0.01785889	0.00092734	0.00266451	0.02867800	0.28757810	0.00094873		0.03665304
4	0.00139891	0.00205259	0.00804799	0.01786413	0.00092761	0.00266396	0.02867638	0.28766331	0.00094867		0.03666380
5	0.00139910	0.00205295	0.00804820	0.01787067	0.00092795	0.00266329	0.02867436	0.28776972	0.00094860		0.03667724
6	0.00139939	0.00205350	0.00804852	0.01788056	0.00092847	0.00266229	0.02867130	0.28793074	0.00094849		0.03669756
7	0.00139948	0.00205369	0.00804862	0.01788373	0.00092864	0.00266198	0.02867032	0.28798236	0.00094845		0.03670408
8C	0.00138231	0.00202797	0.00795500	0.01764046	0.00091601	0.00263529	0.02835288	0.28405839	0.00093793		0.03620473
8D	0.00141160	0.00207113	0.00812166	0.01802316		0.00268891	0.02894089	0.29022309			0.01794507
9	0.00080072	0.00110495	0.00730670				0.03152946	0.29409314			
10A	0.00081393	0.00112302	0.00742547				0.03203837	0.28289280			
11B	0.00065276	0.00095581	0.00291023				0.03519011	0.21909776			
12D							0.03694796	0.18551438			
12E							0.03700374	0.18439311			
13B							0.01419288	0.14263255			
14A							0.00602393	0.10980819			
14B							0.00611593	0.10107743			
14C							0.00627964	0.07974408			
15A							0.00637535	0.06606495			
16A							0.00659511	0.03449417			
17E							0.00202042				
31A	0.00629812	0.00979558	0.02622386			0.05046240		0.43995900			

Reach No.	Southern California Area (continued)								
	Littlerock Creek Irrigation District	Mojave Water Agency	Palmdale Water Agency	San Bernardino Valley Municipal Water District	San Gabriel Valley Municipal Water District	San Gorgonio Pass Water Agency	Metropolitan Water District of Southern California	Ventura County Flood Control District	Total
1	0.00049062	0.01818589	0.00458624	0.02357268	0.00648811	0.00397449	0.43810072	0.00427980	1.00000000
2A	0.00051393	0.01903286	0.00480356	0.02468156	0.00679439	0.00416145	0.45888194	0.00448311	1.00000000
2B	0.00051449	0.01906454	0.00480919	0.02471561	0.00680308	0.00416719	0.45940581	0.00448804	1.00000000
3									
4	0.00051440	0.01906408	0.00480838	0.02471295	0.00680216	0.00416674	0.45932435	0.00448720	1.00000000
	0.00051431	0.01906361	0.00480752	0.02471018	0.00680118	0.00416626	0.45923873	0.00448630	1.00000000
5									
6	0.00051419	0.01906301	0.00480646	0.02470671	0.00679996	0.00416568	0.45913179	0.00448519	1.00000000
7	0.00051399	0.01906210	0.00480486	0.02470145	0.00679812	0.00416480	0.45897001	0.00448350	1.00000000
8C	0.00051392	0.01906182	0.00480434	0.02469976	0.00679752	0.00416452	0.45891812	0.00448296	1.00000000
8D	0.00050877	0.01884645	0.00475534	0.02443641	0.00672656	0.00412012	0.46575066	0.00443800	1.00000000
	0.00051911	0.01923893	0.00485241	0.02493944	0.00686448	0.00420494	0.47529598	0.00452831	1.00000000
9									
10A	0.00056475	0.01851572	0.00528022	0.02715513	0.00747209	0.00457851	0.51735429	0.00492643	1.00000000
11B	0.00057359	0.01880437	0.00536322	0.02758808	0.00759043	0.00465149	0.52554247	0.00500347	1.00000000
12D	0.00062860	0.02060256	0.00587959	0.03027497	0.00832559	0.00510450	0.57642175	0.00548321	1.00000000
12E	0.00065915	0.02160045	0.00608203	0.03177092	0.00873450	0.00535672	0.60471929	0.00574955	1.00000000
	0.00065997	0.02162738	0.00608979	0.03181591	0.00874644	0.00536431	0.60554215	0.00575686	1.00000000
13B									
14A	0.00071426	0.02340249	0.00659077	0.03446459	0.00947146	0.00581087	0.65572085	0.00623033	1.00000000
14B	0.00074877	0.02452971	0.00690923	0.03615705	0.00993389	0.00609622	0.68771972	0.00653126	1.00000000
14C	0.00075950	0.02487823	0.00700816	0.03669570	0.01007982	0.00618702	0.69781003	0.00662472	1.00000000
15A	0.00077900	0.02551403	0.00718816	0.03766219	0.01034291	0.00634999	0.71601079	0.00679477	1.00000000
	0.00079041	0.02588667	0.00729362	0.03822772	0.01049694	0.00644533	0.72666609	0.00689441	1.00000000
16A									
17E	0.00081684	0.02674976	0.00753768	0.03953029	0.01085229	0.00666495	0.75125241	0.00712502	1.00000000
17F	0.00084977	0.02782408	0.00784155	0.04115462	0.01129518	0.00693883	0.78189401	0.00741212	1.00000000
18A	0.00085149	0.02788024	0.00785739	0.04123809	0.01131805	0.00695290	0.78347733	0.00742709	1.00000000
19	0.00221525	0.04960424	0.01662681	0.10730448	0.02944860	0.01809191	0.57469531		1.00000000
	0.00221522	0.04960300	0.01662640	0.10730707	0.02944876	0.01809229	0.57469557		1.00000000
19C									1.00000000
20A									1.00000000
20B	0.00237800	0.05324853	0.01784830	0.11522152	0.03161798	0.01942666	0.61700971		1.00000000
21	0.00249470	0.05586075	0.01872390	0.12087843	0.03316986	0.02038045	0.64729088		1.00000000
22A	0.00254199	0.05692052		0.12319480	0.03380324	0.02077093	0.65963498		1.00000000
		0.05773081		0.12495766	0.03428605	0.02106816	0.66905054		1.00000000
22B									
23		0.05842135		0.12645207	0.03469614	0.02132008	0.67705257		1.00000000
24				0.14467451	0.03969010	0.02439237	0.77446614		1.00000000
25				0.22243002	0.04339444	0.02843498	0.66607404		1.00000000
26A				0.11825184	0.03722720	0.01993915	0.82458181		1.00000000
				0.14947726	0.03997502	0.02520426	0.78534346		1.00000000
28G									
28H				0.05126137			0.94873863		1.00000000
28J							1.00000000		1.00000000
29A									
29F							0.92702291	0.01274255	1.00000000
29G							0.92702302	0.01274253	1.00000000
29H							0.92979606	0.01278067	1.00000000
29J							0.95753173	0.00897255	1.00000000
30							0.92980918	0.01278086	1.00000000
							0.95895422	0.00855971	1.00000000
31A									
33A		0.09318490							1.00000000
33B									1.00000000
34									
35									1.00000000

Table B-3

Power Costs and Credits and Annual Replacement Deposits for Each Aqueduct Pumping and Power Recovery Plant

(Dollars)

Sheet 1 of 2

Calendar Year	North Bay Aqueduct			South Bay Aqueduct	California Aqueduct					
	Reach 1	Reach 3A	Reach 3B	Reach 1 ^a	Reach 1	Reach 4	Reach 14A	Reach 15A	Reach 16A	Reach 17E
	Barker Slough Pumping Plant (1)	Cordelia Pumping Plant Solano (2)	Cordelia Pumping Plant Napa ^a (3)	South Bay & Del Valle Pumping Plant (4)	Banks Pumping Plant (5)	Dos Amigos Pumping Plant (6)	Buena Vista Pumping Plant (7)	Teerink Pumping Plant (8)	Chrisman Pumping Plant (9)	Edmonston Pumping Plant (10)
1961	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	37,731	0	0	0	0	0	0
1963	0	0	0	56,414	0	0	0	0	0	0
1964	0	0	0	71,745	0	0	0	0	0	0
1965	0	0	0	138,653	0	0	0	0	0	0
1966	0	0	0	189,402	0	0	0	0	0	0
1967	0	0	0	220,327	28,554	0	0	0	0	0
1968	0	0	7,128	339,261	1,286,777	227,505	0	0	0	0
1969	0	0	8,557	274,851	817,304	119,303	0	0	0	0
1970	0	0	13,666	439,983	330,508	193,720	2,940	0	0	0
1971	0	0	10,626	413,657	559,946	205,206	134,340	7,921	0	0
1972	0	0	14,430	615,164	1,072,833	541,628	305,868	159,125	348,235	1,179,787
1973	0	0	14,453	477,134	880,234	469,676	469,104	472,187	829,325	2,961,697
1974	0	0	17,508	502,473	959,269	536,361	514,168	553,285	993,796	3,522,973
1975	0	0	14,801	373,706	1,315,916	536,495	607,981	664,738	1,340,518	4,675,938
1976	0	0	20,867	580,607	878,728	572,326	658,261	645,377	1,360,502	4,740,176
1977	0	0	22,640	534,087	631,578	178,904	139,856	138,714	291,196	977,258
1978	0	0	21,670	559,981	3,833,011	653,606	966,756	926,444	1,728,268	6,104,186
1979	0	0	16,240	614,117	3,394,344	994,921	805,839	788,539	1,612,105	5,564,009
1980	0	0	19,936	523,445	1,981,918	818,368	857,033	846,757	1,808,192	6,269,482
1981	0	0	23,863	639,976	1,975,220	1,640,814	1,197,553	1,189,437	2,731,775	9,388,367
1982	0	0	12,078	484,808	3,405,761	1,148,258	1,159,605	1,212,973	2,557,070	9,355,533
1983	0	0	2,339	77,394	1,264,426	140,742	276,289	264,076	545,887	1,827,188
1984	0	0	4,797	289,827	1,390,432	555,409	551,468	508,111	1,044,264	3,507,659
1985	0	0	10,220	456,051	2,830,593	1,283,981	1,336,378	1,378,587	2,994,227	10,459,919
1986	0	0	15,484	827,079	7,180,656	2,282,364	2,290,023	2,343,903	5,062,706	17,643,403
1987	0	0	27,223	901,077	3,924,603	1,996,638	1,851,663	1,885,638	4,119,308	14,361,151
1988	18,112	19,927	23,868	932,456	5,377,272	2,072,091	2,100,427	2,142,121	4,724,696	16,562,202
1989	30,783	45,783	26,501	1,211,118	10,887,880	3,334,006	3,427,675	3,553,496	7,936,397	27,756,045
1990	53,484	67,109	40,793	1,881,178	9,523,541	4,754,649	5,990,489	6,327,687	14,254,357	50,152,078
1991	11,254	10,442	5,983	365,808	3,463,154	723,518	1,263,736	1,445,729	3,363,863	12,019,190
1992	14,484	13,070	9,398	327,309	2,700,240	808,067	1,071,702	1,121,273	2,503,167	8,677,102
1993	(12,340)	(8,753)	(5,393)	(159,836)	(333,548)	(609,139)	(461,719)	(459,965)	(1,018,142)	(3,558,718)
1994	54,154	39,894	29,105	823,063	4,439,609	1,940,345	2,322,098	2,371,362	5,328,412	18,692,998
1995	20,699	20,620	11,791	253,482	4,009,296	1,076,372	924,147	887,105	1,948,905	6,847,537
1996	59,545	47,288	23,483	645,189	9,531,541	3,449,781	2,444,752	2,341,848	5,156,434	18,332,558
1997	69,837	52,935	21,955	963,877	7,625,930	3,064,281	2,847,907	2,788,387	6,217,434	22,057,503
1998	(11,058)	(9,488)	(4,554)	(124,695)	296,016	(362,362)	(316,705)	(304,065)	(673,122)	(2,350,976)
1999	26,057	22,038	8,538	461,658	4,743,472	2,064,039	1,388,361	1,096,591	2,881,601	11,247,964
2000	83,763	58,963	21,557	991,936	10,758,870	4,337,740	4,091,378	4,318,694	9,740,264	34,984,791
2001	1,336,227	539,610	1,101,340	8,385,040	86,215,910	22,150,940	38,273,104	45,105,452	110,533,354	389,766,830
2002	581,001	295,483	472,635	6,163,340	45,942,695	11,153,255	20,589,191	23,192,144	56,674,033	199,738,538
2003	489,267	245,071	400,734	5,444,436	39,424,805	10,443,149	17,173,887	19,477,227	47,646,562	168,006,160
2004	307,006	294,965	318,131	4,540,081	30,528,512	13,748,890	15,757,840	15,320,704	35,998,690	134,685,488
2005	357,659	341,423	372,502	5,462,354	34,015,832	16,463,106	19,355,585	18,895,182	44,463,591	166,507,873
2006	368,952	349,416	388,524	5,652,760	36,806,662	17,105,009	20,348,903	19,894,230	46,839,864	175,464,142
2007	364,678	342,783	388,241	5,546,067	34,896,066	17,064,737	20,553,552	20,125,482	47,411,137	177,666,026
2008	328,317	306,259	353,454	4,955,780	35,423,694	15,278,409	18,447,180	18,067,524	42,566,400	159,519,596
2009	344,353	318,675	374,440	5,157,317	31,722,232	15,985,216	19,375,904	18,986,185	44,739,068	167,679,880
2010	365,059	335,242	401,111	5,424,846	40,903,557	16,983,242	20,682,684	20,281,972	47,805,210	179,201,368
2011	368,014	335,383	408,552	5,427,111	37,201,268	17,235,332	21,118,189	20,730,290	48,880,402	183,273,807
2012	385,060	348,265	431,866	5,635,573	35,113,411	17,777,074	21,720,486	21,311,521	50,241,876	188,358,419
2013	429,555	386,078	485,669	6,247,450	46,848,301	20,045,263	24,666,554	24,231,007	57,149,717	214,312,965
2014	468,525	417,518	535,771	6,756,231	41,908,854	21,901,468	27,065,875	26,606,696	62,768,850	235,421,888
2015	483,105	424,417	564,299	6,867,844	47,439,626	22,347,427	27,656,431	27,194,140	64,160,750	240,655,819
2016	494,671	429,176	589,157	6,944,870	54,295,839	22,833,699	28,378,747	27,923,869	65,898,925	247,213,224
2017	492,890	422,381	598,147	6,834,900	48,498,910	22,533,355	28,037,076	27,592,719	65,121,630	244,307,231
2018	514,697	435,792	637,343	7,051,927	47,015,967	22,993,374	28,481,443	28,009,320	66,087,341	247,889,840
2019	534,945	447,583	675,694	7,242,722	56,421,733	24,572,362	30,918,895	30,485,025	71,995,592	270,204,787
2020	508,783	420,792	654,504	6,809,181	49,102,954	22,836,332	28,607,347	28,185,301	66,547,032	249,715,823
2021	509,036	420,033	656,499	6,796,905	48,189,291	22,895,659	28,729,607	28,313,712	66,856,920	250,894,061
2022	490,914	405,080	633,128	6,554,934	44,276,881	22,092,177	27,328,673	27,328,673	64,530,525	242,165,797
2023	494,136	407,737	637,280	6,597,930	47,814,423	22,253,186	27,937,522	27,535,180	65,020,553	244,007,132
2024	515,143	425,071	664,374	6,878,437	53,251,597	23,222,145	29,163,709	28,745,529	67,879,883	254,740,734
2025	512,471	422,865	660,928	6,842,768	43,892,792	22,995,675	28,828,602	28,406,914	67,073,354	251,698,166
2026	516,524	426,211	666,156	6,896,877	55,753,914	23,350,843	29,357,055	28,941,146	68,346,289	256,501,673
2027	507,549	418,805	654,581	6,777,039	49,161,985	22,782,025	28,721,127	28,308,821	66,848,155	250,867,827
2028	511,618	422,161	659,827	6,831,363	50,506,978	23,029,707	28,907,550	28,490,470	67,275,610	252,468,034
2029	504,104	415,962	650,138	6,731,045	47,782,933	22,704,347	28,504,566	28,094,190	66,340,689	248,961,530
2030	508,802	419,839	656,196	6,793,761	50,268,579	22,915,312	28,770,202	28,356,044	66,958,905	251,281,496
2031	500,768	413,211	645,835	6,686,496	43,980,142	22,038,187	27,416,694	26,981,615	63,678,875	238,893,341
2032	512,310	422,733	660,723	6,840,626	50,283,184	23,326,425	29,408,889	29,005,414	68,509,251	257,137,894
2033	542,029	447,257	699,049	7,237,442	51,444,524	24,035,328	29,991,334	29,530,063	69,705,874	261,532,564
2034	519,232	428,445	669,648	6,933,040	49,782,831	23,639,636	29,803,674	29,394,750	69,428,598	260,588,390
2035	507,024	418,371	653,903	6,770,027	49,150,744	22,913,665	28,804,246	28,395,822	67,057,854	251,664,615
Total	17,593,198	14,129,921	20,531,930	243,930,013	1,728,233,492	757,485,569	950,501,696	949,059,887	2,240,772,999	8,336,951,958

^aPower costs for the period 1968 through 1987 are for an interim facility.^bThe costs of Del Valle Pumping Plant are combined with those of South Bay Pumping Plant to simplify the cost allocations.

Table B-3

Power Costs and Credits and Annual Replacement Deposits for Each Aqueduct Pumping and Power Recovery Plant (Dollars)

Sheet 2 of 2

Calendar Year	California Aqueduct (continued)									Grand Total (20)
	Reach 18A	Reach 22B	Reach 23	Reach 26A	Reach 29A	Reach 29G	Reach 29J	Reach 31A	Reach 33A	
	Alamo Power Plant (11)	Pearlblossom Pumping Plant (12)	Mojave Siphon Power Plant (13)	Devil Canyon Power Plant (14)	Oso Pumping Plant (15)	Warne Power Plant (16)	Castaic Power Plant (17)	Las Perillas and Badger Hill Pumping Plants (18)	Devil's Den, Bluestone, and Polonio Pass Pumping Plants (19)	
1961	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	0	37,731
1963	0	0	0	0	0	0	0	0	0	56,414
1964	0	0	0	0	0	0	0	0	0	71,745
1965	0	0	0	0	0	0	0	0	0	138,653
1966	0	0	0	0	0	0	0	0	0	189,402
1967	0	0	0	0	0	0	0	0	0	248,881
1968	0	0	0	0	0	0	0	118,578	0	1,979,249
1969	0	0	0	0	0	0	0	76,920	0	1,296,935
1970	0	0	0	0	0	0	0	134,749	0	1,115,566
1971	0	0	0	0	0	0	0	168,689	0	1,500,385
1972	0	81,484	0	(3,112)	157,005	0	(385,696)	213,251	0	4,300,002
1973	0	586,209	0	(956,197)	238,650	0	(1,193,216)	120,014	0	5,369,270
1974	0	566,546	0	(963,572)	286,640	0	(1,823,397)	119,505	0	5,785,555
1975	0	587,227	0	(1,125,945)	421,687	0	(2,835,302)	92,012	0	6,669,772
1976	0	871,540	0	(1,567,312)	278,869	0	(2,512,021)	146,530	0	6,674,450
1977	0	275,980	0	(1,262,960)	17,319	0	(1,701,284)	84,225	0	327,513
1978	0	1,758,473	0	(3,345,147)	215,573	0	(2,361,377)	190,745	0	11,252,189
1979	0	1,770,844	0	(3,381,969)	122,134	0	(2,752,003)	203,143	0	9,752,263
1980	0	1,769,468	0	(3,508,195)	86,893	0	(2,728,494)	182,996	0	8,927,799
1981	0	2,049,947	0	(3,743,153)	382,330	0	(2,854,192)	189,573	0	14,811,510
1982	0	1,614,895	0	(3,149,352)	444,009	(973,898)	(3,476,126)	182,427	0	13,978,041
1983	0	301,180	0	(5,905,161)	59,561	(1,314,237)	(3,904,690)	18,936	0	(6,346,070)
1984	0	633,223	0	(7,865,341)	135,658	(2,285,362)	844,120	117,585	0	(568,150)
1985	0	1,140,057	0	(10,664,136)	739,708	(8,476,552)	(19,162,735)	155,931	0	(15,517,771)
1986	(1,080,970)	2,482,042	0	(12,235,312)	1,037,512	(6,269,528)	(11,462,662)	317,622	0	10,434,322
1987	(1,062,392)	1,822,523	0	(10,871,342)	914,642	(6,757,040)	(11,630,562)	266,825	0	1,749,955
1988	(810,907)	2,373,442	0	(14,772,519)	951,580	(7,448,747)	(12,677,211)	237,272	0	1,826,082
1989	(822,973)	4,130,250	0	(19,098,882)	1,543,985	(8,790,866)	(14,657,167)	309,851	0	20,823,882
1990	(845,641)	6,810,694	0	(21,336,948)	3,032,334	(11,692,826)	(19,863,014)	466,262	0	49,616,226
1991	(351,262)	1,306,263	0	(5,781,948)	778,874	(5,250,121)	(8,731,129)	17,608	0	4,660,962
1992	(997,736)	1,116,809	0	(9,903,370)	541,093	(5,955,563)	(9,599,392)	111,742	0	(7,440,605)
1993	(84,856)	(370,935)	0	(7,956,659)	(244,261)	(4,607,075)	(9,740,511)	(122,190)	0	(29,754,040)
1994	(93,031)	2,528,937	0	(12,122,861)	1,035,776	(6,228,273)	(10,867,596)	226,550	0	10,520,542
1995	(1,297,179)	951,513	0	(10,256,635)	342,312	(3,827,718)	(7,403,219)	261,423	0	(5,229,549)
1996	(2,959,744)	2,725,712	(941,959)	(13,155,960)	908,180	(5,026,221)	(8,969,945)	321,137	0	14,933,619
1997	(2,876,697)	3,431,693	(1,932,337)	(13,519,660)	990,932	(5,184,788)	(9,027,058)	322,753	208,816	18,123,700
1998	(2,244,105)	(439,496)	(1,385,473)	(10,955,475)	(66,088)	(1,888,975)	(4,963,075)	(56,675)	(87,016)	(25,947,387)
1999	(2,811,928)	1,583,773	(2,482,354)	(14,772,635)	606,402	(5,526,541)	(9,954,674)	135,972	204,124	(9,077,542)
2000	(5,123,988)	5,187,013	(4,402,610)	(25,758,437)	1,755,603	(10,161,472)	(17,461,286)	309,851	515,629	14,248,259
2001	49,401,766	24,668,554	4,079,848	11,023,314	(4,432,100)	(6,892,500)	(23,992,500)	(12,437,500)	(20,823,500)	724,003,189
2002	24,564,400	12,884,307	2,230,019	5,975,453	(4,479,100)	(6,247,500)	(23,382,500)	(11,800,000)	(19,637,900)	344,909,499
2003	17,537,696	12,090,538	1,846,193	4,955,975	(4,262,900)	(5,370,000)	(19,887,500)	(13,490,000)	(23,180,400)	728,990,900
2004	(5,713,555)	26,782,882	(6,919,575)	(33,302,350)	4,335,736	(8,721,550)	(13,792,800)	1,577,094	4,487,280	220,233,469
2005	(5,351,373)	26,467,547	(6,251,025)	(30,108,725)	7,940,586	(13,739,575)	(21,737,350)	1,894,128	5,138,253	270,487,573
2006	(5,410,640)	27,502,852	(6,316,725)	(30,413,625)	8,558,883	(14,283,625)	(22,835,700)	1,854,429	5,258,571	287,132,882
2007	(5,487,109)	27,533,298	(6,395,700)	(30,960,225)	8,833,004	(15,137,525)	(24,003,600)	1,726,812	5,158,749	285,626,473
2008	(5,594,927)	25,099,542	(6,548,625)	(31,216,650)	7,796,538	(15,018,475)	(23,732,600)	1,542,812	4,609,059	252,183,287
2009	(5,599,674)	26,331,837	(6,526,500)	(31,566,025)	8,229,237	(15,241,625)	(24,070,050)	1,605,355	4,795,905	262,641,730
2010	(5,647,379)	28,248,785	(6,596,625)	(31,860,925)	8,778,305	(15,363,925)	(24,382,250)	1,688,819	5,045,248	292,294,344
2011	(5,693,157)	28,566,838	(6,650,250)	(32,188,175)	9,132,101	(15,968,250)	(25,324,900)	1,689,526	5,047,355	293,589,436
2012	(5,786,264)	29,977,368	(6,829,725)	(32,405,200)	9,139,013	(15,350,650)	(24,424,750)	1,754,421	5,241,227	302,638,991
2013	(5,775,031)	33,867,273	(6,846,000)	(32,831,750)	10,533,822	(15,930,550)	(25,368,450)	1,944,906	5,810,289	360,207,068
2014	(5,799,048)	36,599,570	(6,862,800)	(32,782,050)	11,825,895	(16,535,550)	(26,309,150)	2,103,295	6,283,469	392,375,307
2015	(5,888,677)	37,978,208	(7,063,725)	(33,390,200)	11,888,849	(16,379,725)	(26,031,050)	2,138,041	6,387,268	407,432,847
2016	(5,951,375)	39,186,800	(7,156,875)	(34,005,575)	12,178,454	(16,562,650)	(26,356,050)	2,162,019	6,458,910	424,955,835
2017	(5,906,866)	38,467,754	(7,174,350)	(33,978,600)	12,139,529	(16,738,275)	(26,679,950)	2,127,786	6,356,631	413,052,898
2018	(5,969,705)	39,792,317	(7,497,975)	(34,012,075)	12,001,586	(16,051,100)	(25,574,700)	2,195,349	6,558,476	420,559,217
2019	(6,016,799)	41,722,468	(7,434,300)	(34,727,425)	13,820,841	(17,748,700)	(28,579,150)	2,254,747	6,735,920	463,526,940
2020	(5,985,826)	39,328,562	(7,439,925)	(34,666,150)	12,453,858	(17,147,525)	(27,440,000)	2,119,779	6,332,714	420,943,536
2021	(6,012,334)	39,436,593	(7,505,625)	(34,811,350)	12,553,882	(17,287,900)	(27,699,150)	2,115,959	6,321,296	421,373,094
2022	(6,040,064)	37,935,245	(7,496,625)	(34,809,700)	12,166,888	(17,364,050)	(27,831,400)	2,040,630	6,096,256	400,903,436
2023	(6,055,527)	38,282,066	(7,534,575)	(34,804,325)	12,239,551	(17,354,700)	(27,815,700)	2,054,015	6,136,246	407,852,130
2024	(6,029,865)	40,011,772	(7,548,000)	(34,803,550)	12,763,504	(17,358,975)	(27,823,450)	2,141,340	6,397,122	433,236,520
2025	(6,001,712)	39,267,843	(7,450,050)	(34,514,225)	12,697,403	(17,359,025)	(27,823,500)	2,130,236	6,363,950	418,645,455
2026	(6,065,585)	40,454,854	(7,632,075)	(35,124,800)	12,797,766	(17,358,975)	(27,823,450)	2,147,071	6,414,277	438,565,781
2027	(6,023,520)	39,321,654	(7,471,275)	(34,768,475)	12,599,143	(17,391,000)	(27,874,650)	2,109,785	6,302,822	421,942,388
2028	(6,002,276)	39,636,478	(7,494,675)	(34,815,075)	12,652,552	(17,330,950)	(27,773,450)	2,126,685	6,353,345	426,455,952
2029	(6,012,193)	39,054,422	(7,507,125)	(34,810,950)	12,490,091	(17,358,950)	(27,823,500)	2,095,455	6,260,047	417,076,801
2030	(6,002,370)	39,418,357	(7,494,825)	(34,815,050)	12,606,510	(17,359,000)	(27,823,550)	2,114,979	6,318,376	423,892,563
2031	(6,005,989)	38,458,006	(7,813,125)	(34,452,000)	11,555,439	(16,250,975)	(25,948,650)	2,081,587	6,218,615	399,078,072
2032	(6,076,113)	39,756,461	(7,908,300)	(34,774,175)	13,147,619	(17,854,700)	(28,777,350)	2,129,568	6,361,958	432,112,417
2033	(6,041,803)	41,910,066	(7,942,800)	(34,611,900)	12,745,213	(16,440,850)	(26,412,100)	2,253,102	6,731,009	447,355,401
2034	(6,071,272)	40,232,430	(7,981,350)	(34,688,400)	13,345,311	(17,873,775)	(28,818,550)	2,158,338	6,447,907	437,938,867
2035	(6,073,246)	39,502,312	(7,716,375)	(35,001,675)	12,626,272	(17,376,700)	(27,951,400)	2,107,590	6,296,298	422,749,344
Total	(120,050,821)	1,245,423,165	(233,996,173)	(1,304,006,828)	363,114,194	(647,415,603)	(1,113,779,764)	32,099,970	127,924,601	13,608,503,404

Table B-4
Annual Table A Amounts to Project Water
(Acre-Feet)

Sheet 1 of 4

Calendar Year	North Bay Area			South Bay Area ^a				Central Coastal Area		
	Napa County FC&WCD ^b (1)	Solano County Water Agency (2)	Total (3)	Alameda County FC&WCD, Zone 7 (4)	Alameda County Water District (5)	Santa Clara Valley Water District (6)	Total (7)	San Luis Obispo County FC&WCD (8)	Santa Barbara County FC&WCD (9)	Total (10)
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	0	500	500	22,000	24,800	88,000	134,800	1,000	946	1,946
1981	0	650	650	23,000	26,000	88,000	137,000	1,000	1,813	2,813
1982	0	800	800	24,000	27,200	88,000	139,200	2,000	3,626	5,626
1983	0	950	950	25,000	28,400	88,000	141,400	3,000	5,439	8,439
1984	0	1,100	1,100	26,000	29,600	88,000	143,600	4,500	8,198	12,698
1985	0	1,250	1,250	27,000	30,800	88,000	145,800	7,500	13,638	21,138
1986	0	1,400	1,400	28,000	32,100	88,000	148,100	10,000	18,210	28,210
1987	0	1,550	1,550	29,000	33,300	88,000	150,300	12,500	22,704	35,204
1988	5,745	9,726	15,471	30,000	34,500	88,000	152,500	15,500	28,222	43,722
1989	6,195	18,420	24,615	31,000	35,700	90,000	156,700	20,000	36,342	56,342
1990	6,940	21,250	28,190	32,000	36,900	92,000	160,900	25,000	45,486	70,486
1991	7,290	22,300	29,590	34,000	38,400	94,000	166,400	25,000	45,486	70,486
1992	7,840	24,170	32,010	36,000	39,900	96,000	171,900	25,000	45,486	70,486
1993	8,490	26,130	34,620	38,000	41,400	98,000	177,400	25,000	45,486	70,486
1994	9,135	28,080	37,215	40,000	42,000	100,000	182,000	25,000	45,486	70,486
1995	9,780	34,250	44,030	42,000	42,000	100,000	184,000	25,000	45,486	70,486
1996	10,425	37,800	48,225	44,000	42,000	100,000	186,000	25,000	45,486	70,486
1997	11,065	38,250	49,315	46,000	42,000	100,000	188,000	6,215	38,986	45,201
1998	11,710	38,710	50,420	46,000	42,000	100,000	188,000	6,215	38,986	45,201
1999	15,850	39,170	55,020	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2000	16,325	39,620	55,945	68,000	42,000	100,000	210,000	25,000	45,486	70,486
2001	20,725	45,836	66,561	78,000	42,000	100,000	220,000	25,000	45,486	70,486
2002	21,100	46,296	67,396	78,000	42,000	100,000	220,000	25,000	45,486	70,486
2003	21,475	46,756	68,231	78,000	42,000	100,000	220,000	25,000	45,486	70,486
2004	21,850	47,206	69,056	78,000	42,000	100,000	220,000	25,000	45,486	70,486
2005	22,225	47,256	69,481	78,000	42,000	100,000	220,000	25,000	45,486	70,486
2006	22,550	47,306	69,856	78,000	42,000	100,000	220,000	25,000	45,486	70,486
2007	22,875	47,356	70,231	78,000	42,000	100,000	220,000	25,000	45,486	70,486
2008	23,200	47,406	70,606	78,000	42,000	100,000	220,000	25,000	45,486	70,486
2009	23,525	47,456	70,981	78,000	42,000	100,000	220,000	25,000	45,486	70,486
2010	23,850	47,506	71,356	78,000	42,000	100,000	220,000	25,000	45,486	70,486
2011	24,175	47,556	71,731	78,000	42,000	100,000	220,000	25,000	45,486	70,486
2012	24,500	47,606	72,106	78,000	42,000	100,000	220,000	25,000	45,486	70,486
2013	24,775	47,656	72,431	78,000	42,000	100,000	220,000	25,000	45,486	70,486
2014	25,150	47,706	72,856	78,000	42,000	100,000	220,000	25,000	45,486	70,486
2015	25,825	47,756	73,581	78,000	42,000	100,000	220,000	25,000	45,486	70,486
2016	26,450	47,756	74,206	78,000	42,000	100,000	220,000	25,000	45,486	70,486
2017	27,075	47,756	74,831	78,000	42,000	100,000	220,000	25,000	45,486	70,486
2018	27,700	47,756	75,456	78,000	42,000	100,000	220,000	25,000	45,486	70,486
2019	28,325	47,756	76,081	78,000	42,000	100,000	220,000	25,000	45,486	70,486
2020	28,925	47,756	76,681	78,000	42,000	100,000	220,000	25,000	45,486	70,486
2021	29,025	47,756	76,781	78,000	42,000	100,000	220,000	25,000	45,486	70,486
2022	29,025	47,756	76,781	78,000	42,000	100,000	220,000	25,000	45,486	70,486
2023	29,025	47,756	76,781	78,000	42,000	100,000	220,000	25,000	45,486	70,486
2024	29,025	47,756	76,781	78,000	42,000	100,000	220,000	25,000	45,486	70,486
2025	29,025	47,756	76,781	78,000	42,000	100,000	220,000	25,000	45,486	70,486
2026	29,025	47,756	76,781	78,000	42,000	100,000	220,000	25,000	45,486	70,486
2027	29,025	47,756	76,781	78,000	42,000	100,000	220,000	25,000	45,486	70,486
2028	29,025	47,756	76,781	78,000	42,000	100,000	220,000	25,000	45,486	70,486
2029	29,025	47,756	76,781	78,000	42,000	100,000	220,000	25,000	45,486	70,486
2030	29,025	47,756	76,781	78,000	42,000	100,000	220,000	25,000	45,486	70,486
2031	29,025	47,756	76,781	78,000	42,000	100,000	220,000	25,000	45,486	70,486
2032	29,025	47,756	76,781	78,000	42,000	100,000	220,000	25,000	45,486	70,486
2033	29,025	47,756	76,781	78,000	42,000	100,000	220,000	25,000	45,486	70,486
2034	29,025	47,756	76,781	78,000	42,000	100,000	220,000	25,000	45,486	70,486
2035	29,025	47,756	76,781	78,000	42,000	100,000	220,000	25,000	45,486	70,486
Total	1,048,440	2,049,856	3,098,296	3,636,607	2,459,248	6,510,783	12,606,638	1,189,430	2,218,494	3,407,924

^aTable A quantities for the South Bay Area were supplied by non-Project water for the period June 1962 through November 1967. Actual delivery quantities of Project water are shown for 1967.

^bDistrict's Table A quantities exclude amounts during the period 1968 through 1987 that were supplied by non-Project water.

Table B-4
Annual Table A Amounts to Project Water
(Acre-Feet)

Sheet 2 of 4

Calendar Year	San Joaquin Valley Area								Total (19)
	Dudley Ridge Water District (11)	Empire West Side Irrigation District (12)	Kern County Water Agency			County of Kings (16)	Oak Flat Water District (17)	Tulare Lake Basin Water Storage District (18)	
			Municipal and Industrial (13)	Agricultural (14)	Total (15)				
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	14,300	1,000	0	46,600	46,600	900	2,300	12,250	77,350
1969	14,325	3,000	0	95,700	95,700	1,200	2,500	46,350	163,075
1970	15,700	3,000	28,700	116,400	145,100	1,300	2,600	34,300	202,000
1971	17,900	3,000	35,700	154,600	190,300	1,300	2,800	36,500	251,800
1972	20,000	3,000	39,200	231,500	270,700	1,400	5,366	112,600	413,066
1973	22,000	3,000	43,500	267,000	310,500	1,500	3,100	43,552	383,652
1974	33,390	3,000	48,000	299,000	347,000	1,500	3,471	72,289	460,650
1975	40,555	3,000	52,700	358,120	410,820	1,600	3,576	86,258	545,809
1976	30,921	3,000	56,100	386,050	442,150	1,600	4,039	61,707	543,417
1977	30,400	3,000	60,600	423,000	483,600	1,700	3,700	59,000	581,400
1978	32,500	0	64,100	470,200	534,300	1,900	3,900	63,300	635,900
1979	38,544	3,000	67,600	516,300	583,900	2,000	4,000	71,241	702,685
1980	41,000	3,000	71,100	563,400	634,500	2,200	5,700	71,700	758,100
1981	41,000	3,000	74,800	616,600	691,400	2,300	4,300	76,000	818,000
1982	41,000	3,000	79,600	665,700	745,300	2,500	4,500	80,200	876,500
1983	42,900	3,000	83,500	721,600	805,100	2,800	3,770	9,548	867,118
1984	45,100	3,000	88,600	772,000	860,600	3,100	4,800	62,611	979,211
1985	47,200	3,000	93,900	821,100	915,000	3,400	4,900	45,549	1,019,049
1986	49,300	3,000	98,400	835,246	933,646	3,700	5,100	97,200	1,091,946
1987	51,400	3,000	104,100	919,400	1,023,500	4,000	5,200	101,400	1,188,500
1988	53,500	3,000	108,900	965,700	1,074,600	4,000	5,400	105,600	1,246,100
1989	55,600	3,000	113,200	999,100	1,112,300	4,000	5,600	109,900	1,290,400
1990	28,850	3,000	119,600	1,033,800	1,153,400	4,000	5,700	118,500	1,313,450
1991	53,411	3,000	119,600	1,033,800	1,153,400	4,000	5,700	118,500	1,338,011
1992	57,700	3,000	119,600	1,033,800	1,153,400	4,000	5,700	118,500	1,342,300
1993	57,700	3,000	119,600	1,033,800	1,153,400	4,000	5,700	118,500	1,342,300
1994	57,700	3,000	119,600	1,033,800	1,153,400	4,000	5,700	118,500	1,342,300
1995	57,700	3,000	119,600	1,033,800	1,153,400	4,000	5,700	118,500	1,342,300
1996	53,370	3,000	119,600	997,460	1,117,060	4,000	5,700	118,500	1,301,630
1997	53,370	3,000	119,600	993,130	1,112,730	4,000	5,700	118,500	1,297,300
1998	53,370	3,000	119,600	968,130	1,087,730	4,000	5,700	118,500	1,272,300
1999	53,370	3,000	119,600	968,130	1,087,730	4,000	5,700	118,500	1,272,300
2000	53,370	3,000	119,600	901,130	1,020,730	4,000	5,700	118,500	1,205,300
2001	53,370	3,000	119,600	881,349	1,000,949	4,000	5,700	118,500	1,185,519
2002	53,370	3,000	119,600	881,349	1,000,949	4,000	5,700	118,500	1,185,519
2003	53,370	3,000	119,600	881,349	1,000,949	4,000	5,700	118,500	1,185,519
2004	53,370	3,000	119,600	881,349	1,000,949	4,000	5,700	118,500	1,185,519
2005	53,370	3,000	119,600	881,349	1,000,949	4,000	5,700	118,500	1,185,519
2006	53,370	3,000	119,600	881,349	1,000,949	4,000	5,700	118,500	1,185,519
2007	53,370	3,000	119,600	881,349	1,000,949	4,000	5,700	118,500	1,185,519
2008	53,370	3,000	119,600	881,349	1,000,949	4,000	5,700	118,500	1,185,519
2009	53,370	3,000	119,600	881,349	1,000,949	4,000	5,700	118,500	1,185,519
2010	53,370	3,000	119,600	881,349	1,000,949	4,000	5,700	118,500	1,185,519
2011	53,370	3,000	119,600	881,349	1,000,949	4,000	5,700	118,500	1,185,519
2012	53,370	3,000	119,600	881,349	1,000,949	4,000	5,700	118,500	1,185,519
2013	53,370	3,000	119,600	881,349	1,000,949	4,000	5,700	118,500	1,185,519
2014	53,370	3,000	119,600	881,349	1,000,949	4,000	5,700	118,500	1,185,519
2015	53,370	3,000	119,600	881,349	1,000,949	4,000	5,700	118,500	1,185,519
2016	53,370	3,000	119,600	881,349	1,000,949	4,000	5,700	118,500	1,185,519
2017	53,370	3,000	119,600	881,349	1,000,949	4,000	5,700	118,500	1,185,519
2018	53,370	3,000	119,600	881,349	1,000,949	4,000	5,700	118,500	1,185,519
2019	53,370	3,000	119,600	881,349	1,000,949	4,000	5,700	118,500	1,185,519
2020	53,370	3,000	119,600	881,349	1,000,949	4,000	5,700	118,500	1,185,519
2021	53,370	3,000	119,600	881,349	1,000,949	4,000	5,700	118,500	1,185,519
2022	53,370	3,000	119,600	881,349	1,000,949	4,000	5,700	118,500	1,185,519
2023	53,370	3,000	119,600	881,349	1,000,949	4,000	5,700	118,500	1,185,519
2024	53,370	3,000	119,600	881,349	1,000,949	4,000	5,700	118,500	1,185,519
2025	53,370	3,000	119,600	881,349	1,000,949	4,000	5,700	118,500	1,185,519
2026	53,370	3,000	119,600	881,349	1,000,949	4,000	5,700	118,500	1,185,519
2027	53,370	3,000	119,600	881,349	1,000,949	4,000	5,700	118,500	1,185,519
2028	53,370	3,000	119,600	881,349	1,000,949	4,000	5,700	118,500	1,185,519
2029	53,370	3,000	119,600	881,349	1,000,949	4,000	5,700	118,500	1,185,519
2030	53,370	3,000	119,600	881,349	1,000,949	4,000	5,700	118,500	1,185,519
2031	53,370	3,000	119,600	881,349	1,000,949	4,000	5,700	118,500	1,185,519
2032	53,370	3,000	119,600	881,349	1,000,949	4,000	5,700	118,500	1,185,519
2033	53,370	3,000	119,600	881,349	1,000,949	4,000	5,700	118,500	1,185,519
2034	53,370	3,000	119,600	881,349	1,000,949	4,000	5,700	118,500	1,185,519
2035	53,370	3,000	119,600	881,349	1,000,949	4,000	5,700	118,500	1,185,519
Total	3,226,396	199,000	6,913,900	53,122,311	60,036,211	233,900	352,822	6,910,055	70,958,384

Table B-4
Annual Table A Amounts to Project Water
(Acre-Feet)

Sheet 3 of 4

Calendar Year	Southern California Area									
	Antelope Valley-East Kern Water Agency (20)	Castaic Lake Water Agency (21)	Coachella Valley Water District (22)	Crestline-Lake Arrowhead Water Agency (23)	Desert Water Agency (24)	Littlerock Creek Irrigation District (25)	Mojave Water Agency (26)	Palmdale Water District (27)	San Bernardino Valley Municipal Water District (28)	San Gabriel Valley Municipal Water District (29)
1962	0	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0	0	0	0
1967	0	0	0	0	0	0	0	0	0	0
1968	0	3,700	0	0	0	0	0	0	0	0
1969	0	5,000	0	0	0	0	0	0	0	0
1970	0	5,700	0	0	0	0	0	0	0	0
1971	0	6,700	0	0	0	0	0	0	0	0
1972	20,000	8,936	5,200	526	8,000	170	8,400	1,620	1,677	122
1973	25,000	12,400	5,800	870	9,000	290	10,700	2,940	48,000	11,500
1974	30,000	15,400	6,400	1,160	10,000	400	13,100	4,260	50,000	12,300
1975	35,000	18,200	7,000	1,450	11,000	520	15,400	5,580	52,500	13,100
1976	44,000	21,200	7,600	1,740	12,000	640	17,800	6,900	55,000	14,000
1977	50,000	24,100	8,421	2,030	13,000	730	20,200	8,220	57,500	14,800
1978	57,000	24,762	9,242	2,320	14,000	920	0	9,340	60,000	15,700
1979	63,000	28,000	10,063	2,610	15,000	1,040	24,900	10,260	62,500	16,600
1980	69,200	30,400	10,884	2,900	17,000	1,150	27,200	11,180	65,500	17,400
1981	75,000	32,800	12,105	3,190	19,000	1,270	23,100	11,700	68,500	18,300
1982	81,300	34,800	13,326	3,480	21,000	1,380	22,843	12,320	71,500	19,100
1983	87,700	37,300	14,547	3,770	23,000	1,500	34,300	12,940	74,500	19,900
1984	35,000	39,600	15,768	4,060	25,000	1,610	36,700	13,560	78,000	20,700
1985	40,000	41,800	16,989	4,350	27,000	1,730	39,000	14,180	81,500	21,800
1986	42,000	43,600	18,210	4,640	29,000	1,840	41,400	14,800	85,000	23,200
1987	44,000	45,600	19,431	4,930	31,500	1,960	43,700	15,420	89,000	24,600
1988	46,000	48,000	20,652	5,220	34,000	2,070	46,000	16,040	93,000	26,000
1989	125,700	50,100	21,873	5,510	36,500	2,190	48,500	16,660	97,000	27,400
1990	132,100	52,000	23,100	5,800	38,100	2,300	50,800	17,300	101,500	28,800
1991	138,400	54,200	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
1992	138,400	54,200	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
1993	138,400	54,200	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
1994	138,400	54,200	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
1995	138,400	54,200	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
1996	138,400	54,200	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
1997	138,400	54,200	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
1998	138,400	54,200	23,100	5,800	38,100	2,300	75,800	17,300	102,600	28,800
1999	138,400	54,200	23,100	5,800	38,100	2,300	75,800	17,300	102,600	28,800
2000	138,400	95,200	23,100	5,800	38,100	2,300	75,800	21,300	102,600	28,800
2001	138,400	95,200	23,100	5,800	38,100	2,300	75,800	21,300	102,600	28,800
2002	138,400	95,200	23,100	5,800	38,100	2,300	75,800	21,300	102,600	28,800
2003	138,400	95,200	23,100	5,800	38,100	2,300	75,800	21,300	102,600	28,800
2004	138,400	95,200	23,100	5,800	38,100	2,300	75,800	21,300	102,600	28,800
2005	138,400	95,200	23,100	5,800	38,100	2,300	75,800	21,300	102,600	28,800
2006	138,400	95,200	23,100	5,800	38,100	2,300	75,800	21,300	102,600	28,800
2007	138,400	95,200	23,100	5,800	38,100	2,300	75,800	21,300	102,600	28,800
2008	138,400	95,200	23,100	5,800	38,100	2,300	75,800	21,300	102,600	28,800
2009	138,400	95,200	23,100	5,800	38,100	2,300	75,800	21,300	102,600	28,800
2010	138,400	95,200	23,100	5,800	38,100	2,300	75,800	21,300	102,600	28,800
2011	138,400	95,200	23,100	5,800	38,100	2,300	75,800	21,300	102,600	28,800
2012	138,400	95,200	23,100	5,800	38,100	2,300	75,800	21,300	102,600	28,800
2013	138,400	95,200	23,100	5,800	38,100	2,300	75,800	21,300	102,600	28,800
2014	138,400	95,200	23,100	5,800	38,100	2,300	75,800	21,300	102,600	28,800
2015	138,400	95,200	23,100	5,800	38,100	2,300	75,800	21,300	102,600	28,800
2016	138,400	95,200	23,100	5,800	38,100	2,300	75,800	21,300	102,600	28,800
2017	138,400	95,200	23,100	5,800	38,100	2,300	75,800	21,300	102,600	28,800
2018	138,400	95,200	23,100	5,800	38,100	2,300	75,800	21,300	102,600	28,800
2019	138,400	95,200	23,100	5,800	38,100	2,300	75,800	21,300	102,600	28,800
2020	138,400	95,200	23,100	5,800	38,100	2,300	75,800	21,300	102,600	28,800
2021	138,400	95,200	23,100	5,800	38,100	2,300	75,800	21,300	102,600	28,800
2022	138,400	95,200	23,100	5,800	38,100	2,300	75,800	21,300	102,600	28,800
2023	138,400	95,200	23,100	5,800	38,100	2,300	75,800	21,300	102,600	28,800
2024	138,400	95,200	23,100	5,800	38,100	2,300	75,800	21,300	102,600	28,800
2025	138,400	95,200	23,100	5,800	38,100	2,300	75,800	21,300	102,600	28,800
2026	138,400	95,200	23,100	5,800	38,100	2,300	75,800	21,300	102,600	28,800
2027	138,400	95,200	23,100	5,800	38,100	2,300	75,800	21,300	102,600	28,800
2028	138,400	95,200	23,100	5,800	38,100	2,300	75,800	21,300	102,600	28,800
2029	138,400	95,200	23,100	5,800	38,100	2,300	75,800	21,300	102,600	28,800
2030	138,400	95,200	23,100	5,800	38,100	2,300	75,800	21,300	102,600	28,800
2031	138,400	95,200	23,100	5,800	38,100	2,300	75,800	21,300	102,600	28,800
2032	138,400	95,200	23,100	5,800	38,100	2,300	75,800	21,300	102,600	28,800
2033	138,400	95,200	23,100	5,800	38,100	2,300	75,800	21,300	102,600	28,800
2034	138,400	95,200	23,100	5,800	38,100	2,300	75,800	21,300	102,600	28,800
2035	138,400	95,200	23,100	5,800	38,100	2,300	75,800	21,300	102,600	28,800
Total	7,330,000	4,545,098	1,286,111	321,556	2,107,600	127,210	3,760,043	1,127,720	5,909,177	1,641,322

Table B-4
Annual Table A Amounts to Project Water
(Acre-Feet)

Sheet 4 of 4

Calendar Year	Southern California Area				Feather River Area				South Bay Area Future Contractor (38)	Grand Total (39)
	San Geronio Pass Water Agency (30)	Metropolitan Water District of Southern California (31)	Ventura County Flood Control District (32)	Total (33)	City of Yuba City (34)	County of Butte (35)	Plumas County FC&WCD (36)	Total (37)		
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	11,538
1968	0	0	0	3,700	0	300	250	550	0	191,500
1969	0	0	0	5,000	0	350	270	620	0	267,395
1970	0	0	0	5,700	0	400	300	700	0	322,600
1971	0	0	0	6,700	0	450	440	890	0	375,590
1972	0	154,772	0	209,423	0	500	470	970	0	741,759
1973	0	354,600	0	481,100	0	600	500	1,100	0	986,252
1974	0	454,900	0	597,920	0	700	530	1,230	0	1,182,200
1975	0	555,200	0	714,950	0	1,050	560	1,610	0	1,386,869
1976	0	655,600	0	836,480	0	1,400	590	1,990	0	1,508,387
1977	0	755,900	0	954,901	0	1,800	620	2,420	0	1,667,321
1978	0	856,300	0	1,049,584	0	1,200	650	1,850	0	1,818,034
1979	0	956,600	0	1,190,573	0	1,450	680	2,130	0	2,028,088
1980	6,800	1,057,000	1,000	1,317,614	0	1,100	710	1,810	0	2,214,770
1981	7,800	1,157,300	2,000	1,432,065	0	1,200	740	1,940	0	2,392,468
1982	8,800	1,257,600	3,000	1,550,449	0	1,200	770	1,970	0	2,574,545
1983	9,800	1,358,000	4,000	1,681,257	0	1,200	800	2,000	0	2,701,164
1984	10,800	1,458,300	5,000	1,744,098	1,600	1,200	830	3,630	0	2,884,337
1985	11,800	1,558,700	6,000	1,864,849	1,700	1,200	860	3,760	0	3,055,846
1986	12,900	1,659,300	8,000	1,983,890	2,100	1,200	890	4,190	0	3,257,736
1987	14,000	1,759,800	10,000	2,103,941	2,500	1,200	920	4,620	0	3,484,115
1988	15,100	1,860,400	13,000	2,225,482	2,900	1,200	960	5,060	0	3,688,335
1989	16,200	1,961,000	16,000	2,424,633	3,300	1,200	1,000	5,500	0	3,958,190
1990	17,300	2,011,500	20,000	2,500,600	3,800	1,200	1,040	6,040	0	4,079,666
1991	17,300	2,011,500	20,000	2,510,200	9,600	1,200	1,080	11,880	0	4,126,567
1992	17,300	2,011,500	20,000	2,510,200	9,600	1,200	1,120	11,920	0	4,138,816
1993	17,300	2,011,500	20,000	2,510,200	9,600	1,200	1,160	11,960	0	4,146,966
1994	17,300	2,011,500	20,000	2,510,200	9,600	1,200	1,200	12,000	0	4,154,201
1995	17,300	2,011,500	20,000	2,510,200	9,600	1,200	1,250	12,050	0	4,163,066
1996	0	2,011,500	20,000	2,492,900	9,600	1,200	1,300	12,100	0	4,111,341
1997	0	2,011,500	20,000	2,492,900	9,600	1,200	1,350	12,150	0	4,084,866
1998	0	2,011,500	20,000	2,517,900	9,600	1,200	1,400	12,200	0	4,086,021
1999	2,000	2,011,500	20,000	2,519,900	9,600	2,890	1,450	13,940	0	4,119,646
2000	3,000	2,011,500	20,000	2,565,900	9,600	2,890	1,510	14,000	0	4,121,631
2001	4,000	2,011,500	20,000	2,566,900	9,600	3,500	1,570	14,670	0	4,124,136
2002	4,000	2,011,500	20,000	2,566,900	9,600	27,500	1,630	38,730	0	4,149,031
2003	5,000	2,011,500	20,000	2,567,900	9,600	27,500	1,690	38,790	0	4,150,926
2004	6,000	2,011,500	20,000	2,568,900	9,600	27,500	1,750	38,850	0	4,152,811
2005	6,500	2,011,500	20,000	2,569,400	9,600	27,500	1,810	38,910	0	4,153,796
2006	7,000	2,011,500	20,000	2,569,900	9,600	27,500	1,880	38,980	0	4,154,741
2007	7,500	2,011,500	20,000	2,570,400	9,600	27,500	1,950	39,050	0	4,155,686
2008	17,300	2,011,500	20,000	2,580,200	9,600	27,500	2,020	39,120	0	4,165,931
2009	17,300	2,011,500	20,000	2,580,200	9,600	27,500	2,090	39,190	0	4,166,376
2010	17,300	2,011,500	20,000	2,580,200	9,600	27,500	2,160	39,260	0	4,166,821
2011	17,300	2,011,500	20,000	2,580,200	9,600	27,500	2,240	39,340	0	4,167,276
2012	17,300	2,011,500	20,000	2,580,200	9,600	27,500	2,320	39,420	0	4,167,731
2013	17,300	2,011,500	20,000	2,580,200	9,600	27,500	2,410	39,510	0	4,168,146
2014	17,300	2,011,500	20,000	2,580,200	9,600	27,500	2,500	39,600	0	4,168,661
2015	17,300	2,011,500	20,000	2,580,200	9,600	27,500	2,600	39,700	0	4,169,486
2016	17,300	2,011,500	20,000	2,580,200	9,600	27,500	2,700	39,800	0	4,170,211
2017	17,300	2,011,500	20,000	2,580,200	9,600	27,500	2,700	39,800	0	4,170,836
2018	17,300	2,011,500	20,000	2,580,200	9,600	27,500	2,700	39,800	0	4,171,461
2019	17,300	2,011,500	20,000	2,580,200	9,600	27,500	2,700	39,800	0	4,172,086
2020	17,300	2,011,500	20,000	2,580,200	9,600	27,500	2,700	39,800	0	4,172,686
2021	17,300	2,011,500	20,000	2,580,200	9,600	27,500	2,700	39,800	0	4,172,786
2022	17,300	2,011,500	20,000	2,580,200	9,600	27,500	2,700	39,800	0	4,172,786
2023	17,300	2,011,500	20,000	2,580,200	9,600	27,500	2,700	39,800	0	4,172,786
2024	17,300	2,011,500	20,000	2,580,200	9,600	27,500	2,700	39,800	0	4,172,786
2025	17,300	2,011,500	20,000	2,580,200	9,600	27,500	2,700	39,800	0	4,172,786
2026	17,300	2,011,500	20,000	2,580,200	9,600	27,500	2,700	39,800	0	4,172,786
2027	17,300	2,011,500	20,000	2,580,200	9,600	27,500	2,700	39,800	0	4,172,786
2028	17,300	2,011,500	20,000	2,580,200	9,600	27,500	2,700	39,800	0	4,172,786
2029	17,300	2,011,500	20,000	2,580,200	9,600	27,500	2,700	39,800	0	4,172,786
2030	17,300	2,011,500	20,000	2,580,200	9,600	27,500	2,700	39,800	0	4,172,786
2031	17,300	2,011,500	20,000	2,580,200	9,600	27,500	2,700	39,800	0	4,172,786
2032	17,300	2,011,500	20,000	2,580,200	9,600	27,500	2,700	39,800	0	4,172,786
2033	17,300	2,011,500	20,000	2,580,200	9,600	27,500	2,700	39,800	0	4,172,786
2034	17,300	2,011,500	20,000	2,580,200	9,600	27,500	2,700	39,800	0	4,172,786
2035	17,300	2,011,500	20,000	2,580,200	9,600	27,500	2,700	39,800	0	4,172,786
Total	747,200	112,360,272	988,000	142,251,309	449,900	977,180	112,820	1,539,900	0	233,862,451

Table B-5A

Annual Water Quantities Delivered from Each Aqueduct Reach to Each Contractor (Acre-Feet)

Sheet 1 of 12

Calendar Year	Grizzly Valley Pipeline PC FC&WCD (1)	North Bay Aqueduct				South Bay Aqueduct				
		Reach 1	Reach 3A	Reach 3B	Total (5)	Reach 1		Reach 2	Reach 4	Reach 5
		SCWA (2)	SCWA (3)	NC FC&WCD ^a (4)		ACWD (6)	AC FC&WCD (7)	AC FC&WCD (8)	AC FC&WCD (9)	ACWD (10)
1962	0	0	0	0	0	8,412	141	353	0	0
1963	0	0	0	0	0	10,914	814	917	0	0
1964	0	0	0	0	0	19,238	248	1,425	0	0
1965	0	0	0	0	0	15,280	637	1,830	138	0
1966	0	0	0	0	0	0	2,475	2,537	499	0
1967	0	0	0	0	0	0	1,527	2,391	862	0
1968	0	0	0	1,214	1,214	0	1,608	3,799	721	0
1969	0	0	0	2,687	2,687	0	1,165	3,459	1,851	0
1970	70	0	0	3,618	3,618	0	1,345	4,558	3,182	0
1971	64	0	0	2,521	2,521	0	546	1,908	2,403	0
1972	505	0	0	3,647	3,647	0	1,066	4,605	2,041	1,489
1973	679	0	0	3,792	3,792	0	430	1,123	1,193	0
1974	648	0	0	4,870	4,870	0	177	0	975	0
1975	405	0	0	6,840	6,840	0	137	1,783	1,864	0
1976	382	0	0	7,122	7,122	0	265	7,204	3,384	0
1977	303	0	0	8,226	8,226	0	210	4,491	2,213	0
1978	278	0	0	6,034	6,034	0	422	2,426	3,754	0
1979	329	0	0	6,561	6,561	0	197	4,283	5,567	0
1980	295	0	0	6,707	6,707	0	77	3,883	6,686	1,508
1981	355	0	0	9,001	9,001	0	1,250	4,648	5,273	5,752
1982	305	0	0	1,213	1,213	0	473	3,043	4,406	0
1983	262	0	0	2,287	2,287	0	179	2,712	1,714	0
1984	272	0	0	2,923	2,923	0	165	4,219	2,219	0
1985	254	0	0	4,039	4,039	0	213	5,199	2,060	0
1986	317	1,400	0	3,519	4,919	0	200	6,052	2,062	0
1987	452	1,550	0	7,693	9,243	0	218	7,538	2,372	0
1988	523	1	9,725	5,392	15,118	0	222	8,302	4,681	0
1989	486	10	17,246	6,195	23,451	0	222	8,051	6,562	0
1990	548	3,275	15,856	6,940	26,071	0	256	8,160	8,347	0
1991	420	3,117	3,855	1,380	8,352	0	162	3,676	3,269	0
1992	485	5,553	9,220	4,001	18,774	0	217	5,177	2,188	0
1993	444	14,709	14,471	5,286	34,466	0	190	5,843	8,430	1,650
1994	492	10,343	14,913	6,792	32,048	0	132	4,482	5,427	0
1995	308	5,452	15,893	5,182	26,527	0	278	6,236	7,195	0
1996	360	12,930	17,069	4,893	34,892	0	277	6,151	5,119	0
1997	231	16,029	17,501	4,341	37,871	0	138	6,647	6,501	1,323
1998	0	11,562	18,204	5,359	35,125	0	106	3,748	2,493	0
1999	0	15,191	19,562	5,304	40,057	0	148	3,048	8,227	0
2000	0	15,490	21,525	4,918	41,933	0	110	7,464	10,120	0
2001	662	8,321	8,231	8,555	25,107	0	266	8,133	5,712	0
2002	1,630	25,268	18,150	21,100	64,518	0	287	8,441	13,381	0
2003	1,690	25,728	18,150	21,475	65,353	0	292	8,812	23,519	0
2004	1,750	25,948	18,380	21,850	66,178	0	292	16,500	23,734	0
2005	1,810	25,998	18,380	22,225	66,603	0	292	16,565	23,396	0
2006	1,880	25,998	18,430	22,550	66,978	0	292	16,565	23,396	0
2007	1,950	28,876	18,480	22,875	70,231	0	292	16,565	23,396	0
2008	2,020	28,876	18,530	23,200	70,606	0	292	16,565	23,396	0
2009	2,090	28,876	18,580	23,525	70,981	0	292	16,565	23,396	0
2010	2,160	28,876	18,630	23,850	71,356	0	292	16,565	23,396	0
2011	2,240	28,876	18,680	24,175	71,731	0	292	16,565	23,396	0
2012	2,320	28,876	18,730	24,500	72,106	0	292	16,565	23,396	0
2013	2,410	28,876	18,780	24,775	72,431	0	292	16,565	23,396	0
2014	2,500	28,876	18,830	25,150	72,856	0	292	16,565	23,396	0
2015	2,600	28,876	18,880	25,825	73,581	0	292	16,565	23,396	0
2016	2,700	28,876	18,880	26,450	74,206	0	292	16,565	23,396	0
2017	2,700	28,876	18,880	27,075	74,831	0	292	16,565	23,396	0
2018	2,700	28,876	18,880	27,700	75,456	0	292	16,565	23,396	0
2019	2,700	28,876	18,880	28,325	76,081	0	292	16,565	23,396	0
2020	2,700	28,876	18,880	28,925	76,681	0	292	16,565	23,396	0
2021	2,700	28,876	18,880	29,025	76,781	0	292	16,565	23,396	0
2022	2,700	28,876	18,880	29,025	76,781	0	292	16,565	23,396	0
2023	2,700	28,876	18,880	29,025	76,781	0	292	16,565	23,396	0
2024	2,700	28,876	18,880	29,025	76,781	0	292	16,565	23,396	0
2025	2,700	28,876	18,880	29,025	76,781	0	292	16,565	23,396	0
2026	2,700	28,876	18,880	29,025	76,781	0	292	16,565	23,396	0
2027	2,700	28,876	18,880	29,025	76,781	0	292	16,565	23,396	0
2028	2,700	28,876	18,880	29,025	76,781	0	292	16,565	23,396	0
2029	2,700	28,876	18,880	29,025	76,781	0	292	16,565	23,396	0
2030	2,700	28,876	18,880	29,025	76,781	0	292	16,565	23,396	0
2031	2,700	28,876	18,880	29,025	76,781	0	292	16,565	23,396	0
2032	2,700	28,876	18,880	29,025	76,781	0	292	16,565	23,396	0
2033	2,700	28,876	18,880	29,025	76,781	0	292	16,565	23,396	0
2034	2,700	28,876	18,880	29,025	76,781	0	292	16,565	23,396	0
2035	2,700	28,876	18,880	29,025	76,781	0	292	16,565	23,396	0
Total	94,184	1,091,277	840,481	1,069,977	3,001,735	53,844	28,832	718,772	927,620	11,722

^aFor the period 1968 through 1987, deliveries are non-Project water pumped through an interim facility.

Table B-5A

Annual Water Quantities Delivered from Each Aqueduct Reach to Each Contractor (Acre-Feet)

Sheet 2 of 12

Calendar Year	South Bay Aqueduct ^b (continued)						California Aqueduct									
	Reach 5	Reach 6	Reach 7	Reach 8	Reach 9	Total	North San Joaquin Division			San Luis Division						
							Reach 2A			Reach 3				Reach 4		
							AC FC&WCD (11)	AC FC&WCD (12)	ACWD (13)	ACWD (14)	SCVWD (15)	OFWD ^c (17)	TLBWSD (18)	SCVWD (19)	MWD (20)	DRWD (21)
1962	0	0	0	0	8,906	0	0	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	12,645	0	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	20,911	0	0	0	0	0	0	0	0	0	0
1965	0	0	1,127	0	15,014	34,026	0	0	0	0	0	0	0	0	0	0
1966	0	0	14,864	0	34,538	54,913	0	0	0	0	0	0	0	0	0	0
1967	0	0	12,882	0	39,101	56,763	0	0	0	0	0	0	0	0	0	0
1968	5	0	24,817	0	70,105	101,055	3,084	0	0	0	0	0	0	0	0	0
1969	160	0	813	0	62,264	69,712	3,016	0	0	0	0	0	0	0	0	0
1970	164	0	0	0	80,311	89,560	5,911	0	0	0	0	0	0	0	0	0
1971	160	0	5,961	0	87,606	98,584	7,212	0	0	0	0	0	0	0	0	0
1972	2,777	0	26,182	0	100,266	138,426	8,166	0	0	0	0	0	0	0	0	0
1973	229	0	2,521	0	88,582	94,078	3,214	0	0	0	0	0	0	0	0	0
1974	162	0	0	4	88,000	89,318	3,471	0	0	0	0	0	0	0	0	0
1975	120	714	393	593	88,000	93,604	3,576	0	0	0	0	0	0	0	0	0
1976	817	5,461	13,774	7,526	88,000	126,431	4,112	0	0	0	0	0	0	0	0	0
1977	524	5,206	11,284	7,556	76,220	107,704	1,472	0	0	0	0	0	0	0	0	0
1978	2,034	2,348	854	5,009	95,727	112,574	3,906	0	0	0	0	0	0	0	0	0
1979	3,937	5,341	3,430	7,444	91,991	122,190	6,149	0	0	0	0	0	0	0	0	0
1980	0	6,144	2,824	6,702	88,000	115,824	5,700	0	0	0	0	0	0	0	0	0
1981	1,157	7,262	7,595	8,570	88,000	129,507	4,300	0	0	0	0	0	0	0	0	0
1982	630	4,571	1,776	4,540	88,000	107,439	3,838	0	0	0	0	0	0	0	0	0
1983	50	111	0	3,157	86,733	94,656	3,822	0	0	0	0	0	0	0	0	0
1984	55	126	0	3,338	88,000	98,122	5,700	0	0	0	0	0	0	0	0	0
1985	63	7,537	11,203	7,813	88,000	122,088	5,433	0	0	0	0	0	0	0	0	0
1986	212	2,083	5,311	7,068	88,000	110,988	5,107	0	0	0	0	0	0	0	0	0
1987	285	12,993	15,488	9,902	88,000	136,796	5,625	0	0	0	0	0	0	0	0	0
1988	189	12,436	24,259	9,205	87,961	147,255	4,412	0	0	0	0	0	0	0	0	0
1989	418	10,974	17,340	8,702	90,000	142,269	6,091	300	0	0	602	0	0	12,647	1,898	0
1990	593	15,678	22,149	9,554	91,800	156,537	2,922	0	200	0	0	0	0	0	0	0
1991	359	1,945	9,155	3,493	28,200	50,259	141	0	0	0	0	0	0	0	0	0
1992	154	6,933	12,621	6,532	42,839	76,661	2,239	0	0	0	0	0	0	0	0	0
1993	5,964	13,208	1,792	6,829	62,065	105,971	2,858	0	0	0	0	0	0	0	0	0
1994	822	9,679	3,379	19,532	57,115	100,568	3,071	0	0	0	0	0	0	0	0	0
1995	955	15,427	21	17,772	28,756	76,640	5,169	0	0	0	0	0	0	3,500	14,446	0
1996	388	6,968	1,871	11,591	44,850	77,215	4,904	0	0	0	0	0	1,125	4,162	0	0
1997	1,582	12,654	1,876	10,864	60,601	102,186	5,238	0	0	11,100	0	0	0	0	0	0
1998	1,277	8,347	3,817	11,478	39,610	70,786	4,401	0	0	(11,100)	0	0	0	0	0	0
1999	1,444	13,133	5,326	16,226	52,945	100,497	4,871	0	0	0	0	0	0	0	0	0
2000	903	16,375	4,498	18,100	77,717	135,287	4,616	0	0	0	0	8,486	63,794	0	0	0
2001	1,654	10,136	6	16,909	46,233	89,049	1,833	0	0	0	0	0	0	0	0	0
2002	1,088	18,402	21,242	20,758	100,000	183,599	5,700	0	0	0	0	0	0	0	0	0
2003	1,088	19,273	12,908	29,092	100,000	194,984	5,700	0	0	0	0	0	0	0	0	0
2004	1,088	18,749	11,500	30,500	100,000	202,363	5,700	0	0	0	0	0	0	0	0	0
2005	1,088	19,659	11,500	30,500	100,000	203,000	5,700	0	0	0	0	0	0	0	0	0
2006	1,088	19,659	11,500	30,500	100,000	203,000	5,700	0	0	0	0	0	0	0	0	0
2007	1,088	19,659	11,500	30,500	100,000	203,000	5,700	0	0	0	0	0	0	0	0	0
2008	1,088	19,659	11,500	30,500	100,000	203,000	5,700	0	0	0	0	0	0	0	0	0
2009	1,088	19,659	11,500	30,500	100,000	203,000	5,700	0	0	0	0	0	0	0	0	0
2010	1,088	19,659	11,500	30,500	100,000	203,000	5,700	0	0	0	0	0	0	0	0	0
2011	1,088	19,659	11,500	30,500	100,000	203,000	5,700	0	0	0	0	0	0	0	0	0
2012	1,088	19,659	11,500	30,500	100,000	203,000	5,700	0	0	0	0	0	0	0	0	0
2013	1,088	19,659	11,500	30,500	100,000	203,000	5,700	0	0	0	0	0	0	0	0	0
2014	1,088	19,659	11,500	30,500	100,000	203,000	5,700	0	0	0	0	0	0	0	0	0
2015	1,088	19,659	11,500	30,500	100,000	203,000	5,700	0	0	0	0	0	0	0	0	0
2016	1,088	19,659	11,500	30,500	100,000	203,000	5,700	0	0	0	0	0	0	0	0	0
2017	1,088	19,659	11,500	30,500	100,000	203,000	5,700	0	0	0	0	0	0	0	0	0
2018	1,088	19,659	11,500	30,500	100,000	203,000	5,700	0	0	0	0	0	0	0	0	0
2019	1,088	19,659	11,500	30,500	100,000	203,000	5,700	0	0	0	0	0	0	0	0	0
2020	1,088	19,659	11,500	30,500	100,000	203,000	5,700	0	0	0	0	0	0	0	0	0
2021	1,088	19,659	11,500	30,500	100,000	203,000	5,700	0	0	0	0	0	0	0	0	0
2022	1,088	19,659	11,500	30,500	100,000	203,000	5,700	0	0	0	0	0	0	0	0	0
2023	1,088	19,659	11,500	30,500	100,000	203,000	5,700	0	0	0	0	0	0	0	0	0
2024	1,088	19,659	11,500	30,500	100,000	203,000	5,700	0	0	0	0	0	0	0	0	0
2025	1,088	19,659	11,500	30,500	100,000	203,000	5,700	0	0	0	0	0	0	0	0	0
2026	1,088	19,659	11,500	30,500	100,000	203,000	5,700	0	0	0	0	0	0	0	0	0
2027	1,088	19,659	11,500	30,500	100,000	203,000	5,700	0	0	0	0	0	0	0	0	0
2028	1,088	19,659	11,500	30,500	100,000	203,000	5,700	0	0	0	0	0	0	0	0	0
2029	1,088	19,659	11,500	30,500	100,000	203,000	5,700	0	0	0	0	0	0	0	0	0
2030	1,088	19,659	11,500	30,500	100,000	203,000	5,700	0	0	0	0	0	0	0	0	0
2031	1,088	19,659	11,500	30,500	100,000	203,000	5,700	0	0	0	0	0	0	0	0	0
2032	1,088	19,659	11,500	30,500	100,000	203,000	5,700	0	0	0	0	0	0	0	0	0
2033	1,088	19,659	11,500	30,500	100,000	203,000	5,700	0	0	0	0	0	0	0	0	0
2034	1,088	19,659	11,500	30,500	100,000	203,000	5,700	0	0	0	0	0	0	0	0	0
2035	1,088	19,659	11,500	30,500	100,000	203,000	5,700	0	0	0	0	0	0	0	0	0
Total	67,235	879,643	673,359	1,271,859	6,019,150	10,652,036	339,380	300	200	0	602	8,486	63,794	1,125	20,309	16,344

^bFor the period June 1962 through November 1967, deliveries were supplied by non-Project water.^cIncludes 425 AF of 1988 advance Table A amount and 141 AF of 1992 advance Table A amount.

Table B-5A

Annual Water Quantities Delivered from Each Aqueduct Reach to Each Contractor

(Acre-Feet)

Sheet 3 of 12

Calendar Year	California Aqueduct (continued)															
	San Luis Division (continued)															
	Reach 4	Reach 5							Reach 6				Reach 7			
	TLBWSD (27)	DRWD (28)	KCWA (M&I) (29)	KCWA (Ag) (30)	MWD (31)	CLWA (32)	TLBWSD (33)	OFWD (34)	KCWA (M&I) (35)	MWD (36)	KCWA (Ag) (37)	TLBWSD (38)	KCWA (M&I) (39)	CLWA (40)	DRWD (41)	KCWA (Ag) (42)
1962	0	0	0	0	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	0	0	0	0
1964	0	0	0	0	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	0	0	0	0
1966	0	0	0	0	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	0	0	0	0
1968	0	0	0	0	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	0	0	0	0
1970	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1971	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1972	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1973	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1974	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1975	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1976	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1977	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1978	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1979	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1980	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1981	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1982	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1983	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1984	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1985	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1986	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1987	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1988	0	0	0	0	0	0	1,550	0	0	0	0	0	0	0	0	0
1989	0	0	0	18,831	0	0	0	0	0	0	8,260	0	0	0	0	5,262
1990	1,500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1991	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1992	0	10,823	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1993	0	27,200	0	28,200	0	5,095	1,624	2,000	0	0	31,200	0	18,157	0	0	10,043
1994	0	0	0	0	0	0	0	0	0	0	0	0	0	2,100	0	0
1995	0	0	0	21,776	0	0	0	0	0	0	3,932	0	10,875	0	0	20,595
1996	0	0	1,125	81,507	0	0	4,000	0	0	0	0	0	3,424	0	0	69,704
1997	0	0	9,080	154,940	0	0	3,500	0	0	0	0	0	27,079	0	0	32,463
1998	0	0	0	0	0	0	0	0	20,400	0	33,340	3,000	3,998	0	200	62,081
1999	1,300	0	0	0	21,500	0	8,000	0	0	11,000	33,776	23,000	7,923	0	0	19,500
2000	0	0	26,104	43,525	0	0	0	0	7,215	35,970	7,484	0	0	1,200	0	31,788
2001	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2002	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2003	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2004	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2007	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2008	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2009	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2010	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2011	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2012	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2013	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2014	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2015	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2016	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2017	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2018	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2019	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2020	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2023	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2024	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2025	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2026	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2027	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2028	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2029	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2030	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2031	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2032	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2033	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2034	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2035	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	2,800	38,023	36,309	348,779	21,500	5,095	18,674	2,000	20,400	18,215	146,478	33,484	71,456	3,300	200	251,436

Table B-5A
Annual Water Quantities Delivered from Each Aqueduct Reach to Each Contractor
(Acre-Feet)

Sheet 4 of 12

Calendar Year	California Aqueduct (continued)														
	South San Joaquin Division														
	Reach 7		Reach 8C							Reach 8D					
	TLBWSD (43)	MWD (44)	KCWA (M&I) (45)	KCWA (Ag) (46)	DRWD (47)	TLBWSD (48)	EWSID (49)	CK (50)	KCWA (M&I) (51)	KCWA (Ag) (52)	DRWD (53)	CK (54)	SLOC FC&WCD (55)	TLBWSD (56)	
1962	0	0	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	0	0	
1964	0	0	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	0	0	
1966	0	0	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	0	0	
1968	0	0	0	0	0	25,100	1,978	900	0	0	26,360	0	0	0	
1969	0	0	0	0	0	7,081	56	100	0	0	31,375	0	0	0	
1970	0	0	0	0	0		3,942		0	0	40,407	0	0	3,408	
1971	0	0	0	0	0	80,906	5,990	3,700	0	0	41,053	0	0	41,579	
1972	0	0	0	0	0	144,843	5,795	1,400	0	0	42,443	0	0	113,550	
1973	0	0	0	0	0	26,317	3,000	1,500	0	1,500	22,057	0	0	24,147	
1974	0	0	0	0	0	32,603	3,000	1,500	0	0	33,390	0	0	39,686	
1975	0	0	0	0	0	41,536	3,000	1,600	0	0	40,555	0	0	44,722	
1976	0	0	0	0	0	26,595	3,000	1,600	0	0	41,421	0	0	32,216	
1977	0	0	0	0	0	12,984	738	1,530	0	0	11,153	0	0	5,097	
1978	0	0	0	0	0	3,934	454	2,070	0	0	51,747	0	0	8,119	
1979	0	0	0	0	0	74,758	1,739	2,000	0	0	38,544	0	0	80,363	
1980	0	0	0	0	0	35,140	894	2,200	0	0	41,000	0	0	40,304	
1981	0	0	0	0	0	50,888	5,859	2,300	0	0	41,000	0	0	32,550	
1982	0	0	0	0	0	4,405	361	1,536	0	0	41,000	214	0	14,146	
1983	0	0	0	0	0	1,001	0	3,550	0	0	42,900	0	0	5	
1984	0	0	0	0	0	3,677	0	3,100	0	0	45,100	0	0	2,066	
1985	0	0	0	0	0	68,638	5,197	3,400	0	0	46,251	0	0	41,153	
1986	0	0	0	0	0	40,017	1,170	3,700	0	0	50,249	0	0	39,338	
1987	0	0	0	0	0	30,359	2,525	4,000	0	0	46,288	0	0	62,725	
1988	0	0	0	0	0	46,281	3,475	4,000	0	0	47,994	0	0	48,035	
1989	0	0	0	0	2,391	63,703	3,000	4,000	0	0	52,158	0	0	63,947	
1990	0	0	0	0	0	23,504	1,279	2,000	0	161	36,296	0	0	32,066	
1991	0	0	0	0	0	1,697	221		0	0	927	0	0	483	
1992	0	0	0	0	280	15,982	1,354	1,806	0	0	12,667	0	0	30,746	
1993	0	0	0	0	0	57,112	2,741	4,000	0	0	23,221	0	0	65,732	
1994	0	0	0	0	0	21,510	1,666	2,116	0	1,726	28,793	0	0	40,852	
1995	0	0	989	10,527	0	40,934	1,631	4,000	2,959	27,270	45,240	0	0	57,435	
1996	0	0	0	1,500	95	84,130	1,868	4,000	0	1,455	52,722	0	100	148,745	
1997	0	0	0	1,500	0	9,467	0	0	0	0	57,496	0	100	9,402	
1998	0	0	0	1,000	90	8,956	542	15	0	20,000	49,435	0	0	8,721	
1999	4,470	500	0	400	86	90,334	3,176	4,000	0	9,000	58,290	0	0	162,631	
2000	16,016	13,107	0	400	0	65,098	1,799	3,600	0	0	61,202	0	0	119,696	
2001	0	0	0	0	2,561	27,994	1,360	1,200	0	0	34,530	0	0	47,293	
2002	0	0	0	0	0	47,400	3,000	4,000	0	0	53,370	0	0	71,100	
2003	0	0	0	0	0	47,400	3,000	4,000	0	0	53,370	0	0	71,100	
2004	0	0	0	0	0	118,500	3,000	4,000	0	0	53,370	0	0	0	
2005	0	0	0	0	0	118,500	3,000	4,000	0	0	53,370	0	0	0	
2006	0	0	0	0	0	118,500	3,000	4,000	0	0	53,370	0	0	0	
2007	0	0	0	0	0	118,500	3,000	4,000	0	0	53,370	0	0	0	
2008	0	0	0	0	0	118,500	3,000	4,000	0	0	53,370	0	0	0	
2009	0	0	0	0	0	118,500	3,000	4,000	0	0	53,370	0	0	0	
2010	0	0	0	0	0	118,500	3,000	4,000	0	0	53,370	0	0	0	
2011	0	0	0	0	0	118,500	3,000	4,000	0	0	53,370	0	0	0	
2012	0	0	0	0	0	118,500	3,000	4,000	0	0	53,370	0	0	0	
2013	0	0	0	0	0	118,500	3,000	4,000	0	0	53,370	0	0	0	
2014	0	0	0	0	0	118,500	3,000	4,000	0	0	53,370	0	0	0	
2015	0	0	0	0	0	118,500	3,000	4,000	0	0	53,370	0	0	0	
2016	0	0	0	0	0	118,500	3,000	4,000	0	0	53,370	0	0	0	
2017	0	0	0	0	0	118,500	3,000	4,000	0	0	53,370	0	0	0	
2018	0	0	0	0	0	118,500	3,000	4,000	0	0	53,370	0	0	0	
2019	0	0	0	0	0	118,500	3,000	4,000	0	0	53,370	0	0	0	
2020	0	0	0	0	0	118,500	3,000	4,000	0	0	53,370	0	0	0	
2021	0	0	0	0	0	118,500	3,000	4,000	0	0	53,370	0	0	0	
2022	0	0	0	0	0	118,500	3,000	4,000	0	0	53,370	0	0	0	
2023	0	0	0	0	0	118,500	3,000	4,000	0	0	53,370	0	0	0	
2024	0	0	0	0	0	118,500	3,000	4,000	0	0	53,370	0	0	0	
2025	0	0	0	0	0	118,500	3,000	4,000	0	0	53,370	0	0	0	
2026	0	0	0	0	0	118,500	3,000	4,000	0	0	53,370	0	0	0	
2027	0	0	0	0	0	118,500	3,000	4,000	0	0	53,370	0	0	0	
2028	0	0	0	0	0	118,500	3,000	4,000	0	0	53,370	0	0	0	
2029	0	0	0	0	0	118,500	3,000	4,000	0	0	53,370	0	0	0	
2030	0	0	0	0	0	118,500	3,000	4,000	0	0	53,370	0	0	0	
2031	0	0	0	0	0	118,500	3,000	4,000	0	0	53,370	0	0	0	
2032	0	0	0	0	0	118,500	3,000	4,000	0	0	53,370	0	0	0	
2033	0	0	0	0	0	118,500	3,000	4,000	0	0	53,370	0	0	0	
2034	0	0	0	0	0	118,500	3,000	4,000	0	0	53,370	0	0	0	
2035	0	0	0	0	0	118,500	3,000	4,000	0	0	53,370	0	0	0	
Total	20,486	13,607	989	15,327	5,503	5,154,284	174,810	212,423	2,959	61,112	3,149,844	214	200	1,603,158	

Table B-5A

Annual Water Quantities Delivered from Each Aqueduct Reach to Each Contractor (Acre-Feet)

Sheet 5 of 12

Calendar Year	California Aqueduct (continued)													
	South San Joaquin Division (continued)													
	Reach 9				Reach 10A								Reach 11B	
	DRWD (57)	KCWA (M&I) (58)	KCWA (Ag) (59)	TLBWSD (60)	MWD (61)	KCWA (M&I) (62)	TLBWSD (63)	FC&WCD (64)	KCWA (Ag) (65)	SCVWD (66)	ACWD (67)	TLBWSD (68)	KCWA (M&I) (69)	KCWA (Ag) (70)
1962	0	0	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	0	0
1964	0	0	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	0	0
1966	0	0	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	0	0
1968	0	0	30,951	0	0	0	0	0	0	0	0	0	0	24,776
1969	0	0	24,489	0	0	0	0	0	0	0	0	2,842	0	64,682
1970	0	0	46,114	1,855	0	0	0	0	158	0	0	4,315	0	72,279
1971	0	0	58,356	0	0	0	0	0	9,973	0	0	0	0	63,773
1972	0	0	75,464	0	0	0	0	0	5,876	0	0	0	0	72,358
1973	0	0	54,583	0	0	0	0	0	22,948	0	0	0	0	67,544
1974	0	0	63,814	0	0	10,019	0	0	22,719	0	0	0	0	87,476
1975	0	0	50,021	0	0	2,791	0	0	72,121	0	0	0	0	85,675
1976	0	0	53,465	0	0	74	0	0	50,444	0	0	0	0	85,067
1977	0	0	24,668	0	0	201	0	0	34,451	0	0	0	3,981	29,603
1978	0	0	72,231	0	0	0	0	0	161,889	0	0	0	0	88,753
1979	0	0	74,524	0	0	285	0	0	153,245	0	0	0	484	108,379
1980	0	0	79,946	0	0	3,780	0	0	131,836	0	0	0	3,112	103,207
1981	0	0	76,508	0	0	341	0	0	133,500	0	0	0	494	104,395
1982	0	0	76,877	0	0	4,700	0	0	164,832	0	0	0	798	99,081
1983	0	2,217	84,573	0	0	0	0	0	146,493	0	0	0	2,069	94,117
1984	0	4,100	85,732	0	0	6,910	0	0	150,302	0	0	0	2,349	124,819
1985	0	0	67,696	0	0	6,495	0	0	153,473	0	0	0	10,666	118,646
1986	0	0	79,943	0	0	5,065	0	0	198,099	0	0	0	8,673	124,836
1987	0	0	97,732	0	0	900	0	0	226,521	0	0	0	13,074	111,877
1988	0	1,100	83,858	0	0	9,529	0	0	212,495	0	0	0	13,509	114,031
1989	0	0	91,134	0	0	21,038	0	0	251,979	0	0	0	9,986	127,058
1990	0	0	83,108	0	0	25,189	0	0	47,472	0	0	0	9,319	104,107
1991	0	13,683	601	0	0	1,142	0	0	6,820	0	0	0	6,099	118
1992	0	28	40,183	0	0	3,685	0	0	89,390	0	0	0	7,419	35,093
1993	197	5,945	53,597	0	44,496	775	0	0	233,862	0	0	0	2,696	72,645
1994	0	0	44,994	0	0	5,227	0	0	126,792	0	0	0	3,506	71,202
1995	0	0	64,076	0	50,000	366	0	0	229,448	0	0	0	1,154	97,072
1996	0	2,236	89,291	0	95,000	6,666	0	0	199,854	45,000	6,200	0	1,185	96,250
1997	4,900	0	72,013	0	125,000	3,577	900	0	157,385	35,000	10,000	0	1,111	104,823
1998	0	0	57,530	0	39,500	2,603	0	1,970	163,587	23,800	3,780	0	1,311	72,646
1999	0	0	72,734	0	75,850	1,657	0	22,910	190,787	30,000	16,100	0	2,127	92,262
2000	0	2,000	71,562	0	9,208	267	0	23,940	282,147	23,730	13,380	0	3,793	89,623
2001	0	55,590	0	0	(1,614)	90,512	0	8,008	400	0	0	0	105,327	2,000
2002	0	0	71,230	0	0	2,000	0	29,051	254,546	0	0	0	2,000	106,727
2003	0	0	71,230	0	0	400	0	19,000	254,546	0	0	0	2,000	126,508
2004	0	0	71,230	0	0	400	0	17,637	254,546	0	0	0	2,000	126,508
2005	0	0	71,230	0	0	400	0	17,000	254,546	0	0	0	2,000	126,508
2006	0	0	71,230	0	0	400	0	17,000	254,546	0	0	0	2,000	126,508
2007	0	0	71,230	0	0	400	0	17,000	254,546	0	0	0	2,000	126,508
2008	0	0	71,230	0	0	400	0	17,000	254,546	0	0	0	2,000	126,508
2009	0	0	71,230	0	0	400	0	17,000	254,546	0	0	0	2,000	126,508
2010	0	0	71,230	0	0	400	0	17,000	254,546	0	0	0	2,000	126,508
2011	0	0	71,230	0	0	400	0	17,000	254,546	0	0	0	2,000	126,508
2012	0	0	71,230	0	0	400	0	17,000	254,546	0	0	0	2,000	126,508
2013	0	0	71,230	0	0	400	0	17,000	254,546	0	0	0	2,000	126,508
2014	0	0	71,230	0	0	400	0	17,000	254,546	0	0	0	2,000	126,508
2015	0	0	71,230	0	0	400	0	17,000	254,546	0	0	0	2,000	126,508
2016	0	0	71,230	0	0	400	0	17,000	254,546	0	0	0	2,000	126,508
2017	0	0	71,230	0	0	400	0	17,000	254,546	0	0	0	2,000	126,508
2018	0	0	71,230	0	0	400	0	17,000	254,546	0	0	0	2,000	126,508
2019	0	0	71,230	0	0	400	0	17,000	254,546	0	0	0	2,000	126,508
2020	0	0	71,230	0	0	400	0	17,000	254,546	0	0	0	2,000	126,508
2021	0	0	71,230	0	0	400	0	17,000	254,546	0	0	0	2,000	126,508
2022	0	0	71,230	0	0	400	0	17,000	254,546	0	0	0	2,000	126,508
2023	0	0	71,230	0	0	400	0	17,000	254,546	0	0	0	2,000	126,508
2024	0	0	71,230	0	0	400	0	17,000	254,546	0	0	0	2,000	126,508
2025	0	0	71,230	0	0	400	0	17,000	254,546	0	0	0	2,000	126,508
2026	0	0	71,230	0	0	400	0	17,000	254,546	0	0	0	2,000	126,508
2027	0	0	71,230	0	0	400	0	17,000	254,546	0	0	0	2,000	126,508
2028	0	0	71,230	0	0	400	0	17,000	254,546	0	0	0	2,000	126,508
2029	0	0	71,230	0	0	400	0	17,000	254,546	0	0	0	2,000	126,508
2030	0	0	71,230	0	0	400	0	17,000	254,546	0	0	0	2,000	126,508
2031	0	0	71,230	0	0	400	0	17,000	254,546	0	0	0	2,000	126,508
2032	0	0	71,230	0	0	400	0	17,000	254,546	0	0	0	2,000	126,508
2033	0	0	71,230	0	0	400	0	17,000	254,546	0	0	0	2,000	126,508
2034	0	0	71,230	0	0	400	0	17,000	254,546	0	0	0	2,000	126,508
2035	0	0	71,230	0	0	400	0	17,000	254,546	0	0	0	2,000	126,508
Total	5,097	86,899	4,524,188	1,855	437,440	228,994	900	649,516	12,685,862	157,530	49,460	7,157	282,242	7,091,764

Table B-5A

Annual Water Quantities Delivered from Each Aqueduct Reach to Each Contractor (Acre-Feet)

Sheet 6 of 12

Calendar Year	California Aqueduct (continued)											
	South San Joaquin Division (continued)											
	Reach 12E				Reach 13B				Reach 14A		Reach 14B	
	KCWA (M&I) (71)	KCWA (Ag) (72)	DRWD (73)	MWD (74)	KCWA (M&I) (75)	MWD (76)	TLBWSD (77)	KCWA (Ag) (78)	KCWA (M&I) (79)	KCWA (Ag) (80)	KCWA (M&I) (81)	KCWA (Ag) (82)
1962	0	0	0	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0	0	0	0	0	0
1967	0	0	0	0	0	0	0	0	0	0	0	0
1968	0	0	0	0	0	0	0	0	0	0	0	0
1969	0	0	0	0	0	0	0	0	0	0	0	0
1970	0	9,279	0	0	0	0	0	4,891	0	0	0	3
1971	0	28,056	0	0	0	0	0	0	0	23,844	0	49,929
1972	0	62,342	0	0	0	0	0	17,388	0	26,621	0	77,034
1973	0	13,082	0	0	0	0	0	9,297	0	15,328	0	47,040
1974	2,651	4,248	0	0	8,038	0	0	4,246	0	7,794	0	32,356
1975	0	10,787	0	0	8,538	0	0	7,059	0	10,306	0	27,736
1976	37,519	20,555	0	0	5,626	0	0	8,855	0	268	0	35,296
1977	20,280	1,737	0	0	0	0	0	5,024	0	8,299	0	13,539
1978	47,133	15,011	0	0	21,773	0	0	7,601	0	34,029	0	72,351
1979	50,740	61,567	0	0	5,663	0	0	17,766	3,012	27,356	0	59,413
1980	32,039	22,252	0	0	0	0	0	22,515	4,312	16,876	0	40,513
1981	59,917	58,470	0	0	7,844	0	0	14,037	4,511	13,007	8	42,753
1982	36,139	75,587	0	0	0	0	0	25,553	3,735	24,240	184	57,739
1983	0	10,950	0	0	0	0	0	3,491	1,168	20,302	0	57,922
1984	63,941	39,929	0	0	12,117	0	0	26,178	137	35,369	10	79,179
1985	69,839	84,117	0	0	0	0	0	67,711	206	33,103	0	72,855
1986	62,109	51,540	0	0	0	0	0	66,551	180	26,384	0	70,864
1987	95,297	86,223	0	0	5,609	0	0	40,374	610	30,098	9	67,710
1988	86,390	123,249	0	0	9,298	0	0	47,167	622	32,778	19	75,968
1989	83,965	146,544	0	0	5,504	0	0	57,114	721	29,292	7	82,201
1990	82,164	38,973	0	0	7,645	0	0	20,423	673	26,800	13	81,076
1991	8,842	303	0	0	0	0	0	0	768	0	0	0
1992	47,181	57,048	0	0	789	0	0	17,449	673	16,238	464	41,143
1993	84,822	285,554	0	5,504	12,798	0	0	88,157	629	17,832	0	62,493
1994	66,188	77,839	0	0	2,494	0	0	33,148	2,513	16,760	3,000	54,011
1995	107,130	181,097	1,000	0	8,751	0	3,500	110,685	3	21,234	0	67,391
1996	89,257	134,138	4,131	0	28,063	0	0	64,849	0	26,978	0	85,936
1997	32,061	128,329	8,012	1,486	43,803	0	0	49,312	0	23,035	0	79,790
1998	28,258	88,998	5,925	24,234	29,444	5,500	0	40,085	0	15,706	0	58,132
1999	110,161	255,343	1,321	62,162	12,969	0	0	92,998	0	21,153	0	67,576
2000	71,807	85,163	0	159,731	4,066	0	0	98,136	0	19,264	0	70,585
2001	49,752	54,394	0	0	28,745	0	0	4,500	2,691	1,500	87,095	0
2002	102,800	106,846	0	250,000	6,000	0	0	41,800	6,000	20,000	0	69,500
2003	102,800	106,846	0	250,000	6,000	0	0	41,800	6,000	20,000	0	69,500
2004	102,800	106,846	0	200,000	6,000	0	0	41,800	6,000	0	0	69,500
2005	102,800	106,846	0	200,000	6,000	0	0	41,800	6,000	20,000	0	0
2006	102,800	106,846	0	200,000	6,000	0	0	41,800	6,000	20,000	0	69,500
2007	102,800	106,846	0	200,000	6,000	0	0	41,800	6,000	20,000	0	69,500
2008	102,800	106,846	0	200,000	6,000	0	0	41,800	6,000	20,000	0	69,500
2009	102,800	106,846	0	200,000	6,000	0	0	41,800	6,000	20,000	0	69,500
2010	102,800	106,846	0	200,000	6,000	0	0	41,800	6,000	20,000	0	69,500
2011	102,800	106,846	0	200,000	6,000	0	0	41,800	6,000	20,000	0	69,500
2012	102,800	106,846	0	200,000	6,000	0	0	41,800	6,000	20,000	0	69,500
2013	102,800	106,846	0	200,000	6,000	0	0	41,800	6,000	20,000	0	69,500
2014	102,800	106,846	0	200,000	6,000	0	0	41,800	6,000	20,000	0	69,500
2015	102,800	106,846	0	200,000	6,000	0	0	41,800	6,000	20,000	0	69,500
2016	102,800	106,846	0	200,000	6,000	0	0	41,800	6,000	20,000	0	69,500
2017	102,800	106,846	0	200,000	6,000	0	0	41,800	6,000	20,000	0	69,500
2018	102,800	106,846	0	200,000	6,000	0	0	41,800	6,000	20,000	0	69,500
2019	102,800	106,846	0	200,000	6,000	0	0	41,800	6,000	20,000	0	69,500
2020	102,800	106,846	0	200,000	6,000	0	0	41,800	6,000	20,000	0	69,500
2021	102,800	106,846	0	200,000	6,000	0	0	41,800	6,000	20,000	0	69,500
2022	102,800	106,846	0	200,000	6,000	0	0	41,800	6,000	20,000	0	69,500
2023	102,800	106,846	0	200,000	6,000	0	0	41,800	6,000	20,000	0	69,500
2024	102,800	106,846	0	200,000	6,000	0	0	41,800	6,000	20,000	0	69,500
2025	102,800	106,846	0	200,000	6,000	0	0	41,800	6,000	20,000	0	69,500
2026	102,800	106,846	0	200,000	6,000	0	0	41,800	6,000	20,000	0	69,500
2027	102,800	106,846	0	200,000	6,000	0	0	41,800	6,000	20,000	0	69,500
2028	102,800	106,846	0	200,000	6,000	0	0	41,800	6,000	20,000	0	69,500
2029	102,800	106,846	0	200,000	6,000	0	0	41,800	6,000	20,000	0	69,500
2030	102,800	106,846	0	200,000	6,000	0	0	41,800	6,000	20,000	0	69,500
2031	102,800	106,846	0	200,000	6,000	0	0	41,800	6,000	20,000	0	69,500
2032	102,800	106,846	0	200,000	6,000	0	0	41,800	6,000	20,000	0	69,500
2033	102,800	106,846	0	200,000	6,000	0	0	41,800	6,000	20,000	0	69,500
2034	102,800	106,846	0	200,000	6,000	0	0	41,800	6,000	20,000	0	69,500
2035	102,800	106,846	0	200,000	6,000	0	0	41,800	6,000	20,000	0	69,500
Total	5,020,782	5,945,468	20,389	7,153,117	473,577	5,500	3,500	2,493,760	231,164	1,281,794	90,809	4,024,034

Table B-5A

Annual Water Quantities Delivered from Each Aqueduct Reach to Each Contractor (Acre-Feet)

Sheet 7 of 12

Calendar Year	California Aqueduct (continued)											
	South San Joaquin Division (continued)							Mojave Division				
	Reach 14C		Reach 15A		Reach 16A			Reach 18A	Reach 19			
	KCWA (M&I) (83)	KCWA (Ag) (84)	KCWA (M&I) (85)	KCWA (Ag) (86)	KCWA (M&I) (87)	KCWA (Ag) (88)	AVEKWA (89)	AVEKWA (90)	MWA (91)	MWA (92)	AVEKWA (93)	AVEKWA (94)
1962	0	0	0	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0	0	0	0	0	0
1967	0	0	0	0	0	0	0	0	0	0	0	0
1968	0	0	0	0	0	0	0	0	0	0	0	0
1969	0	0	0	0	0	0	0	0	0	0	0	0
1970	0	0	0	0	0	0	0	0	0	0	0	0
1971	0	24,187	0	3,552	0	0	0	0	0	0	0	0
1972	0	35,016	0	6,064	0	4,768	0	0	0	0	0	0
1973	0	19,043	0	19,916	0	1,961	0	0	0	0	0	0
1974	0	12,601	0	18,000	3,000	1,564	0	0	0	0	0	1,223
1975	0	12,783	0	35,420	3,200	9,867	0	0	0	0	0	7,622
1976	0	9,005	0	39,551	3,500	11,667	0	3,808	0	0	0	23,063
1977	0	3,757	0	6,158	3,420	685	0	1,231	0	0	0	8,927
1978	0	24,542	0	31,148	7,989	1,655	0	1,321	0	0	0	36,333
1979	0	22,372	0	38,602	2,813	15,808	0	2,098	0	0	0	49,910
1980	0	19,953	0	37,817	2,700	16,145	0	2,610	0	0	0	61,534
1981	7	18,729	0	39,033	2,636	18,156	0	2,340	0	0	0	65,690
1982	0	26,479	0	47,782	1,921	16,577	0	1,669	0	0	0	41,127
1983	0	26,613	0	37,426	1,400	17,907	0	43	0	0	0	26,377
1984	2	34,996	0	49,848	1,338	24,246	0	90	0	0	0	22,462
1985	0	31,758	0	44,078	1,309	16,820	0	8	0	0	0	23,440
1986	0	34,566	0	42,461	1,213	15,559	0	8	0	0	0	16,898
1987	10	31,019	0	34,748	1,665	10,170	0	0	0	0	0	15,958
1988	1	37,165	16	41,978	1,925	8,987	0	0	0	0	0	13,471
1989	5	37,800	2	43,239	2,668	8,649	0	0	0	0	0	18,007
1990	9	34,174	6	36,347	2,819	8,608	0	0	0	0	0	17,281
1991	0	0	0	0	2,588	343	2,000	0	0	0	0	728
1992	0	18,084	0	24,243	2,087	8,275	0	0	0	0	0	7,238
1993	0	28,103	0	27,997	2,494	9,167	0	0	0	0	0	13,340
1994	1,000	22,624	0	29,511	3,011	13,877	0	0	0	0	0	19,122
1995	0	31,285	0	26,134	3,188	15,042	0	0	0	0	0	20,222
1996	0	38,879	0	36,186	2,573	18,142	0	0	0	0	0	23,919
1997	0	33,512	0	36,281	3,997	17,048	0	0	64	0	0	28,834
1998	0	23,097	0	28,712	3,751	17,032	0	0	1,345	0	0	22,466
1999	0	31,489	0	36,801	3,316	24,071	0	0	1,439	0	0	30,944
2000	0	33,716	0	40,063	3,015	20,919	0	0	1,303	0	0	34,786
2001	15,411	0	11,369	0	15,952	1,584	0	0	1,500	0	0	27,231
2002	0	34,200	0	40,300	4,400	20,100	0	0	0	0	0	91,933
2003	0	34,200	0	40,300	4,400	20,100	0	0	0	0	0	88,669
2004	0	34,200	0	40,300	4,400	20,100	0	0	1,500	0	0	85,411
2005	0	34,200	0	40,300	4,400	20,100	0	0	1,500	0	0	81,645
2006	0	0	0	40,300	4,400	20,100	0	0	1,500	0	0	78,650
2007	0	34,200	0	0	4,400	20,100	0	0	1,500	0	0	74,900
2008	0	34,200	0	40,300	0	20,100	0	0	1,500	0	0	70,900
2009	0	34,200	0	40,300	4,400	0	0	0	1,500	0	0	69,891
2010	0	34,200	0	40,300	4,400	20,100	0	0	1,500	0	0	69,891
2011	0	34,200	0	40,300	4,400	20,100	0	0	1,500	0	0	69,891
2012	0	34,200	0	40,300	4,400	20,100	0	0	1,500	0	0	69,891
2013	0	34,200	0	40,300	4,400	20,100	0	0	1,500	0	0	69,891
2014	0	34,200	0	40,300	4,400	20,100	0	0	1,500	0	0	69,891
2015	0	34,200	0	40,300	4,400	20,100	0	0	1,500	0	0	69,891
2016	0	34,200	0	40,300	4,400	20,100	0	0	1,500	0	0	69,891
2017	0	34,200	0	40,300	4,400	20,100	0	0	1,500	0	0	69,891
2018	0	34,200	0	40,300	4,400	20,100	0	0	1,500	0	0	69,891
2019	0	34,200	0	40,300	4,400	20,100	0	0	1,500	0	0	69,891
2020	0	34,200	0	40,300	4,400	20,100	0	0	1,500	0	0	69,891
2021	0	34,200	0	40,300	4,400	20,100	0	0	1,500	0	0	69,891
2022	0	34,200	0	40,300	4,400	20,100	0	0	1,500	0	0	69,891
2023	0	34,200	0	40,300	4,400	20,100	0	0	1,500	0	0	69,891
2024	0	34,200	0	40,300	4,400	20,100	0	0	1,500	0	0	69,891
2025	0	34,200	0	40,300	4,400	20,100	0	0	1,500	0	0	69,891
2026	0	34,200	0	40,300	4,400	20,100	0	0	1,500	0	0	69,891
2027	0	34,200	0	40,300	4,400	20,100	0	0	1,500	0	0	69,891
2028	0	34,200	0	40,300	4,400	20,100	0	0	1,500	0	0	69,891
2029	0	34,200	0	40,300	4,400	20,100	0	0	1,500	0	0	69,891
2030	0	34,200	0	40,300	4,400	20,100	0	0	1,500	0	0	69,891
2031	0	34,200	0	40,300	4,400	20,100	0	0	1,500	0	0	69,891
2032	0	34,200	0	40,300	4,400	20,100	0	0	1,500	0	0	69,891
2033	0	34,200	0	40,300	4,400	20,100	0	0	1,500	0	0	69,891
2034	0	34,200	0	40,300	4,400	20,100	0	0	1,500	0	0	69,891
2035	0	34,200	0	40,300	4,400	20,100	0	0	1,500	0	0	69,891
Total	16,445	1,885,947	11,393	2,268,996	236,688	1,018,599	2,000	15,226	53,651	0	0	3,137,318

Table B-5A

Annual Water Quantities Delivered from Each Aqueduct Reach to Each Contractor (Acre-Feet)

Sheet 8 of 12

Calendar Year	California Aqueduct (continued)								
	Mojave Division (continued)								
	Reach 20A			Reach 20B		Reach 21		Reach 22A	Reach 22B
	PWD (95)	MWA (96)	AVEKWA (97)	PWD (98)	AVEKWA (99)	LCID (100)	PWD (101)	AVEKWA (102)	MWD ^d (103)
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	0	0	0	0	0	338	0	0	0
1973	0	0	0	0	0	290	0	0	(14,800)
1974	0	0	0	0	0	400	0	0	(16,400)
1975	0	0	420	0	0	520	0	0	(18,000)
1976	0	0	471	0	416	589	0	0	(19,600)
1977	0	0	773	0	271	111	0	0	0
1978	0	0	5,549	0	934	208	0	0	(25,384)
1979	0	0	7,555	0	930	133	0	0	(25,063)
1980	0	0	7,605	0	655	191	0	3	(27,884)
1981	0	0	10,333	0	966	1,270	0	46	(31,105)
1982	0	0	7,313	0	8	0	0	174	(34,326)
1983	0	0	6,253	0	20	38	0	268	(37,547)
1984	0	0	9,558	0	2	1	0	550	(40,768)
1985	1,510	0	11,613	32	217	0	16	1,786	(43,989)
1986	3,041	0	13,808	45	163	163	10	1,735	(47,210)
1987	2,389	0	15,493	1,624	151	1,085	1,366	2,273	(50,931)
1988	366	0	17,117	1,261	281	419	143	3,210	(54,652)
1989	381	0	23,481	7,848	112	971	780	3,591	(58,373)
1990	282	0	25,843	8,292	84	1,747	34	3,988	(61,200)
1991	84	1,391	4,282	3,830	131	522	0	2,427	(18,360)
1992	185	1,310	18,518	3,850	650	251	0	3,859	(27,624)
1993	164	1,514	23,662	7,597	996	734	0	5,098	0
1994	299	1,399	25,250	8,119	124	1,098	0	4,657	0
1995	328	1,227	22,385	6,633	0	480	0	4,679	0
1996	354	1,316	26,979	11,080	0	494	0	5,458	0
1997	313	1,272	27,999	11,548	0	444	0	5,549	0
1998	195	0	25,985	8,557	0	404	0	4,468	0
1999	377	0	32,409	12,901	36	342	0	5,684	0
2000	0	0	37,819	9,060	80	0	0	10,892	0
2001	0	0	30,820	10,147	0	690	0	3,279	0
2002	0	0	40,083	20,300	0	2,300	0	6,384	0
2003	0	0	42,657	21,300	0	2,300	0	7,074	0
2004	0	0	45,509	21,300	0	2,300	0	7,480	0
2005	0	0	48,884	21,300	0	2,300	0	7,871	0
2006	0	0	51,385	21,300	0	2,300	0	8,365	0
2007	0	0	54,610	21,300	0	2,300	0	8,890	0
2008	0	0	58,050	21,300	0	2,300	0	9,450	0
2009	0	0	58,907	21,300	0	2,300	0	9,602	0
2010	0	0	58,907	21,300	0	2,300	0	9,602	0
2011	0	0	58,907	21,300	0	2,300	0	9,602	0
2012	0	0	58,907	21,300	0	2,300	0	9,602	0
2013	0	0	58,907	21,300	0	2,300	0	9,602	0
2014	0	0	58,907	21,300	0	2,300	0	9,602	0
2015	0	0	58,907	21,300	0	2,300	0	9,602	0
2016	0	0	58,907	21,300	0	2,300	0	9,602	0
2017	0	0	58,907	21,300	0	2,300	0	9,602	0
2018	0	0	58,907	21,300	0	2,300	0	9,602	0
2019	0	0	58,907	21,300	0	2,300	0	9,602	0
2020	0	0	58,907	21,300	0	2,300	0	9,602	0
2021	0	0	58,907	21,300	0	2,300	0	9,602	0
2022	0	0	58,907	21,300	0	2,300	0	9,602	0
2023	0	0	58,907	21,300	0	2,300	0	9,602	0
2024	0	0	58,907	21,300	0	2,300	0	9,602	0
2025	0	0	58,907	21,300	0	2,300	0	9,602	0
2026	0	0	58,907	21,300	0	2,300	0	9,602	0
2027	0	0	58,907	21,300	0	2,300	0	9,602	0
2028	0	0	58,907	21,300	0	2,300	0	9,602	0
2029	0	0	58,907	21,300	0	2,300	0	9,602	0
2030	0	0	58,907	21,300	0	2,300	0	9,602	0
2031	0	0	58,907	21,300	0	2,300	0	9,602	0
2032	0	0	58,907	21,300	0	2,300	0	9,602	0
2033	0	0	58,907	21,300	0	2,300	0	9,602	0
2034	0	0	58,907	21,300	0	2,300	0	9,602	0
2035	0	0	58,907	21,300	0	2,300	0	9,602	0
Total	10,268	9,429	2,370,960	835,624	7,064	92,133	2,349	388,442	(653,216)

^dIn accordance with the Exchange Agreement between the noted agencies, MWD assumed responsibility for payment of variable OMP&R costs on the exchange water in reaches beyond Reach 22B, and Desert Water Agency and Coachella Valley Water District for such costs from the Delta through Reach 22B. The adjustment in deliveries in Reach 22B provides for compliance with provisions for the repayment of costs under the agreement in 1993 and after the exchange takes place in Reach 26A.

Table B-5A

Annual Water Quantities Delivered from Each Aqueduct Reach to Each Contractor (Acre-Feet)

Sheet 9 of 12

Calendar Year	California Aqueduct (continued)								
	Mojave Division (continued)								Santa Ana Division
	Reach 22B					Reach 23	Reach 24		Reach 26A
	CVWD ^d (104)	AVEKWA ^e (105)	SCWA (106)	DWA ^d (107)	MWA (108)	MWA (109)	CLAWA (110)	MWA (111)	MWD ^f (112)
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									
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	0	0	0	0	55	0	464	0	0
1973	5,800	0	0	9,000	0	0	389	0	444
1974	6,400	0	0	10,000	0	14	627	0	84,981
1975	7,000	0	0	11,000	0	0	825	0	169,960
1976	7,600	0	0	12,000	0	0	1,002	0	215,312
1977	0	0	0	0	22	58	1,109	0	64,823
1978	10,084	0	0	15,300	0	0	1,209	0	297,708
1979	10,063	0	0	15,000	4,000	0	1,260	0	260,903
1980	10,884	0	0	17,000	4,000	0	1,239	0	300,345
1981	12,105	0	0	19,000	4,000	0	1,485	0	395,678
1982	13,326	0	0	21,000	10,500	0	1,238	0	214,566
1983	14,547	0	0	23,000	0	0	911	0	175,288
1984	15,768	0	0	25,000	0	0	1,128	0	122,311
1985	16,989	0	0	27,000	0	0	1,422	0	147,599
1986	18,210	0	0	29,000	0	0	1,506	0	215,265
1987	19,431	214	0	31,500	17	0	1,849	0	175,012
1988	20,652	0	0	34,000	9	0	2,006	0	247,101
1989	21,873	89	0	36,500	0	200	2,170	0	326,217
1990	23,100	10	0	38,100	0	0	1,827	0	399,387
1991	6,930	0	0	11,430	0	0	849	2,032	107,182
1992	10,427	0	0	17,197	42	0	519	9,334	219,524
1993	0	0	0	0	0	0	439	10,000	98,291
1994	0	0	0	0	14,634	0	785	819	192,979
1995	0	0	0	0	7,495	0	409	0	107,299
1996	0	0	0	0	6,111	0	485	0	73,438
1997	0	0	0	0	9,038	0	651	0	157,215
1998	0	0	0	0	2,580	0	187	0	36,770
1999	0	0	0	0	6,705	0	1,132	0	139,752
2000	0	0	0	0	9,909	0	1,194	0	332,113
2001	0	0	0	0	7,000	0	1,740	0	196,168
2002	0	0	0	0	13,500	0	2,050	0	534,401
2003	0	0	0	0	18,500	0	2,150	0	402,076
2004	0	0	0	0	28,500	0	2,350	0	576,878
2005	0	0	0	0	33,500	0	2,550	0	576,878
2006	0	0	0	0	34,500	0	2,700	0	576,878
2007	0	0	0	0	35,500	0	2,850	0	576,878
2008	0	0	0	0	36,500	0	3,000	0	576,878
2009	0	0	0	0	37,500	0	3,200	0	576,878
2010	0	0	0	0	38,500	0	3,350	0	576,878
2011	0	0	0	0	40,500	0	3,550	0	576,878
2012	0	0	0	0	42,500	0	3,700	0	576,878
2013	0	0	0	0	44,500	0	3,900	0	576,878
2014	0	0	0	0	46,500	0	4,100	0	576,878
2015	0	0	0	0	48,500	0	4,300	0	576,878
2016	0	0	0	0	50,500	0	4,450	0	576,878
2017	0	0	0	0	52,500	0	4,600	0	576,878
2018	0	0	0	0	54,500	0	4,750	0	576,878
2019	0	0	0	0	56,500	0	4,900	0	576,878
2020	0	0	0	0	58,500	0	5,000	0	576,878
2021	0	0	0	0	61,500	0	5,150	0	576,878
2022	0	0	0	0	65,500	0	5,250	0	576,878
2023	0	0	0	0	68,500	0	5,350	0	576,878
2024	0	0	0	0	71,500	0	5,400	0	576,878
2025	0	0	0	0	74,300	0	5,450	0	576,878
2026	0	0	0	0	74,300	0	5,500	0	576,878
2027	0	0	0	0	74,300	0	5,550	0	576,878
2028	0	0	0	0	74,300	0	5,600	0	576,878
2029	0	0	0	0	74,300	0	5,650	0	576,878
2030	0	0	0	0	74,300	0	5,700	0	576,878
2031	0	0	0	0	74,300	0	5,725	0	576,878
2032	0	0	0	0	74,300	0	5,750	0	576,878
2033	0	0	0	0	74,300	0	5,775	0	576,878
2034	0	0	0	0	74,300	0	5,800	0	576,878
2035	0	0	0	0	74,300	0	5,800	0	576,878
Total	251,189	313	0	402,027	1,941,917	272	182,956	22,185	24,870,204

^e1988 advance Table A amount.^fIn accordance with the Exchange Agreement between the noted agencies, MWD assumed responsibility for payment of variable OMP&R costs on the exchange water in reaches beyond Reach 22B, and Desert Water Agency and Coachella Valley Water District for such costs from the Delta through Reach 22B.

The adjustment in deliveries in Reach 22B provides for compliance with provisions for the repayment of costs under the agreement. In 1993 and after the exchange takes place in Reach 26A.

Table B-5A
Annual Water Quantities Delivered from Each Aqueduct Reach to Each Contractor
(Acre-Feet)

Sheet 10 of 12

Calendar Year	California Aqueduct (continued)											
	Santa Ana Division (continued)											
	Reach 26A					Reach 28G	Reach 28H			Reach 28J		
	SBVMW ⁹ (113)	SGVMWD (114)	SGPWA (115)	CVWD [†] (116)	DWA [†] (117)	MWD (118)	CVWD (119)	DWA (120)	MWD (121)	CVWD (122)	DWA (123)	MWD (124)
1962	0	0	0	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0	0	0	0	0	0
1967	0	0	0	0	0	0	0	0	0	0	0	0
1968	0	0	0	0	0	0	0	0	0	0	0	0
1969	0	0	0	0	0	0	0	0	0	0	0	0
1970	0	0	0	0	0	0	0	0	0	0	0	0
1971	0	0	0	0	0	0	0	0	0	0	0	0
1972	1,275	0	0	0	0	0	0	0	0	0	0	0
1973	32,426	0	0	0	0	18,942	0	0	0	0	0	0
1974	16,605	612	0	0	0	0	0	0	0	0	0	0
1975	13,865	5,450	0	0	0	0	0	0	0	0	0	251
1976	12,273	6,071	0	0	0	0	0	0	55	0	0	2,000
1977	24,833	8,996	0	0	0	0	0	0	43	0	0	2,442
1978	4,055	7,771	0	0	0	0	0	0	48	0	0	64,054
1979	18	290	0	0	0	0	0	0	1,290	0	0	94,353
1980		1,085	0	0	0	0	0	0	3,013	0	0	91,532
1981	16,021	3,619	0	0	0	0	0	0	4,365	0	0	149,405
1982	8,409	12,599	0	0	0	0	0	0	3,961	0	0	155,629
1983	5,994	734	0	0	0	0	0	0	6,645	0	0	41,616
1984	5,556	7,656	0	0	0	0	0	0	109,743	0	0	5,672
1985	7,390	5,028	0	0	0	0	0	0	182,781	0	0	6,538
1986	6,421	9,454	0	0	0	0	0	0	131,439	0	0	30,071
1987	18,751	10,630	0	0	0	0	0	0	144,743	0	0	26,315
1988	21,386	8,948	0	0	0	0	0	0	199,641	0	0	22,209
1989	20,782	12,839	0	0	0	0	0	0	247,430	0	0	51,462
1990	18,831	16,649	0	0	0	0	0	0	257,796	0	0	36,060
1991	3,661	5,399	0	0	0	0	0	0	38,832	0	0	5,958
1992	3,358	7,908	0	0	0	0	0	0	85,341	0	0	12,223
1993	4,361	14,397	0	23,100	38,100	0	0	0	61,841	0	0	4,588
1994	9,135	15,230	0	14,102	23,257	0	0	0	134,262	0	0	4,725
1995	696	12,922	0	23,100	38,100	0	0	0	117,762	0	0	21,099
1996	6,064	15,989	0	62,219	102,622	0	0	0	144,906	0	0	12,418
1997	9,654	18,175	0	58,100	53,100	0	0	0	107,853	0	0	47,777
1998	1,878	9,310	0	78,100	58,100	0	6,582	7,708	77,473	1,027	4,839	50,411
1999	12,874	21,729	0	50,480	58,100	0	0	0	206,689	0	0	8,163
2000	18,399	14,475	0	42,323	58,234	0	0	0	379,713	0	0	16,045
2001	30,780	8,640	200	10,189	14,749	0	0	0	162,666	0	0	18,589
2002	102,600	16,000	4,000	23,100	38,100	0	0	0	403,295	0	0	3,960
2003	102,600	18,000	5,000	23,100	38,100	0	0	0	405,326	0	0	3,960
2004	102,600	28,800	6,000	23,100	38,100	0	0	0	406,436	0	0	3,960
2005	102,600	28,800	6,500	23,100	38,100	0	0	0	405,325	0	0	3,960
2006	102,600	28,800	7,000	23,100	38,100	0	0	0	405,325	0	0	3,960
2007	102,600	28,800	7,500	23,100	38,100	0	0	0	405,325	0	0	3,960
2008	102,600	28,800	17,300	23,100	38,100	0	0	0	405,325	0	0	3,960
2009	102,600	28,800	17,300	23,100	38,100	0	0	0	405,325	0	0	3,960
2010	102,600	28,800	17,300	23,100	38,100	0	0	0	405,325	0	0	3,960
2011	102,600	28,800	17,300	23,100	38,100	0	0	0	405,325	0	0	3,960
2012	102,600	28,800	17,300	23,100	38,100	0	0	0	405,325	0	0	3,960
2013	102,600	28,800	17,300	23,100	38,100	0	0	0	405,325	0	0	3,960
2014	102,600	28,800	17,300	23,100	38,100	0	0	0	405,325	0	0	3,960
2015	102,600	28,800	17,300	23,100	38,100	0	0	0	405,325	0	0	3,960
2016	102,600	28,800	17,300	23,100	38,100	0	0	0	405,325	0	0	3,960
2017	102,600	28,800	17,300	23,100	38,100	0	0	0	405,325	0	0	3,960
2018	102,600	28,800	17,300	23,100	38,100	0	0	0	405,325	0	0	3,960
2019	102,600	28,800	17,300	23,100	38,100	0	0	0	405,325	0	0	3,960
2020	102,600	28,800	17,300	23,100	38,100	0	0	0	405,325	0	0	3,960
2021	102,600	28,800	17,300	23,100	38,100	0	0	0	405,325	0	0	3,960
2022	102,600	28,800	17,300	23,100	38,100	0	0	0	405,325	0	0	3,960
2023	102,600	28,800	17,300	23,100	38,100	0	0	0	405,325	0	0	3,960
2024	102,600	28,800	17,300	23,100	38,100	0	0	0	405,325	0	0	3,960
2025	102,600	28,800	17,300	23,100	38,100	0	0	0	405,325	0	0	3,960
2026	102,600	28,800	17,300	23,100	38,100	0	0	0	405,325	0	0	3,960
2027	102,600	28,800	17,300	23,100	38,100	0	0	0	405,325	0	0	3,960
2028	102,600	28,800	17,300	23,100	38,100	0	0	0	405,325	0	0	3,960
2029	102,600	28,800	17,300	23,100	38,100	0	0	0	405,325	0	0	3,960
2030	102,600	28,800	17,300	23,100	38,100	0	0	0	405,325	0	0	3,960
2031	102,600	28,800	17,300	23,100	38,100	0	0	0	405,325	0	0	3,960
2032	102,600	28,800	17,300	23,100	38,100	0	0	0	405,325	0	0	3,960
2033	102,600	28,800	17,300	23,100	38,100	0	0	0	405,325	0	0	3,960
2034	102,600	28,800	17,300	23,100	38,100	0	0	0	405,325	0	0	3,960
2035	102,600	28,800	17,300	23,100	38,100	0	0	0	405,325	0	0	3,960
Total	3,824,151	1,218,205	520,600	1,147,113	1,739,762	18,942	6,582	7,708	16,590,463	1,027	4,839	1,116,245

⁹Includes 1,650 AF recaptured from groundwater storage in 1982, 10,000 AF in 1987, and 8,749 AF in 1988.
This water was stored under DWR's Groundwater Demonstration Program.

Table B-5A

Annual Water Quantities Delivered from Each Aqueduct Reach to Each Contractor (Acre-Feet)

Sheet 11 of 12

Calendar Year	California Aqueduct (continued)									
	West Branch								Coastal Branch	
	Reach 29F	Reach 29H	Reach 30						Reach 31A	
	AVEKWA (125)	VCFCFCD (126)	CVWD (127)	DWA (128)	MWD ^h (129)	VCFCFCD (130)	CLWA (131)	SBCFC&WCD (132)	KCWA (M&I) (133)	KCWA (Ag) (134)
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	71,657
1969	0	0	0	0	0	0	0	0	0	52,094
1970	0	0	0	0	0	0	0	0	0	71,910
1971	0	0	0	0	0	0	0	0	0	98,481
1972	53	0	0	0	71,938	0	0	0	0	107,850
1973	20	0	0	0	155,297	0	0	0	0	69,227
1974	36	0	0	0	209,136	0	0	0	0	68,474
1975	26	0	0	0	374,280	0	0	0	0	74,516
1976	24	0	0	0	420,684	0	0	0	0	78,358
1977	0	0	0	0	122,447	0	0	0	0	35,504
1978	0	0	0	0	171,139	0	0	0	0	81,242
1979	0	0	0	0	145,591	0	7	0	0	104,017
1980	0	0	0	0	164,721	0	1,210	0	0	97,497
1981	0	0	0	0	277,503	0	5,761	0	0	97,054
1982	0	0	0	0	351,362	0	9,516	0	0	83,076
1983	0	0	0	0	157,519	0	9,476	0	0	87,859
1984	0	0	0	0	260,624	0	11,477	0	0	119,098
1985	0	0	0	0	390,696	0	12,401	0	0	110,124
1986	0	0	0	0	379,275	0	13,928	0	0	118,298
1987	0	0	0	0	417,285	0	16,167	0	0	116,259
1988	0	0	0	0	488,265	0	18,904	0	0	109,435
1989	0	0	0	0	589,962	0	21,719	0	0	102,156
1990	0	4,836	0	0	764,380	0	22,139	0	0	103,362
1991	0	988	0	0	257,835	0	3,846	1,240	0	780
1992	0	0	0	0	420,849	0	14,812	0	0	73,748
1993	6	0	0	0	437,470	0	13,787	0	0	90,764
1994	0	0	0	0	475,900	0	14,919	0	200	77,536
1995	0	0	0	0	139,882	0	17,747	0	0	85,050
1996	0	0	0	0	267,618	0	18,448	0	0	100,578
1997	11	0	10,240	16,890	271,379	1,850	22,842	0	0	97,020
1998	7	0	0	0	187,277	1,850	19,782	0	0	86,879
1999	0	0	0	0	327,001	1,850	28,813	0	0	92,095
2000	0	2,200	0	0	632,993	1,848	33,674	0	0	85,215
2001	0	1,150	850	0	555,169	1,850	25,368	0	75,250	0
2002	0	3,150	0	0	714,536	16,850	85,200	0	0	115,100
2003	0	3,150	0	0	866,226	16,850	85,200	0	0	115,100
2004	0	3,150	0	0	799,260	16,850	85,200	0	0	115,100
2005	0	3,150	0	0	825,337	16,850	85,200	0	0	115,100
2006	0	3,150	0	0	825,337	16,850	85,200	0	0	115,100
2007	0	3,150	0	0	825,337	16,850	85,200	0	0	115,100
2008	0	3,150	0	0	825,337	16,850	85,200	0	0	115,100
2009	0	3,150	0	0	825,337	16,850	85,200	0	0	115,100
2010	0	3,150	0	0	825,337	16,850	85,200	0	0	115,100
2011	0	3,150	0	0	825,337	16,850	93,375	0	0	115,100
2012	0	3,150	0	0	825,337	16,850	95,200	0	0	115,100
2013	0	3,150	0	0	825,337	16,850	95,200	0	0	115,100
2014	0	3,150	0	0	825,337	16,850	95,200	0	0	115,100
2015	0	3,150	0	0	825,337	16,850	95,200	0	0	115,100
2016	0	3,150	0	0	825,337	16,850	95,200	0	0	115,100
2017	0	3,150	0	0	825,337	16,850	95,200	0	0	115,100
2018	0	3,150	0	0	825,337	16,850	95,200	0	0	115,100
2019	0	3,150	0	0	825,337	16,850	95,200	0	0	115,100
2020	0	3,150	0	0	825,337	16,850	95,200	0	0	115,100
2021	0	3,150	0	0	825,337	16,850	95,200	0	0	115,100
2022	0	3,150	0	0	825,337	16,850	95,200	0	0	115,100
2023	0	3,150	0	0	825,337	16,850	95,200	0	0	115,100
2024	0	3,150	0	0	825,337	16,850	95,200	0	0	115,100
2025	0	3,150	0	0	825,337	16,850	95,200	0	0	115,100
2026	0	3,150	0	0	825,337	16,850	95,200	0	0	115,100
2027	0	3,150	0	0	825,337	16,850	95,200	0	0	115,100
2028	0	3,150	0	0	825,337	16,850	95,200	0	0	115,100
2029	0	3,150	0	0	825,337	16,850	95,200	0	0	115,100
2030	0	3,150	0	0	825,337	16,850	95,200	0	0	115,100
2031	0	3,150	0	0	825,337	16,850	95,200	0	0	115,100
2032	0	3,150	0	0	825,337	16,850	95,200	0	0	115,100
2033	0	3,150	0	0	825,337	16,850	95,200	0	0	115,100
2034	0	3,150	0	0	825,337	16,850	95,200	0	0	115,100
2035	0	3,150	0	0	825,337	16,850	95,200	0	0	115,100
Total	183	116,274	11,090	16,890	37,850,946	582,148	3,501,718	1,240	75,450	6,760,613

^h Deliveries exclude 6,171 AF of 1982 exchange water.

Table B-5A

Annual Water Quantities Delivered from Each Aqueduct Reach to Each Contractor (Acre-Feet)

Sheet 12 of 12

Calendar Year	California Aqueduct (continued)						Grand Total (141)
	Coastal Branch (continued)					Total (140)	
	Reach 31A	Reach 33A	Reach 34	Reach 35			
	CLWA (135)	SLOCFC&WCD (136)	SLOCFC&WCD (137)	SLOCFC&WCD (138)	SBCFC&WCD (139)		
1962	0	0	0	0	0	0	8,906
1963	0	0	0	0	0	0	12,645
1964	0	0	0	0	0	0	20,911
1965	0	0	0	0	0	0	34,026
1966	0	0	0	0	0	0	54,913
1967	0	0	0	0	0	0	56,763
1968	7,382	0	0	0	0	192,188	294,457
1969	9,970	0	0	0	0	195,705	268,104
1970	11,739	0	0	0	0	276,211	369,459
1971	12,490	0	0	0	0	553,081	654,250
1972	13,905	0	0	0	0	895,006	1,037,584
1973	9,418	0	0	0	0	638,930	737,479
1974	9,700	0	0	0	0	783,984	878,820
1975	10,700	0	0	0	0	1,129,728	1,230,577
1976	11,700	0	0	0	0	1,245,662	1,379,597
1977	5,075	0	0	0	0	465,442	581,675
1978	11,362	0	0	0	0	1,339,268	1,458,154
1979	19,138	0	0	0	0	1,537,075	1,666,155
1980	13,882	0	0	0	0	1,413,363	1,536,189
1981	12,700	0	0	0	0	1,779,479	1,918,342
1982	12,700	0	0	0	0	1,641,571	1,750,528
1983	12,659	0	0	0	0	1,089,626	1,186,831
1984	12,741	0	0	0	0	1,489,814	1,591,131
1985	12,099	0	0	0	0	1,863,544	1,989,925
1986	13,301	0	0	0	0	1,882,290	1,998,514
1987	11,821	0	0	0	0	1,984,570	2,131,061
1988	11,534	0	0	0	0	2,221,538	2,384,434
1989	14,645	0	0	0	0	2,686,838	2,853,044
1990	6,440	0	0	0	0	2,398,121	2,581,277
1991	716	0	0	0	0	489,489	548,520
1992	5,887	0	0	0	0	1,374,775	1,470,695
1993	4,157	0	0	0	0	2,173,352	2,314,233
1994	9,422	0	0	0	0	1,727,504	1,860,612
1995	9,486	0	0	0	0	1,926,835	2,030,310
1996	14,052	0	0	0	0	2,429,928	2,542,395
1997	4,870	0	1,099	0	7,439	2,263,966	2,404,254
1998	311	0	3,592	0	18,618	1,657,381	1,763,382
1999	4,086	0	0	3,743	20,137	2,755,025	2,895,579
2000	8,395	0	0	3,985	22,718	3,394,588	3,571,808
2001	3,810	0	0	7,599	13,942	1,859,363	1,974,181
2002	10,000	0	0	25,000	45,486	3,669,398	3,919,145
2003	10,000	0	0	25,000	45,486	3,708,024	3,970,051
2004	10,000	0	0	25,000	45,486	3,769,107	4,039,398
2005	10,000	0	0	25,000	45,486	3,749,636	4,021,049
2006	10,000	0	0	25,000	45,486	3,786,586	4,058,444
2007	10,000	0	0	25,000	45,486	3,782,136	4,057,317
2008	10,000	0	0	25,000	45,486	3,828,986	4,104,612
2009	10,000	0	0	25,000	45,486	3,814,486	4,090,557
2010	10,000	0	0	25,000	45,486	3,835,736	4,112,252
2011	1,825	0	0	25,000	45,486	3,837,936	4,114,907
2012	0	0	0	25,000	45,486	3,840,086	4,117,512
2013	0	0	0	25,000	45,486	3,842,286	4,120,127
2014	0	0	0	25,000	45,486	3,844,486	4,122,842
2015	0	0	0	25,000	45,486	3,846,686	4,125,867
2016	0	0	0	25,000	45,486	3,848,836	4,128,742
2017	0	0	0	25,000	45,486	3,850,986	4,131,517
2018	0	0	0	25,000	45,486	3,853,136	4,134,292
2019	0	0	0	25,000	45,486	3,855,286	4,137,067
2020	0	0	0	25,000	45,486	3,857,386	4,139,767
2021	0	0	0	25,000	45,486	3,860,536	4,143,017
2022	0	0	0	25,000	45,486	3,864,636	4,147,117
2023	0	0	0	25,000	45,486	3,867,736	4,150,217
2024	0	0	0	25,000	45,486	3,870,786	4,153,267
2025	0	0	0	25,000	45,486	3,873,636	4,156,117
2026	0	0	0	25,000	45,486	3,873,686	4,156,167
2027	0	0	0	25,000	45,486	3,873,736	4,156,217
2028	0	0	0	25,000	45,486	3,873,786	4,156,267
2029	0	0	0	25,000	45,486	3,873,836	4,156,317
2030	0	0	0	25,000	45,486	3,873,886	4,156,367
2031	0	0	0	25,000	45,486	3,873,911	4,156,392
2032	0	0	0	25,000	45,486	3,873,936	4,156,417
2033	0	0	0	25,000	45,486	3,873,961	4,156,442
2034	0	0	0	25,000	45,486	3,873,986	4,156,467
2035	0	0	0	25,000	45,486	3,873,986	4,156,467
Total	424,118	0	4,691	865,327	1,629,378	182,252,485	196,000,440

Table B-5B
Annual Water Quantities Delivered to Each Contractor
(Acre-Feet)

Sheet 1 of 4

Calendar Year	North Bay Area			South Bay Area ^b				Central Coastal Area		
	Napa County FC&WCD ^a (1)	Solano County WA (2)	Total (3)	Alameda County FC&WCD, Zone 7 (4)	Alameda County Water District (5)	Santa Clara Valley Water District (6)	Total (7)	San Luis Obispo County FC&WCD (8)	Santa Barbara County FC&WCD (9)	Total (10)
1962	0	0	0	494	8,412	0	8,906	0	0	0
1963	0	0	0	1,731	10,914	0	12,645	0	0	0
1964	0	0	0	1,673	19,238	0	20,911	0	0	0
1965	0	0	0	2,605	16,407	15,014	34,026	0	0	0
1966	0	0	0	5,511	14,864	34,538	54,913	0	0	0
1967	0	0	0	4,780	12,882	39,101	56,763	0	0	0
1968	1,214	0	1,214	6,133	24,817	70,105	101,055	0	0	0
1969	2,687	0	2,687	6,635	813	62,264	69,712	0	0	0
1970	3,618	0	3,618	9,249	0	80,311	89,560	0	0	0
1971	2,521	0	2,521	5,017	5,961	87,606	98,584	0	0	0
1972	3,647	0	3,647	10,489	27,671	100,266	138,426	0	0	0
1973	3,792	0	3,792	2,975	2,521	88,582	94,078	0	0	0
1974	4,870	0	4,870	1,314	4	88,000	89,318	0	0	0
1975	6,840	0	6,840	4,618	986	88,000	93,604	0	0	0
1976	7,122	0	7,122	17,131	21,300	88,000	126,431	0	0	0
1977	8,226	0	8,226	12,644	18,840	76,220	107,704	0	0	0
1978	6,034	0	6,034	10,984	5,863	95,727	112,574	0	0	0
1979	6,561	0	6,561	19,325	10,874	91,991	122,190	0	0	0
1980	6,707	0	6,707	16,790	11,034	88,000	115,824	0	0	0
1981	9,001	0	9,001	19,590	21,917	88,000	129,507	0	0	0
1982	1,213	0	1,213	13,123	6,316	88,000	107,439	0	0	0
1983	2,287	0	2,287	4,766	3,157	86,733	94,656	0	0	0
1984	2,923	0	2,923	6,784	3,338	88,000	98,122	0	0	0
1985	4,039	0	4,039	15,072	19,016	88,000	122,088	0	0	0
1986	3,519	1,400	4,919	10,609	12,379	88,000	110,988	0	0	0
1987	7,693	1,550	9,243	23,406	25,390	88,000	136,796	0	0	0
1988	5,392	9,726	15,118	25,830	33,464	87,961	147,255	0	0	0
1989	6,195	17,256	23,451	26,227	26,042	90,000	142,269	0	0	0
1990	6,940	19,131	26,071	33,034	31,703	92,000	156,737	0	0	0
1991	1,380	6,972	8,352	9,411	12,648	28,200	50,259	0	1,240	1,240
1992	4,001	14,773	18,774	14,669	19,153	42,839	76,661	0	0	0
1993	5,286	29,180	34,466	33,635	10,271	62,065	105,971	0	0	0
1994	6,792	25,256	32,048	20,542	22,911	57,115	100,568	0	0	0
1995	5,182	21,345	26,527	30,091	17,793	28,756	76,640	0	0	0
1996	4,893	29,999	34,892	18,903	19,662	89,850	128,415	100	0	100
1997	4,341	33,530	37,871	27,522	24,063	95,601	147,186	1,199	7,439	8,638
1998	5,359	29,766	35,125	17,941	19,075	63,410	100,426	3,592	18,618	22,210
1999	5,304	34,753	40,057	48,910	37,652	82,945	169,507	3,743	20,137	23,880
2000	4,918	37,015	41,933	58,912	35,978	101,447	196,337	3,985	22,718	26,703
2001	8,555	16,552	25,107	33,909	16,915	46,233	97,057	7,599	13,942	21,541
2002	21,100	43,418	64,518	70,650	42,000	100,000	212,650	25,000	45,486	70,486
2003	21,475	43,878	65,353	71,984	42,000	100,000	213,984	25,000	45,486	70,486
2004	21,850	44,328	66,178	78,000	42,000	100,000	220,000	25,000	45,486	70,486
2005	22,225	44,378	66,603	78,000	42,000	100,000	220,000	25,000	45,486	70,486
2006	22,550	44,428	66,978	78,000	42,000	100,000	220,000	25,000	45,486	70,486
2007	22,875	47,356	70,231	78,000	42,000	100,000	220,000	25,000	45,486	70,486
2008	23,200	47,406	70,606	78,000	42,000	100,000	220,000	25,000	45,486	70,486
2009	23,525	47,456	70,981	78,000	42,000	100,000	220,000	25,000	45,486	70,486
2010	23,850	47,506	71,356	78,000	42,000	100,000	220,000	25,000	45,486	70,486
2011	24,175	47,556	71,731	78,000	42,000	100,000	220,000	25,000	45,486	70,486
2012	24,500	47,606	72,106	78,000	42,000	100,000	220,000	25,000	45,486	70,486
2013	24,775	47,656	72,431	78,000	42,000	100,000	220,000	25,000	45,486	70,486
2014	25,150	47,706	72,856	78,000	42,000	100,000	220,000	25,000	45,486	70,486
2015	25,825	47,756	73,581	78,000	42,000	100,000	220,000	25,000	45,486	70,486
2016	26,450	47,756	74,206	78,000	42,000	100,000	220,000	25,000	45,486	70,486
2017	27,075	47,756	74,831	78,000	42,000	100,000	220,000	25,000	45,486	70,486
2018	27,700	47,756	75,456	78,000	42,000	100,000	220,000	25,000	45,486	70,486
2019	28,325	47,756	76,081	78,000	42,000	100,000	220,000	25,000	45,486	70,486
2020	28,925	47,756	76,681	78,000	42,000	100,000	220,000	25,000	45,486	70,486
2021	29,025	47,756	76,781	78,000	42,000	100,000	220,000	25,000	45,486	70,486
2022	29,025	47,756	76,781	78,000	42,000	100,000	220,000	25,000	45,486	70,486
2023	29,025	47,756	76,781	78,000	42,000	100,000	220,000	25,000	45,486	70,486
2024	29,025	47,756	76,781	78,000	42,000	100,000	220,000	25,000	45,486	70,486
2025	29,025	47,756	76,781	78,000	42,000	100,000	220,000	25,000	45,486	70,486
2026	29,025	47,756	76,781	78,000	42,000	100,000	220,000	25,000	45,486	70,486
2027	29,025	47,756	76,781	78,000	42,000	100,000	220,000	25,000	45,486	70,486
2028	29,025	47,756	76,781	78,000	42,000	100,000	220,000	25,000	45,486	70,486
2029	29,025	47,756	76,781	78,000	42,000	100,000	220,000	25,000	45,486	70,486
2030	29,025	47,756	76,781	78,000	42,000	100,000	220,000	25,000	45,486	70,486
2031	29,025	47,756	76,781	78,000	42,000	100,000	220,000	25,000	45,486	70,486
2032	29,025	47,756	76,781	78,000	42,000	100,000	220,000	25,000	45,486	70,486
2033	29,025	47,756	76,781	78,000	42,000	100,000	220,000	25,000	45,486	70,486
2034	29,025	47,756	76,781	78,000	42,000	100,000	220,000	25,000	45,486	70,486
2035	29,025	47,756	76,781	78,000	42,000	100,000	220,000	25,000	45,486	70,486
Total	1,069,977	1,931,758	3,001,735	3,271,618	2,060,244	6,176,880	11,508,742	870,218	1,630,618	2,500,836

^aFor the period 1968 through 1987, deliveries are non-Project water pumped through an interim facility.

^bFor the period June 1962 through November 1967, deliveries were supplied by non-Project water.

Table B-5B
Annual Water Quantities Delivered to Each Contractor
(Acre-Feet)

Sheet 2 of 4

Calendar Year	San Joaquin Valley Area								Total (19)
	Dudley Ridge Water District (11)	Empire West Side Irrigation District (12)	Kern County Water Agency			County of Kings (16)	Oak Flat Water District (17)	Tulare Lake Basin Water Storage District (18)	
			Municipal and Industrial (13)	Agricultural (14)	Total (15)				
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	26,360	1,978	0	127,384	127,384	900	3,084	25,100	184,806
1969	31,375	56	0	141,265	141,265	100	3,016	9,923	185,735
1970	40,407	3,942	0	204,634	204,634	0	5,911	9,578	264,472
1971	41,053	5,990	0	360,151	360,151	3,700	7,212	122,485	540,591
1972	42,443	5,795	0	490,781	490,781	1,400	8,166	258,393	806,978
1973	22,057	3,000	0	341,469	341,469	1,500	3,214	50,464	421,704
1974	33,390	3,000	23,708	323,292	347,000	1,500	3,471	72,289	460,650
1975	40,555	3,000	14,529	396,291	410,820	1,600	3,576	86,258	545,809
1976	41,421	3,000	46,719	392,531	439,250	1,600	4,112	58,811	548,194
1977	11,153	738	27,882	163,425	191,307	1,530	1,472	18,081	224,281
1978	51,747	454	76,895	590,452	667,347	2,070	3,906	12,053	737,577
1979	38,544	1,739	62,997	683,049	746,046	2,000	6,149	155,121	949,599
1980	41,000	894	45,943	588,557	634,500	2,200	5,700	75,444	759,738
1981	41,000	5,859	75,758	615,642	691,400	2,300	4,300	83,438	828,297
1982	41,000	361	47,477	697,823	745,300	1,750	3,838	18,551	810,800
1983	42,900	0	6,854	587,653	594,507	3,550	3,822	1,006	645,785
1984	45,100	0	90,904	769,696	860,600	3,100	5,700	5,743	920,243
1985	46,251	5,197	88,515	800,381	888,896	3,400	5,433	109,791	1,058,968
1986	50,249	1,170	77,240	829,101	906,341	3,700	5,107	79,355	1,045,922
1987	46,288	2,525	117,174	852,731	969,905	4,000	5,625	93,084	1,121,427
1988	47,994	3,475	122,409	887,111	1,009,520	4,000	4,412	95,866	1,165,267
1989	57,049	3,000	123,896	1,022,166	1,146,062	4,000	6,091	127,950	1,344,152
1990	36,296	1,279	127,837	584,611	712,448	2,000	2,922	57,070	812,015
1991	927	221	33,122	8,965	42,087	0	141	2,180	45,556
1992	23,770	1,354	62,326	420,894	483,220	1,806	2,239	46,728	559,117
1993	50,618	2,741	128,316	1,039,614	1,167,930	4,000	4,858	124,468	1,354,615
1994	28,793	1,666	87,139	570,020	657,159	2,116	3,071	62,362	755,167
1995	60,686	1,631	135,415	1,016,114	1,151,529	4,000	5,169	101,869	1,324,884
1996	56,948	1,868	135,654	1,049,409	1,185,063	4,000	4,904	236,875	1,489,658
1997	71,308	0	120,708	987,451	1,108,159	0	5,238	22,369	1,207,074
1998	55,650	542	89,765	768,825	858,590	15	4,401	20,677	939,875
1999	59,697	3,176	138,153	1,039,985	1,178,138	4,000	4,871	289,735	1,539,617
2000	61,202	1,799	119,538	1,071,870	1,191,408	3,600	4,616	208,294	1,470,919
2001	37,091	1,360	537,694	64,378	602,072	1,200	1,833	75,287	718,843
2002	53,370	3,000	123,200	880,349	1,003,549	4,000	5,700	118,500	1,188,119
2003	53,370	3,000	121,600	900,130	1,021,730	4,000	5,700	118,500	1,206,300
2004	53,370	3,000	121,600	880,130	1,001,730	4,000	5,700	118,500	1,186,300
2005	53,370	3,000	121,600	830,630	952,230	4,000	5,700	118,500	1,136,800
2006	53,370	3,000	121,600	865,930	987,530	4,000	5,700	118,500	1,172,100
2007	53,370	3,000	121,600	859,830	981,430	4,000	5,700	118,500	1,166,000
2008	53,370	3,000	117,200	900,130	1,017,330	4,000	5,700	118,500	1,201,900
2009	53,370	3,000	121,600	880,030	1,001,630	4,000	5,700	118,500	1,186,200
2010	53,370	3,000	121,600	900,130	1,021,730	4,000	5,700	118,500	1,206,300
2011	53,370	3,000	121,600	900,130	1,021,730	4,000	5,700	118,500	1,206,300
2012	53,370	3,000	121,600	900,130	1,021,730	4,000	5,700	118,500	1,206,300
2013	53,370	3,000	121,600	900,130	1,021,730	4,000	5,700	118,500	1,206,300
2014	53,370	3,000	121,600	900,130	1,021,730	4,000	5,700	118,500	1,206,300
2015	53,370	3,000	121,600	900,130	1,021,730	4,000	5,700	118,500	1,206,300
2016	53,370	3,000	121,600	900,130	1,021,730	4,000	5,700	118,500	1,206,300
2017	53,370	3,000	121,600	900,130	1,021,730	4,000	5,700	118,500	1,206,300
2018	53,370	3,000	121,600	900,130	1,021,730	4,000	5,700	118,500	1,206,300
2019	53,370	3,000	121,600	900,130	1,021,730	4,000	5,700	118,500	1,206,300
2020	53,370	3,000	121,600	900,130	1,021,730	4,000	5,700	118,500	1,206,300
2021	53,370	3,000	121,600	900,130	1,021,730	4,000	5,700	118,500	1,206,300
2022	53,370	3,000	121,600	900,130	1,021,730	4,000	5,700	118,500	1,206,300
2023	53,370	3,000	121,600	900,130	1,021,730	4,000	5,700	118,500	1,206,300
2024	53,370	3,000	121,600	900,130	1,021,730	4,000	5,700	118,500	1,206,300
2025	53,370	3,000	121,600	900,130	1,021,730	4,000	5,700	118,500	1,206,300
2026	53,370	3,000	121,600	900,130	1,021,730	4,000	5,700	118,500	1,206,300
2027	53,370	3,000	121,600	900,130	1,021,730	4,000	5,700	118,500	1,206,300
2028	53,370	3,000	121,600	900,130	1,021,730	4,000	5,700	118,500	1,206,300
2029	53,370	3,000	121,600	900,130	1,021,730	4,000	5,700	118,500	1,206,300
2030	53,370	3,000	121,600	900,130	1,021,730	4,000	5,700	118,500	1,206,300
2031	53,370	3,000	121,600	900,130	1,021,730	4,000	5,700	118,500	1,206,300
2032	53,370	3,000	121,600	900,130	1,021,730	4,000	5,700	118,500	1,206,300
2033	53,370	3,000	121,600	900,130	1,021,730	4,000	5,700	118,500	1,206,300
2034	53,370	3,000	121,600	900,130	1,021,730	4,000	5,700	118,500	1,206,300
2035	53,370	3,000	121,600	900,130	1,021,730	4,000	5,700	118,500	1,206,300
Total	3,236,902	174,810	6,896,167	50,888,260	57,784,427	212,637	341,380	6,845,698	68,595,854

Table B-5B
Annual Water Quantities Delivered to Each Contractor
(Acre-Feet)

Sheet 3 of 4

Calendar Year	Southern California Area									
	Antelope Valley-East Kern Water Agency (20)	Castaic Lake Water Agency ^c (21)	Coachella Valley Water District (22)	Crestline-Lake Arrowhead Water Agency (23)	Desert Water Agency (24)	Littlerock Creek Irrigation District (25)	Mojave Water Agency (26)	Palmdale Water District (27)	San Bernardino Valley Municipal Water District (28)	San Gabriel Valley Municipal Water District (29)
1962	0	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0	0	0	0
1967	0	0	0	0	0	0	0	0	0	0
1968	0	7,382	0	0	0	0	0	0	0	0
1969	0	9,970	0	0	0	0	0	0	0	0
1970	0	11,739	0	0	0	0	0	0	0	0
1971	0	12,490	0	0	0	0	0	0	0	0
1972	53	13,905	0	464	0	338	55	0	1,275	0
1973	20	9,418	5,800	389	9,000	290	0	0	32,426	0
1974	1,259	9,700	6,400	627	10,000	400	14	0	16,605	612
1975	8,068	10,700	7,000	825	11,000	520	0	0	13,865	5,450
1976	27,782	11,700	7,600	1,002	12,000	589	0	0	12,273	6,071
1977	11,202	5,075	0	1,109	0	111	80	0	24,833	8,996
1978	44,137	11,362	10,084	1,209	15,300	208	0	0	4,055	7,771
1979	60,493	19,145	10,063	1,260	15,000	133	4,000	0	18	290
1980	72,407	15,092	10,884	1,239	17,000	191	4,000	0	0	1,085
1981	79,375	18,461	12,105	1,485	19,000	1,270	4,000	0	16,021	3,619
1982	50,291	22,216	13,326	1,238	21,000	0	10,500	0	8,409	12,599
1983	32,961	22,135	14,547	911	23,000	38	0	0	5,994	734
1984	32,662	24,218	15,768	1,128	25,000	1	0	0	5,556	7,656
1985	37,064	24,500	16,989	1,422	27,000	0	0	1,558	7,390	5,028
1986	32,449	27,229	18,210	1,506	29,000	163	0	3,096	6,421	9,454
1987	34,089	27,988	19,431	1,849	31,500	1,085	17	5,379	18,751	10,630
1988	34,079	30,438	20,652	2,006	34,000	419	9	1,770	21,386	8,948
1989	45,280	36,364	21,873	2,170	36,500	971	200	9,009	20,782	12,839
1990	47,206	28,579	23,100	1,827	38,100	1,747	0	8,608	18,831	16,649
1991	9,568	4,562	6,930	849	11,430	522	3,423	3,914	3,661	5,399
1992	30,265	20,699	10,427	519	17,197	251	10,686	4,035	3,358	7,908
1993	43,102	23,039	23,100	439	38,100	734	11,514	7,761	4,361	14,397
1994	49,153	26,441	14,102	785	23,257	1,098	16,852	8,418	9,135	15,230
1995	47,286	27,233	23,100	409	38,100	480	8,722	6,961	696	12,922
1996	56,356	32,500	62,219	485	102,622	494	7,427	11,434	6,064	15,989
1997	62,393	27,712	68,340	651	69,990	444	10,374	11,861	9,654	18,175
1998	52,926	20,093	85,709	187	70,647	404	3,925	8,752	1,878	9,310
1999	69,073	32,899	50,480	1,132	58,100	342	8,144	13,278	12,874	21,729
2000	83,577	43,269	42,323	1,194	58,234	0	11,212	9,060	18,399	14,475
2001	61,330	29,178	11,039	1,740	14,749	690	8,500	10,147	30,780	8,640
2002	138,400	95,200	23,100	2,050	38,100	2,300	13,500	20,300	102,600	16,000
2003	138,400	95,200	23,100	2,150	38,100	2,300	18,500	21,300	102,600	18,000
2004	138,400	95,200	23,100	2,350	38,100	2,300	30,000	21,300	102,600	28,800
2005	138,400	95,200	23,100	2,550	38,100	2,300	35,000	21,300	102,600	28,800
2006	138,400	95,200	23,100	2,700	38,100	2,300	36,000	21,300	102,600	28,800
2007	138,400	95,200	23,100	2,850	38,100	2,300	37,000	21,300	102,600	28,800
2008	138,400	95,200	23,100	3,000	38,100	2,300	38,000	21,300	102,600	28,800
2009	138,400	95,200	23,100	3,200	38,100	2,300	39,000	21,300	102,600	28,800
2010	138,400	95,200	23,100	3,350	38,100	2,300	40,000	21,300	102,600	28,800
2011	138,400	95,200	23,100	3,550	38,100	2,300	42,000	21,300	102,600	28,800
2012	138,400	95,200	23,100	3,700	38,100	2,300	44,000	21,300	102,600	28,800
2013	138,400	95,200	23,100	3,900	38,100	2,300	46,000	21,300	102,600	28,800
2014	138,400	95,200	23,100	4,100	38,100	2,300	48,000	21,300	102,600	28,800
2015	138,400	95,200	23,100	4,300	38,100	2,300	50,000	21,300	102,600	28,800
2016	138,400	95,200	23,100	4,450	38,100	2,300	52,000	21,300	102,600	28,800
2017	138,400	95,200	23,100	4,600	38,100	2,300	54,000	21,300	102,600	28,800
2018	138,400	95,200	23,100	4,750	38,100	2,300	56,000	21,300	102,600	28,800
2019	138,400	95,200	23,100	4,900	38,100	2,300	58,000	21,300	102,600	28,800
2020	138,400	95,200	23,100	5,000	38,100	2,300	60,000	21,300	102,600	28,800
2021	138,400	95,200	23,100	5,150	38,100	2,300	63,000	21,300	102,600	28,800
2022	138,400	95,200	23,100	5,250	38,100	2,300	67,000	21,300	102,600	28,800
2023	138,400	95,200	23,100	5,350	38,100	2,300	70,000	21,300	102,600	28,800
2024	138,400	95,200	23,100	5,400	38,100	2,300	73,000	21,300	102,600	28,800
2025	138,400	95,200	23,100	5,450	38,100	2,300	75,800	21,300	102,600	28,800
2026	138,400	95,200	23,100	5,500	38,100	2,300	75,800	21,300	102,600	28,800
2027	138,400	95,200	23,100	5,550	38,100	2,300	75,800	21,300	102,600	28,800
2028	138,400	95,200	23,100	5,600	38,100	2,300	75,800	21,300	102,600	28,800
2029	138,400	95,200	23,100	5,650	38,100	2,300	75,800	21,300	102,600	28,800
2030	138,400	95,200	23,100	5,700	38,100	2,300	75,800	21,300	102,600	28,800
2031	138,400	95,200	23,100	5,725	38,100	2,300	75,800	21,300	102,600	28,800
2032	138,400	95,200	23,100	5,750	38,100	2,300	75,800	21,300	102,600	28,800
2033	138,400	95,200	23,100	5,775	38,100	2,300	75,800	21,300	102,600	28,800
2034	138,400	95,200	23,100	5,800	38,100	2,300	75,800	21,300	102,600	28,800
2035	138,400	95,200	23,100	5,800	38,100	2,300	75,800	21,300	102,600	28,800
Total	5,921,506	3,934,231	1,417,001	182,956	2,171,226	92,133	2,027,454	848,241	3,824,151	1,218,205

^c Devil's Den Water District merged with Castaic Lake Water Agency effective January 1, 1992.

Table B-5B
Annual Water Quantities Delivered to Each Contractor
(Acre-Feet)

Sheet 4 of 4

Calendar Year	Southern California Area (continued)				Feather River Area				South Bay Area Future Contractor (38)	Grand Total (39)
	San Geronio Pass Water Agency (30)	Metropolitan Water District of Southern California (31)	Ventura County Flood Control District (32)	Total (33)	City of Yuba City (34)	County of Butte (35)	Plumas County FC&WCD (36)	Total (37)		
1962	0	0	0	0	0	0	0	0	0	8,906
1963	0	0	0	0	0	0	0	0	0	12,645
1964	0	0	0	0	0	0	0	0	0	20,911
1965	0	0	0	0	0	0	0	0	0	34,026
1966	0	0	0	0	0	0	0	0	0	54,913
1967	0	0	0	0	0	0	0	0	0	56,763
1968	0	0	0	7,382	0	0	0	0	0	294,457
1969	0	0	0	9,970	0	0	0	0	0	268,104
1970	0	0	0	11,739	0	0	70	70	0	369,459
1971	0	0	0	12,490	0	192	64	256	0	654,442
1972	0	71,938	0	88,028	0	186	505	691	0	1,037,770
1973	0	159,883	0	217,226	0	53	679	732	0	737,532
1974	0	277,717	0	323,334	0	127	648	775	0	878,947
1975	0	526,491	0	583,919	0	253	405	658	0	1,230,830
1976	0	618,451	0	697,468	0	527	382	909	0	1,380,124
1977	0	189,755	0	241,161	0	706	303	1,009	0	582,381
1978	0	507,565	0	601,691	0	579	278	857	0	1,458,733
1979	0	477,074	0	572,476	0	302	329	631	0	1,666,457
1980	0	531,727	0	653,625	0	267	295	562	0	1,536,456
1981	0	795,846	0	951,182	0	221	355	576	0	1,918,563
1982	0	691,192	0	830,771	0	334	305	639	0	1,750,862
1983	0	343,521	0	443,841	0	325	262	587	0	1,187,156
1984	0	457,582	0	569,571	108	177	272	557	0	1,591,416
1985	0	683,625	0	804,576	62	308	254	624	0	1,990,295
1986	0	708,840	0	836,368	328	313	317	958	0	1,999,155
1987	0	712,424	0	863,143	88	459	452	999	0	2,131,608
1988	0	902,564	0	1,056,271	303	385	523	1,211	0	2,385,122
1989	0	1,156,698	0	1,342,686	403	300	486	1,189	0	2,853,747
1990	0	1,396,423	4,836	1,585,906	494	380	548	1,422	0	2,582,151
1991	0	391,447	988	442,693	265	328	420	1,013	0	549,113
1992	0	710,313	0	815,658	642	117	485	1,244	0	1,471,454
1993	0	652,190	0	818,737	746	256	444	1,446	0	2,315,235
1994	0	807,866	0	972,337	1,035	329	492	1,856	0	1,861,976
1995	0	436,042	0	601,951	910	203	308	1,421	0	2,031,423
1996	0	593,380	0	888,970	820	257	360	1,437	0	2,543,472
1997	0	721,810	1,850	1,003,254	1,005	185	231	1,421	0	2,405,444
1998	0	410,065	1,850	665,746	1,054	527	0	1,581	0	1,764,963
1999	0	852,617	1,850	1,122,518	1,096	286	0	1,382	0	2,896,961
2000	0	1,550,125	4,048	1,835,916	901	583	0	1,484	0	3,573,292
2001	200	930,978	3,000	1,110,971	2,880	1,050	662	4,592	0	1,978,111
2002	4,000	1,906,192	20,000	2,381,742	9,600	27,500	1,630	38,730	0	3,956,245
2003	5,000	1,927,588	20,000	2,412,238	9,600	27,500	1,690	38,790	0	4,007,151
2004	6,000	1,986,534	20,000	2,494,684	9,600	27,500	1,750	38,850	0	4,076,498
2005	6,500	2,011,500	20,000	2,525,350	9,600	27,500	1,810	38,910	0	4,058,149
2006	7,000	2,011,500	20,000	2,527,000	9,600	27,500	1,880	38,980	0	4,095,544
2007	7,500	2,011,500	20,000	2,528,650	9,600	27,500	1,950	39,050	0	4,094,417
2008	17,300	2,011,500	20,000	2,539,600	9,600	27,500	2,020	39,120	0	4,141,712
2009	17,300	2,011,500	20,000	2,540,800	9,600	27,500	2,090	39,190	0	4,127,657
2010	17,300	2,011,500	20,000	2,541,950	9,600	27,500	2,160	39,260	0	4,149,352
2011	17,300	2,011,500	20,000	2,544,150	9,600	27,500	2,240	39,340	0	4,152,007
2012	17,300	2,011,500	20,000	2,546,300	9,600	27,500	2,320	39,420	0	4,154,612
2013	17,300	2,011,500	20,000	2,548,500	9,600	27,500	2,410	39,510	0	4,157,227
2014	17,300	2,011,500	20,000	2,550,700	9,700	27,500	2,500	39,700	0	4,160,042
2015	17,300	2,011,500	20,000	2,552,900	9,600	27,500	2,600	39,700	0	4,162,967
2016	17,300	2,011,500	20,000	2,555,050	9,600	27,500	2,700	39,800	0	4,165,842
2017	17,300	2,011,500	20,000	2,557,200	9,600	27,500	2,700	39,800	0	4,168,617
2018	17,300	2,011,500	20,000	2,559,350	9,600	27,500	2,700	39,800	0	4,171,392
2019	17,300	2,011,500	20,000	2,561,500	9,600	27,500	2,700	39,800	0	4,174,167
2020	17,300	2,011,500	20,000	2,563,600	9,600	27,500	2,700	39,800	0	4,176,867
2021	17,300	2,011,500	20,000	2,566,750	9,600	27,500	2,700	39,800	0	4,180,117
2022	17,300	2,011,500	20,000	2,570,850	9,600	27,500	2,700	39,800	0	4,184,217
2023	17,300	2,011,500	20,000	2,573,950	9,600	27,500	2,700	39,800	0	4,187,317
2024	17,300	2,011,500	20,000	2,577,000	9,600	27,500	2,700	39,800	0	4,190,367
2025	17,300	2,011,500	20,000	2,579,850	9,600	27,500	2,700	39,800	0	4,193,217
2026	17,300	2,011,500	20,000	2,579,900	9,600	27,500	2,700	39,800	0	4,193,267
2027	17,300	2,011,500	20,000	2,579,950	9,600	27,500	2,700	39,800	0	4,193,317
2028	17,300	2,011,500	20,000	2,580,000	9,600	27,500	2,700	39,800	0	4,193,367
2029	17,300	2,011,500	20,000	2,580,050	9,600	27,500	2,700	39,800	0	4,193,417
2030	17,300	2,011,500	20,000	2,580,100	9,600	27,500	2,700	39,800	0	4,193,467
2031	17,300	2,011,500	20,000	2,580,125	9,600	27,500	2,700	39,800	0	4,193,492
2032	17,300	2,011,500	20,000	2,580,150	9,600	27,500	2,700	39,800	0	4,193,517
2033	17,300	2,011,500	20,000	2,580,175	9,600	27,500	2,700	39,800	0	4,193,542
2034	17,300	2,011,500	20,000	2,580,200	9,600	27,500	2,700	39,800	0	4,193,567
2035	17,300	2,011,500	20,000	2,580,200	9,600	27,500	2,700	39,800	0	4,193,567
Total	520,600	87,442,963	698,422	110,299,089	339,640	945,515	94,184	1,379,339	0	197,285,595

Table B-6

Annual Water Quantities Conveyed through Each Pumping and Power Recovery Plant of Project Transportation Facilities (Acre-Feet)

Sheet 1 of 9

Calendar Year	North Bay Aqueduct											
	Barker Slough Pumping Plant				Cordelia Pumping Plant Solano County Water Agency				Cordelia Pumping Plant Napa County FC&WCD			
	Initial Fill Water (1)	Operational Losses (2)	Water Supply Delivery (3)	Total (4)	Initial Fill Water (5)	Operational Losses (6)	Water Supply Delivery (7)	Total (8)	Initial Fill Water (9)	Operational Losses (10)	Water Supply Delivery ^a (11)	Total (12)
1961	0	0	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0	0	0	0	0	0
1967	0	0	0	0	0	0	0	0	0	0	0	0
1968	0	0	0	0	0	0	0	0	24	(10)	1,214	1,228
1969	0	0	0	0	0	0	0	0	0	2	2,687	2,689
1970	0	0	0	0	0	0	0	0	0	18	3,618	3,636
1971	0	0	0	0	0	0	0	0	0	4	2,521	2,525
1972	0	0	0	0	0	0	0	0	0	(10)	3,647	3,637
1973	0	0	0	0	0	0	0	0	0	1	3,792	3,793
1974	0	0	0	0	0	0	0	0	0	10	4,870	4,880
1975	0	0	0	0	0	0	0	0	0	10	6,840	6,850
1976	0	0	0	0	0	0	0	0	0	4	7,122	7,126
1977	0	0	0	0	0	0	0	0	0	2	8,226	8,228
1978	0	0	0	0	0	0	0	0	0	(6)	6,034	6,028
1979	0	0	0	0	0	0	0	0	0	1	6,561	6,562
1980	0	0	0	0	0	0	0	0	0	(3)	6,707	6,704
1981	0	0	0	0	0	0	0	0	0	8	9,001	9,009
1982	0	0	0	0	0	0	0	0	0	(8)	1,213	1,205
1983	0	0	0	0	0	0	0	0	0	(12)	2,287	2,275
1984	0	0	0	0	0	0	0	0	0	(15)	2,923	2,908
1985	0	0	0	0	0	0	0	0	0	13	4,039	4,052
1986	0	0	0	0	0	0	0	0	0	(4)	3,519	3,515
1987	0	0	0	0	0	0	0	0	0	0	7,693	7,693
1988	10	277	15,118	15,405	6	(6)	9,725	9,725	3	(3)	5,392	5,392
1989	10	277	23,451	23,738	6	(6)	17,246	17,246	3	(3)	6,195	6,195
1990	0	634	26,071	26,705	0	0	15,856	15,856	0	0	6,940	6,940
1991	0	667	8,352	9,019	0	124	3,855	3,979	0	198	1,380	1,578
1992	0	1,643	18,774	20,417	0	0	9,220	9,220	0	0	4,001	4,001
1993	0	1,153	34,466	35,619	0	0	14,471	14,471	0	0	5,286	5,286
1994	0	780	32,048	32,828	0	(6)	14,913	14,907	0	0	6,792	6,792
1995	0	908	26,527	27,435	0	0	15,893	15,893	0	0	5,182	5,182
1996	0	1,354	34,892	36,246	0	0	17,069	17,069	0	0	4,893	4,893
1997	0	1,422	37,871	39,293	0	0	17,501	17,501	0	0	4,341	4,341
1998	0	1,343	35,125	36,468	0	0	18,204	18,204	0	0	5,359	5,359
1999	0	2,522	40,057	42,579	0	0	19,562	19,562	0	0	5,304	5,304
2000	0	1,853	41,933	43,786	0	(88)	21,525	21,437	0	88	4,918	5,006
2001	0	51	25,107	25,158	0	0	8,231	8,231	0	5	8,555	8,560
2002	0	51	64,518	64,569	0	0	18,150	18,150	0	5	21,100	21,105
2003	0	51	65,353	65,404	0	0	18,150	18,150	0	5	21,475	21,480
2004	0	51	66,178	66,229	0	0	18,380	18,380	0	5	21,850	21,855
2005	0	51	66,603	66,654	0	0	18,380	18,380	0	5	22,225	22,230
2006	0	51	66,978	67,029	0	0	18,430	18,430	0	5	22,550	22,555
2007	0	51	70,231	70,282	0	0	18,480	18,480	0	5	22,875	22,880
2008	0	51	70,606	70,657	0	0	18,530	18,530	0	5	23,200	23,205
2009	0	51	70,981	71,032	0	0	18,580	18,580	0	5	23,525	23,530
2010	0	51	71,356	71,407	0	0	18,630	18,630	0	5	23,850	23,855
2011	0	51	71,731	71,782	0	0	18,680	18,680	0	5	24,175	24,180
2012	0	51	72,106	72,157	0	0	18,730	18,730	0	5	24,500	24,505
2013	0	51	72,431	72,482	0	0	18,780	18,780	0	5	24,775	24,780
2014	0	51	72,856	72,907	0	0	18,830	18,830	0	5	25,150	25,155
2015	0	51	73,581	73,632	0	0	18,880	18,880	0	5	25,825	25,830
2016	0	51	74,206	74,257	0	0	18,880	18,880	0	5	26,450	26,455
2017	0	51	74,831	74,882	0	0	18,880	18,880	0	5	27,075	27,080
2018	0	51	75,456	75,507	0	0	18,880	18,880	0	5	27,700	27,705
2019	0	51	76,081	76,132	0	0	18,880	18,880	0	5	28,325	28,330
2020	0	51	76,681	76,732	0	0	18,880	18,880	0	5	28,925	28,930
2021	0	51	76,781	76,832	0	0	18,880	18,880	0	5	29,025	29,030
2022	0	51	76,781	76,832	0	0	18,880	18,880	0	5	29,025	29,030
2023	0	51	76,781	76,832	0	0	18,880	18,880	0	5	29,025	29,030
2024	0	51	76,781	76,832	0	0	18,880	18,880	0	5	29,025	29,030
2025	0	51	76,781	76,832	0	0	18,880	18,880	0	5	29,025	29,030
2026	0	51	76,781	76,832	0	0	18,880	18,880	0	5	29,025	29,030
2027	0	51	76,781	76,832	0	0	18,880	18,880	0	5	29,025	29,030
2028	0	51	76,781	76,832	0	0	18,880	18,880	0	5	29,025	29,030
2029	0	51	76,781	76,832	0	0	18,880	18,880	0	5	29,025	29,030
2030	0	51	76,781	76,832	0	0	18,880	18,880	0	5	29,025	29,030
2031	0	51	76,781	76,832	0	0	18,880	18,880	0	5	29,025	29,030
2032	0	51	76,781	76,832	0	0	18,880	18,880	0	5	29,025	29,030
2033	0	51	76,781	76,832	0	0	18,880	18,880	0	5	29,025	29,030
2034	0	51	76,781	76,832	0	0	18,880	18,880	0	5	29,025	29,030
2035	0	51	76,781	76,832	0	0	18,880	18,880	0	5	29,025	29,030

^aFor the period 1968 through 1987, deliveries are non-SWP water pumped through an interim facility.

Table B-6
**Annual Water Quantities Conveyed through Each Pumping
and Power Recovery Plant of Project Transportation Facilities**
(Acre-Feet)

Sheet 2 of 9

Calendar Year	South Bay Aqueduct						California Aqueduct								
	South Bay Pumping Plant						North San Joaquin Division								
							Banks Pumping Plant								
	Initial Fill Water (13)	Opera- tional Losses (14)	Reservoir Storage Changes (15)	Deliveries		Total (18)	Transportation Water					Conser- vation Water (25)	Total (26)		
				Water Supply ^b (16)	Recreation (17)		Initial Fill Water (19)	Opera- tional Losses (20)	Reservoir Storage Changes (21)	Deliveries				Total (24)	
											Water Supply (22)	Recreation (23)			
1961	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1962	9	272	0	8,906	0	9,187	0	0	0	0	0	0	0	0	0
1963	71	185	0	12,645	0	12,901	0	0	0	0	0	0	0	0	0
1964	171	152	0	20,911	0	21,234	0	0	0	0	0	0	0	0	0
1965	93	729	0	34,026	0	34,848	0	0	0	0	0	0	0	0	0
1966	0	1,746	0	54,913	0	56,659	0	0	0	0	0	0	0	0	0
1967	0	1,677	0	56,763	0	58,440	5,746	1,183	0	11,538	0	18,467	2,957	21,424	
1968	0	1,847	0	101,055	0	102,902	11,079	74,464	0	293,243	0	378,786	531,275	910,061	
1969	3,449	2,668	0	69,712	0	75,829	7,336	44,287	0	265,417	0	317,040	531,185	848,225	
1970	16,279	1,086	(5,355)	89,560	0	101,570	23,947	20,767	(5,355)	365,771	0	405,130	(12,995)	392,135	
1971	0	1,815	8,854	98,584	0	109,253	23,207	(10,754)	8,854	651,665	8	672,980	7,708	680,688	
1972	0	3,557	2,273	138,426	0	144,256	145,066	9,057	(4,285)	1,033,432	6,489	1,189,759	48,300	1,238,059	
1973	0	(33)	(1,510)	94,078	0	92,535	214,941	(4,951)	2,902	733,008	1,155	947,055	55,846	1,002,901	
1974	0	1,287	(10,056)	89,318	0	80,549	247,894	(11,526)	(32,510)	873,302	2,118	1,079,278	54,683	1,133,961	
1975	0	320	8,550	93,604	0	102,474	110,149	(8,092)	16,101	1,223,332	3,377	1,344,867	(102,625)	1,242,242	
1976	0	2,431	1,391	126,431	141	130,394	67,834	5,443	(244,124)	1,372,093	1,745	1,202,991	(442,348)	760,643	
1977	0	2,866	2,685	107,704	112	113,367	0	39,897	(157,543)	573,146	1,111	456,611	(13,507)	443,104	
1978	0	2,165	(11,249)	112,574	126	103,616	67,457	(36,898)	35,129	1,451,842	1,177	1,518,707	752,075	2,270,782	
1979	0	2,401	1,069	122,190	89	125,749	17,397	60,958	(32,307)	1,659,265	1,398	1,706,711	(112,053)	1,594,658	
1980	0	1,758	(6,563)	115,824	123	111,142	3,159	58,484	(275,538)	1,529,187	2,131	1,317,423	186,601	1,504,024	
1981	0	2,627	13,742	129,507	121	145,997	46,060	85,350	40,536	1,908,986	4,974	2,085,906	(931,878)	1,154,028	
1982	0	2,344	(23,928)	107,439	129	85,984	5,979	61,556	99,897	1,743,145	4,646	1,915,223	347,983	2,263,206	
1983	0	2,151	(22,886)	94,656	132	74,053	6,071	47,022	(310,477)	1,184,282	7,853	934,751	835,771	1,770,522	
1984	0	2,088	8,442	98,122	158	108,810	38,649	97,143	(108,548)	1,587,936	5,874	1,621,054	21,875	1,642,929	
1985	0	2,817	(1,607)	122,088	152	123,450	0	110,469	137,783	1,985,632	5,452	2,239,336	(110,569)	2,128,767	
1986	0	2,299	(1,850)	110,988	130	111,567	0	90,799	20,177	1,993,278	3,865	2,108,119	200,298	2,308,417	
1987	0	2,625	(584)	136,796	137	138,974	0	91,427	(23,116)	2,121,366	7,672	2,197,349	(458,725)	1,738,624	
1988	0	2,884	(698)	147,255	142	149,583	0	107,249	(35,484)	2,368,793	4,889	2,445,447	(303,583)	2,141,864	
1989	0	2,884	(698)	142,269	142	144,597	0	107,249	(35,484)	2,829,107	4,889	2,905,761	(303,583)	2,602,178	
1990	0	2,763	1,982	156,537	168	161,450	0	120,791	(318,420)	2,554,658	9,262	2,366,291	(218,200)	2,148,091	
1991	0	2,637	(4,532)	50,259	150	48,514	0	80,106	265,223	539,748	4,879	889,956	210,643	1,100,599	
1992	0	2,881	756	76,661	147	80,445	0	91,391	(18,371)	1,451,436	2,605	1,527,061	(138,456)	1,388,605	
1993	0	1,940	(20,051)	105,971	143	88,003	0	149,372	(273,789)	2,279,323	2,609	2,157,515	849,249	3,006,764	
1994	0	1,981	1,714	100,568	168	104,431	0	148,714	(28,269)	1,828,072	3,803	1,952,320	(417,358)	1,534,962	
1995	0	1,188	(12,333)	76,640	146	65,641	0	173,074	(334,999)	2,003,475	2,533	1,844,083	230,553	2,074,636	
1996	0	981	(1,990)	77,215	150	76,356	0	123,502	78,123	2,507,143	3,902	2,712,670	288,576	3,001,246	
1997	0	1,575	5,016	102,186	155	108,932	527	135,106	(98,334)	2,366,152	2,594	2,406,045	(50,000)	2,356,045	
1998	0	1,551	3,595	70,876	114	76,136	0	91,319	(346,039)	1,728,257	2,107	1,475,644	120,886	1,596,530	
1999	0	2,166	12,313	100,497	139	115,115	0	135,809	(17,569)	2,855,522	4,301	2,978,063	(307,839)	2,670,224	
2000	0	942	(7,436)	135,287	145	128,938	0	78,467	3,746	3,529,875	4,361	3,616,449	(190,240)	3,426,209	
2001	0	3,296	(1,066)	89,049	400	91,679	0	201,961	57,102	1,948,412	8,660	2,216,135	0	2,216,135	
2002	0	3,193	36	183,599	400	187,228	0	110,854	(108,363)	3,852,997	8,660	3,864,148	0	3,864,148	
2003	0	3,193	36	194,984	400	198,613	0	111,145	(7,925)	3,903,008	8,660	4,014,888	0	4,014,888	
2004	0	3,439	0	202,363	400	206,202	0	129,916	76,561	3,971,470	8,660	4,186,607	195,999	4,382,606	
2005	0	3,351	0	203,000	400	206,751	0	128,606	(59,387)	3,952,636	8,660	4,030,515	(121,668)	3,908,847	
2006	0	3,351	0	203,000	400	206,751	0	127,993	(36,988)	3,989,586	8,660	4,089,251	(253,589)	3,835,662	
2007	0	3,351	0	203,000	400	206,751	0	129,168	22,514	3,985,136	8,660	4,145,478	(77,232)	4,068,246	
2008	0	3,351	0	203,000	400	206,751	0	128,939	6,985	4,031,986	8,660	4,176,570	222,755	4,399,325	
2009	0	3,351	0	203,000	400	206,751	0	129,619	(15,186)	4,017,486	8,660	4,140,579	(140,708)	3,999,871	
2010	0	3,351	0	203,000	400	206,751	0	128,523	4,288	4,038,736	8,660	4,180,207	182,970	4,363,177	
2011	0	3,351	0	203,000	400	206,751	0	128,364	64,678	4,040,936	8,660	4,242,638	137,242	4,379,880	
2012	0	3,351	0	203,000	400	206,751	0	128,100	(67,943)	4,043,086	8,660	4,111,903	(260,827)	3,851,076	
2013	0	3,351	0	203,000	400	206,751	0	128,264	9,749	4,045,286	8,660	4,191,959	145,525	4,337,484	
2014	0	3,351	0	203,000	400	206,751	0	130,280	16,625	4,047,486	8,660	4,203,051	(186,678)	4,016,373	
2015	0	3,351	0	203,000	400	206,751	0	130,445	32,003	4,049,686	8,660	4,220,794	(31,516)	4,189,278	
2016	0	3,351	0	203,000	400	206,751	0	128,415	(28,401)	4,051,836	8,660	4,160,510	205,134	4,365,644	
2017	0	3,351	0	203,000	400	206,751	0	128,602	61,309	4,053,986	8,660	4,252,557	119,885	4,372,442	
2018	0	3,351	0	203,000	400	206,751	0	128,369	(80,817)	4,056,136	8,660	4,112,348	(194,534)	3,917,814	
2019	0	3,351	0	203,000	400	206,751	0	128,613	50,179	4,058,286	8,660	4,245,738	77,224	4,322,962	
2020	0	3,351	0	203,000	400	206,751	0	128,690	(366)	4,060,386	8,660	4,197,370	(8,687)	4,188,683	
2021	0	3,351	0	203,000	400	206,751	0	128,769	10,725	4,063,536	8,660	4,211,690	(1,095)	4,210,595	
2022	0	3,351	0	203,000	400	206,751	0	128,846	(3,483)	4,067,636					

Table B-6
**Annual Water Quantities Conveyed through Each Pumping
and Power Recovery Plant of Project Transportation Facilities**
(Acre-Feet)

Sheet 3 of 9

Calendar Year	California Aqueduct (continued)											
	San Luis Division						South San Joaquin Division					
	Dos Amigos Pumping Plant						Buena Vista Pumping Plant					
	Initial Fill Water (27)	Operational Losses (28)	Reservoir Storage Changes (29)	Deliveries		Total (32)	Initial Fill Water (33)	Operational Losses (34)	Reservoir Storage Changes (35)	Deliveries		Total (38)
Water Supply (30)				Recreation (31)	Water Supply (36)					Recreation (37)		
1961	0	0	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0	0	0	0	0	0
1967	0	0	0	0	0	0	0	0	0	0	0	0
1968	11,079	25,126	0	189,104	0	225,309	0	0	0	0	0	0
1969	3,887	9,922	0	192,689	0	206,498	0	0	0	0	0	0
1970	7,668	1,901	0	270,300	0	279,869	4,779	1,012	0	3	0	5,794
1971	23,207	(12,030)	0	545,869	0	557,046	7,853	8,399	0	101,512	0	117,764
1972	145,066	(6,635)	(6,558)	886,840	6,481	1,025,194	100,274	20,044	(6,558)	223,626	6,481	343,867
1973	214,941	(6,778)	1,329	635,716	1,147	846,355	204,638	35,695	1,329	311,096	1,147	553,905
1974	247,894	(16,765)	(15,295)	780,513	2,108	998,455	237,554	19,672	(15,295)	388,949	2,108	632,988
1975	110,149	(12,144)	(693)	1,126,152	3,358	1,226,822	103,352	26,342	(693)	672,531	3,358	804,890
1976	67,834	(456)	(152,171)	1,241,550	1,581	1,158,338	61,122	29,428	(152,171)	785,055	1,581	725,015
1977	0	26,359	(116,219)	463,970	737	374,847	0	25,173	(116,219)	271,944	560	181,458
1978	67,457	1,905	79,308	1,335,362	680	1,484,712	65,027	17,751	121,904	762,043	674	967,399
1979	17,397	33,884	(51,299)	1,530,926	685	1,531,593	12,302	46,157	(51,299)	737,714	502	745,376
1980	3,159	34,391	(272,825)	1,407,663	1,514	1,173,902	0	49,025	(134,009)	778,059	1,262	694,337
1981	46,060	36,962	23,359	1,775,179	4,348	1,885,908	0	38,942	23,359	1,077,322	4,112	1,143,735
1982	5,979	57,146	116,086	1,631,868	4,205	1,815,284	0	29,059	117,174	990,863	4,045	1,141,141
1983	6,071	63,583	(101,155)	1,085,804	7,475	1,061,778	0	40,205	(101,155)	593,920	7,291	540,261
1984	38,649	109,263	(112,744)	1,484,114	5,391	1,524,673	0	38,487	(114,984)	781,955	5,244	710,702
1985	0	86,772	138,898	1,858,111	4,936	2,088,717	0	42,838	139,689	992,606	4,804	1,179,937
1986	0	51,963	19,989	1,877,183	3,426	1,952,561	0	36,751	37,546	1,014,294	3,285	1,091,876
1987	0	64,827	(25,707)	1,978,945	7,121	2,025,186	0	30,495	(25,522)	1,027,361	6,937	1,039,271
1988	0	72,679	(34,592)	2,217,126	4,490	2,259,703	0	38,804	(29,747)	1,244,196	4,360	1,257,613
1989	0	72,679	(34,592)	2,679,845	4,490	2,722,422	0	38,804	(29,747)	1,532,625	4,360	1,546,042
1990	0	118,316	(15,942)	2,394,999	8,922	2,506,295	0	46,855	(14,959)	1,769,991	8,879	1,810,766
1991	0	92,227	9,325	489,348	4,605	595,505	0	39,274	96,506	446,916	4,560	587,256
1992	0	118,796	(225,603)	1,372,536	2,079	1,267,808	0	28,138	(98,271)	920,978	1,995	852,840
1993	0	136,432	(220,537)	2,170,494	1,864	2,088,253	0	14,186	(128,363)	908,200	1,676	795,699
1994	0	152,414	(78,957)	1,724,433	3,098	1,800,988	0	35,083	(88,211)	1,107,122	2,918	1,056,912
1995	0	137,937	(12,473)	1,921,666	1,669	2,048,799	0	33,963	(16,431)	706,742	1,669	725,943
1996	0	45,591	14,927	2,425,024	2,998	2,488,540	0	31,304	15,438	988,612	2,928	1,038,282
1997	527	107,033	(66,814)	2,247,628	2,090	2,290,464	0	42,670	40,852	1,054,461	2,076	1,140,059
1998	0	95,185	(338,076)	1,664,080	1,589	1,422,778	0	41,910	(106,487)	753,731	1,585	690,739
1999	0	95,262	(2,778)	2,750,154	3,285	2,845,923	0	48,502	(2,807)	1,131,826	3,279	1,180,800
2000	0	125,056	11,514	3,317,692	4,216	3,458,478	0	32,999	11,485	1,824,622	4,216	1,873,322
2001	0	165,136	10,844	1,857,530	7,210	2,040,720	0	135,674	10,844	1,244,377	7,010	1,397,905
2002	0	75,292	(376)	3,663,698	7,210	3,745,824	0	45,830	(376)	2,316,242	7,010	2,368,706
2003	0	75,292	(376)	3,702,324	7,210	3,784,450	0	45,830	(376)	2,346,738	7,010	2,399,202
2004	0	71,062	76,561	3,763,407	7,210	3,918,240	0	41,600	76,561	2,459,184	7,010	2,584,355
2005	0	70,341	(59,387)	3,743,936	7,210	3,762,100	0	40,879	(59,387)	2,440,350	7,010	2,428,852
2006	0	69,959	(36,988)	3,780,886	7,210	3,821,067	0	40,497	(36,988)	2,477,300	7,010	2,487,819
2007	0	70,076	22,514	3,776,436	7,210	3,876,236	0	40,614	22,514	2,472,850	7,010	2,542,988
2008	0	70,205	6,985	3,823,286	7,210	3,907,686	0	40,743	6,985	2,519,700	7,010	2,574,438
2009	0	70,102	(15,186)	3,808,786	7,210	3,870,912	0	40,640	(15,186)	2,505,200	7,010	2,537,664
2010	0	70,198	4,288	3,830,036	7,210	3,911,732	0	40,736	4,288	2,526,450	7,010	2,578,484
2011	0	70,389	64,678	3,832,236	7,210	3,974,513	0	40,927	64,678	2,536,825	7,010	2,649,440
2012	0	70,279	(67,943)	3,834,386	7,210	3,843,932	0	40,817	(67,943)	2,540,800	7,010	2,520,684
2013	0	70,217	9,749	3,836,586	7,210	3,923,762	0	40,755	9,749	2,543,000	7,010	2,600,514
2014	0	70,525	16,625	3,838,786	7,210	3,933,146	0	41,063	16,625	2,545,200	7,010	2,609,898
2015	0	70,654	32,003	3,840,986	7,210	3,950,853	0	41,192	32,003	2,547,400	7,010	2,627,605
2016	0	70,354	(28,401)	3,843,136	7,210	3,892,299	0	40,892	(28,401)	2,549,550	7,010	2,569,051
2017	0	70,586	61,309	3,845,286	7,210	3,984,391	0	41,124	61,309	2,551,700	7,010	2,661,143
2018	0	70,740	(80,817)	3,847,436	7,210	3,844,569	0	41,278	(80,817)	2,553,850	7,010	2,521,321
2019	0	70,564	50,179	3,849,586	7,210	3,977,539	0	41,102	50,179	2,556,000	7,010	2,654,291
2020	0	70,628	(366)	3,851,686	7,210	3,929,158	0	41,166	(366)	2,558,100	7,010	2,605,910
2021	0	70,711	10,725	3,854,836	7,210	3,943,482	0	41,249	10,725	2,561,250	7,010	2,620,234
2022	0	70,705	(3,483)	3,858,936	7,210	3,933,368	0	41,243	(3,483)	2,565,350	7,010	2,610,120
2023	0	70,696	(18,971)	3,862,036	7,210	3,920,971	0	41,234	(18,971)	2,568,450	7,010	2,597,723
2024	0	70,575	11,289	3,865,086	7,210	3,954,160	0	41,113	11,289	2,571,500	7,010	2,630,912
2025	0	70,638	(12,518)	3,867,936	7,210	3,933,266	0	41,176	(12,518)	2,574,350	7,010	2,610,018
2026	0	70,650	24,308	3,867,986	7,210	3,970,154	0	41,188	24,308	2,574,400	7,010	2,646,906
2027	0	70,563	(17,799)	3,868,036	7,210	3,928,010	0	41,101	(17,799)	2,574,450	7,010	2,604,762
2028	0	70,703	12,291	3,868,086	7,210	3,958,290	0	41,241	12,291	2,574,500	7,010	2,635,042
2029	0	70,630	(9,046)	3,868,136	7,210	3,936,930	0	41,168	(9,046)	2,574,550	7,010	2,613,682
2030	0	70,694	20,756	3,868,186	7,210	3,966,846	0	41,232	20,756	2,574,600	7,010	2,643,598
2031	0	70,566	(97,726)	3,868,211	7,210	3,848,261	0	41,104	(97,726)	2,574,625	7,010	2,525,013
2032	0	70,168	84,999	3,868,236	7,210	4,030,613	0	40,706	84,999	2,574,650	7,010	2,707,365
2033	0	70,373	(94,652)	3,868,261	7,210	3,851,192	0	40,911	(94,652)	2,574,675	7,010	2,527,944
2034	0	69,865	69,593	3,868,286	7,210	4,014,954	0	40,403	69,593	2,574,700	7,010	2,691,706
2035	0	69,205	(242,659)	3,868,286	7,210	3,702,042	0	39,743	(242,659)	2,574,700	7,010	2,378,794

Table B-6

Annual Water Quantities Conveyed through Each Pumping and Power Recovery Plant of Project Transportation Facilities

(Acre-Feet)

Sheet 4 of 9

Calendar Year	California Aqueduct (continued)											
	South San Joaquin Division (continued)											
	Teerink Pumping Plant						Chrisman Pumping Plant					
	Initial Fill Water (39)	Operational Losses (40)	Reservoir Storage Changes (41)	Deliveries		Total (44)	Initial Fill Water (45)	Operational Losses (46)	Reservoir Storage Changes (47)	Deliveries		Total (50)
				Water Supply (42)	Recreation (43)					Water Supply (48)	Recreation (49)	
1961	0	0	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0	0	0	0	0	0
1967	0	0	0	0	0	0	0	0	0	0	0	0
1968	0	0	0	0	0	0	0	0	0	0	0	0
1969	0	0	0	0	0	0	0	0	0	0	0	0
1970	198	2	0	0	0	200	0	0	0	0	0	0
1971	7,533	(112)	0	3,552	0	10,973	7,366	(159)	0	0	0	7,207
1972	100,274	12,765	(6,558)	84,955	6,481	197,917	100,274	13,160	(6,558)	78,891	6,481	192,248
1973	204,638	21,543	1,329	229,685	1,147	458,342	204,638	32,414	1,329	209,769	1,147	449,297
1974	237,554	11,843	(15,295)	336,198	2,108	572,408	237,554	17,655	(15,295)	318,198	2,108	560,220
1975	103,352	19,763	(693)	621,706	3,358	747,486	103,352	25,326	(693)	586,286	3,358	717,629
1976	61,122	18,552	(152,171)	740,486	1,581	669,570	61,122	21,468	(152,171)	700,935	1,581	632,935
1977	0	16,415	(116,219)	246,349	560	147,105	0	15,698	(116,219)	240,191	560	140,230
1978	65,027	28,820	121,904	631,121	674	847,546	65,027	26,705	121,904	599,973	674	814,283
1979	12,302	50,663	(51,299)	625,561	502	637,729	12,302	50,580	(51,299)	586,959	502	599,044
1980	0	48,825	(134,009)	696,405	1,262	612,483	0	58,085	(134,009)	658,588	1,262	583,926
1981	0	51,600	23,359	998,307	4,112	1,077,378	0	48,844	23,359	959,274	4,112	1,035,589
1982	0	44,353	117,332	878,486	4,045	1,044,216	0	33,541	117,277	830,704	4,045	985,567
1983	0	43,961	(101,155)	487,915	7,291	438,012	0	34,698	(101,155)	450,489	7,291	391,323
1984	0	45,999	(115,088)	632,262	5,244	568,417	0	33,132	(115,092)	582,414	5,244	505,698
1985	0	50,106	139,973	854,684	4,804	1,049,567	0	54,831	139,954	810,606	4,804	1,010,195
1986	0	38,747	37,546	882,300	3,285	961,878	0	41,421	37,546	839,839	3,285	922,091
1987	0	47,815	(25,522)	897,905	6,937	927,135	0	33,195	(25,522)	863,157	6,937	877,767
1988	0	53,815	(29,747)	1,097,643	4,360	1,126,071	0	39,775	(29,747)	1,056,649	4,360	1,070,037
1989	0	53,815	(29,747)	1,382,599	4,360	1,411,027	0	39,775	(29,747)	1,339,358	4,360	1,353,746
1990	0	66,858	(14,959)	1,627,246	8,879	1,688,024	0	56,653	(14,959)	1,590,893	8,879	1,641,466
1991	0	40,564	105,176	446,148	4,560	596,448	0	34,016	105,176	446,148	4,560	589,900
1992	0	31,820	(92,123)	844,376	1,995	786,068	0	34,477	(92,123)	820,133	1,995	764,482
1993	0	27,158	(127,738)	799,143	1,676	700,239	0	28,614	(127,738)	771,146	1,676	673,698
1994	0	50,802	(88,211)	1,007,214	2,918	972,723	0	57,203	(88,211)	977,703	2,918	949,613
1995	0	48,705	(16,431)	586,829	1,669	620,772	0	36,309	(16,431)	560,695	1,669	582,242
1996	0	58,437	15,438	836,819	2,928	913,622	0	43,710	15,438	800,633	2,928	862,709
1997	0	73,656	40,852	918,124	2,076	1,034,708	0	62,275	40,852	881,843	2,076	987,046
1998	0	61,137	(106,487)	656,796	1,585	613,031	0	47,523	(106,487)	628,084	1,585	570,705
1999	0	77,334	(2,807)	1,011,608	3,279	1,089,414	0	55,514	(2,807)	974,807	3,279	1,030,793
2000	0	82,569	11,485	1,701,057	4,216	1,799,327	0	45,175	11,485	1,660,994	4,216	1,721,870
2001	0	132,044	10,844	1,137,680	7,010	1,287,578	0	131,794	10,844	1,126,311	7,010	1,275,959
2002	0	42,200	(376)	2,186,542	7,010	2,235,376	0	41,950	(376)	2,146,242	7,010	2,194,826
2003	0	42,200	(376)	2,217,038	7,010	2,265,872	0	41,950	(376)	2,176,738	7,010	2,225,322
2004	0	37,970	76,561	2,349,484	7,010	2,471,025	0	37,720	76,561	2,309,184	7,010	2,430,475
2005	0	37,249	(59,387)	2,380,150	7,010	2,365,022	0	36,999	(59,387)	2,339,850	7,010	2,324,472
2006	0	36,867	(36,988)	2,381,800	7,010	2,388,689	0	36,617	(36,988)	2,341,500	7,010	2,348,139
2007	0	36,984	22,514	2,343,150	7,010	2,409,658	0	36,734	22,514	2,343,150	7,010	2,409,408
2008	0	37,113	6,985	2,390,000	7,010	2,441,108	0	36,863	6,985	2,349,700	7,010	2,400,558
2009	0	37,010	(15,186)	2,375,500	7,010	2,404,334	0	36,760	(15,186)	2,335,200	7,010	2,363,784
2010	0	37,106	4,288	2,396,750	7,010	2,445,154	0	36,856	4,288	2,356,450	7,010	2,404,604
2011	0	37,297	64,678	2,407,125	7,010	2,516,110	0	37,047	64,678	2,366,825	7,010	2,475,560
2012	0	37,187	(67,943)	2,411,100	7,010	2,387,354	0	36,937	(67,943)	2,370,800	7,010	2,346,804
2013	0	37,125	9,749	2,413,300	7,010	2,467,184	0	36,875	9,749	2,373,000	7,010	2,426,634
2014	0	37,433	16,625	2,415,500	7,010	2,476,568	0	37,183	16,625	2,375,200	7,010	2,436,018
2015	0	37,562	32,003	2,417,700	7,010	2,494,275	0	37,312	32,003	2,377,400	7,010	2,453,725
2016	0	37,262	(28,401)	2,419,850	7,010	2,435,721	0	37,012	(28,401)	2,379,550	7,010	2,395,171
2017	0	37,494	61,309	2,422,000	7,010	2,527,813	0	37,244	61,309	2,381,700	7,010	2,487,263
2018	0	37,648	(80,817)	2,424,150	7,010	2,387,991	0	37,398	(80,817)	2,383,850	7,010	2,347,441
2019	0	37,472	50,179	2,426,300	7,010	2,520,961	0	37,222	50,179	2,386,000	7,010	2,480,411
2020	0	37,536	(366)	2,428,400	7,010	2,472,580	0	37,286	(366)	2,388,100	7,010	2,432,030
2021	0	37,619	10,725	2,431,550	7,010	2,486,904	0	37,369	10,725	2,391,250	7,010	2,446,354
2022	0	37,613	(3,483)	2,435,650	7,010	2,476,790	0	37,363	(3,483)	2,395,350	7,010	2,436,240
2023	0	37,604	(18,971)	2,438,750	7,010	2,464,393	0	37,354	(18,971)	2,398,450	7,010	2,423,843
2024	0	37,483	11,289	2,441,800	7,010	2,497,582	0	37,233	11,289	2,401,500	7,010	2,457,032
2025	0	37,546	(12,518)	2,444,650	7,010	2,476,688	0	37,296	(12,518)	2,404,350	7,010	2,436,138
2026	0	37,558	24,308	2,444,700	7,010	2,513,576	0	37,308	24,308	2,404,400	7,010	2,473,026
2027	0	37,471	(17,799)	2,444,750	7,010	2,471,432	0	37,221	(17,799)	2,404,450	7,010	2,430,882
2028	0	37,611	12,291	2,444,800	7,010	2,501,712	0	37,361	12,291	2,404,500	7,010	2,461,162
2029	0	37,538	(9,046)	2,444,850	7,010	2,480,352	0	37,288	(9,046)	2,404,550	7,010	2,439,802
2030	0	37,602	20,756	2,444,900	7,010	2,510,268	0	37,352	20,756	2,404,600	7,010	2,469,718
2031	0	37,474	(97,726)	2,444,925	7,010	2,391,683	0	37,224	(97,726)	2,404,625	7,010	2,351,133
2032	0	37,076	84,999	2,444,950	7,010	2,574,035	0	36,826	84,999	2,404,650	7,010	2,533,485
2033	0	37,281	(94,652)	2,444,975	7,010	2,394,614	0	37,031	(94,652)	2,404,675	7,010	2,354,064
2034	0	36,773	69,593	2,445,000	7,010	2,558,376	0	36,523	69,593	2,404,700	7,010	2,517,826
2035	0	36,113	(242,659)	2,445,000	7,010	2,245,464	0	35,863	(242,659)	2,404,700	7,010	2,204,914

Table B-6

Annual Water Quantities Conveyed through Each Pumping and Power Recovery Plant of Project Transportation Facilities (Acre-Feet)

Sheet 5 of 9

Calendar Year	California Aqueduct (continued)											
	Tehachapi Division						Mojave Division					
	Edmonston Pumping Plant						Alamo Power Plant					
	Initial Fill Water (51)	Opera- tional Losses (52)	Reservoir Storage Changes (53)	Deliveries		Total (56)	Initial Fill Water (57)	Opera- tional Losses (58)	Reservoir Storage Changes (59)	Deliveries		Total (62)
				Water Supply (54)	Recrea- tion (55)					Water Supply (60)	Recrea- tion (61)	
1961	0	0	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0	0	0	0	0	0
1967	0	0	0	0	0	0	0	0	0	0	0	0
1968	0	0	0	0	0	0	0	0	0	0	0	0
1969	0	0	0	0	0	0	0	0	0	0	0	0
1970	0	0	0	0	0	0	0	0	0	0	0	0
1971	5,446	8	0	0	0	5,454	0	0	0	0	0	0
1972	100,274	16,067	(6,558)	74,123	6,481	190,387	0	0	0	0	0	0
1973	204,638	34,051	1,329	207,808	1,147	448,973	0	0	0	0	0	0
1974	237,554	18,181	(15,295)	313,634	2,108	556,182	0	0	0	0	0	0
1975	103,352	20,183	(693)	573,219	3,358	699,419	0	0	0	0	0	0
1976	61,122	21,096	(152,171)	685,768	1,581	617,396	0	0	0	0	0	0
1977	0	18,424	(116,219)	236,086	560	138,851	0	0	0	0	0	0
1978	65,027	20,887	121,904	590,329	674	798,821	0	0	0	0	0	0
1979	12,302	46,332	(51,299)	568,338	502	576,175	0	0	0	0	0	0
1980	0	52,967	(134,009)	639,743	1,262	559,963	0	0	0	0	0	0
1981	0	40,602	23,359	938,482	4,112	1,006,555	0	0	0	0	0	0
1982	0	37,244	117,296	812,206	4,045	970,791	0	0	0	0	0	0
1983	0	40,690	(101,155)	431,182	7,291	378,008	0	0	0	0	0	0
1984	0	42,112	(115,214)	556,830	5,244	488,972	0	0	0	0	0	0
1985	0	45,265	139,988	792,477	4,804	982,534	0	0	0	0	0	0
1986	0	36,918	37,546	823,067	3,285	900,816	0	14,735	12,258	429,864	1,508	458,365
1987	0	29,580	(25,522)	851,322	6,937	862,317	0	11,665	(15,270)	417,870	1,239	415,504
1988	0	42,017	(29,747)	1,044,737	4,360	1,061,367	0	21,696	1,101	537,568	971	561,336
1989	0	42,017	(29,747)	1,328,041	4,360	1,344,671	0	21,696	1,101	716,360	971	740,128
1990	0	42,188	(14,959)	1,579,466	8,879	1,615,574	0	8,888	(5,783)	788,111	1,388	792,604
1991	0	33,999	105,176	441,217	4,560	584,952	0	17,908	34,422	177,308	394	230,032
1992	0	23,121	(92,123)	809,771	1,995	742,764	0	14,873	(17,115)	374,110	423	372,291
1993	0	11,946	(127,738)	759,485	1,676	645,369	0	9,304	(3,455)	308,222	443	314,514
1994	0	40,808	(88,211)	960,815	2,918	916,330	0	21,837	3,395	469,996	430	495,658
1995	0	36,001	(16,431)	542,465	1,669	563,704	0	14,139	(30,761)	384,836	427	368,641
1996	0	37,357	15,438	779,918	2,928	835,641	0	7,247	(11,410)	493,852	565	490,254
1997	0	51,475	40,852	860,798	2,076	955,201	0	20,725	38,960	537,586	507	597,778
1998	0	48,601	(106,487)	607,301	1,585	551,000	0	21,456	16,361	398,385	363	436,565
1999	0	52,726	(2,807)	947,420	3,279	1,000,618	0	26,644	(8,486)	589,756	396	608,310
2000	0	38,557	11,485	1,637,060	4,216	1,691,318	0	5,833	(8,059)	966,345	449	964,568
2001	0	130,244	10,844	1,108,775	7,010	1,256,873	0	113,003	14,768	524,388	1,630	653,789
2002	0	40,400	(376)	2,121,742	7,010	2,168,776	0	23,004	(447)	1,302,006	1,630	1,326,193
2003	0	40,400	(376)	2,152,238	7,010	2,199,272	0	23,004	(447)	1,180,812	1,630	1,204,999
2004	0	36,170	76,561	2,284,684	7,010	2,404,425	0	21,266	20,133	1,383,374	1,630	1,426,403
2005	0	35,449	(59,387)	2,315,350	7,010	2,298,422	0	21,116	(11,777)	1,387,963	1,630	1,398,932
2006	0	35,067	(36,988)	2,317,000	7,010	2,322,089	0	20,801	(25,870)	1,389,613	1,630	1,386,174
2007	0	35,184	22,514	2,318,650	7,010	2,383,358	0	20,894	25,284	1,391,263	1,630	1,439,071
2008	0	35,313	6,985	2,329,600	7,010	2,378,908	0	21,000	(934)	1,402,213	1,630	1,423,909
2009	0	35,210	(15,186)	2,330,800	7,010	2,357,834	0	20,905	(9,404)	1,403,413	1,630	1,416,544
2010	0	35,306	4,288	2,331,950	7,010	2,378,554	0	21,001	3,921	1,404,563	1,630	1,431,115
2011	0	35,497	64,678	2,342,325	7,010	2,449,510	0	20,971	26,001	1,406,763	1,630	1,455,365
2012	0	35,387	(67,943)	2,346,300	7,010	2,320,754	0	20,962	(41,797)	1,408,913	1,630	1,389,708
2013	0	35,325	9,749	2,348,500	7,010	2,400,584	0	20,835	4,742	1,411,113	1,630	1,438,320
2014	0	35,633	16,625	2,350,700	7,010	2,409,968	0	21,002	2,759	1,413,313	1,630	1,438,704
2015	0	35,762	32,003	2,352,900	7,010	2,427,675	0	21,066	22,604	1,415,513	1,630	1,460,813
2016	0	35,462	(28,401)	2,355,050	7,010	2,369,121	0	20,829	(21,084)	1,417,663	1,630	1,419,038
2017	0	35,694	61,309	2,357,200	7,010	2,461,213	0	20,895	33,266	1,419,813	1,630	1,475,604
2018	0	35,848	(80,817)	2,359,350	7,010	2,321,391	0	20,998	(50,078)	1,421,963	1,630	1,394,513
2019	0	35,672	50,179	2,361,500	7,010	2,454,361	0	20,924	31,508	1,424,113	1,630	1,478,175
2020	0	35,736	(366)	2,363,600	7,010	2,405,980	0	20,947	(3,398)	1,426,213	1,630	1,445,392
2021	0	35,819	10,725	2,366,750	7,010	2,420,304	0	20,946	(1,117)	1,429,363	1,630	1,450,822
2022	0	35,813	(3,483)	2,370,850	7,010	2,410,190	0	20,940	(3,434)	1,433,463	1,630	1,452,599
2023	0	35,804	(18,971)	2,373,950	7,010	2,397,793	0	20,939	(18,638)	1,436,563	1,630	1,440,494
2024	0	35,683	11,289	2,377,000	7,010	2,430,982	0	20,881	21,309	1,439,613	1,630	1,483,433
2025	0	35,746	(12,518)	2,379,850	7,010	2,410,088	0	20,965	(11,624)	1,442,463	1,630	1,453,434
2026	0	35,758	24,308	2,379,900	7,010	2,446,976	0	20,930	13,030	1,442,513	1,630	1,478,103
2027	0	35,671	(17,799)	2,379,950	7,010	2,404,832	0	20,861	(6,161)	1,442,563	1,630	1,458,893
2028	0	35,811	12,291	2,380,000	7,010	2,435,112	0	20,961	4,006	1,442,613	1,630	1,469,210
2029	0	35,738	(9,046)	2,380,050	7,010	2,413,752	0	20,955	(913)	1,442,663	1,630	1,464,335
2030	0	35,802	20,756	2,380,100	7,010	2,443,668	0	20,930	8,528	1,442,713	1,630	1,473,801
2031	0	35,674	(97,726)	2,380,125	7,010	2,325,083	0	20,956	(31,057)	1,442,738	1,630	1,434,267
2032	0	35,276	84,999	2,380,150	7,010	2,507,435	0	20,865	43,953	1,442,763	1,630	1,509,211
2033	0	35,481	(94,652)	2,380,175	7,010	2,328,014	0	20,854	(37,929)	1,442,788	1,630	1,427,343
2034	0	34,973	69,593	2,380,200	7,010	2,491,776	0	20,769	28,588	1,442,813	1,630	1,493,800
2035	0	34,313	(242,659)	2,380,200	7,010	2,178,864	0	20,892	(49,219)	1,442,813	1,630	1,416,116

Table B-6

Annual Water Quantities Conveyed through Each Pumping and Power Recovery Plant of Project Transportation Facilities (Acre-Feet)

Sheet 6 of 9

Calendar Year	California Aqueduct (continued)											
	Mojave Division (continued)											
	Pearblossom Pumping Plant						Mojave Siphon Power Plant					
	Initial Fill Water (63)	Opera- tional Losses (64)	Reservoir Storage Changes (65)	Deliveries		Total (68)	Initial Fill Water (69)	Opera- tional Losses (70)	Reservoir Storage Changes (71)	Deliveries		Total (74)
			Water Supply (66)	Recrea- tion (67)						Water Supply (72)	Recrea- tion (73)	
1961	0	0	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0	0	0	0	0	0
1967	0	0	0	0	0	0	0	0	0	0	0	0
1968	0	0	0	0	0	0	0	0	0	0	0	0
1969	0	0	0	0	0	0	0	0	0	0	0	0
1970	0	0	0	0	0	0	0	0	0	0	0	0
1971	21	0	0	0	0	21	0	0	0	0	0	0
1972	35,243	5,282	(153)	1,794	0	42,166	0	0	0	0	0	0
1973	80,177	21,522	(2,700)	52,201	72	151,272	0	0	0	0	0	0
1974	76,694	10,847	(11,149)	102,839	44	179,275	0	0	0	0	0	0
1975	10,000	2,364	(8,397)	190,351	70	194,388	0	0	0	0	0	0
1976	4,168	7,040	(16,055)	236,713	152	232,018	0	0	0	0	0	0
1977	0	11,398	(17,534)	102,326	580	96,770	0	0	0	0	0	0
1978	19,922	5,696	69,130	374,845	498	470,091	0	0	0	0	0	0
1979	12,302	6,836	(32,518)	362,114	502	349,236	0	0	0	0	0	0
1980	0	16,200	6,159	401,214	781	424,354	0	0	0	0	0	0
1981	0	4,992	(36,278)	574,573	933	544,220	0	0	0	0	0	0
1982	0	5,251	55,232	401,037	1,919	463,439	0	0	0	0	0	0
1983	0	11,745	(26,847)	231,188	1,180	217,266	0	0	0	0	0	0
1984	0	18,228	23,230	252,066	1,494	295,018	0	0	0	0	0	0
1985	0	25,292	(2,815)	350,758	1,076	374,311	0	0	0	0	0	0
1986	0	30,876	12,258	394,156	1,508	438,798	0	0	0	0	0	0
1987	0	27,552	(15,270)	377,531	1,239	391,052	0	0	0	0	0	0
1988	0	32,209	1,101	501,300	971	535,581	0	1,977	1,101	501,291	971	505,340
1989	0	32,209	1,101	661,189	971	695,470	0	1,977	1,101	661,100	971	665,149
1990	0	32,672	(5,793)	730,560	1,388	758,827	0	23,692	(5,793)	730,550	1,388	749,837
1991	0	15,209	34,774	163,913	394	214,290	0	(543)	34,774	163,913	394	198,538
1992	0	13,989	(17,451)	338,249	423	335,210	0	(13,193)	(17,451)	338,207	423	307,986
1993	0	9,779	(3,455)	255,117	443	261,884	0	(11,922)	(3,455)	255,117	443	240,183
1994	0	150	3,395	409,928	430	413,903	0	1,601	3,395	395,294	430	400,720
1995	0	6,820	(29,282)	328,882	427	306,847	0	10,458	(29,282)	321,387	427	302,990
1996	0	9,514	(11,410)	424,252	565	422,921	0	(5,577)	(11,410)	418,141	565	401,719
1997	0	(1,124)	38,960	461,563	507	499,906	0	5,171	38,960	452,525	507	497,163
1998	0	(2,087)	16,361	334,965	363	349,602	0	11,496	16,361	332,385	363	360,605
1999	0	(1,154)	(8,486)	505,624	396	496,380	0	11,065	(8,486)	498,919	396	501,894
2000	0	(26,504)	(8,059)	872,405	449	838,291	0	1,688	(8,059)	862,496	449	856,574
2001	0	107,653	14,768	450,721	1,430	574,572	0	104,183	14,768	443,721	1,430	564,102
2002	0	17,654	(447)	1,141,006	1,430	1,159,643	0	14,184	(447)	1,127,506	1,430	1,142,673
2003	0	17,654	(447)	1,018,812	1,430	1,037,449	0	14,184	(447)	1,000,312	1,430	1,015,479
2004	0	15,916	20,133	1,219,874	1,430	1,257,353	0	12,446	20,133	1,191,374	1,430	1,225,383
2005	0	15,766	(11,777)	1,224,463	1,430	1,229,882	0	12,296	(11,777)	1,190,963	1,430	1,192,912
2006	0	15,451	(25,870)	1,226,113	1,430	1,217,124	0	11,981	(25,870)	1,191,613	1,430	1,179,154
2007	0	15,544	25,284	1,227,763	1,430	1,270,021	0	12,074	25,284	1,192,263	1,430	1,231,051
2008	0	15,650	(934)	1,238,713	1,430	1,254,859	0	12,180	(934)	1,202,213	1,430	1,214,889
2009	0	15,555	(9,404)	1,239,913	1,430	1,247,494	0	12,085	(9,404)	1,202,413	1,430	1,206,524
2010	0	15,651	3,921	1,241,063	1,430	1,262,065	0	12,181	3,921	1,202,563	1,430	1,220,095
2011	0	15,621	26,001	1,243,263	1,430	1,286,315	0	12,151	26,001	1,202,763	1,430	1,242,345
2012	0	15,612	(41,797)	1,245,413	1,430	1,220,658	0	12,142	(41,797)	1,202,913	1,430	1,174,688
2013	0	15,485	4,742	1,247,613	1,430	1,269,270	0	12,015	4,742	1,203,113	1,430	1,221,300
2014	0	15,652	2,759	1,249,813	1,430	1,269,654	0	12,182	2,759	1,203,313	1,430	1,219,684
2015	0	15,716	22,604	1,252,013	1,430	1,291,763	0	12,246	22,604	1,203,513	1,430	1,239,793
2016	0	15,479	(21,084)	1,254,163	1,430	1,249,988	0	12,009	(21,084)	1,203,663	1,430	1,196,018
2017	0	15,545	33,266	1,256,313	1,430	1,306,554	0	12,075	33,266	1,203,813	1,430	1,250,584
2018	0	15,648	(50,078)	1,258,463	1,430	1,225,463	0	12,178	(50,078)	1,203,963	1,430	1,167,493
2019	0	15,574	31,508	1,260,613	1,430	1,309,125	0	12,104	31,508	1,204,113	1,430	1,249,155
2020	0	15,597	(3,398)	1,262,713	1,430	1,276,342	0	12,127	(3,398)	1,204,213	1,430	1,214,372
2021	0	15,596	(1,117)	1,265,863	1,430	1,281,772	0	12,126	(1,117)	1,204,363	1,430	1,216,802
2022	0	15,590	(3,434)	1,269,963	1,430	1,283,549	0	12,120	(3,434)	1,204,463	1,430	1,214,579
2023	0	15,589	(18,638)	1,273,063	1,430	1,271,444	0	12,119	(18,638)	1,204,563	1,430	1,199,474
2024	0	15,531	21,309	1,276,113	1,430	1,314,383	0	12,061	21,309	1,204,613	1,430	1,239,413
2025	0	15,615	(11,624)	1,278,963	1,430	1,284,384	0	12,145	(11,624)	1,204,663	1,430	1,206,614
2026	0	15,580	13,030	1,279,013	1,430	1,309,053	0	12,110	13,030	1,204,713	1,430	1,231,283
2027	0	15,511	(6,161)	1,279,063	1,430	1,289,843	0	12,041	(6,161)	1,204,763	1,430	1,212,073
2028	0	15,611	4,006	1,279,113	1,430	1,300,160	0	12,141	4,006	1,204,813	1,430	1,222,390
2029	0	15,605	(913)	1,279,163	1,430	1,295,285	0	12,135	(913)	1,204,863	1,430	1,217,515
2030	0	15,580	8,528	1,279,213	1,430	1,304,751	0	12,110	8,528	1,204,913	1,430	1,226,981
2031	0	15,606	(31,057)	1,279,238	1,430	1,265,217	0	12,136	(31,057)	1,204,938	1,430	1,187,447
2032	0	15,515	43,953	1,279,263	1,430	1,340,161	0	12,045	43,953	1,204,963	1,430	1,262,391
2033	0	15,504	(37,929)	1,279,288	1,430	1,258,293	0	12,034	(37,929)	1,204,988	1,430	1,180,523
2034	0	15,419	28,588	1,279,313	1,430	1,324,750	0	11,949	28,588	1,205,013	1,430	1,246,980
2035	0	15,542	(49,219)	1,279,313	1,430	1,247,066	0	12,072	(49,219)	1,205,013	1,430	1,169,296

Table B-6
**Annual Water Quantities Conveyed through Each Pumping
and Power Recovery Plant of Project Transportation Facilities**
(Acre-Feet)

Sheet 7 of 9

Calendar Year	California Aqueduct (continued)											
	Santa Ana Division						West Branch, California Aqueduct					
	Devil Canyon Power Plant						Oso Pumping Plant					
	Initial Fill Water (75)	Opera- tional Losses (76)	Reservoir Storage Changes (77)	Deliveries		Total (80)	Initial Fill Water (81)	Opera- tional Losses (82)	Reservoir Storage Changes (83)	Deliveries		Total (86)
				Water Supply (78)	Recrea- tion (79)					Water Supply (84)	Recrea- tion (85)	
1961	0	0	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0	0	0	0	0	0
1967	0	0	0	0	0	0	0	0	0	0	0	0
1968	0	0	0	0	0	0	0	0	0	0	0	0
1969	0	0	0	0	0	0	0	0	0	0	0	0
1970	0	0	0	0	0	0	0	0	0	0	0	0
1971	0	0	0	0	0	0	2,444	133	0	0	0	2,577
1972	37	0	0	1,275	0	1,312	63,883	6,557	(6,405)	71,991	6,481	142,507
1973	40,848	14,745	0	51,812	0	107,405	124,461	16,995	4,029	155,317	1,075	301,877
1974	74,666	8,367	(4,925)	102,198	0	180,306	160,860	12,702	(4,146)	209,172	2,064	380,652
1975	10,000	1,995	(6,719)	189,526	0	194,802	93,352	23,008	7,704	374,306	3,288	501,658
1976	4,168	5,180	(9,182)	235,711	23	235,900	56,954	15,845	(136,116)	420,708	1,429	358,820
1977	0	8,082	(5,235)	101,137	469	104,453	0	4,407	(98,685)	122,447	(20)	28,149
1978	14,820	3,754	21,686	373,636	481	414,377	45,105	9,061	52,774	171,139	176	278,255
1979	12,302	5,620	(27,107)	356,854	485	348,154	0	25,355	(18,781)	145,598	0	152,172
1980	0	9,468	12,714	395,975	742	418,899	0	24,576	(140,168)	165,931	481	50,820
1981	0	8,401	(23,448)	569,088	807	554,848	0	15,254	59,637	283,264	3,179	361,334
1982	0	6,012	44,469	399,799	1,798	452,078	0	23,824	61,685	360,878	2,126	448,513
1983	0	8,597	5,188	230,277	1,078	245,140	0	23,601	(74,308)	166,995	6,111	122,399
1984	0	12,861	(850)	250,938	1,414	264,363	0	12,461	(138,146)	272,101	3,750	150,166
1985	0	14,325	(8,791)	349,336	956	355,826	0	28,257	142,219	403,097	3,728	577,301
1986	0	9,486	8,339	392,650	1,378	411,853	0	22,387	25,288	393,203	1,777	442,655
1987	0	7,923	(11,335)	375,451	1,118	373,157	0	18,164	(10,252)	433,452	5,698	447,062
1988	0	11,090	2,238	499,285	861	513,474	0	20,461	(30,848)	507,169	3,389	500,171
1989	0	11,090	2,238	658,730	861	672,919	0	20,461	(30,848)	611,681	3,389	604,683
1990	0	13,439	(4,622)	728,723	1,281	738,821	0	33,666	(9,176)	791,355	7,491	823,336
1991	0	10,836	18,308	161,032	340	190,516	0	16,460	70,754	263,909	4,166	355,289
1992	0	9,157	(9,084)	328,354	371	328,798	0	8,238	(75,008)	435,661	1,572	370,463
1993	0	5,602	5,593	244,678	364	256,237	0	2,674	(124,283)	451,263	1,233	330,887
1994	0	10,915	(11,045)	393,690	357	393,917	0	18,688	(91,606)	490,819	2,488	420,389
1995	0	11,268	2,331	320,978	358	334,935	0	21,775	14,330	157,629	1,242	194,976
1996	0	9,496	13,015	417,656	494	440,661	0	30,121	26,848	286,066	2,363	345,398
1997	0	8,087	(19,685)	451,874	416	440,692	0	30,468	1,892	323,212	1,569	357,141
1998	0	6,700	16,643	332,198	310	355,851	0	26,851	(122,848)	208,916	1,222	114,141
1999	0	9,784	(4,177)	497,787	341	503,735	0	25,690	5,679	357,664	2,883	391,916
2000	0	3,935	(11,040)	861,302	375	854,572	0	32,293	19,544	670,715	3,767	726,319
2001	0	100,001	13,768	441,981	1,250	557,000	0	17,191	(3,924)	584,387	5,380	603,034
2002	0	10,002	(447)	1,125,456	1,250	1,136,261	0	17,346	71	819,736	5,380	842,533
2003	0	10,002	(447)	998,162	1,250	1,008,967	0	17,346	71	971,426	5,380	994,223
2004	0	8,752	4,466	1,189,024	1,250	1,203,492	0	14,854	56,428	901,310	5,380	977,972
2005	0	8,561	(16,027)	1,188,413	1,250	1,182,197	0	14,283	(47,610)	927,387	5,380	899,440
2006	0	8,512	(9,315)	1,188,913	1,250	1,189,360	0	14,216	(11,118)	927,387	5,380	935,865
2007	0	8,531	6,931	1,189,413	1,250	1,206,125	0	14,240	(2,770)	927,387	5,380	944,237
2008	0	8,481	(2,332)	1,199,213	1,250	1,206,612	0	14,263	7,919	927,387	5,380	954,949
2009	0	8,508	3,506	1,199,213	1,250	1,212,477	0	14,255	(5,782)	927,387	5,380	941,240
2010	0	8,504	10,523	1,199,213	1,250	1,219,490	0	14,255	367	927,387	5,380	947,389
2011	0	8,519	1,352	1,199,213	1,250	1,210,334	0	14,476	38,677	935,562	5,380	994,095
2012	0	8,482	(22,894)	1,199,213	1,250	1,186,051	0	14,375	(26,146)	937,387	5,380	930,996
2013	0	8,499	16,733	1,199,213	1,250	1,225,695	0	14,440	5,007	937,387	5,380	962,214
2014	0	8,522	(4,585)	1,199,213	1,250	1,204,400	0	14,581	13,866	937,387	5,380	971,214
2015	0	8,499	2,964	1,199,213	1,250	1,211,926	0	14,646	9,399	937,387	5,380	966,812
2016	0	8,483	(1,269)	1,199,213	1,250	1,207,677	0	14,583	(7,317)	937,387	5,380	950,033
2017	0	8,502	9,828	1,199,213	1,250	1,218,793	0	14,749	28,043	937,387	5,380	985,559
2018	0	8,484	(19,777)	1,199,213	1,250	1,189,170	0	14,800	(30,739)	937,387	5,380	926,828
2019	0	8,492	17,408	1,199,213	1,250	1,226,363	0	14,698	18,671	937,387	5,380	976,136
2020	0	8,483	(17,305)	1,199,213	1,250	1,191,641	0	14,739	3,032	937,387	5,380	960,538
2021	0	8,486	(398)	1,199,213	1,250	1,208,551	0	14,823	11,842	937,387	5,380	969,432
2022	0	8,486	13,735	1,199,213	1,250	1,222,684	0	14,823	(49)	937,387	5,380	957,541
2023	0	8,482	(8,417)	1,199,213	1,250	1,200,528	0	14,815	(333)	937,387	5,380	957,249
2024	0	8,462	689	1,199,213	1,250	1,209,614	0	14,752	(10,020)	937,387	5,380	947,499
2025	0	8,489	4,591	1,199,213	1,250	1,213,543	0	14,731	(894)	937,387	5,380	956,604
2026	0	8,475	(3,819)	1,199,213	1,250	1,205,119	0	14,778	11,278	937,387	5,380	968,823
2027	0	8,479	745	1,199,213	1,250	1,209,687	0	14,760	(11,638)	937,387	5,380	945,889
2028	0	8,481	(5,355)	1,199,213	1,250	1,203,589	0	14,800	8,285	937,387	5,380	965,852
2029	0	8,481	2,909	1,199,213	1,250	1,211,853	0	14,733	(8,133)	937,387	5,380	949,367
2030	0	8,480	296	1,199,213	1,250	1,209,239	0	14,822	12,228	937,387	5,380	969,817
2031	0	8,475	(1,976)	1,199,213	1,250	1,206,962	0	14,668	(66,669)	937,387	5,380	890,766
2032	0	8,449	18,821	1,199,213	1,250	1,227,733	0	14,361	41,046	937,387	5,380	998,174
2033	0	8,449	(23,419)	1,199,213	1,250	1,185,493	0	14,577	(56,723)	937,387	5,380	900,621
2034	0	8,443	21,651	1,199,213	1,250	1,230,557	0	14,154	41,005	937,387	5,380	997,926
2035	0	8,451	(31,434)	1,199,213	1,250	1,177,480	0	13,371	(193,440)	937,387	5,380	762,698

Table B-6

Annual Water Quantities Conveyed through Each Pumping and Power Recovery Plant of Project Transportation Facilities (Acre-Feet)

Sheet 8 of 9

Calendar Year	California Aqueduct (continued)											
	West Branch, California Aqueduct (continued)											
	Warne Power Plant						Castaic Power Plant					
	Initial Fill Water (87)	Opera- tional Losses (88)	Reservoir Storage Changes (89)	Deliveries		Total (92)	Initial Fill Water (93)	Opera- tional Losses (94)	Reservoir Storage Changes (95)	Deliveries		Total (98)
Water Supply (90)				Recrea- tion (91)	Water Supply (96)					Recrea- tion (97)		
1961	0	0	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0	0	0	0	0	0
1967	0	0	0	0	0	0	0	0	0	0	0	0
1968	0	0	0	0	0	0	0	0	0	0	0	0
1969	0	0	0	0	0	0	0	0	0	0	0	0
1970	0	0	0	0	0	0	0	0	0	0	0	0
1971	0	0	0	0	0	0	0	0	0	0	0	0
1972	0	0	0	0	0	0	57,364	1,788	(6,162)	71,938	6,481	131,409
1973	0	0	0	0	0	0	37,198	6,430	4,542	155,297	1,075	204,542
1974	0	0	0	0	0	0	82,364	1,772	(950)	209,136	541	292,863
1975	0	0	0	0	0	0	90,460	5,002	(1,534)	374,280	1,563	469,771
1976	0	0	0	0	0	0	55,990	(7,695)	(132,036)	420,684	1,429	338,372
1977	0	0	0	0	0	0	0	(1,485)	(102,532)	122,447	(20)	18,410
1978	0	0	0	0	0	0	45,105	(2,264)	129,523	171,139	176	343,679
1979	0	0	0	0	0	0	0	(2,339)	(20,400)	145,598	0	122,859
1980	0	0	0	0	0	0	0	991	(118,026)	165,931	481	49,377
1981	0	0	0	0	0	0	0	(44,416)	47,244	283,264	2,704	288,796
1982	0	24,468	61,169	360,878	2,126	448,641	0	(60,135)	59,069	360,878	1,187	360,999
1983	0	20,780	(74,308)	166,995	6,111	119,578	0	(33,418)	(46,904)	166,995	2,618	89,291
1984	0	13,572	(139,219)	275,212	2,208	151,773	0	(29,618)	(139,545)	275,212	2,201	108,250
1985	0	29,286	141,492	403,097	874	574,749	0	(4,622)	135,007	403,097	844	534,326
1986	0	21,579	25,288	393,203	1,777	441,847	0	(6,664)	21,520	393,203	623	408,682
1987	0	20,885	(10,252)	433,452	5,698	449,783	0	(519)	(6,241)	433,452	2,734	429,426
1988	0	23,253	(31,453)	507,169	3,389	502,358	0	12,650	(28,498)	507,169	1,359	492,680
1989	0	23,253	(31,453)	611,681	3,389	606,870	0	12,650	(28,498)	611,681	1,359	597,192
1990	0	34,208	(9,176)	791,355	7,491	823,878	0	(14,012)	(15,101)	786,519	3,419	760,825
1991	0	16,908	70,754	263,909	4,166	355,737	0	(871)	89,637	262,921	2,283	353,970
1992	0	9,638	(75,008)	435,661	1,572	371,863	0	(609)	(71,795)	435,661	1,543	364,800
1993	0	1,922	(124,283)	451,257	1,233	330,129	0	21,959	(77,428)	451,257	1,211	396,999
1994	0	23,151	(91,606)	490,819	2,488	424,852	0	5,205	(95,738)	490,819	2,465	402,751
1995	0	15,860	14,330	157,629	1,242	189,061	0	20,400	75,863	157,629	1,223	255,115
1996	0	21,191	26,848	286,066	2,363	336,468	0	(5,621)	19,088	286,066	2,362	301,895
1997	0	23,437	1,892	323,201	1,569	350,099	0	11,119	(1,802)	323,201	1,566	334,084
1998	0	26,864	(122,848)	208,909	1,222	114,147	0	24,544	(57,726)	208,909	1,222	176,949
1999	0	21,822	8,120	357,664	2,883	390,489	0	(3,670)	6,280	357,664	2,865	363,139
2000	0	27,218	18,198	670,715	3,767	719,898	0	(19,637)	9,320	668,515	1,556	659,754
2001	0	15,281	(3,924)	584,387	5,380	601,124	0	9,628	(1,924)	583,237	2,330	593,271
2002	0	15,436	71	819,736	5,380	840,623	0	9,711	71	816,586	2,330	828,698
2003	0	15,436	71	971,426	5,380	992,313	0	9,711	71	968,276	2,330	980,388
2004	0	12,944	56,428	901,310	5,380	976,062	0	6,659	56,428	901,310	2,330	966,727
2005	0	12,373	(47,610)	927,387	5,380	897,530	0	6,088	(47,610)	927,387	2,330	888,195
2006	0	12,306	(11,118)	927,387	5,380	933,955	0	6,021	(11,118)	927,387	2,330	924,620
2007	0	12,330	(2,770)	927,387	5,380	942,327	0	6,045	(2,770)	927,387	2,330	932,992
2008	0	12,353	7,919	927,387	5,380	953,039	0	6,068	7,919	927,387	2,330	943,704
2009	0	12,345	(5,782)	927,387	5,380	939,330	0	6,060	(5,782)	927,387	2,330	929,995
2010	0	12,345	367	927,387	5,380	945,479	0	6,060	367	927,387	2,330	936,144
2011	0	12,566	38,677	935,562	5,380	992,185	0	6,281	38,677	935,562	2,330	982,850
2012	0	12,465	(26,146)	937,387	5,380	929,086	0	6,180	(26,146)	937,387	2,330	919,751
2013	0	12,530	5,007	937,387	5,380	960,304	0	6,245	5,007	937,387	2,330	950,969
2014	0	12,671	13,866	937,387	5,380	969,304	0	6,386	13,866	937,387	2,330	959,969
2015	0	12,736	9,399	937,387	5,380	964,902	0	6,451	9,399	937,387	2,330	955,567
2016	0	12,673	(7,317)	937,387	5,380	948,123	0	6,388	(7,317)	937,387	2,330	938,788
2017	0	12,839	28,043	937,387	5,380	983,649	0	6,554	28,043	937,387	2,330	974,314
2018	0	12,890	(30,739)	937,387	5,380	924,918	0	6,605	(30,739)	937,387	2,330	915,583
2019	0	12,788	18,671	937,387	5,380	974,226	0	6,503	18,671	937,387	2,330	964,891
2020	0	12,829	3,032	937,387	5,380	958,628	0	6,544	3,032	937,387	2,330	949,293
2021	0	12,913	11,842	937,387	5,380	967,522	0	6,628	11,842	937,387	2,330	958,187
2022	0	12,913	(49)	937,387	5,380	955,631	0	6,628	(49)	937,387	2,330	946,296
2023	0	12,905	(333)	937,387	5,380	955,339	0	6,620	(333)	937,387	2,330	946,004
2024	0	12,842	(10,020)	937,387	5,380	945,589	0	6,557	(10,020)	937,387	2,330	936,254
2025	0	12,821	(894)	937,387	5,380	954,694	0	6,536	(894)	937,387	2,330	945,359
2026	0	12,868	11,278	937,387	5,380	966,913	0	6,583	11,278	937,387	2,330	957,578
2027	0	12,850	(11,638)	937,387	5,380	943,979	0	6,565	(11,638)	937,387	2,330	934,644
2028	0	12,890	8,285	937,387	5,380	963,942	0	6,605	8,285	937,387	2,330	954,607
2029	0	12,823	(8,133)	937,387	5,380	947,457	0	6,538	(8,133)	937,387	2,330	938,122
2030	0	12,912	12,228	937,387	5,380	967,907	0	6,627	12,228	937,387	2,330	958,572
2031	0	12,758	(66,669)	937,387	5,380	888,856	0	6,473	(66,669)	937,387	2,330	879,521
2032	0	12,451	41,046	937,387	5,380	996,264	0	6,166	41,046	937,387	2,330	986,929
2033	0	12,667	(56,723)	937,387	5,380	898,711	0	6,382	(56,723)	937,387	2,330	889,376
2034	0	12,244	41,005	937,387	5,380	996,016	0	5,959	41,005	937,387	2,330	986,681
2035	0	11,461	(193,440)	937,387	5,380	760,788	0	5,176	(193,440)	937,387	2,330	751,453

Table B-6

Annual Water Quantities Conveyed through Each Pumping and Power Recovery Plant of Project Transportation Facilities (Acre-Feet)

Sheet 9 of 9

Calendar Year	California Aqueduct (continued)							
	Coastal Branch, California Aqueduct							
	Las Perillas and Badger Hill Pumping Plants				Devil's Den, Bluestone, and Polonio Pass Pumping Plants			
	Initial Fill Water (99)	Operational Losses (100)	Water Supply Delivery (101)	Total (102)	Initial Fill Water (103)	Operational Losses (104)	Water Supply Delivery (105)	Total (106)
1961	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0	0
1967	0	0	0	0	0	0	0	0
1968	210	873	79,039	80,122	0	0	0	0
1969	0	1,042	62,064	63,106	0	0	0	0
1970	0	638	83,649	84,287	0	0	0	0
1971	0	3,455	110,971	114,426	0	0	0	0
1972	0	1,745	121,755	123,500	0	0	0	0
1973	0	5,479	78,645	84,124	0	0	0	0
1974	0	7,344	78,174	85,518	0	0	0	0
1975	0	5,819	85,216	91,035	0	0	0	0
1976	0	6,562	90,058	96,620	0	0	0	0
1977	0	5,777	40,579	46,356	0	0	0	0
1978	0	9,085	92,604	101,689	0	0	0	0
1979	0	10,896	123,155	134,051	0	0	0	0
1980	0	9,449	111,379	120,828	0	0	0	0
1981	0	13,232	109,754	122,986	0	0	0	0
1982	0	7,984	95,776	103,760	0	0	0	0
1983	0	5,710	100,518	106,228	0	0	0	0
1984	0	5,740	126,387	132,127	0	0	0	0
1985	0	7,563	120,823	128,386	0	0	0	0
1986	0	8,719	131,599	140,318	0	0	0	0
1987	0	11,363	128,080	139,443	0	0	0	0
1988	0	12,831	120,969	133,800	0	0	0	0
1989	0	12,831	116,801	129,632	0	0	0	0
1990	0	13,021	109,802	122,823	0	0	0	0
1991	0	5,802	1,496	7,298	0	0	0	0
1992	0	7,893	79,635	87,528	0	0	0	0
1993	0	9,282	94,921	104,203	0	0	0	0
1994	0	8,515	87,158	95,673	0	0	0	0
1995	0	6,986	94,536	101,522	0	0	0	0
1996	0	9,663	114,630	124,293	0	0	0	0
1997	527	8,343	110,428	119,298	527	0	8,538	9,065
1998	0	8,415	109,400	117,815	0	0	22,210	22,210
1999	0	2,453	120,061	122,514	0	303	23,880	24,183
2000	0	(429)	120,313	119,884	0	0	26,703	26,703
2001	0	802	100,601	101,403	0	212	21,541	21,753
2002	0	802	195,586	196,388	0	212	70,486	70,698
2003	0	802	195,586	196,388	0	212	70,486	70,698
2004	0	802	195,586	196,388	0	212	70,486	70,698
2005	0	802	195,586	196,388	0	212	70,486	70,698
2006	0	802	195,586	196,388	0	212	70,486	70,698
2007	0	802	195,586	196,388	0	212	70,486	70,698
2008	0	802	195,586	196,388	0	212	70,486	70,698
2009	0	802	195,586	196,388	0	212	70,486	70,698
2010	0	802	195,586	196,388	0	212	70,486	70,698
2011	0	802	187,411	188,213	0	212	70,486	70,698
2012	0	802	185,586	186,388	0	212	70,486	70,698
2013	0	802	185,586	186,388	0	212	70,486	70,698
2014	0	802	185,586	186,388	0	212	70,486	70,698
2015	0	802	185,586	186,388	0	212	70,486	70,698
2016	0	802	185,586	186,388	0	212	70,486	70,698
2017	0	802	185,586	186,388	0	212	70,486	70,698
2018	0	802	185,586	186,388	0	212	70,486	70,698
2019	0	802	185,586	186,388	0	212	70,486	70,698
2020	0	802	185,586	186,388	0	212	70,486	70,698
2021	0	802	185,586	186,388	0	212	70,486	70,698
2022	0	802	185,586	186,388	0	212	70,486	70,698
2023	0	802	185,586	186,388	0	212	70,486	70,698
2024	0	802	185,586	186,388	0	212	70,486	70,698
2025	0	802	185,586	186,388	0	212	70,486	70,698
2026	0	802	185,586	186,388	0	212	70,486	70,698
2027	0	802	185,586	186,388	0	212	70,486	70,698
2028	0	802	185,586	186,388	0	212	70,486	70,698
2029	0	802	185,586	186,388	0	212	70,486	70,698
2030	0	802	185,586	186,388	0	212	70,486	70,698
2031	0	802	185,586	186,388	0	212	70,486	70,698
2032	0	802	185,586	186,388	0	212	70,486	70,698
2033	0	802	185,586	186,388	0	212	70,486	70,698
2034	0	802	185,586	186,388	0	212	70,486	70,698
2035	0	802	185,586	186,388	0	212	70,486	70,698

Table B-7
Reconciliation of Capital Costs Allocated to Water Supply and Power Generation
(Thousands of Dollars).

Item	Project Costs Allocated to Water Supply and Power Generation							Capital Costs Allocated to Other Purposes (8)	Total State Water Project Capital Cost (9)
	Miscellaneous Income Credited to Construction ^a (1)	Allowance for Future Price Escalation ^b (2)	Costs of Construction of Delivery Structures ^c (3)	Costs of Requested Excess Capacity and Future Enlargement ^d (4)	Capital Cost Component of Delta Water Charge ^e (5)	Capital Cost Component of Transportation Water Charge ^f (6)	Water Supply and Power Total (7)		
Conservation Facilities									
Upper Feather Division									
Frenchman Dam and Lake	162	0	0	0	603	0	765	2,888	3,653
Grizzly Valley Dam and Lake Davis	65	0	0	0	39	0	104	7,378	7,482
Antelope Dam and Lake	1	0	0	0	0	0	1	5,534	5,535
Abbey Bridge Dam and Reservoir	0	0	0	0	0	0	0	519	519
Dixie Refuge Dam and Reservoir	0	0	0	0	0	0	0	236	236
Total, Upper Feather Division	228	0	0	0	642	0	870	16,555	17,425
Oroville Division									
Multipurpose Facilities	3,374	153	0	0	375,985	0	379,512	90,795	470,307
Specific Power Facilities	230	0	0	0	98,229	0	98,459	568	99,027
Total, Oroville Division	3,604	153	0	0	474,214	0	477,971	91,363	569,334
California Aqueduct									
North San Joaquin Division	1,106	104	0	0	78,967	0	80,177	2,880	83,057
San Luis Division	13,079	73	0	0	105,065	0	118,217	3,827	122,044
Total, California Aqueduct	14,185	177	0	0	184,032	0	198,394	6,707	205,101
Delta Facilities	37,311	0	0	0	310,794	0	348,105	47,886	395,991
Planning and Pre-operation	5,302	0	0	0	90,792	0	96,094	0	96,094
Total, Conservation Facilities	60,630	330	0	0	1,060,474	0	1,121,434	162,511	1,283,945
Transportation Facilities									
Upper Feather Division									
Grizzly Valley Pipeline	3	0	181	0	0	341	525	0	525
North Bay Aqueduct	385	0	676	0	0	93,088	94,149	0	94,149
South Bay Aqueduct	1,787	54	1,782	0	0	60,994	64,617	21,673	86,290
California Aqueduct									
North San Joaquin Division	2,462	0	62	0	0	179,773	182,297	6,409	188,706
San Luis Division	9,201	0	0	0	0	147,666	156,867	10,346	167,213
South San Joaquin Division	386	0	3,564	2,093	0	286,710	292,753	16,708	309,461
Tehachapi Division	27	0	0	5,230	0	304,557	309,814	18,328	328,142
Mojave Division	918	0	787	0	0	283,716	285,421	37,946	323,367
Santa Ana Division	1,184	0	6,989	5,331	0	269,140	282,644	32,032	314,676
West Branch	37,592	0	522	37	0	474,023	512,174	33,946	546,120
Coastal Branch	(229)	0	93	0	0	481,595	481,459	0	481,459
Total, California Aqueduct	51,541	0	12,017	12,691	0	2,427,180	2,503,429	155,715	2,659,144
Total, Transportation Facilities	53,716	54	14,656	12,691	0	2,581,603	2,662,720	177,388	2,840,108
East Branch Enlargement	0	0	0	0	0	448,870	448,870	0	448,870
East Branch Extension	21	0	0	0	0	121,980	122,001	0	122,001
Coastal Costs Allocated to Power	0	0	0	0	0	30,708	30,708	0	30,708
San Joaquin Drainage Facilities	69	0	0	0	0	0	69	100,048	100,117
Off-Aqueduct Power Generation Facilities	0	0	0	0	0	484,896	484,896	0	484,896
Small Hydro Power Generation Facilities	0	0	0	0	14,095	89,955	104,050	0	104,050
Land Purchase - Kern Water Bank	0	0	0	0	34,686	0	34,686	0	34,686
Unassigned/Miscellaneous	0	0	0	0	0	15	15	305	320
Davis - Grunsky	0	0	0	0	0	0	0	130,000	130,000
Total through 2015	114,436	384	14,656	12,691	1,109,255	3,758,027	5,009,449	570,252	5,579,701

^aMiscellaneous project receipts that are applied for accounting purposes to reduce the capital costs of the particular facilities.

^bThese allowances are included for planning the future financial program, but not for determining current water charges.

^cThe costs shown in this appendix are based on prices prevailing on December 31, 2000.

^dSee Table B-8.

^eSee Table B-9.

^fSee Table B-13. A portion of these costs will be offset by power generation sales and credits. Planning and Pre-operation line item includes \$50,534.00 of planning costs financed from Systems Revenues and not included in Table 14-3. Delta Facilities total reduced by \$13,207,000 for relinquished entitlement capacity costs that are included in Table B-10.

Delta Facilities total does not include \$30,912,000 of projected costs that are included in Table 14-3.

See Table B-10. Mojave Division total reduced by \$89,995,000 for Alamo Power Plant costs included under Small Hydro.

Table B-8
State Water Project Capital Costs of Requested Delivery Structures
(Dollars)

Project Service Area and Water Supply Contractor	Calendar Year Capital Costs ^a						Total (7)
	1952-1998 (1)	1999 (2)	2000 (3)	2001 (4)	2002 (5)	2003 (6)	
Feather River Area							
County of Butte	136,546	0	0	0	0	0	136,546
Plumas County Flood Control and Water Conservation District	645	0	0	0	0	0	645
Thermalito Irrigation District ^b	43,939	0	0	0	0	0	43,939
Subtotal	181,130	0	0	0	0	0	181,130
North Bay Area							
Napa County Flood Control and Water Conservation District	13,590	0	0	0	0	0	13,590
Solano County Water Agency	662,113	0	0	0	0	0	662,113
Subtotal	675,703	0	0	0	0	0	675,703
South Bay Area							
Alameda County Flood Control and Water Conservation District, Zone 7	265,902	2,796	14,549	33,900	60,000	0	377,147
Alameda County Water District	232,484	0	0	0	0	0	232,484
Santa Clara Valley Water District	21,500	0	0	0	0	0	21,500
San Francisco Water Department ^b	1,066,207	473	0	4,000	80,000	0	1,150,680
Subtotal	1,586,093	3,269	14,549	37,900	140,000	0	1,781,811
Central Coastal Area							
San Luis Obispo County Flood Control and Water Conservation District	26,204	0	0	0	0	0	26,204
Santa Barbara County Flood Control and Water Conservation District	67,058	0	0	0	0	0	67,058
Subtotal	93,262	0	0	0	0	0	93,262
San Joaquin Valley Area							
Castaic Lake Water Agency	82,567	0	0	0	0	0	82,567
Dudley Ridge Water District	304,541	0	0	0	0	0	304,541
Empire West Side Irrigation District	6,358	0	0	0	0	0	6,358
Green Valley Water District ^c	5,292	0	0	0	0	0	5,292
Kern County Water Agency	2,796,395	34,857	36,202	106,160	1,500	0	2,975,114
Oak Flat Water District	46,882	0	0	0	0	0	46,882
Tracy Golf and Country Club ^c	1,028	0	3,659	4,750	2,500	0	11,937
Tulare Lake Basin Water Storage District	277,483	0	0	0	0	0	277,483
Veterans Administration Cemetery ^b	3,342	0	0	0	0	0	3,342
Subtotal	3,523,888	34,857	39,861	110,910	4,000	0	3,713,516
Southern California Area							
Antelope Valley-East Kern Water Agency	395,083	5,580	2,219	1,500	50,000	0	454,382
Castaic Lake Water Agency	354,745	0	0	0	0	0	354,745
Coachella Valley Water District	14,206	0	0	0	0	0	14,206
Crestline-Lake Arrowhead Water Agency	25,298	0	0	0	0	0	25,298
Desert Water Agency	23,438	0	0	0	0	0	23,438
Littlerock Creek Irrigation District	23,732	0	0	0	0	0	23,732
Mojave Water Agency	211,765	0	0	0	0	0	211,765
Palmdale Water District	34,173	0	0	0	0	0	34,173
San Bernardino Valley Municipal Water District	801,669	21,361	129,224	500,000	500,000	25,000	1,977,254
San Gabriel Valley Municipal Water District	131,052	0	0	0	0	0	131,052
San Geronio Pass Water Agency	66,530	0	0	0	0	0	66,530
The Metropolitan Water District of Southern California	4,804,320	440	8,696	1,150	0	0	4,814,606
Ventura County Flood Control District	79,699	0	0	0	0	0	79,699
Subtotal	6,965,710	27,381	140,139	502,650	550,000	25,000	8,210,880
Total	13,025,786	65,507	194,549	651,460	694,000	25,000	14,656,302

^aApproximate only, not to be construed as invoice amounts.

^bNot an SWP water supply contractor.

^cNot an SWP water supply contractor, but has contracted for water.

Table B-9
Capital Costs of Requested Excess Peaking Capacity
(Dollars)

Sheet 1 of 2

Calendar Year	Total Advance Payments and Credits for Excess Capacity (1)	Incremental Costs for Excess Capacity (2)	Overpayment (+) or Underpayment (-) ^a (3)	Annual Surplus Money Investment Fund Interest Rate ^b		Net Over or Underpayment With Interest ^c (6)
				January-June (4)	July-December (5)	
	Metropolitan Water District of Southern California					
1965	0	158,000	(158,000)	3.968%	4.184%	(163,412)
1966	8,056,000	435,800	7,620,200	4.540%	5.057%	7,701,103
1967	9,094,963	1,878,270	7,216,693	4.815%	4.744%	15,524,533
1968	1,523,252	2,887,351	(1,364,099)	5.330%	5.540%	14,959,187
1969	8,310,651	3,059,310	5,251,341	5.946%	6.389%	21,369,973
1970	3,426,736	2,397,102	1,029,634	7.071%	7.125%	23,986,083
1971	1,086,045	1,146,648	(60,603)	5.154%	5.580%	25,238,017
1972	(4,244,807)	487,394	(4,732,201)	4.477%	4.977%	21,532,965
1973	(15,913,829)	25,041	(15,938,870)	6.023%	8.717%	6,014,116
1974	0	37,775	(37,775)	9.222%	10.351%	6,576,393
1975	0	2,085	(2,085)	7.089%	6.791%	7,038,515
1976	0	0	0	6.048%	6.021%	7,469,662
1977	0	0	0	5.788%	6.182%	7,923,403
1978	0	0	0	7.171%	8.096%	8,539,736
1979	0	0	0	8.979%	9.671%	9,354,605
1980	0	0	0	11.500%	11.500%	10,461,314
Total	11,339,011	12,514,776	(1,175,765)	-	-	10,461,314
	San Gabriel Valley Municipal Water District					
1967	0	25,730	(25,730)	4.815%	4.744%	(26,611)
1968	184,422	44,053	140,369	5.330%	5.540%	117,587
1969	49,052	38,075	10,977	5.946%	6.389%	136,751
1970	44,911	17,959	26,952	7.071%	7.125%	175,186
1971	61,588	5,900	55,688	5.154%	5.580%	242,927
1972	(20,263)	6,835	(27,098)	4.477%	4.977%	226,230
1973	(180,465)	0	(180,465)	6.023%	8.717%	49,198
1974	0	0	0	9.222%	10.351%	54,130
1975	0	0	0	7.089%	6.791%	57,952
1976	0	0	0	6.048%	6.021%	61,501
1977	0	0	0	5.788%	6.182%	65,237
1978	0	0	0	7.171%	8.096%	70,312
1979	0	0	0	8.979%	9.671%	77,021
1980	0	0	0	11.500%	11.500%	86,133
Total	139,245	138,552	693	-	-	86,133
	Antelope Valley-East Kern Water Agency					
1968	85,495	1,645	83,850	5.330%	5.540%	86,962
1969	52,625	6,326	46,299	5.946%	6.389%	140,964
1970	101,648	15,076	86,572	7.071%	7.125%	243,222
1971	34,062	11,748	22,314	5.154%	5.580%	279,673
1972	(12,794)	2,018	(14,812)	4.477%	4.977%	277,552
1973	(205,354)	308	(205,662)	6.023%	8.717%	77,288
1974	0	96	(96)	9.222%	10.351%	84,933
1975	0	0	0	7.089%	6.791%	90,929
1976	0	190	(190)	6.048%	6.021%	96,300
1977	0	0	0	5.788%	6.182%	102,150
1978	0	0	0	7.171%	8.096%	110,096
1979	0	0	0	8.979%	9.671%	120,601
1980	0	0	0	11.500%	11.500%	134,869
Total	55,682	37,407	18,275	-	-	134,869

^aOverpayment or underpayment for each calendar year - column (1) minus column (2).

^bInterest rates shown are annual rates. Interest is credited daily at applicable rates on funds deposited in the State's Surplus Money Investment Fund.

^cAmounts shown are end-of-year balances. Interest on overpayments is credited at applicable Surplus Money Investment Fund Interest Rates shown in columns (4) and (5). Interest on underpayments is charged at the 1980 Project Interest Rate of 4.584 percent.

Table B-9
Capital Costs of Requested Excess Peaking Capacity
(Dollars)

Sheet 2 of 2

Reach Number	Annual Required Advance Of Funds													Reach Total (20)
	Incremental Costs and Advance Payments by Calendar Year													
	1965 (7)	1966 (8)	1967 (9)	1968 (10)	1969 (11)	1970 (12)	1971 (13)	1972 (14)	1973 (15)	1974 (16)	1975 (17)	1976 (18)	1981 (19)	
Metropolitan Water District of Southern California														
Incremental Costs														
8C		1,000	1,000											2,000
8D		43,500	43,500											87,000
9		27,000	27,000	13,500										67,500
10A		29,700	29,700	14,800										74,200
11B	10,100	18,300	18,300	9,200										55,900
12D	1,800		19,300	25,800	12,900									59,800
12E	1,800		12,400	18,800	10,800									43,800
13B			12,600	37,800	31,600									82,000
14A	2,500	500	11,100	80,216	107,504	124,069	37,519	6,413	381	87				370,289
14B	1,200	1,800		19,100	19,100	12,800								54,000
14C	1,800	900		13,500	13,500	9,000								38,700
15A	700		14,000	66,947	133,357	128,099	54,821	5,327	946	2,076				406,273
16A	700		18,900	137,894	182,000	211,608	133,927	26,203	5,767	6,156				723,155
17E		51,500	444,600	537,247	860,024	998,985	699,281	193,286	17,947	29,456	2,085			3,834,411
17F	109,100	261,600	261,600	261,600	261,600	239,500								1,395,000
25			964,270	1,650,947	1,426,925	673,041	221,100	256,165						5,192,448
28J		304,612	13,706	296,668	65,966	230,169	1,209,586	2,017,134	235,900	4,900				4,378,641
Total	129,700	740,412	1,891,976	3,184,019	3,125,276	2,627,271	2,356,234	2,504,528	260,941	42,675	2,085			16,865,117
Current Adjustment														
8C through 25 28J	1. Advance Payments Applied to Incremental Costs Amendment 2 ^d													
	0	8,056,000	9,094,963	1,523,252	8,310,651	3,426,736	1,086,045	(4,244,807)	(14,381,396)				(356,668)	12,514,776
	2. Interest Credits-Amendment 2 ^e													
									(1,532,433)				(10,104,646)	(11,637,079)
	3. Advance Payments Applied to Incremental Costs Amendment 5 ^f													
0	1,240,000	1,483,180	2,469,325	(927,035)	1,729,160	3,215,258	2,967,475	1,690,000	(9,488,722)				4,378,641	
4. Interest Credits-Amendment 5 ^g														
										(2,721,803)				(2,721,803)
5. Net Required Advance of Funds														
0	9,296,000	10,578,143	3,992,577	7,383,616	5,155,896	4,301,303	(1,277,332)	(14,233,829)	(12,210,525)				(10,461,314)	2,524,535
San Gabriel Valley Municipal Water District														
Incremental Costs														
25			25,730	44,053	38,075	17,959	5,900	6,835						138,552
Total Unadjusted Incremental Costs for Past Payments														
			25,730	44,053	38,075	17,959	5,900	6,835						138,552
Current Adjustment														
25	1. Advance Payments Applied to Incremental Costs ^d													
			0	184,422	49,052	44,911	61,588	(20,263)	(174,133)				(7,025)	138,552
	2. Interest Credit													
									(6,332)				(79,108)	(85,440)
	3. Net Required Advance of Funds													
			0	184,422	49,052	44,911	61,588	(20,263)	(180,465)				(86,133)	53,112
Antelope Valley-East Kern Water Agency														
Incremental Costs														
29A				1,645	6,326	13,376	10,048	2,018	308	96		190		34,007
29F						1,700	1,700							3,400
Total Unadjusted Incremental Costs for Past Payments														
				1,645	6,326	15,076	11,748	2,018	308	96		190		37,407
Current Adjustment														
29A	1. Advance Payments Applied to Incremental Costs ^d													
				85,495	52,625	101,648	34,062	(12,794)	(189,120)	0		0	(34,509)	37,407
	2. Interest Credit													
									(16,234)				(100,360)	(116,594)
	3. Net Required Advance of Funds													
				85,495	52,625	101,648	34,062	(12,794)	(205,354)	0		0	(134,869) ^h	(79,187)

^d Actual payments are shown for 1965 through 1976, with 1981 adjusted to reflect overpayments and underpayments without interest for prior years.

^e Interest for overpayments and underpayments under provisions of Amendment 2 of the contract.

^f Actual payments are shown for 1965 through 1973, with 1974 adjusted to reflect overpayments and underpayments without interest for prior years.

^g Interest for overpayments and underpayments under provisions of Amendment 5 of the contract.

^h Amounts in excess of incremental costs, under the provisions of the contract, reduce the Transportation Charge capital cost component of the Agency's Statement of Charges for January 1981.

Table B-10

Capital Costs of Each Aqueduct Reach to Be Reimbursed through Capital Cost Component of Transportation Charge

(Dollars)

Sheet 1 of 8

Calendar	Upper Feather Division (1)	North Bay Aqueduct					South Bay Aqueduct			
		Reach 1 (2)	Reach 2 (3)	Reach 3A (4)	Reach 3B (5)	Total (6)	Reach 1 (7)	Reach 2 (8)	Reach 4 (9)	Reach 5 (10)
1952	0	0	0	0	0	0	97	34	30	57
1953	0	0	0	0	0	0	477	166	144	297
1954	0	0	0	0	0	0	1,466	508	437	959
1955	0	0	0	0	0	0	1,944	674	560	1,266
1956	0	0	0	0	0	0	18,789	6,515	5,090	12,545
1957	0	13,290	3,391	0	9,953	26,634	45,090	15,639	12,285	33,218
1958	2	19,202	5,011	0	25,798	50,011	195,985	80,961	7,714	21,930
1959	14	7,517	2,118	0	17,653	27,288	496,140	148,516	24,945	17,118
1960	28	8,797	4,292	0	4,838	17,927	1,130,378	67,351	71,779	68,028
1961	10	1,551	10,318	0	2,526	14,395	3,273,247	180,596	307,885	74,398
1962	32	217	(1,751)	0	414	(1,120)	1,548,884	203,535	695,446	35,102
1963	51	2,510	(1,063)	0	983	2,430	480,716	69,182	2,284,291	206,587
1964	7,791	39,879	12,046	0	21,934	73,859	2,549,118	15,903	181,900	264,410
1965	3,139	72,793	17,900	0	170,361	261,054	807,505	153,454	85,425	447,830
1966	(48)	59,615	12,972	0	438,949	511,536	898,074	149,529	142,096	1,690,200
1967	47	47,257	11,597	0	1,551,023	1,609,877	607,614	50,423	293,304	3,496,284
1968	51,573	70,586	19,560	0	831,158	921,304	965,119	19,543	89,300	2,931,101
1969	234,232	63,650	23,628	0	46,428	133,706	455,173	9,618	3,860	896,727
1970	16,227	59,090	42,733	0	9,415	111,238	52,481	3,380	10,517	154,358
1971	27,204	20,819	31,516	0	8,480	60,815	24,505	4,645	5,035	20,395
1972	9	15,538	12,952	0	10,058	38,548	26,918	825	2,945	26,090
1973	25	18,488	29,018	0	39,878	87,384	24,468	4,010	6,016	12,708
1974	45	67,352	29,978	0	134,332	231,662	17,108	1,192	1,765	65,587
1975	21	62,855	73,112	0	45,091	181,058	57,619	561	1,165	7,291
1976	51	52,419	75,611	218	13,168	141,416	104,242	2,846	8,915	12,701
1977	28	53,274	65,662	2,240	23,138	144,314	176,062	3,625	3,225	16,158
1978	38	61,936	57,158	2,955	28,987	151,036	264,581	4,494	3,668	14,028
1979	23	316,620	91,367	3,953	62,240	474,180	111,106	17,151	8,515	31,725
1980	26	422,804	111,600	19,910	96,125	650,439	368,942	17,708	8,249	38,045
1981	34	430,992	147,295	(10,752)	43,157	610,692	(145,428)	3,600	6,533	12,448
1982	11	934,812	357,720	(7,165)	134,408	1,419,775	(44,778)	18,971	7,451	37,824
1983	19	1,091,091	1,076,627	2,628	517,615	2,687,961	429,225	73,925	38,185	72,415
1984	26	1,875,968	2,317,661	3,290	1,068,363	5,265,282	506,951	36,354	9,610	92,846
1985	29	2,248,491	7,849,886	27,815	3,416,370	13,542,562	34,103	2,822	5,034	27,138
1986	31	16,420,238	10,020,277	1,309,599	1,819,349	29,569,463	85,732	14,715	17,144	13,982
1987	32	11,873,826	7,214,307	1,628,932	1,670,596	22,387,661	126,377	15,693	27,881	32,931
1988	55	3,287,756	1,648,431	1,015,971	686,821	6,638,979	290,505	36,744	51,786	25,078
1989	44	1,056,583	950,985	224,567	374,886	2,607,021	130,609	16,848	35,518	12,582
1990	63	493,522	537,881	145,694	71,938	1,249,035	275,732	32,387	99,251	40,263
1991	54	76,599	17,130	24,846	70,542	189,117	1,153,109	26,900	53,613	21,889
1992	42	56,492	6,525	18,333	37,778	119,128	401,906	53,036	61,799	51,386
1993	30	104,317	24,579	40,129	82,032	251,057	313,476	55,679	79,149	39,293
1994	14	68,065	13,463	27,107	45,909	154,544	(211,712)	29,017	362,585	36,350
1995	3	26,002	5,920	7,337	20,617	59,876	265,751	42,516	48,189	21,436
1996	0	14,790	3,334	6,614	14,606	39,344	139,573	13,049	25,751	10,677
1997	3	67,264	35,545	38,585	(13,571)	127,823	203,476	31,135	36,986	16,906
1998	7	15,301	6,392	6,749	10,314	38,756	67,158	6,120	14,731	4,590
1999	2	71,896	35,374	33,950	32,597	173,817	162,685	25,317	35,678	24,361
2000	24	14,905	8,102	6,343	6,014	35,364	99,759	18,937	30,625	19,007
2001	0	0	0	0	0	0	661,318	0	63,263	0
2002	0	0	0	0	0	0	1,101,506	0	185,663	0
2003	0	0	0	0	0	0	546,789	0	45,709	0
2004	0	0	0	0	0	0	26,176	0	0	0
2005	0	0	0	0	0	0	23,151	0	0	0
2006	0	0	0	0	0	0	23,151	0	0	0
2007	0	0	0	0	0	0	0	0	0	0
2008	0	0	0	0	0	0	0	0	0	0
2009	0	0	0	0	0	0	0	0	0	0
2010	0	0	0	0	0	0	0	0	0	0
Total	341,091	41,786,969	33,018,160	4,579,848	13,703,271	93,088,248	21,370,148	1,786,349	5,608,640	11,210,545

Table B-10

Capital Costs of Each Aqueduct Reach to Be Reimbursed through Capital Cost Component of Transportation Charge

(Dollars)

Sheet 2 of 8

Calendar Year	South Bay Aqueduct (continued)					California Aqueduct			
						North San Joaquin Division			
	Reach 6 (11)	Reach 7 (12)	Reach 8 (13)	Reach 9 (14)	Total (15)	Reach 1 (16)	Reach 2A (17)	Reach 2B (18)	Subtotal (19)
1952	8	66	72	132	496	4,012	3,279	1,499	8,790
1953	38	327	336	640	2,425	10,559	8,589	3,964	23,112
1954	123	1,005	1,003	1,954	7,455	13,796	11,163	5,179	30,138
1955	160	1,293	1,149	2,454	9,500	7,370	5,952	2,760	16,082
1956	1,559	11,959	11,043	28,372	95,872	9,880	5,020	2,398	17,298
1957	3,659	28,675	27,385	563,114	729,065	11,953	5,456	2,612	20,021
1958	2,243	17,872	17,385	560,904	904,994	18,585	17,191	7,994	43,770
1959	357	3,200	3,568	149,874	843,718	123,170	100,306	45,510	268,986
1960	1,102	2,944	4,498	359,749	1,705,829	191,408	102,136	48,968	342,512
1961	4,726	18,325	22,765	(1,367)	3,880,575	153,765	195,947	42,843	392,555
1962	17,295	160,939	178,242	209,042	3,048,485	612,258	491,225	168,218	1,271,701
1963	265,414	1,250,386	939,832	129,902	5,626,310	1,993,284	1,525,734	684,095	4,203,113
1964	100,603	1,716,371	2,327,770	2,947,522	10,103,597	4,674,280	2,369,858	700,074	7,744,212
1965	42,345	368,476	637,266	1,921,844	4,464,145	5,877,189	6,873,699	2,975,719	15,726,607
1966	17,663	34,915	140,350	777,887	3,850,714	8,553,362	14,112,820	5,677,099	28,343,281
1967	(41,567)	137,856	147,183	379,764	5,070,861	9,678,607	10,672,113	6,646,739	26,997,459
1968	84,553	2,130	68,057	253,152	4,412,955	6,392,664	891,681	1,303,186	8,587,531
1969	4,279	11,572	162,300	32,000	1,575,529	3,542,767	792,259	443,924	4,778,950
1970	2,487	6,820	20,086	(15,718)	234,411	2,236,607	149,692	115,578	2,501,877
1971	4,350	6,923	17,750	39,084	122,687	98,138	215,512	69,410	383,060
1972	1,084	203	4,800	32,199	95,064	159,608	43,721	7,744	211,073
1973	288	989	7,449	9,693	65,621	105,581	25,496	22,418	153,495
1974	527	6,020	30,628	11,433	134,260	177,700	16,627	45,707	240,034
1975	126	679	1,086	3,464	71,991	239,144	14,680	169,676	423,500
1976	701	3,529	8,362	26,186	167,482	641,860	45,533	65,943	753,336
1977	270	1,310	8,651	24,938	234,239	274,381	20,283	22,568	317,232
1978	231	1,204	1,631	17,123	306,960	801,265	36,221	9,714	847,200
1979	1,367	1,721	2,134	7,322	181,041	1,051,792	59,695	26,106	1,137,593
1980	1,321	1,718	2,182	7,102	445,267	4,173,603	96,760	38,789	4,309,152
1981	308	1,462	1,398	5,077	(114,602)	(502,921)	1,487,516	38,451	1,023,046
1982	716	1,561	1,746	6,074	29,565	700,738	46,501	22,308	769,547
1983	407	5,721	8,143	23,367	651,388	706,104	84,435	211,619	1,002,158
1984	269	1,853	1,667	13,301	662,851	1,559,539	41,352	48,478	1,649,369
1985	402	1,657	2,129	6,750	80,035	677,955	24,812	19,404	722,171
1986	1,119	2,744	3,313	12,234	150,983	398,788	63,890	35,420	498,038
1987	1,496	3,081	3,560	21,842	232,861	799,672	88,945	41,659	930,276
1988	5,706	6,689	7,603	33,728	457,839	2,898,156	(128,051)	(56,448)	2,713,657
1989	2,641	3,878	4,755	14,489	221,320	6,898,872	346,589	173,993	7,419,454
1990	5,092	19,899	36,584	87,796	597,004	13,483,785	112,002	2,446,232	16,042,019
1991	1,942	5,059	7,357	31,682	1,301,551	13,914,632	133,121	114,981	14,162,734
1992	1,184	2,042	2,250	35,464	609,067	6,260,482	241,456	239,437	6,741,375
1993	3,618	6,028	8,873	42,200	548,316	2,542,869	257,330	200,072	3,000,271
1994	2,897	4,781	5,346	89,991	319,255	1,145,666	148,396	88,357	1,382,419
1995	11,556	3,635	14,769	24,750	432,602	1,462,211	217,940	131,995	1,812,146
1996	3,092	2,271	2,699	12,522	209,634	874,227	74,153	41,215	989,595
1997	1,454	4,141	3,655	20,589	318,342	2,064,446	146,851	84,303	2,295,600
1998	363	1,134	(6,005)	5,776	93,867	719,622	33,695	16,670	769,987
1999	1,529	3,283	12,698	31,555	297,106	2,214,157	88,779	90,528	2,393,464
2000	1,058	2,326	10,680	19,799	202,191	(765,277)	64,297	62,028	(638,952)
2001	9,246	55,382	167,670	339,659	1,296,538	1,928,863	7,854	9,562	1,946,279
2002	17,727	155,361	511,892	1,006,924	2,979,073	1,299,196	0	0	1,299,196
2003	3,744	29,206	96,181	231,522	953,151	200,532	0	0	200,532
2004	0	0	0	0	26,176	200,532	0	0	200,532
2005	0	0	0	0	23,151	177,357	0	0	177,357
2006	0	0	0	0	23,151	177,357	0	0	177,357
2007	0	0	0	0	0	0	0	0	0
2008	0	0	0	0	0	0	0	0	0
2009	0	0	0	0	0	0	0	0	0
2010	0	0	0	0	0	0	0	0	0
Total	594,878	4,122,621	5,703,926	10,596,856	60,993,963	113,866,148	42,490,451	23,416,698	179,773,297

Table B-10

Capital Costs of Each Aqueduct Reach to Be Reimbursed through Capital Cost Component of Transportation Charge

(Dollars)

Sheet 3 of 8

Calendar Year	California Aqueduct (continued)								
	San Luis Division						South San Joaquin Division		
	Reach 3 (20)	Reach 4 (21)	Reach 5 (22)	Reach 6 (23)	Reach 7 (24)	Subtotal (25)	Reach 8C (26)	Reach 8D (27)	Reach 9 (28)
1952	2,492	3,549	3,987	1,010	1,390	12,428	13	727	1,109
1953	6,999	10,144	10,986	2,834	3,869	34,832	45	2,671	4,185
1954	8,704	12,545	13,693	3,520	4,766	43,228	50	2,719	4,026
1955	4,273	6,055	6,813	1,728	2,325	21,194	19	888	1,100
1956	3,295	5,600	5,857	1,445	3,556	19,753	98	3,850	4,376
1957	3,543	6,115	6,357	1,565	3,998	21,578	234	10,604	13,209
1958	11,927	19,393	22,037	5,509	7,512	66,378	375	19,033	25,073
1959	21,979	37,358	39,689	9,813	19,679	128,518	436	20,578	25,697
1960	207,025	45,419	41,044	12,074	37,633	343,195	1,673	44,565	25,290
1961	184,443	292,639	170,559	38,338	70,068	756,047	3,949	75,726	30,852
1962	495,836	549,984	252,698	22,397	26,967	1,347,882	6,131	159,481	62,375
1963	2,772,189	2,034,351	2,498,712	66,353	30,647	7,402,252	5,861	161,252	81,343
1964	4,348,311	4,932,301	1,053,227	161,422	251,461	10,746,722	4,014	90,622	117,907
1965	3,860,997	5,688,252	2,869,931	1,072,111	667,768	14,159,059	15,049	491,042	564,036
1966	2,312,372	8,527,843	5,765,798	4,230,221	7,708,334	28,544,568	201,274	5,197,322	2,539,278
1967	(44,527)	2,062,305	6,942,522	222,885	6,675,398	15,858,583	212,285	4,982,844	3,363,650
1968	119,884	395,689	973,956	179,917	461,031	2,130,477	64,234	611,192	940,074
1969	(6,065)	126,946	98,492	107,486	160,668	487,527	58,960	116,146	85,130
1970	32,387	(20,243)	105,385	(827,457)	1,215,966	506,038	23,011	106,810	84,116
1971	99,945	230,624	305,227	26,995	341,010	1,003,801	8,813	33,099	23,088
1972	15,990	90,852	17,053	14,621	281,343	419,859	10,818	13,349	16,603
1973	6,753	103,707	41,549	13,810	41,427	207,246	5,145	11,089	13,249
1974	6,618	117,165	55,978	16,199	71,796	267,756	5,434	24,433	16,567
1975	18,921	107,275	23,671	8,797	152,574	311,238	5,424	15,960	12,966
1976	17,485	79,554	13,041	5,138	41,687	156,905	19,931	76,280	62,164
1977	35,707	84,669	9,412	4,028	9,655	143,471	21,096	70,005	97,952
1978	8,539	428,395	7,006	3,536	6,994	454,470	7,584	40,453	17,395
1979	(35,394)	543,225	19,463	9,485	(242,253)	294,526	10,474	6,181	6,227
1980	66,622	3,450,695	191,307	75,209	185,384	3,969,217	2,158	17,492	17,706
1981	28,491	(2,244,127)	(44,017)	(15,456)	918,984	(1,356,125)	1,151	9,642	9,541
1982	100,629	(1,616,569)	20,184	10,359	3,525,738	2,040,341	2,469	8,283	6,956
1983	75,639	33,881	11,785	6,638	1,811,638	1,939,581	7,955	13,782	11,090
1984	31,748	87,083	26,712	12,754	3,053,662	3,211,959	26,489	9,959	6,268
1985	53,251	56,732	13,685	6,934	582,910	713,512	7,220	9,762	7,688
1986	73,979	201,509	50,668	19,223	1,282,469	1,627,848	8,902	25,011	20,503
1987	(7,829)	116,268	40,009	15,946	518,349	682,743	12,744	18,927	56,042
1988	(149,385)	224,154	(406,398)	(137,353)	923,622	454,640	9,833	(119,741)	(60,639)
1989	39,652	594,894	232,852	80,090	575,855	1,523,343	5,279	91,501	278,061
1990	39,270	259,895	79,589	29,606	461,219	869,579	5,814	41,345	2,016,434
1991	4,916,134	397,959	98,847	35,860	511,519	5,960,319	4,588	43,140	41,348
1992	(757,001)	545,729	211,854	74,544	396,398	471,524	3,546	103,695	109,225
1993	110,233	724,929	186,271	70,815	720,283	1,812,531	15,016	101,634	90,929
1994	1,151,976	288,018	63,862	27,812	710,770	2,242,438	6,770	42,455	40,696
1995	285,776	441,479	130,761	58,640	1,914,186	2,830,842	12,548	49,963	43,251
1996	31,942	(110,471)	34,529	12,219	588,712	556,931	6,444	29,863	27,050
1997	73,224	513,793	(277,781)	42,881	5,016,215	5,368,332	11,497	49,111	43,799
1998	19,692	295,590	34,319	16,542	2,819,556	3,185,699	2,562	11,115	8,955
1999	44,557	329,390	122,144	50,204	2,414,163	2,960,458	5,703	25,127	23,466
2000	100,023	447,521	89,591	39,994	1,135,656	1,812,785	6,712	26,970	24,853
2001	338,536	17,876	5,798	1,933	10,983,790	11,347,933	483	2,415	1,933
2002	0	0	0	0	7,549,604	7,549,604	0	0	0
2003	0	0	0	0	0	0	0	0	0
2004	0	0	0	0	0	0	0	0	0
2005	0	0	0	0	0	0	0	0	0
2006	0	0	0	0	0	0	0	0	0
2007	0	0	0	0	0	0	0	0	0
2008	0	0	0	0	0	0	0	0	0
2009	0	0	0	0	0	0	0	0	0
2010	0	0	0	0	0	0	0	0	0
Total	21,187,787	31,577,939	22,290,714	5,951,174	66,657,951	147,665,565	858,313	13,000,372	11,064,192

Table B-10

Capital Costs of Each Aqueduct Reach to Be Reimbursed through Capital Cost Component of Transportation Charge

(Dollars)

Sheet 4 of 8

Calendar Year	California Aqueduct (continued)								
	South San Joaquin Division (continued)								
	Reach 10A (29)	Reach 11B (30)	Reach 12D (31)	Reach 12E (32)	Reach 13B (33)	Reach 14A (34)	Reach 14B (35)	Reach 14C (36)	Reach 15A (37)
1952	695	1,279	1,980	995	1,663	794	212	212	1,911
1953	2,569	4,790	7,480	3,745	6,236	2,599	733	741	7,016
1954	2,821	4,855	7,565	3,792	6,319	2,880	810	817	7,073
1955	1,097	1,557	2,404	1,211	2,025	1,183	325	327	2,253
1956	4,428	6,223	9,233	4,737	8,054	7,026	1,638	1,584	9,939
1957	13,269	18,772	29,082	14,615	24,411	15,651	3,834	3,864	26,871
1958	25,086	48,191	78,564	39,087	61,715	33,726	12,330	11,813	49,499
1959	25,787	67,246	107,781	53,836	86,478	64,824	22,102	21,828	70,838
1960	47,492	66,317	77,936	39,867	63,517	84,363	23,260	22,305	73,305
1961	68,505	46,073	88,274	51,457	28,015	242,753	91,290	65,565	150,205
1962	57,705	56,056	69,189	44,851	49,179	208,180	61,489	47,608	133,653
1963	52,585	91,914	173,985	86,405	67,733	425,626	104,436	77,970	102,072
1964	124,014	333,621	291,013	174,469	86,271	1,093,795	684,005	485,033	571,173
1965	622,257	1,053,029	1,524,848	1,044,851	196,487	3,385,205	1,655,024	1,436,258	476,830
1966	2,800,056	3,709,779	673,429	466,228	418,141	4,916,319	974,862	724,354	1,829,852
1967	3,652,342	4,636,627	1,881,333	1,244,265	1,238,428	2,788,299	525,653	400,183	1,721,304
1968	1,025,969	1,323,302	4,726,074	3,145,775	8,343,706	10,210,266	1,330,361	1,405,117	7,522,015
1969	145,111	229,185	706,272	529,080	3,704,065	15,112,041	1,223,457	1,134,395	9,523,012
1970	74,366	85,151	70,725	72,798	320,797	11,031,255	987,213	738,955	8,836,897
1971	15,595	45,006	43,988	42,624	339,078	2,925,191	193,255	36,514	3,275,227
1972	19,736	32,657	43,939	24,748	81,937	1,388,348	101,784	20,165	1,003,380
1973	14,283	16,448	9,980	16,320	25,090	680,834	19,584	13,469	798,805
1974	22,111	14,951	19,555	32,240	29,582	524,504	30,735	16,333	778,696
1975	15,865	13,479	10,793	13,678	25,827	269,197	25,164	21,048	370,265
1976	76,202	54,217	37,464	59,842	105,332	507,519	59,753	42,776	434,574
1977	75,628	52,919	22,826	54,444	81,293	301,515	49,972	30,152	235,514
1978	48,754	16,469	(2,816)	27,331	43,126	348,674	(653)	1,500	297,817
1979	241	6,906	13,401	14,229	25,411	293,786	9,846	7,856	245,590
1980	18,165	18,813	15,608	27,498	34,190	1,676,267	29,169	23,023	1,719,775
1981	10,309	14,885	26,473	20,972	25,515	(1,076,221)	27,551	33,674	(1,142,721)
1982	8,237	6,608	7,680	8,346	16,339	(745,914)	9,886	29,393	(804,147)
1983	14,488	9,792	14,174	13,050	35,872	419,650	17,389	24,933	115,983
1984	7,533	27,613	87,907	49,271	22,732	54,590	75,453	63,060	63,537
1985	9,215	6,949	5,263	8,013	8,875	(49,408)	9,523	5,867	54,782
1986	22,335	16,664	16,014	25,031	20,483	140,642	25,960	13,913	154,089
1987	16,704	13,512	12,369	20,023	15,435	101,453	20,411	8,581	227,047
1988	(159,357)	(73,648)	(151,040)	(51,401)	(120,104)	161,077	(75,276)	(75,307)	144,369
1989	70,153	65,216	63,382	120,925	73,037	2,778,880	119,559	36,660	2,952,046
1990	34,841	29,230	27,269	49,082	34,048	715,031	44,187	14,537	440,017
1991	36,888	32,195	30,146	55,119	34,144	423,235	50,345	12,116	353,596
1992	103,321	99,765	98,178	192,455	97,638	991,603	185,311	9,210	387,615
1993	90,291	70,131	63,247	118,440	80,530	687,462	109,792	38,960	942,211
1994	65,737	29,221	26,997	50,234	35,154	400,534	44,481	17,426	324,942
1995	435,909	32,487	25,516	49,885	41,733	524,524	48,740	29,125	450,952
1996	253,433	19,489	15,020	30,202	29,333	403,125	26,945	16,405	253,622
1997	73,458	30,890	25,368	48,767	40,900	451,910	47,815	29,878	809,848
1998	14,618	7,107	5,773	10,697	9,676	284,393	10,799	6,819	115,129
1999	47,321	16,971	13,316	34,377	31,475	263,933	24,598	14,798	268,064
2000	55,259	17,575	19,183	35,581	26,469	209,057	18,383	13,274	203,651
2001	1,449	1,449	1,449	2,415	1,933	14,494	368,638	483	12,562
2002	0	0	0	0	0	0	50,730	0	0
2003	0	0	0	0	0	0	0	0	0
2004	0	0	0	0	0	0	0	0	0
2005	0	0	0	0	0	0	0	0	0
2006	0	0	0	0	0	0	0	0	0
2007	0	0	0	0	0	0	0	0	0
2008	0	0	0	0	0	0	0	0	0
2009	0	0	0	0	0	0	0	0	0
2010	0	0	0	0	0	0	0	0	0
Total	10,264,876	12,529,933	11,175,589	8,226,502	16,065,323	65,696,670	9,482,863	7,135,570	46,602,555

Table B-10

Capital Costs of Each Aqueduct Reach to Be Reimbursed through Capital Cost Component of Transportation Charge

(Dollars)

Sheet 5 of 8

Calendar Year	California Aqueduct (continued)								
	South San Joaquin (contd.)		Tehachapi Division			Mojave Division			
	Reach 16A (38)	Subtotal (39)	Reach 17E (40)	Reach 17F (41)	Subtotal (42)	Reach 18A (43)	Reach 19 (44)	Reach 19C (45)	Reach 20A (46)
1952	4,440	16,030	9,703	4,072	13,775	4,090	1,520	0	2,561
1953	16,513	59,323	31,337	13,284	44,621	12,610	4,685	0	7,246
1954	16,601	60,328	46,243	20,010	66,253	16,642	6,184	0	9,506
1955	5,223	19,612	25,880	11,362	37,242	5,612	2,086	0	2,529
1956	21,754	82,940	47,487	17,609	65,096	6,038	2,244	0	2,440
1957	62,657	237,073	119,673	49,130	168,803	22,348	8,304	0	9,035
1958	133,083	537,575	164,056	72,091	236,147	37,917	14,166	123	15,391
1959	205,748	773,179	151,389	57,883	209,272	38,620	23,450	1,102	23,605
1960	204,788	774,678	203,222	45,323	248,545	21,356	26,093	5,318	40,523
1961	206,305	1,148,969	387,819	85,558	473,377	35,664	32,281	2,262	34,918
1962	171,396	1,127,293	353,119	82,610	435,729	68,508	266,284	1,841	10,323
1963	481,941	1,913,123	1,191,633	124,757	1,316,390	37,379	435,881	4,137	39,706
1964	1,778,952	5,834,889	1,866,000	775,005	2,641,005	95,693	706,369	8,564	43,342
1965	1,268,176	13,733,092	2,574,824	2,284,869	4,859,693	121,060	716,092	9,156	108,519
1966	2,896,274	27,347,168	5,537,412	9,323,517	14,860,929	366,116	1,644,699	13,373	159,282
1967	3,442,021	30,089,234	26,239,390	12,398,708	38,638,098	1,312,022	903,880	24,103	645,078
1968	7,578,498	48,226,583	33,363,479	7,416,464	40,779,943	136,804	7,109,653	71,388	1,889,601
1969	13,136,056	45,702,910	40,368,425	6,883,206	47,251,631	213,805	2,465,641	7,423	5,939,151
1970	13,890,751	36,322,845	35,446,706	6,786,231	42,232,937	2,211,077	1,210,665	6,217	3,652,478
1971	7,903,937	14,885,415	20,141,395	6,835,303	26,976,698	1,496,843	284,738	6,994	1,074,759
1972	3,025,555	5,783,019	10,002,935	34,791	10,037,726	129,417	409,903	3,620	471,963
1973	1,472,313	3,096,609	3,090,140	36,207	3,126,347	23,931	75,638	2,539	88,416
1974	1,031,843	2,546,984	4,798,348	152,494	4,950,842	28,399	205,581	2,703	138,673
1975	489,545	1,289,211	2,144,178	411,404	2,555,582	44,774	70,652	5,066	68,157
1976	618,049	2,154,103	1,124,357	174,629	1,298,986	121,043	84,593	6,786	59,967
1977	580,209	1,673,525	655,047	31,512	686,559	261,400	133,767	7,521	117,878
1978	582,775	1,428,409	1,900,843	27,956	1,928,799	553,014	57,150	5,872	51,615
1979	542,554	1,182,702	2,099,385	61,381	2,160,766	626,615	339,536	10,831	37,085
1980	3,772,498	7,372,362	17,433,610	6,046	17,439,656	1,130,429	1,073,430	3,604	308,188
1981	(2,527,211)	(4,566,440)	(3,848,206)	6,908	(3,841,298)	1,218,824	845,702	4,498	48,625
1982	(1,850,736)	(3,296,600)	11,370,112	6,054	11,376,166	6,968,683	746,900	3,920	33,869
1983	166,232	864,390	8,862,914	8,269	8,871,183	10,909,386	64,660	2,596	40,793
1984	119,387	613,799	3,227,937	31,701	3,259,638	8,340,371	309,491	3,124	17,505
1985	82,117	165,866	1,926,289	10,460	1,936,749	5,264,156	227,986	3,885	68,422
1986	186,348	675,895	1,381,955	33,788	1,415,743	2,049,111	2,069,663	4,261	2,331,707
1987	194,936	718,184	671,183	13,807	684,990	1,347,722	(6,453)	4,684	562,540
1988	262,334	(308,900)	1,408,760	(49,734)	1,359,026	847,954	(104,961)	13,409	(159,892)
1989	5,955,356	12,610,055	504,715	64,660	569,375	376,980	207,150	50,953	31,173
1990	640,283	4,092,118	783,219	25,218	808,437	202,065	(402,573)	61,192	(637,062)
1991	774,129	1,890,989	691,578	33,405	724,983	273,021	22,218	81,545	(188,732)
1992	731,512	3,113,074	741,986	24,369	766,355	620,962	384,568	86,644	225,398
1993	857,038	3,265,681	1,223,402	35,370	1,258,772	1,131,166	248,287	72,746	110,869
1994	853,328	1,937,975	806,213	16,681	822,894	998,126	164,096	60,147	51,340
1995	628,941	2,373,574	1,538,497	19,443	1,557,940	390,433	157,481	45,990	92,925
1996	388,064	1,498,995	2,571,039	10,797	2,581,836	91,593	69,281	22,188	35,656
1997	481,458	2,144,699	1,009,249	18,265	1,027,514	135,402	92,607	13,590	65,433
1998	431,016	918,659	891,183	6,843	898,026	47,486	36,170	4,164	29,900
1999	369,372	1,138,521	688,768	11,943	700,711	113,030	49,054	5,329	171,872
2000	306,072	963,039	499,905	5,941	505,846	102,491	80,720	936	189,077
2001	16,910	426,613	249,155	966	250,121	3,381	4,348	0	3,381
2002	0	50,730	227,414	0	227,414	0	0	0	0
2003	0	0	227,414	0	227,414	0	0	0	0
2004	0	0	227,414	0	227,414	0	0	0	0
2005	0	0	201,133	196,286	397,419	0	0	0	0
2006	0	0	0	201,133	201,133	0	0	0	0
2007	0	0	0	0	0	0	0	0	0
2008	0	0	0	0	0	0	0	0	0
2009	0	0	0	0	0	0	0	0	0
2010	0	0	0	0	0	0	0	0	0
Total	74,607,341	286,710,099	249,601,263	54,955,985	304,557,248	50,611,569	23,581,560	756,344	18,176,734

Table B-10

Capital Costs of Each Aqueduct Reach to Be Reimbursed through Capital Cost Component of Transportation Charge

(Dollars)

Sheet 6 of 8

Calendar Year	California Aqueduct (continued)							Santa Ana Division	
	Mojave Division (continued)								
	Reach 20B (47)	Reach 21 (48)	Reach 22A (49)	Reach 22B (50)	Reach 23 (51)	Reach 24 (52)	Subtotal (53)	Reach 25 (54)	Reach 26A (55)
1952	892	5,788	35	2,013	2,074	2,413	21,386	3,334	5,599
1953	3,402	17,846	71	5,752	6,886	7,438	65,936	10,275	17,264
1954	4,548	23,558	369	8,560	7,849	9,820	87,036	13,566	22,790
1955	2,213	7,947	178	2,754	2,725	3,313	29,357	4,575	7,687
1956	2,655	8,542	216	2,905	2,961	3,561	31,562	4,917	8,264
1957	9,826	31,616	800	10,757	10,962	13,177	116,825	18,205	30,586
1958	16,752	53,569	1,397	18,717	18,578	22,627	199,237	31,001	52,019
1959	18,604	56,724	1,844	25,421	20,372	45,646	255,388	39,325	58,137
1960	37,179	43,893	11,029	136,751	17,152	109,816	449,110	65,655	93,700
1961	37,102	21,532	14,517	215,859	9,546	373,473	777,154	26,979	56,734
1962	10,730	8,197	4,186	164,168	4,336	279,421	817,994	9,964	36,235
1963	40,865	26,670	17,081	237,695	7,228	358,503	1,205,145	31,013	112,271
1964	71,116	33,912	22,793	262,996	6,863	244,003	1,495,651	69,669	202,642
1965	343,506	91,095	65,689	827,655	11,836	621,566	2,916,174	279,237	206,356
1966	1,311,628	160,388	178,538	1,746,245	31,078	1,018,628	6,629,975	415,066	364,004
1967	1,718,942	498,257	367,961	3,146,128	62,135	2,331,106	11,009,612	3,184,296	638,539
1968	2,291,691	1,141,929	1,145,768	4,588,850	102,207	2,600,293	21,078,184	8,264,126	1,268,194
1969	5,626,284	2,358,737	1,515,147	7,750,478	260,659	11,131,406	37,268,731	6,807,783	1,768,456
1970	5,304,372	3,232,911	2,081,810	23,451,612	1,240,798	16,885,193	59,277,133	2,169,051	7,229,429
1971	1,091,123	825,070	432,464	16,772,680	1,922,115	5,385,721	29,292,507	1,135,248	9,811,736
1972	635,507	484,772	324,865	3,788,894	48,049	788,479	7,085,469	1,095,740	5,528,987
1973	83,840	63,774	36,179	1,623,274	24,333	4,225,877	6,247,801	136,994	1,810,729
1974	118,639	103,545	54,198	5,699,605	130,567	766,562	7,248,472	68,180	1,922,999
1975	169,294	167,240	19,453	4,793,580	19,467	373,783	5,731,466	166,653	3,787,797
1976	102,909	44,896	24,732	3,103,916	84,188	204,705	3,837,735	475,176	1,494,750
1977	120,160	71,389	49,445	1,654,122	60,112	232,230	2,708,024	76,255	776,085
1978	68,838	32,855	18,183	677,448	36,484	210,198	1,711,657	57,463	131,076
1979	36,225	18,948	10,675	560,506	10,634	103,615	1,754,670	29,960	80,482
1980	284,545	133,526	121,171	2,239,224	60,229	559,963	5,914,309	31,462	181,638
1981	32,214	13,223	6,466	(774,614)	138,917	203,941	1,737,796	5,864	69,031
1982	77,988	13,158	14,459	432,274	346,905	79,819	8,717,975	9,224	159,280
1983	58,714	25,900	10,363	451,428	2,029,405	58,989	13,652,234	4,304	528,764
1984	35,378	845,423	6,052	(83,811)	1,290,740	34,764	10,799,037	3,850	270,455
1985	(232,549)	(481,017)	1,945,477	608,583	966,160	51,634	8,422,737	5,555	62,571
1986	(2,046,222)	(1,334,975)	3,260,280	1,097,122	230,510	51,994	7,713,451	9,927	114,561
1987	(344,829)	55,519	64,264	3,631,282	146,850	91,223	5,552,802	4,908	27,208
1988	(147,290)	(70,564)	351,489	552,546	558,557	197,761	2,039,009	7,358	230,957
1989	60,657	30,217	534,658	4,161,037	1,496,776	433,072	7,382,673	8,092	(1,713,399)
1990	(403,413)	(635,623)	(97,841)	8,794,258	1,394,698	344,367	8,620,068	176,854	(169,576)
1991	(18,809)	(147,369)	(17,234)	7,985,326	3,624,824	139,105	11,753,895	202,286	1,990,840
1992	338,098	(263,897)	75,210	4,849,560	8,364,426	127,829	14,808,798	333,934	757,498
1993	180,598	133,941	49,144	2,094,764	15,390,366	159,211	19,571,092	1,506,787	30,177,221
1994	114,273	65,260	26,546	933,021	8,082,401	81,869	10,577,079	2,104,588	21,661,097
1995	121,499	66,503	30,918	1,096,953	5,924,175	123,653	8,050,530	3,310,564	4,183,791
1996	48,699	44,953	17,787	1,736,686	2,181,669	96,339	4,344,851	19,019,751	320,526
1997	39,973	55,881	27,865	809,666	(342,563)	102,390	1,000,244	7,645,602	2,620,476
1998	27,626	20,285	12,816	269,800	3,392,776	36,135	3,877,158	993,619	3,323,505
1999	56,005	37,626	17,823	1,011,297	2,208,401	123,263	3,793,700	223,872	845,007
2000	67,086	44,063	23,841	772,287	1,252,434	82,089	2,615,024	121,997	1,282,631
2001	3,381	109,673	714,086	2,500,752	18,359	2,899	3,360,260	122,235	10,146
2002	0	0	0	0	16,910	0	16,910	16,910	0
2003	0	0	0	0	0	0	0	0	0
2004	0	0	0	0	0	0	0	0	0
2005	0	0	0	0	0	0	0	0	0
2006	0	0	0	0	0	0	0	0	0
2007	0	0	0	0	0	0	0	0	0
2008	0	0	0	0	0	0	0	0	0
2009	0	0	0	0	0	0	0	0	0
2010	0	0	0	0	0	0	0	0	0
Total	17,632,464	8,397,306	13,595,263	126,448,782	62,936,119	51,534,882	373,671,023	60,559,249	104,457,775

Table B-10

Capital Costs of Each Aqueduct Reach to Be Reimbursed through Capital Cost Component of Transportation Charge

(Dollars)

Sheet 7 of 8

Calendar Year	California Aqueduct (continued)								
	Santa Ana Division (continued)				West Branch				
	Reach 28G ^a (56)	Reach 28H (57)	Reach 28J (58)	Subtotal (59)	Reach 29A (60)	Reach 29F (61)	Reach 29G (62)	Reach 29H (63)	Reach 29J (64)
1952	4,785	4,055	3,020	20,793	2,924	136	175	459	553
1953	15,580	11,511	9,476	64,106	9,093	344	237	1,754	1,683
1954	18,015	18,100	12,160	84,631	7,389	1,201	2,229	2,350	4,162
1955	6,052	6,081	4,151	28,546	1,019	585	1,086	1,147	2,029
1956	6,496	6,525	4,480	30,682	490	698	1,297	1,366	2,420
1957	24,044	24,156	16,585	113,576	1,809	2,583	4,792	5,057	8,952
1958	40,844	41,033	28,470	193,367	3,256	4,516	8,714	8,878	15,847
1959	45,746	45,946	44,331	233,485	7,953	9,150	19,414	18,243	35,583
1960	59,102	58,548	118,969	395,974	21,753	14,990	34,447	29,764	69,752
1961	32,226	34,382	674,787	825,108	22,442	12,775	21,559	20,086	39,761
1962	21,383	20,530	47,484	135,596	40,237	28,729	86,938	58,215	108,962
1963	43,884	41,698	1,506,440	1,735,306	91,959	69,162	163,347	110,015	211,592
1964	89,710	45,762	98,569	506,352	150,670	66,420	207,977	143,340	291,404
1965	96,956	76,899	146,095	805,543	361,811	77,914	403,115	127,430	589,638
1966	170,878	308,756	589,107	1,847,811	489,512	203,497	1,233,640	348,918	3,231,797
1967	233,968	283,126	987,832	5,327,761	1,589,715	882,096	1,117,243	891,607	31,088,491
1968	871,337	266,295	780,587	11,450,539	3,899,363	300,921	396,190	1,104,832	36,157,768
1969	1,117,873	1,444,654	756,442	11,895,208	6,592,580	336,480	693,348	1,184,454	9,655,871
1970	1,843,621	1,013,468	2,829,523	15,085,092	7,986,733	6,089,401	2,624,747	3,002,968	8,463,475
1971	16,095,702	6,401,303	12,111,623	45,555,612	4,247,037	3,768,699	1,120,231	8,244,651	5,844,024
1972	1,537,880	11,960,791	21,542,747	41,666,145	1,871,831	426,932	985,512	18,787,722	(23,015,734)
1973	209,664	247,769	3,673,344	6,078,500	775,824	168,064	399,856	9,408,706	1,821,206
1974	162,178	101,638	1,980,991	4,235,986	560,657	168,878	169,717	3,901,261	(3,454,239)
1975	157,365	124,399	1,626,274	5,862,488	353,670	421,176	925,693	664,113	609,891
1976	178,287	118,748	1,497,465	3,764,426	396,809	650,417	1,274,484	706,244	650,209
1977	127,106	89,036	323,091	1,391,573	390,637	3,018,637	2,152,961	196,012	1,135,148
1978	147,112	153,867	347,482	837,000	1,427,190	2,219,135	6,694,615	57,817	149,932
1979	29,723	19,225	225,947	385,337	940,013	2,168,382	19,813,742	597,858	331,313
1980	137,833	154,821	1,077,900	1,583,654	1,276,793	4,108,143	24,537,814	550,337	204,751
1981	28,815	22,654	61,349	187,713	(711,751)	2,699,873	19,806,531	94,944	28,852
1982	16,069	58,900	55,841	299,314	(465,217)	351,251	17,964,617	215,678	42,587
1983	18,213	89,581	(264,804)	376,058	100,394	180,971	6,751,649	220,029	24,295
1984	14,462	12,259	49,547	350,573	71,759	68,930	2,870,259	335,942	17,285
1985	17,816	11,481	54,070	151,493	142,244	25,386	2,126,670	102,366	21,971
1986	31,564	25,037	86,794	267,883	133,914	62,294	274,660	141,894	36,149
1987	17,141	8,005	45,528	102,790	13,936	453,949	711,773	192,511	27,931
1988	41,892	21,113	90,784	392,104	427,544	118,010	1,660,959	203,130	95,930
1989	28,708	12,619	51,556	(1,612,424)	207,067	430,662	584,186	241,811	97,472
1990	27,478	12,817	55,408	102,981	197,428	355,480	386,882	813,211	54,269
1991	142,139	15,524	62,794	2,413,583	219,321	344,386	453,336	1,132,520	55,176
1992	34,185	13,422	69,479	1,208,518	541,026	295,312	464,421	4,402,524	47,182
1993	44,300	27,047	162,854	31,918,209	464,987	320,182	643,189	3,361,457	74,198
1994	16,351	11,673	54,581	23,848,290	203,666	231,527	362,717	306,148	33,758
1995	35,402	28,202	164,254	7,722,213	344,358	392,647	536,253	468,656	34,007
1996	76,723	73,629	344,747	19,835,376	150,901	161,394	427,223	203,201	15,357
1997	50,662	20,720	268,293	10,605,753	298,002	71,310	432,940	276,180	50,095
1998	10,268	8,970	479,138	4,815,500	344,208	21,003	2,028,979	181,951	49,377
1999	84,558	45,168	323,997	1,522,602	298,687	37,513	1,080,170	125,120	50,899
2000	25,359	42,655	111,247	1,583,889	192,257	24,713	172,827	130,877	34,642
2001	483	43,483	714,569	890,916	639,199	124,651	4,424,147	3,381	17,779
2002	0	0	0	16,910	0	16,910	0	0	0
2003	0	0	0	0	0	0	0	0	0
2004	0	0	0	0	0	0	0	0	0
2005	0	0	0	0	0	0	0	0	0
2006	0	0	0	0	0	0	0	0	0
2007	0	0	0	0	0	0	0	0	0
2008	0	0	0	0	0	0	0	0	0
2009	0	0	0	0	0	0	0	0	0
2010	0	0	0	0	0	0	0	0	0
Total	24,287,938	23,728,081	56,107,398	269,140,441	37,335,099	32,008,415	129,259,508	63,329,135	75,165,452

^aIncludes excess capacity costs (not shown in Table B-9) allocated to MWD in the following years and repaid under Article 24(c) of its contract: 1970 - \$362,000; 1971 - \$6,198,000; 1972 - \$139,000.

Table B-10

Capital Costs of Each Aqueduct Reach to Be Reimbursed through Capital Cost Component of Transportation Charge

(Dollars)

Sheet 8 of 8

Calendar Year	California Aqueduct (continued)									Grand Total (74)
	West Branch (continued)		Coastal Branch						Total (73)	
	Reach 30 (65)	Subtotal (66)	Reach 31A (67)	Reach 33A (68)	Reach 33B (69)	Reach 34 (70)	Reach 35 (71)	Subtotal (72)		
1952	1,408	5,655	0	0	0	0	0	0	0	0
1953	4,346	17,457	0	0	0	0	0	0	0	0
1954	5,743	23,074	0	0	0	0	0	0	0	0
1955	1,943	7,809	0	0	0	0	0	0	0	0
1956	2,077	8,348	0	0	0	0	0	0	0	0
1957	7,684	30,877	0	0	0	0	0	0	0	0
1958	13,931	55,142	0	0	0	0	0	0	0	0
1959	44,384	134,727	28,046	49,114	0	7,441	8,236	0	0	92,837
1960	84,703	255,409	34,404	70,450	0	8,507	14,265	0	0	127,626
1961	123,330	239,953	13,801	17,868	0	1,501	3,931	0	0	37,101
1962	348,366	671,447	10,121	7,798	0	524	1,689	0	0	20,132
1963	521,491	1,167,566	20,470	14,299	0	880	2,943	0	0	38,592
1964	1,372,464	2,232,275	315,418	26,963	0	1,687	5,639	0	0	349,707
1965	3,383,950	4,943,858	747,023	36,178	0	2,118	7,060	0	0	792,379
1966	9,364,753	14,872,117	2,258,915	35,864	0	1,736	5,764	0	0	2,302,279
1967	17,618,827	53,187,979	6,310,419	38,331	0	1,891	6,213	0	0	6,356,854
1968	15,736,691	57,595,765	2,707,580	30,784	0	1,324	4,369	0	0	2,744,057
1969	16,228,175	34,690,908	423,797	26,549	0	907	2,905	0	0	454,158
1970	22,330,328	50,497,652	269,194	24,368	0	851	2,787	0	0	297,200
1971	16,890,503	40,115,145	164,446	32,230	0	1,315	3,804	0	0	201,795
1972	3,818,001	2,874,264	131,332	17,601	0	522	1,660	0	0	151,115
1973	13,426,222	25,999,878	182,493	16,154	0	542	1,758	0	0	200,947
1974	2,988,318	4,334,592	190,866	18,799	0	463	1,405	0	0	211,533
1975	1,808,235	4,782,778	64,582	36,012	0	2,255	6,656	0	0	109,505
1976	1,253,067	4,931,230	198,266	68,898	0	5,088	14,988	0	0	287,240
1977	345,023	7,238,418	918,473	81,305	0	1,834	5,387	0	0	1,006,999
1978	763,445	11,312,134	52,994	83,300	0	1,302	3,852	0	0	141,448
1979	282,145	24,133,453	38,182	108,951	0	1,505	4,433	0	0	153,071
1980	2,055,206	32,733,044	189,070	376,036	0	1,152	3,449	0	0	569,707
1981	275,460	22,193,909	19,897	(157,537)	0	1,427	4,261	0	0	(131,952)
1982	351,376	18,460,292	(16,381)	(96,449)	0	588	1,787	0	0	(110,455)
1983	566,545	7,843,883	85,496	67,106	0	794	2,398	0	0	155,794
1984	1,118,954	4,483,129	28,568	54,074	0	986	2,959	0	0	86,587
1985	284,243	2,702,880	36,834	54,314	0	2,111	6,263	0	0	99,522
1986	213,353	862,264	82,358	223,134	0	17,458	51,279	0	0	374,229
1987	158,313	1,558,413	53,817	1,061,939	0	92,506	272,968	0	0	1,481,230
1988	222,068	2,727,641	183,853	1,141,272	0	99,456	293,612	0	0	1,718,193
1989	148,674	1,709,872	84,678	893,765	0	77,283	228,038	0	0	1,283,764
1990	119,438	1,926,708	133,868	1,100,167	0	103,785	277,889	0	0	1,615,709
1991	229,315	2,434,054	164,610	1,635,283	0	123,603	363,889	0	0	2,287,385
1992	206,495	5,956,960	183,240	1,278,346	1,563,851	592,461	251,464	102,051	74,162	4,045,574
1993	296,349	5,160,362	344,928	5,410,377	5,168,894	1,385,959	690,092	268,937	358,367	13,627,554
1994	168,426	1,306,242	282,150	16,096,379	21,534,036	9,015,121	2,290,128	678,753	1,315,559	51,212,126
1995	304,983	2,080,904	1,196,326	46,160,025	64,054,496	24,420,669	18,027,795	7,029,108	7,117,197	168,005,615
1996	98,522	1,056,598	948,730	42,348,773	53,614,098	26,137,467	13,478,115	7,213,823	6,616,310	150,357,315
1997	233,956	1,362,483	562,583	10,539,423	13,209,679	9,934,319	2,969,186	545,378	798,606	38,559,173
1998	67,874	2,693,392	248,210	2,249,933	3,997,914	3,244,815	611,786	192,567	280,779	10,826,004
1999	117,432	1,709,821	288,578	2,882,660	4,351,697	2,589,589	306,732	36,680	51,648	10,507,584
2000	203,668	758,984	178,728	238,937	2,889,436	2,677,469	0	0	0	5,984,570
2001	715,535	5,924,692	23,568	17,048	770,697	0	0	0	0	811,313
2002	0	16,910	20,494	2,049,390	0	0	0	0	0	2,069,884
2003	0	0	20,494	0	0	0	0	0	0	20,494
2004	0	0	20,494	0	0	0	0	0	0	20,494
2005	0	0	20,494	0	0	0	0	0	0	20,494
2006	0	0	20,494	0	0	0	0	0	0	20,494
2007	0	0	0	0	0	0	0	0	0	0
2008	0	0	0	0	0	0	0	0	0	0
2009	0	0	0	0	0	0	0	0	0	0
2010	0	0	0	0	0	0	0	0	0	0
Total	136,925,738	474,023,347	20,487,001	136,466,211	171,154,797	80,563,210	40,243,833	16,067,297	16,612,628	481,594,977

Table B-11

**Minimum OMP&R Costs of Each Aqueduct Reach to Be Reimbursed
through Minimum OMP&R Component of Transportation Charge**
(Dollars)

Sheet 1 of 8

Calendar Year	Upper Feather Division (1)	North Bay Aqueduct					South Bay Aqueduct			
		Reach 1 (2)	Reach 2 (3)	Reach 3A (4)	Reach 3B (5)	Total (6)	Reach 1 (7)	Reach 2 (8)	Reach 4 (9)	Reach 5 (10)
1961	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	37,396	5,522	0	0
1963	0	0	0	0	0	0	147,719	20,639	0	0
1964	0	0	0	0	0	0	149,750	15,574	19,405	0
1965	0	0	0	0	0	0	259,939	45,718	46,485	0
1966	0	0	0	0	0	0	270,890	23,799	63,921	0
1967	0	0	0	0	0	0	438,050	32,798	108,127	0
1968	0	0	0	0	130	130	410,919	44,277	66,973	706
1969	0	0	0	0	80,875	80,875	487,377	48,339	75,644	706
1970	0	0	0	0	94,872	94,872	381,734	44,852	64,833	71,376
1971	54	0	0	0	45,579	45,579	357,850	25,666	50,344	38,735
1972	40	0	0	0	37,895	37,895	347,941	30,606	56,800	100,106
1973	1	0	0	0	32,993	32,993	386,897	36,172	58,288	28,810
1974	143	0	0	0	46,498	46,498	456,381	57,081	83,120	61,623
1975	1,069	0	0	0	37,707	37,707	624,989	46,111	81,361	36,682
1976	139	0	0	0	60,786	60,786	614,362	47,862	123,838	91,096
1977	892	0	0	0	78,400	78,400	511,065	48,926	104,280	102,083
1978	39	0	0	0	56,318	56,318	671,195	125,224	176,855	50,289
1979	3,235	0	0	0	73,852	73,852	650,826	76,849	212,826	91,380
1980	416	0	0	0	81,769	81,769	1,128,840	212,974	242,118	110,786
1981	3,847	0	0	0	101,340	101,340	884,763	130,126	167,118	204,772
1982	11,075	0	0	0	191,987	191,987	1,156,605	141,718	249,447	96,020
1983	1,928	0	0	0	80,215	80,215	1,258,144	84,360	373,875	152,255
1984	3,765	0	0	0	139,121	139,121	1,998,984	113,797	340,344	34,461
1985	2,888	0	0	0	259,515	259,515	2,044,121	207,478	427,930	247,308
1986	2,787	0	0	0	229,508	229,508	1,834,838	285,908	305,149	159,054
1987	2,388	0	0	0	310,683	310,683	2,118,974	163,714	400,547	283,067
1988	545	0	(94)	0	330,156	330,062	2,068,655	186,275	299,934	370,212
1989	1,800	473,408	178,069	237,480	373,427	1,262,384	2,164,688	163,481	320,734	497,038
1990	788	556,610	244,897	123,144	427,257	1,351,908	2,233,036	251,434	355,022	571,415
1991	3,654	651,307	302,327	205,516	428,470	1,587,620	1,806,699	152,509	95,745	93,986
1992	647	443,912	189,330	265,462	280,505	1,179,209	2,064,907	405,932	409,435	363,964
1993	3,630	435,240	294,416	213,267	289,206	1,232,129	3,925,050	621,712	480,832	399,558
1994	2,279	430,117	198,322	206,594	365,646	1,200,679	4,673,275	302,115	404,705	407,980
1995	2,906	428,313	282,898	151,703	295,326	1,158,240	3,849,620	316,905	566,447	330,706
1996	8,007	796,526	272,743	240,106	260,001	1,569,376	3,526,989	254,075	664,485	493,300
1997	7,449	504,476	210,763	213,211	315,374	1,243,824	3,010,809	189,269	591,540	230,371
1998	798	405,030	227,564	204,964	251,183	1,088,741	2,965,468	426,872	532,033	303,322
1999	416	665,877	322,511	313,400	271,731	1,573,519	3,685,216	467,412	421,762	403,884
2000	4,000	695,670	231,150	778,149	233,042	1,938,011	3,539,080	555,451	489,171	469,625
2001	4,187	987,945	273,883	494,062	416,864	2,172,754	4,823,475	507,967	858,169	718,042
2002	4,308	1,051,527	293,244	525,288	442,477	2,312,536	4,984,257	607,517	876,920	789,368
2003	4,340	1,058,485	295,418	528,675	444,941	2,327,519	4,711,295	547,509	893,449	781,414
2004	4,352	1,035,460	288,492	517,339	435,958	2,277,249	4,577,942	534,706	863,026	746,203
2005	4,342	1,032,705	287,862	515,952	434,877	2,271,396	4,567,545	533,503	861,035	744,005
2006	4,354	1,034,388	288,629	516,765	435,749	2,275,531	4,578,861	534,847	863,098	744,754
2007	4,349	1,033,387	288,285	516,271	435,291	2,273,234	4,573,588	534,224	862,118	744,132
2008	4,350	1,033,859	288,375	516,509	435,466	2,274,209	4,575,132	534,402	862,419	744,538
2009	4,348	1,033,630	288,267	516,399	435,346	2,273,642	4,573,541	534,213	862,129	744,442
2010	4,349	1,033,334	288,300	516,240	435,286	2,273,160	4,573,731	534,243	862,140	744,049
2011	4,347	1,037,307	289,278	518,220	436,759	2,281,564	4,588,643	536,106	865,198	749,849
2012	4,348	1,037,592	289,322	518,367	436,860	2,282,141	4,589,452	536,197	865,361	750,111
2013	4,348	1,038,506	289,340	518,842	437,117	2,283,805	4,590,420	536,292	865,596	751,135
2014	4,346	1,039,244	289,181	519,243	437,224	2,284,892	4,588,913	536,091	865,399	752,235
2015	4,349	1,040,016	289,406	519,627	437,553	2,286,602	4,592,466	536,507	866,066	752,776
2016	4,345	1,038,598	289,101	518,910	437,006	2,283,615	4,587,361	535,916	865,083	751,611
2017	4,346	1,039,193	289,209	519,213	437,225	2,284,840	4,589,236	536,132	865,449	752,131
2018	4,347	1,040,265	289,231	519,773	437,525	2,286,794	4,590,375	536,244	865,728	753,335
2019	4,342	1,038,701	288,963	518,975	436,959	2,283,598	4,585,639	535,703	864,796	751,942
2020	4,347	1,039,555	289,267	519,398	437,356	2,285,576	4,590,272	536,248	865,655	752,460
2021	4,350	1,039,924	289,491	519,571	437,578	2,286,564	4,593,472	536,632	866,231	752,538
2022	4,346	1,040,003	289,188	519,639	437,430	2,286,260	4,589,590	536,154	865,574	753,097
2023	4,345	1,038,651	289,140	518,934	437,044	2,283,769	4,587,890	535,980	865,178	751,612
2024	4,345	1,039,229	289,137	519,237	437,196	2,284,799	4,588,321	536,019	865,297	752,282
2025	4,350	1,040,269	289,470	519,753	437,657	2,287,149	4,593,467	536,622	866,256	752,968
2026	4,341	1,038,395	288,882	518,822	436,833	2,282,932	4,584,331	535,550	864,549	751,716
2027	4,356	1,041,654	289,887	520,444	438,260	2,290,245	4,600,000	537,389	867,481	753,923
2028	4,340	1,038,367	288,807	518,815	436,785	2,282,774	4,583,337	535,429	864,376	751,800
2029	4,348	1,039,557	289,323	519,391	437,386	2,285,657	4,591,002	536,338	865,780	752,374
2030	4,345	1,038,459	289,105	518,836	436,973	2,283,373	4,587,287	535,909	865,059	751,445
2031	4,355	1,042,207	289,825	520,736	438,373	2,291,141	4,599,641	537,331	867,463	754,657
2032	4,338	1,037,799	288,630	518,533	436,535	2,281,497	4,580,587	535,106	863,863	751,418
2033	4,349	1,039,553	289,446	519,381	437,454	2,285,834	4,592,598	536,533	866,053	752,178
2034	4,348	1,039,965	289,355	519,604	437,511	2,286,435	4,591,731	536,418	865,935	752,796
2035	4,338	1,037,931	288,680	518,597	436,598	2,281,806	4,581,339	535,196	864,003	751,494
Total	223,563	42,802,146	13,066,315	21,297,357	21,444,819	98,610,637	220,420,778	25,216,705	39,833,405	33,201,506

Table B-11

Minimum OMP&R Costs of Each Aqueduct Reach to Be Reimbursed through Minimum OMP&R Component of Transportation Charge (Dollars)

Sheet 2 of 8

Calendar Year	South Bay Aqueduct (continued)					California Aqueduct			
						North San Joaquin Division			
	Reach 6 (11)	Reach 7 (12)	Reach 8 (13)	Reach 9 (14)	Total (15)	Reach 1 (16)	Reach 2A (17)	Reach 2B (18)	Subtotal (19)
1961	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	42,918	0	0	0	0
1963	0	0	0	0	168,358	0	0	0	0
1964	0	0	0	0	184,729	0	0	0	0
1965	2,634	6,490	4,704	12,904	378,874	0	0	0	0
1966	4,707	10,328	9,233	25,519	408,397	0	0	0	0
1967	2,712	7,659	10,812	34,347	634,505	0	0	0	0
1968	3,109	7,960	10,166	40,372	584,482	1,001,998	228,359	103,116	1,333,473
1969	3,944	5,975	8,795	38,566	669,346	933,116	301,596	188,194	1,422,906
1970	2,464	(1,991)	6,870	28,210	598,348	971,602	306,198	151,539	1,429,339
1971	3,116	9,394	9,895	31,068	526,068	1,103,021	254,786	113,694	1,471,501
1972	5,125	10,247	12,054	44,699	607,578	1,107,855	230,906	110,109	1,448,870
1973	4,178	7,500	4,890	43,816	570,551	1,150,864	221,445	100,221	1,472,530
1974	7,812	7,564	5,523	48,054	727,158	1,272,034	231,383	117,156	1,620,573
1975	18,120	14,683	18,325	68,377	908,648	1,434,736	455,110	201,075	2,090,921
1976	10,873	5,557	19,920	49,921	963,429	1,519,801	217,348	453,400	2,190,549
1977	(240)	2,228	8,391	89,579	866,312	1,913,643	292,380	196,564	2,402,587
1978	(1,404)	16,766	(5,313)	104,078	1,137,690	1,860,456	306,503	188,214	2,355,173
1979	1,269	29,294	7,351	106,835	1,176,630	1,848,109	231,339	145,205	2,224,653
1980	3,621	24,270	17,404	110,852	1,850,865	2,365,292	472,660	247,608	3,085,560
1981	4,038	20,109	17,586	98,143	1,526,655	2,649,730	435,226	154,191	3,239,147
1982	2,236	22,870	21,919	202,590	1,893,405	3,192,710	599,793	244,664	4,037,167
1983	(2,047)	48,781	45,573	216,434	2,177,375	4,244,937	802,908	273,081	5,320,926
1984	4,449	44,017	23,563	455,054	3,014,669	4,373,157	808,917	290,728	5,472,802
1985	13,097	74,565	57,920	238,067	3,310,486	4,717,323	629,825	189,199	5,536,347
1986	11,614	31,084	46,864	363,350	3,037,861	5,217,491	929,919	359,365	6,506,775
1987	15,273	25,182	37,949	416,375	3,461,081	5,292,200	958,927	362,065	6,613,192
1988	30,207	41,047	49,156	335,408	3,380,894	5,329,317	822,300	360,336	6,511,953
1989	9,740	54,881	114,203	179,323	3,504,088	5,753,966	851,745	907,609	7,513,320
1990	31,161	69,416	119,309	247,781	3,878,574	6,788,986	1,066,314	883,822	8,739,122
1991	22,434	(18,690)	99,577	262,052	2,514,312	6,796,247	1,067,078	585,008	8,448,333
1992	26,787	332,012	98,670	186,640	3,888,347	9,415,121	1,419,603	673,833	11,508,557
1993	24,845	181,592	94,169	316,045	6,043,803	10,274,070	1,371,074	900,996	12,546,140
1994	28,383	90,791	80,963	416,061	6,404,273	8,451,193	1,325,416	802,190	10,578,799
1995	29,298	64,012	80,278	373,657	5,610,923	10,406,784	2,386,507	959,685	13,752,976
1996	(1,020)	60,610	11,672	312,097	5,322,208	10,246,985	2,604,651	628,177	13,479,813
1997	18,428	95,321	15,691	335,566	4,486,995	10,429,338	1,098,381	2,084,859	13,612,578
1998	26,323	54,255	611,289	658,090	5,577,652	11,410,435	1,449,378	5,364,351	18,224,164
1999	49,210	33,544	423,413	2,023,874	7,508,315	11,819,164	1,427,790	1,343,085	14,590,039
2000	110,211	41,652	243,412	738,270	6,186,872	11,911,323	987,229	910,490	13,809,042
2001	104,821	122,594	195,139	729,023	8,059,230	12,603,286	2,919,966	1,075,692	16,598,944
2002	159,500	241,930	448,200	569,839	8,677,531	12,958,921	2,458,685	817,192	16,234,798
2003	106,061	104,929	139,471	625,069	7,909,197	12,946,620	2,473,516	822,067	16,242,203
2004	101,428	93,988	114,245	560,612	7,592,150	12,682,017	2,418,058	805,891	15,905,966
2005	101,207	93,783	113,996	559,392	7,574,466	12,660,427	2,413,254	804,319	15,878,000
2006	101,478	94,034	114,302	560,892	7,592,266	12,679,723	2,415,441	805,114	15,900,278
2007	101,357	93,922	114,166	560,222	7,583,729	12,670,034	2,413,913	804,590	15,888,537
2008	101,389	93,951	114,201	560,395	7,586,427	12,673,444	2,414,775	804,867	15,893,086
2009	101,350	93,915	114,158	560,183	7,583,931	12,670,753	2,414,484	804,762	15,889,999
2010	101,362	93,927	114,172	560,250	7,583,874	12,670,041	2,413,768	804,547	15,888,356
2011	101,704	94,247	114,559	562,144	7,612,450	12,711,333	2,423,118	807,295	15,941,746
2012	101,720	94,261	114,576	562,228	7,613,906	12,713,236	2,423,658	807,469	15,944,363
2013	101,724	94,266	114,582	562,257	7,616,272	12,717,347	2,425,624	808,073	15,951,044
2014	101,665	94,211	114,515	561,931	7,614,960	12,717,852	2,427,564	808,639	15,954,055
2015	101,745	94,284	114,605	562,371	7,620,820	12,724,688	2,428,817	809,059	15,962,564
2016	101,638	94,186	114,485	561,780	7,612,060	12,713,877	2,426,300	808,239	15,948,416
2017	101,676	94,221	114,526	561,988	7,615,359	12,718,085	2,427,397	808,592	15,954,074
2018	101,682	94,226	114,533	562,020	7,618,143	12,722,912	2,429,708	809,301	15,961,921
2019	101,588	94,139	114,428	561,505	7,609,740	12,712,091	2,426,802	808,370	15,947,263
2020	101,695	94,239	114,550	562,098	7,617,217	12,720,510	2,428,077	808,808	15,957,395
2021	101,775	94,312	114,639	562,536	7,622,135	12,725,624	2,428,437	808,956	15,963,017
2022	101,667	94,211	114,516	561,935	7,616,744	12,721,101	2,429,215	809,145	15,959,461
2023	101,651	94,199	114,500	561,853	7,612,863	12,714,690	2,426,338	808,256	15,949,284
2024	101,649	94,196	114,497	561,843	7,614,104	12,717,069	2,427,616	808,646	15,953,331
2025	101,766	94,305	114,629	562,490	7,622,503	12,726,716	2,429,239	809,197	15,965,152
2026	101,560	94,113	114,396	561,345	7,607,560	12,709,506	2,426,288	808,201	15,943,995
2027	101,913	94,440	114,795	563,303	7,633,244	12,739,181	2,431,465	809,945	15,980,591
2028	101,533	94,089	114,365	561,198	7,606,127	12,708,194	2,426,377	808,214	15,942,785
2029	101,715	94,258	114,572	562,208	7,618,247	12,721,415	2,427,963	808,783	15,958,161
2030	101,639	94,187	114,486	561,786	7,611,798	12,713,342	2,425,987	808,145	15,947,474
2031	101,891	94,420	114,768	563,175	7,633,346	12,740,505	2,432,799	810,341	15,983,645
2032	101,471	94,031	114,296	560,854	7,601,626	12,702,999	2,425,480	807,912	15,936,391
2033	101,759	94,298	114,621	562,452	7,620,492	12,723,363	2,427,710	808,727	15,959,800
2034	101,726	94,267	114,583	562,265	7,619,721	12,723,613	2,428,800	809,045	15,961,458
2035	101,488	94,047	114,316	560,951	7,602,834	12,704,347	2,425,672	807,977	15,937,996
Total	4,148,700	5,013,601	6,887,584	29,148,467	363,870,746	612,381,866	112,235,305	49,158,205	773,775,376

Table B-11

Minimum OMP&R Costs of Each Aqueduct Reach to Be Reimbursed through Minimum OMP&R Component of Transportation Charge (Dollars)

Sheet 3 of 8

Calendar Year	California Aqueduct (continued)								
	San Luis Division						South San Joaquin Division		
	Reach 3 (20)	Reach 4 (21)	Reach 5 (22)	Reach 6 (23)	Reach 7 (24)	Subtotal (25)	Reach 8C (26)	Reach 8D (27)	Reach 9 (28)
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	120,038	428,308	130,105	44,591	104,033	827,075	0	0	0
1969	90,033	460,907	184,467	35,696	235,322	1,006,425	22,013	134,760	86,103
1970	89,547	484,300	226,002	66,070	192,582	1,058,501	26,207	156,981	128,273
1971	99,917	541,574	175,592	64,193	158,170	1,039,446	32,312	190,753	118,372
1972	116,708	647,979	174,519	73,670	154,783	1,167,659	35,031	187,242	130,396
1973	116,791	611,705	158,145	58,344	153,955	1,098,940	51,150	225,747	127,530
1974	120,309	671,455	150,835	63,905	150,230	1,156,734	34,752	199,127	131,298
1975	133,593	839,285	178,974	81,478	157,586	1,390,916	78,523	250,377	159,006
1976	54,938	883,956	220,832	90,305	174,835	1,424,866	39,348	133,933	123,424
1977	73,331	1,114,465	270,734	98,132	196,311	1,752,973	38,086	121,348	178,078
1978	45,867	898,992	203,261	106,938	203,079	1,458,137	45,552	178,805	129,928
1979	223,973	842,508	144,055	99,670	180,734	1,490,940	69,973	150,679	129,756
1980	243,507	1,176,463	222,942	127,625	281,860	2,052,397	57,726	274,848	185,155
1981	265,766	1,065,358	193,048	90,533	1,612,157	3,226,862	80,121	198,256	144,187
1982	279,250	1,241,285	209,371	114,421	1,433,180	3,277,507	59,424	269,086	233,494
1983	214,468	1,949,017	339,809	131,377	2,143,678	4,778,349	49,448	383,476	223,078
1984	241,273	2,233,969	335,166	163,858	2,111,386	5,085,652	42,062	458,489	300,924
1985	322,068	2,882,583	360,431	176,577	1,603,532	5,345,191	58,820	495,500	213,368
1986	416,027	2,996,792	472,551	252,188	601,250	4,738,808	90,730	478,786	596,800
1987	362,738	3,104,592	424,107	236,349	439,232	4,567,018	113,962	412,042	446,067
1988	365,209	2,954,186	456,864	231,754	639,242	4,647,255	96,728	379,073	417,991
1989	263,171	3,182,472	393,589	332,986	633,419	4,805,637	83,282	389,698	400,853
1990	397,353	4,011,110	579,073	464,639	729,132	6,181,307	111,019	436,849	515,611
1991	256,473	4,388,184	543,760	728,156	765,765	6,682,338	104,414	496,794	465,940
1992	302,021	3,792,401	795,587	363,134	815,590	6,068,733	118,315	511,982	417,871
1993	439,725	4,337,616	1,008,394	551,849	734,796	7,072,380	230,338	745,885	490,159
1994	284,348	4,376,288	815,858	396,671	492,730	6,365,895	125,396	602,275	572,430
1995	107,995	5,026,076	1,066,971	440,006	1,356,668	7,997,716	185,681	657,282	432,072
1996	1,003,229	4,738,221	931,944	683,323	1,034,376	8,391,093	112,062	416,294	472,350
1997	859,665	5,761,996	924,289	524,934	646,209	8,447,093	128,190	449,316	728,436
1998	690,845	5,522,567	1,242,589	534,931	654,538	8,645,470	115,748	457,845	429,433
1999	701,042	5,755,188	1,219,619	522,568	654,593	8,853,010	103,695	395,669	406,755
2000	652,439	6,237,948	1,013,563	477,718	751,915	9,133,583	120,505	432,222	392,977
2001	1,184,141	6,065,457	1,222,454	495,422	676,391	9,643,865	290,068	1,104,642	906,460
2002	962,637	5,297,281	1,130,648	532,382	727,043	8,649,991	310,403	1,179,559	967,410
2003	969,811	5,297,147	1,139,010	537,035	733,323	8,676,326	312,722	1,189,462	975,670
2004	906,142	5,118,027	1,093,383	516,008	704,565	8,338,125	305,404	1,162,168	953,371
2005	903,593	5,102,250	1,091,003	514,500	702,550	8,313,896	304,726	1,159,010	950,705
2006	902,783	5,105,828	1,093,930	515,048	703,383	8,320,972	305,516	1,160,744	951,971
2007	902,559	5,101,904	1,092,621	514,612	702,769	8,314,465	305,158	1,159,652	951,108
2008	903,115	5,104,904	1,092,960	514,887	703,136	8,319,002	305,256	1,160,204	951,585
2009	903,247	5,104,474	1,092,546	514,819	703,025	8,318,111	305,144	1,159,969	951,415
2010	902,349	5,101,181	1,092,677	514,557	702,703	8,313,467	305,170	1,159,578	951,032
2011	911,844	5,130,378	1,098,290	517,687	706,923	8,365,122	306,218	1,164,318	955,011
2012	912,241	5,132,340	1,098,457	517,864	707,155	8,368,057	306,268	1,164,656	955,308
2013	914,267	5,140,603	1,098,512	518,549	708,021	8,379,952	306,304	1,165,802	956,373
2014	917,001	5,150,062	1,097,875	519,273	708,907	8,393,118	306,162	1,166,816	957,401
2015	917,416	5,153,711	1,098,734	519,650	709,423	8,398,934	306,400	1,167,679	958,104
2016	915,973	5,145,261	1,097,580	518,852	708,361	8,386,027	306,068	1,166,038	956,708
2017	916,705	5,149,135	1,097,985	519,207	708,827	8,391,859	306,188	1,166,739	957,313
2018	919,089	5,158,831	1,098,049	520,010	709,846	8,405,825	306,232	1,168,082	958,565
2019	917,077	5,148,426	1,097,042	519,065	708,604	8,390,214	305,935	1,166,240	956,966
2020	917,197	5,151,603	1,098,200	519,429	709,119	8,395,548	306,252	1,167,165	957,687
2021	916,669	5,151,503	1,099,057	519,494	709,242	8,395,965	306,480	1,167,516	957,910
2022	918,739	5,157,054	1,097,883	519,851	709,635	8,403,162	306,182	1,167,771	958,293
2023	915,862	5,145,146	1,097,723	518,854	708,371	8,385,956	306,108	1,166,084	956,734
2024	917,238	5,150,610	1,097,704	519,305	708,936	8,393,793	306,117	1,166,817	957,425
2025	917,614	5,155,077	1,098,968	519,781	709,598	8,401,038	306,466	1,167,962	958,340
2026	916,864	5,146,854	1,096,731	518,910	708,393	8,387,752	305,848	1,165,893	956,679
2027	918,286	5,161,453	1,100,555	520,446	710,514	8,411,254	306,905	1,169,506	959,589
2028	917,263	5,147,770	1,096,444	518,962	708,443	8,388,882	305,775	1,165,898	956,717
2029	916,848	5,150,727	1,098,417	519,375	709,059	8,394,426	306,308	1,167,136	957,634
2030	915,626	5,143,911	1,097,594	518,742	708,222	8,384,095	306,069	1,165,863	956,540
2031	919,964	5,167,601	1,100,306	520,930	711,115	8,419,916	306,854	1,170,234	960,303
2032	917,026	5,145,252	1,095,772	518,696	708,074	8,384,820	305,588	1,165,269	956,211
2033	916,074	5,148,740	1,098,892	519,251	708,928	8,391,885	306,428	1,167,070	957,513
2034	917,616	5,154,054	1,098,529	519,659	709,425	8,399,283	306,346	1,167,638	958,090
2035	917,028	5,145,708	1,095,962	518,749	708,152	8,385,599	305,639	1,165,411	956,320
Total	42,311,561	266,290,009	54,359,539	26,308,450	46,977,049	436,246,608	13,365,320	52,036,010	43,372,576

Table B-11

Minimum OMP&R Costs of Each Aqueduct Reach to Be Reimbursed through Minimum OMP&R Component of Transportation Charge

(Dollars)

Sheet 4 of 8

Calendar Year	California Aqueduct (continued)								
	South San Joaquin Division (continued)								
	Reach 10A (29)	Reach 11B (30)	Reach 12D (31)	Reach 12E (32)	Reach 13B (33)	Reach 14A (34)	Reach 14B (35)	Reach 14C (36)	Reach 15A (37)
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	83,706	59,077	0	0	0	0	0	0	0
1970	118,046	85,758	94,171	123,374	152,424	0	0	0	0
1971	129,811	80,282	95,075	91,389	167,142	691,791	151,979	111,623	529,723
1972	117,625	84,287	98,647	115,592	146,096	877,535	124,831	101,479	609,058
1973	117,706	92,257	74,238	114,843	221,385	961,855	120,106	99,429	692,748
1974	141,658	98,103	74,914	193,523	141,540	898,272	143,866	115,649	853,098
1975	207,908	124,105	61,799	117,194	108,154	1,156,757	180,614	119,889	988,045
1976	139,134	69,715	33,655	147,908	134,063	1,124,051	177,086	114,133	1,037,799
1977	194,086	91,547	91,547	175,039	137,975	1,397,006	203,837	119,467	1,339,196
1978	168,634	106,702	72,585	170,578	151,120	1,254,043	139,662	132,224	1,265,813
1979	175,107	85,942	56,331	174,147	150,029	1,490,461	201,935	260,981	1,216,126
1980	284,207	120,896	123,120	167,249	164,749	1,988,619	189,132	238,607	1,437,614
1981	199,927	76,965	33,322	113,202	171,669	1,741,488	163,934	161,182	1,799,832
1982	264,947	158,178	142,631	224,170	224,051	1,793,867	195,086	15,768	1,933,859
1983	308,801	136,350	124,724	203,733	217,324	2,421,794	199,708	181,879	2,550,842
1984	396,448	163,331	108,212	188,724	245,764	3,312,127	329,490	204,332	3,215,901
1985	298,337	198,368	154,995	194,327	360,308	3,463,178	237,127	180,068	3,427,049
1986	422,493	248,170	242,660	346,410	349,369	3,781,427	320,984	360,156	3,574,451
1987	488,226	334,059	325,697	469,378	322,824	3,731,912	463,757	238,813	4,080,465
1988	532,489	290,881	220,658	374,653	318,253	3,451,893	411,110	313,806	3,746,920
1989	733,030	268,025	207,487	595,433	380,883	3,512,884	333,996	220,978	3,751,081
1990	651,465	363,652	225,171	480,738	677,729	4,021,727	439,953	212,851	4,381,643
1991	716,328	328,683	269,873	371,312	433,313	4,309,082	424,704	273,169	4,566,702
1992	574,145	334,579	270,768	409,314	423,717	4,734,368	729,211	571,412	4,270,793
1993	723,450	413,722	278,375	496,851	594,201	5,182,830	664,063	423,780	5,266,124
1994	703,360	346,521	239,755	482,219	445,771	4,012,431	414,731	254,263	3,727,961
1995	881,902	405,045	242,253	622,654	507,102	4,607,154	309,283	315,905	3,973,757
1996	984,784	367,570	238,622	519,560	604,736	4,892,967	214,773	187,784	4,331,630
1997	1,864,113	309,696	254,080	516,115	429,771	5,094,202	261,221	275,610	4,011,366
1998	1,011,284	295,927	170,556	384,226	484,072	4,753,508	309,440	248,178	4,695,541
1999	1,119,683	371,404	171,602	395,016	492,914	5,084,817	342,978	227,142	4,809,709
2000	958,699	321,784	146,523	533,707	461,020	6,000,868	391,352	192,482	5,315,337
2001	919,202	689,535	627,245	973,993	1,024,274	6,851,981	1,302,094	597,498	6,231,713
2002	983,572	736,311	668,845	1,040,723	1,093,929	6,795,127	923,268	637,800	6,477,561
2003	990,846	742,411	674,852	1,049,101	1,102,983	6,796,914	931,217	643,339	6,473,222
2004	967,670	725,358	659,559	1,024,886	1,077,614	6,662,460	909,959	628,656	6,344,797
2005	965,563	723,430	657,559	1,022,291	1,074,752	6,645,686	907,378	626,850	6,329,668
2006	968,152	724,612	658,092	1,024,239	1,076,512	6,658,564	908,505	627,572	6,343,763
2007	966,995	723,906	657,569	1,023,185	1,075,467	6,651,668	907,701	627,030	6,336,801
2008	967,293	724,239	657,947	1,023,616	1,075,958	6,654,421	908,165	627,356	6,339,165
2009	966,929	724,077	657,880	1,023,345	1,075,718	6,652,640	908,017	627,264	6,337,194
2010	967,045	723,872	657,485	1,023,161	1,075,413	6,651,529	907,621	626,970	6,336,845
2011	970,309	726,770	660,439	1,027,088	1,079,721	6,674,345	911,468	629,660	6,357,483
2012	970,457	726,971	660,685	1,027,339	1,080,016	6,675,942	911,760	629,866	6,358,786
2013	970,504	727,610	661,694	1,028,019	1,080,960	6,680,191	912,841	630,657	6,361,385
2014	969,943	728,123	662,828	1,028,401	1,081,718	6,682,409	913,923	631,472	6,361,241
2015	970,701	728,665	663,299	1,029,177	1,082,522	6,687,450	914,591	631,929	6,366,109
2016	969,681	727,670	662,231	1,027,854	1,081,047	6,678,938	913,233	630,977	6,358,558
2017	970,039	728,088	662,719	1,028,391	1,081,666	6,682,371	913,828	631,395	6,361,467
2018	970,096	728,838	663,900	1,029,190	1,082,775	6,687,358	915,099	632,322	6,364,513
2019	969,206	727,741	662,599	1,027,799	1,081,149	6,678,448	913,523	631,206	6,357,062
2020	970,230	728,342	663,026	1,028,707	1,082,041	6,684,393	914,197	631,660	6,363,127
2021	970,987	728,598	663,039	1,029,187	1,082,425	6,687,594	914,377	631,760	6,366,924
2022	969,950	728,652	663,680	1,028,956	1,082,501	6,685,860	914,829	632,133	6,363,271
2023	969,808	727,706	662,223	1,027,929	1,081,101	6,679,428	913,255	630,984	6,359,168
2024	969,791	728,112	662,889	1,028,347	1,081,701	6,682,025	913,957	631,499	6,360,632
2025	970,907	728,840	663,472	1,029,414	1,082,782	6,689,003	914,817	632,088	6,367,540
2026	968,932	727,528	662,399	1,027,499	1,080,831	6,676,500	913,250	631,015	6,355,229
2027	972,309	729,813	664,301	1,030,818	1,084,228	6,698,140	915,999	632,900	6,376,430
2028	968,677	727,508	662,501	1,027,408	1,080,800	6,675,860	913,303	631,065	6,354,207
2029	970,421	728,340	662,923	1,028,761	1,082,042	6,684,785	914,129	631,604	6,363,846
2030	969,693	727,572	662,066	1,027,758	1,080,903	6,678,327	913,063	630,849	6,358,233
2031	972,090	730,197	665,042	1,031,162	1,084,796	6,700,208	916,741	633,449	6,377,074
2032	968,084	727,110	662,174	1,026,828	1,080,208	6,672,079	912,827	630,739	6,350,493
2033	970,841	728,339	662,698	1,028,875	1,082,043	6,685,616	913,980	631,478	6,365,397
2034	970,520	728,627	663,334	1,029,086	1,082,465	6,686,842	914,587	631,936	6,365,293
2035	968,251	727,202	662,233	1,026,972	1,080,346	6,673,021	912,927	630,807	6,351,470
Total	49,627,233	32,289,391	28,089,473	45,452,083	47,614,875	325,833,037	41,150,378	28,528,824	309,995,850

Table B-11

**Minimum OMP&R Costs of Each Aqueduct Reach to Be Reimbursed
through Minimum OMP&R Component of Transportation Charge
(Dollars)**

Sheet 5 of 8

Calendar Year	California Aqueduct (continued)								
	South San Joaquin Division (continued)		Tehachapi Division			Mojave Division			
	Reach 16A (38)	Subtotal (39)	Reach 17E (40)	Reach 17F (41)	Subtotal (42)	Reach 18A (43)	Reach 19 (44)	Reach 19C (45)	Reach 20A (46)
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	385,659	0	0	0	0	0	0	0
1970	0	885,234	0	0	0	0	0	0	0
1971	10,291	2,400,543	3,471	0	3,471	0	0	0	0
1972	1,106,884	3,734,703	1,424,782	28,127	1,452,909	36,699	135,675	0	130,711
1973	1,243,941	4,142,935	1,777,260	49,949	1,827,209	36,207	146,739	0	161,838
1974	1,343,972	4,369,772	2,298,091	16,259	2,314,350	30,525	90,404	0	115,571
1975	1,537,862	5,090,233	2,403,430	35,193	2,438,623	40,588	122,584	0	137,684
1976	1,727,428	5,001,677	2,776,194	126,653	2,902,847	118,610	201,215	0	182,927
1977	1,961,081	6,065,390	3,845,464	83,936	3,929,400	93,565	226,906	0	180,884
1978	1,922,950	5,738,596	2,954,313	42,637	2,996,950	91,815	200,759	0	215,673
1979	1,798,566	5,960,033	3,539,402	45,997	3,585,399	99,670	307,386	0	261,205
1980	2,231,456	7,463,378	4,749,245	54,806	4,804,051	116,487	446,175	0	290,719
1981	2,762,773	7,646,858	5,485,957	64,886	5,550,843	316,590	585,003	0	325,112
1982	2,961,383	8,475,944	6,349,080	55,997	6,405,077	447,739	638,615	0	275,763
1983	4,302,165	11,303,322	14,153,033	96,397	14,249,430	345,229	564,698	0	368,139
1984	5,077,824	14,043,628	18,448,383	77,201	18,525,584	267,497	563,588	0	413,443
1985	5,683,454	14,964,899	18,134,698	137,928	18,272,626	298,932	475,028	0	450,444
1986	5,780,666	16,593,102	19,297,129	109,938	19,407,067	703,413	350,906	0	347,690
1987	5,636,043	17,063,245	17,398,908	98,355	17,497,263	1,261,056	558,996	0	818,475
1988	5,150,238	15,704,693	17,697,838	138,405	17,836,243	1,242,139	560,911	0	585,014
1989	5,458,633	16,336,263	17,641,151	88,488	17,729,639	1,049,615	283,065	0	366,590
1990	6,440,643	18,959,051	19,995,760	99,868	20,095,628	1,298,537	229,083	0	469,502
1991	5,805,189	18,565,503	19,903,346	131,558	20,034,904	1,432,360	665,443	0	1,025,089
1992	6,471,964	19,838,439	18,194,788	279,610	18,474,398	1,167,898	738,238	0	666,181
1993	7,583,165	23,092,943	19,051,939	199,640	19,251,579	1,868,745	606,763	0	1,232,409
1994	7,141,764	19,068,877	17,354,702	204,958	17,559,660	1,699,467	763,489	0	1,145,599
1995	6,540,575	19,680,665	19,360,033	191,516	19,551,549	1,284,146	614,314	0	1,941,939
1996	7,065,052	20,408,184	19,041,451	237,846	19,279,297	1,163,708	576,674	0	1,335,804
1997	7,387,904	21,710,020	19,724,881	176,120	19,901,001	1,330,450	730,628	0	1,401,562
1998	7,531,886	20,887,644	23,229,552	182,754	23,412,306	1,513,824	309,052	0	7,568,901
1999	8,887,646	22,809,030	20,369,030	149,291	20,518,798	3,079,525	624,746	0	5,292,693
2000	11,035,492	26,302,968	22,485,691	105,662	22,591,353	1,559,965	502,179	0	2,014,941
2001	9,210,828	30,729,533	27,545,186	936,597	28,481,783	2,101,808	1,129,533	0	1,786,228
2002	9,375,036	31,189,544	26,489,485	387,325	26,876,810	2,234,839	1,188,405	0	1,789,772
2003	9,330,092	31,212,831	26,284,042	390,447	26,674,489	2,244,594	1,206,796	0	1,809,179
2004	9,164,049	30,585,951	25,975,697	381,425	26,357,122	2,193,332	1,183,223	0	1,769,951
2005	9,140,870	30,508,488	25,915,306	380,460	26,295,766	2,187,521	1,175,808	0	1,762,985
2006	9,158,288	30,566,530	25,976,429	381,180	26,357,609	2,191,108	1,168,166	0	1,760,782
2007	9,148,880	30,535,120	25,947,179	380,790	26,327,969	2,188,982	1,169,152	0	1,760,203
2008	9,152,708	30,547,913	25,956,381	380,951	26,337,332	2,189,977	1,171,016	0	1,761,714
2009	9,150,308	30,539,900	25,947,807	380,854	26,328,661	2,189,489	1,172,217	0	1,762,103
2010	9,148,673	30,534,394	25,947,695	380,781	26,328,476	2,188,880	1,168,271	0	1,759,691
2011	9,178,169	30,640,999	26,001,657	382,250	26,383,907	2,197,690	1,178,552	0	1,769,686
2012	9,180,399	30,648,453	26,006,594	382,341	26,388,935	2,198,293	1,180,073	0	1,770,818
2013	9,186,477	30,668,817	26,014,522	382,602	26,397,124	2,200,210	1,188,718	0	1,776,423
2014	9,189,882	30,680,319	26,009,760	382,751	26,392,511	2,201,731	1,201,173	0	1,783,840
2015	9,196,807	30,703,433	26,029,789	383,037	26,412,826	2,203,372	1,201,797	0	1,785,032
2016	9,185,024	30,664,027	25,999,934	382,547	26,382,481	2,200,378	1,197,436	0	1,781,166
2017	9,189,803	30,680,007	26,011,163	382,747	26,393,910	2,201,641	1,200,026	0	1,783,202
2018	9,196,930	30,703,900	26,020,472	383,047	26,403,519	2,203,883	1,210,038	0	1,789,692
2019	9,184,522	30,662,396	25,991,901	382,531	26,374,432	2,200,593	1,203,072	0	1,784,290
2020	9,192,633	30,689,460	26,017,466	382,865	26,400,331	2,202,404	1,201,869	0	1,784,582
2021	9,196,918	30,703,715	26,034,367	383,041	26,417,408	2,203,196	1,198,424	0	1,783,161
2022	9,194,855	30,696,933	26,015,719	382,963	26,398,682	2,203,341	1,209,068	0	1,788,918
2023	9,185,690	30,666,218	26,002,689	382,574	26,385,263	2,200,500	1,196,944	0	1,780,983
2024	9,189,421	30,678,733	26,006,813	382,733	26,389,546	2,201,717	1,202,874	0	1,784,770
2025	9,198,966	30,710,597	26,035,545	383,131	26,418,676	2,203,916	1,202,576	0	1,785,747
2026	9,181,852	30,653,455	25,984,454	382,420	26,366,874	2,199,951	1,202,756	0	1,783,799
2027	9,211,491	30,752,429	26,072,256	383,651	26,455,907	2,206,857	1,203,156	0	1,787,581
2028	9,181,040	30,650,759	25,979,516	382,387	26,361,903	2,199,878	1,204,749	0	1,784,817
2029	9,193,118	30,691,047	26,021,033	382,885	26,403,918	2,202,419	1,200,206	0	1,783,717
2030	9,184,159	30,661,095	25,999,078	382,509	26,381,587	2,200,104	1,196,190	0	1,780,375
2031	9,214,547	30,762,697	26,072,437	383,783	26,456,220	2,208,007	1,210,734	0	1,792,223
2032	9,175,857	30,633,467	25,964,115	382,172	26,346,287	2,198,676	1,204,676	0	1,784,149
2033	9,194,138	30,694,416	26,028,799	382,923	26,411,722	2,202,423	1,196,260	0	1,781,618
2034	9,196,026	30,700,790	26,026,017	383,008	26,409,025	2,203,272	1,203,264	0	1,785,784
2035	9,177,136	30,637,735	25,968,249	382,225	26,350,474	2,198,968	1,204,648	0	1,784,303
Total	461,324,482	1,478,679,532	1,291,389,031	17,259,908	1,308,648,939	100,948,951	54,551,128	0	92,025,786

Table B-11

Minimum OMP&R Costs of Each Aqueduct Reach to Be Reimbursed through Minimum OMP&R Component of Transportation Charge (Dollars)

Sheet 6 of 8

Calendar Year	California Aqueduct (continued)								
	Mojave Division (continued)							Santa Ana Division	
	Reach 20B (47)	Reach 21 (48)	Reach 22A (49)	Reach 22B (50)	Reach 23 (51)	Reach 24 (52)	Subtotal (53)	Reach 25 (54)	Reach 26A (55)
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	120,271	75,768	80,436	1,036,831	51,520	362,153	2,030,064	26	578
1973	148,631	60,641	66,539	1,283,816	65,475	353,262	2,323,148	20,541	679,328
1974	88,200	65,007	77,667	1,477,946	96,340	334,302	2,375,962	24,380	799,400
1975	118,898	135,462	77,825	1,630,554	111,141	419,450	2,794,186	29,337	885,021
1976	151,555	106,314	131,007	1,598,071	107,787	304,638	2,902,124	51,356	1,103,139
1977	112,589	98,757	86,279	1,882,080	71,228	48,359	2,800,647	62,584	1,412,740
1978	120,584	109,271	71,763	2,211,965	72,179	637,401	3,731,410	67,186	1,159,950
1979	194,104	203,078	121,586	2,104,832	76,960	202,566	3,571,387	84,462	1,235,189
1980	237,250	156,794	117,274	2,670,387	147,009	688,605	4,870,700	72,651	1,532,535
1981	292,081	181,062	119,602	3,030,407	134,895	47,750	5,032,502	35,662	1,575,444
1982	330,502	186,109	125,429	3,248,883	299,712	623,755	6,176,507	26,852	1,822,250
1983	326,767	219,943	140,523	3,899,769	223,626	384,292	6,472,986	19,017	1,663,599
1984	329,933	266,919	146,866	4,783,997	59,337	1,104,149	7,935,729	11,319	2,325,661
1985	388,327	799,514	125,780	5,330,501	261,135	811,346	8,941,007	17,764	2,707,662
1986	315,566	242,158	178,847	6,190,812	156,053	515,945	9,001,390	31,012	2,768,728
1987	357,971	298,190	236,263	5,731,239	151,796	732,607	10,146,593	19,362	2,847,390
1988	400,005	331,099	149,876	6,910,472	253,833	970,052	11,403,401	36,576	3,087,873
1989	345,614	194,047	138,825	5,963,386	349,544	1,242,144	9,932,830	30,881	3,190,809
1990	202,412	273,748	49,174	6,905,442	436,785	1,891,053	11,755,736	25,518	3,330,913
1991	516,257	478,555	231,223	7,488,366	263,723	1,561,051	13,662,067	32,172	3,847,589
1992	696,623	585,072	168,251	7,076,997	317,042	622,116	12,038,418	55,819	4,043,878
1993	818,675	509,309	207,818	7,765,751	359,632	1,708,915	15,078,017	72,464	5,638,325
1994	957,231	873,175	241,671	7,690,314	1,220,795	1,258,741	15,850,482	105,373	5,139,776
1995	2,411,412	355,198	179,930	6,994,639	842,041	746,371	15,369,990	96,781	4,357,648
1996	1,713,145	790,618	136,397	8,590,347	889,842	(78,782)	15,117,753	156,395	4,051,744
1997	2,043,179	640,177	189,241	8,138,580	1,586,227	3,355,446	19,415,490	177,217	4,585,198
1998	508,030	297,621	115,100	8,888,912	1,925,089	1,134,837	22,261,366	142,703	4,857,213
1999	1,576,321	1,338,608	159,248	9,605,500	2,085,996	1,320,322	25,082,259	187,815	5,900,455
2000	1,259,182	874,531	160,675	9,944,112	1,694,763	1,404,696	19,415,044	290,164	3,850,107
2001	992,110	743,969	463,894	9,607,426	783,282	2,069,952	19,678,202	72,534	6,859,792
2002	1,048,891	788,663	434,647	9,454,840	518,315	2,292,939	19,751,311	77,527	7,013,268
2003	1,062,819	797,983	440,596	9,476,237	507,089	629,837	18,175,130	78,099	6,923,178
2004	1,040,520	780,923	431,376	9,313,483	505,514	1,376,343	18,594,665	76,270	6,797,133
2005	1,035,142	777,467	429,060	9,280,090	503,548	4,008,288	21,159,909	76,104	6,781,182
2006	1,030,986	775,631	427,132	9,275,911	503,013	1,046,119	18,178,848	76,308	6,796,854
2007	1,031,280	775,566	427,302	9,271,192	502,819	2,450,165	19,576,661	76,216	6,789,272
2008	1,032,566	776,355	427,861	9,278,116	503,239	1,803,001	18,943,845	76,241	6,791,724
2009	1,033,229	776,656	428,169	9,279,004	503,330	2,422,029	19,566,226	76,212	6,789,527
2010	1,030,729	775,266	427,055	9,269,058	502,661	1,980,447	19,102,058	76,221	6,789,376
2011	1,038,344	780,201	430,337	9,311,911	504,250	2,493,875	19,704,846	76,479	6,810,527
2012	1,039,365	780,803	430,786	9,316,880	504,547	2,129,815	19,351,380	76,490	6,811,859
2013	1,044,933	783,958	433,250	9,340,430	506,067	1,122,539	18,396,528	76,494	6,814,188
2014	1,052,772	788,278	436,747	9,370,522	508,094	2,937,260	20,280,417	76,450	6,813,334
2015	1,053,394	788,784	436,999	9,376,933	508,420	1,116,251	18,470,982	76,509	6,818,568
2016	1,050,295	786,827	435,657	9,358,629	507,320	3,201,834	20,519,542	76,429	6,810,650
2017	1,052,063	787,898	436,431	9,367,837	507,876	1,869,934	19,206,908	76,457	6,813,654
2018	1,058,512	791,555	439,286	9,395,227	509,657	2,203,665	19,601,515	76,461	6,816,389
2019	1,053,778	788,701	437,217	9,370,687	508,134	3,184,560	20,531,032	76,392	6,808,727
2020	1,053,298	788,634	436,972	9,373,967	508,247	1,947,851	19,297,824	76,472	6,815,352
2021	1,051,307	787,660	436,067	9,369,467	507,875	865,541	18,202,698	76,532	6,819,649
2022	1,057,845	791,149	438,995	9,391,483	509,395	2,036,396	19,426,590	76,450	6,815,114
2023	1,050,017	786,696	435,531	9,357,964	507,239	3,145,474	20,461,348	76,439	6,811,347
2024	1,053,817	788,840	437,216	9,373,800	508,268	1,863,462	19,214,764	76,437	6,812,604
2025	1,053,953	789,137	437,240	9,380,163	508,580	2,072,589	19,433,901	76,525	6,820,084
2026	1,053,494	788,487	437,102	9,367,990	507,967	3,260,418	20,601,964	76,370	6,806,771
2027	1,054,731	789,860	437,545	9,390,599	509,114	1,679,219	19,058,662	76,636	6,829,667
2028	1,054,704	789,118	437,644	9,371,837	508,257	902,254	18,253,258	76,350	6,805,551
2029	1,052,290	788,102	436,518	9,370,616	507,995	3,078,038	20,419,901	76,487	6,816,227
2030	1,049,496	786,379	435,302	9,355,158	507,063	3,201,766	20,511,833	76,430	6,810,381
2031	1,059,536	792,529	439,681	9,409,592	510,363	252,035	17,674,700	76,619	6,829,945
2032	1,054,482	788,877	437,562	9,367,895	508,064	3,050,177	20,394,558	76,303	6,801,535
2033	1,049,874	786,821	435,434	9,362,612	507,428	1,606,365	18,928,835	76,521	6,818,128
2034	1,054,282	789,251	437,401	9,379,512	508,569	1,377,344	18,738,679	76,495	6,817,620
2035	1,054,512	788,927	437,572	9,368,703	508,070	4,710,513	22,056,216	76,317	6,802,604
Total	53,720,681	38,212,696	19,278,699	477,780,679	32,340,474	100,095,837	968,954,931	4,656,665	319,081,923

Table B-11

Minimum OMP&R Costs of Each Aqueduct Reach to Be Reimbursed through Minimum OMP&R Component of Transportation Charge (Dollars)

Sheet 7 of 8

Calendar Year	California Aqueduct (continued)								
	Santa Ana Division (continued)				West Branch				
	Reach 28G (56)	Reach 28H (57)	Reach 28J (58)	Subtotal (59)	Reach 29A (60)	Reach 29F (61)	Reach 29G (62)	Reach 29H (63)	Reach 29I (64)
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	109	30	0	743	719,255	159,249	199,145	234,196	88,198
1973	136,352	79	0	836,300	779,949	339,363	122,664	264,850	119,743
1974	155,262	34,693	854,637	1,868,372	883,312	158,366	112,458	350,160	(4,525)
1975	110,729	69,082	723,814	1,817,983	1,049,990	176,676	194,724	801,457	75,870
1976	138,575	100,400	635,853	2,029,323	1,220,429	215,588	202,591	624,614	98,268
1977	127,543	92,647	825,880	2,521,394	1,268,813	116,939	218,129	684,679	184
1978	166,919	68,363	835,082	2,297,500	1,174,708	342,479	267,308	415,641	17,764
1979	142,586	92,812	265,525	1,820,574	1,366,942	285,575	284,188	972,584	29,850
1980	158,340	129,897	1,120,131	3,013,554	1,698,215	224,472	455,619	874,259	288,303
1981	160,053	111,722	333,550	2,216,431	1,783,405	123,264	615,047	2,305,110	8,794
1982	205,350	135,463	1,518,759	3,708,674	1,919,979	190,500	702,265	2,208,264	414,230
1983	244,720	124,651	412,806	2,464,793	2,739,814	149,333	888,475	745,939	579,882
1984	240,496	190,924	769,068	3,537,468	3,463,038	81,260	2,358,495	537,207	719,282
1985	451,600	182,242	871,492	4,230,760	3,866,946	295,836	3,047,591	975,729	614,735
1986	439,048	256,526	982,332	4,477,646	3,791,427	457,604	2,893,171	1,480,015	1,032,216
1987	278,094	218,717	1,118,529	4,482,092	3,423,494	213,106	2,933,342	944,604	459,398
1988	271,868	200,811	1,176,659	4,773,787	3,447,403	255,113	3,017,463	883,714	446,468
1989	230,953	281,861	1,130,035	4,864,539	4,025,641	405,583	2,738,143	1,398,165	865,738
1990	437,812	308,144	1,538,449	5,640,836	4,088,481	383,655	3,232,445	3,153,869	777,713
1991	843,388	632,912	1,630,321	6,986,382	3,862,056	304,143	3,550,063	639,527	763,037
1992	281,864	5,636,464	1,102,519	11,120,544	4,286,050	327,802	3,892,480	1,014,551	872,953
1993	382,195	570,563	994,721	7,658,268	3,969,075	343,304	4,515,385	1,670,952	852,208
1994	617,136	415,603	1,020,211	7,298,099	3,649,849	296,166	3,359,381	1,878,175	872,624
1995	1,308,828	704,154	894,338	7,361,749	4,137,046	883,315	4,750,275	1,588,080	754,904
1996	1,001,063	1,041,697	1,316,493	7,567,392	4,511,858	966,044	3,593,671	4,208,195	877,111
1997	493,841	949,188	953,590	7,159,034	4,543,506	1,030,809	2,429,066	3,755,901	1,597,361
1998	379,997	991,426	(67,444)	6,303,895	4,872,244	464,376	3,474,463	2,398,630	1,996,114
1999	485,274	1,955,889	824,019	9,353,452	4,783,193	4,331,904	4,871,186	1,368,763	992,149
2000	477,522	991,078	999,316	6,608,187	5,113,566	678,551	3,553,005	2,061,920	313,031
2001	963,740	660,491	2,233,991	10,790,548	6,663,103	713,261	3,269,306	3,938,693	2,178,822
2002	718,966	501,870	2,479,172	10,790,803	6,978,700	741,594	3,426,599	4,460,026	1,454,688
2003	724,284	505,581	2,358,287	10,589,429	6,998,091	757,082	3,416,697	4,177,810	822,073
2004	708,180	493,746	2,060,656	10,135,985	6,866,388	744,819	3,352,245	4,094,154	809,824
2005	706,638	492,671	2,660,382	10,716,977	6,850,388	738,034	3,343,350	4,067,836	808,061
2006	708,533	493,993	1,822,302	9,897,990	6,866,437	728,324	3,348,797	4,038,630	810,228
2007	707,685	493,402	2,418,408	10,484,983	6,858,732	730,052	3,345,556	4,042,547	809,259
2008	707,904	493,554	2,193,884	10,263,307	6,861,180	731,930	3,347,085	4,049,543	809,509
2009	707,637	493,368	2,253,072	10,319,816	6,858,929	733,411	3,346,345	4,054,197	809,203
2010	707,721	493,428	2,609,217	10,675,963	6,858,865	729,041	3,345,394	4,039,593	809,301
2011	709,992	495,094	2,147,001	10,239,093	6,879,392	738,408	3,357,247	4,077,671	811,028
2012	710,100	495,169	2,350,058	10,443,676	6,880,712	739,889	3,358,168	4,082,846	811,152
2013	710,136	495,193	2,645,290	10,741,301	6,882,889	749,157	3,361,118	4,114,676	811,192
2014	709,724	494,906	2,215,591	10,310,005	6,881,753	763,032	3,363,498	4,161,371	810,722
2015	710,280	495,293	2,496,712	10,597,362	6,887,049	763,199	3,365,994	4,163,101	811,355
2016	709,533	494,773	2,141,480	10,232,865	6,879,119	758,962	3,361,403	4,146,808	810,503
2017	709,796	494,956	2,820,743	10,915,606	6,882,115	761,526	3,363,330	4,156,148	810,803
2018	709,836	494,985	2,284,945	10,382,616	6,884,671	772,382	3,366,791	4,193,295	810,851
2019	709,186	494,530	2,844,071	10,932,906	6,877,059	765,209	3,361,733	4,167,079	810,106
2020	709,935	495,053	2,005,418	10,102,230	6,883,801	763,411	3,364,492	4,162,134	810,962
2021	710,489	495,439	2,354,866	10,456,975	6,888,231	759,257	3,365,687	4,149,206	811,595
2022	709,730	494,910	3,271,101	11,367,305	6,883,407	771,175	3,365,933	4,188,512	810,728
2023	709,627	494,838	2,289,912	10,382,163	6,879,847	758,241	3,361,567	4,144,054	810,610
2024	709,613	494,829	2,645,646	10,739,129	6,880,996	764,630	3,363,438	4,165,905	810,595
2025	710,430	495,398	1,925,019	10,027,456	6,888,582	763,778	3,366,794	4,164,316	811,528
2026	708,985	494,391	3,182,770	11,269,287	6,875,090	764,900	3,360,740	4,165,356	809,877
2027	711,456	496,114	1,625,186	9,739,059	6,898,280	763,582	3,371,291	4,165,760	812,701
2028	708,799	494,261	2,555,699	10,640,660	6,873,804	767,352	3,360,656	4,173,968	809,665
2029	710,075	495,150	2,414,039	10,511,978	6,884,722	761,369	3,364,491	4,155,120	811,122
2030	709,542	494,779	2,486,841	10,577,973	6,878,889	757,440	3,360,950	4,141,095	810,514
2031	711,296	496,002	3,317,561	11,431,423	6,898,399	771,834	3,373,072	4,193,920	812,517
2032	708,365	493,958	1,825,736	9,905,897	6,869,739	767,626	3,358,817	4,173,997	809,169
2033	710,381	495,365	2,686,381	10,786,776	6,886,735	756,851	3,364,481	4,140,428	811,472
2034	710,146	495,201	2,434,263	10,533,725	6,886,072	764,686	3,365,817	4,167,285	811,205
2035	708,488	494,044	3,228,187	11,309,640	6,870,825	767,215	3,359,236	4,172,114	809,309
Total	35,474,745	33,984,773	110,064,572	503,262,678	327,162,675	40,583,034	180,100,356	185,288,944	46,915,852

Table B-11

**Minimum OMP&R Costs of Each Aqueduct Reach to Be Reimbursed
through Minimum OMP&R Component of Transportation Charge
(Dollars)**

Sheet 8 of 8

Calendar Year	California Aqueduct (continued)									Grand Total (74)
	West Branch (cont'd.)		Coastal Branch						Total (73)	
	Reach 30 (65)	Subtotal (66)	Reach 31A ^a (67)	Reach 33A (68)	Reach 33B (69)	Reach 34 (70)	Reach 35 (71)	Subtotal (72)		
1961	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	0	42,918
1963	0	0	0	0	0	0	0	0	0	168,358
1964	0	0	0	0	0	0	0	0	0	184,729
1965	0	0	0	0	0	0	0	0	0	378,874
1966	0	0	0	0	0	0	0	0	0	408,397
1967	0	0	0	0	0	0	0	0	0	634,505
1968	0	0	0	0	0	0	0	0	2,160,548	2,745,160
1969	0	0	509,728	0	0	0	0	509,728	3,324,718	4,074,939
1970	0	0	609,988	0	0	0	0	609,988	3,983,062	4,676,282
1971	0	0	699,052	0	0	0	0	699,052	5,614,013	6,185,714
1972	420,789	1,820,832	697,576	0	0	0	0	697,576	12,353,356	12,998,869
1973	621,431	2,248,000	641,626	0	0	0	0	641,626	14,590,688	15,194,233
1974	723,949	2,223,720	669,279	0	0	0	0	669,279	16,598,762	17,372,561
1975	841,991	3,140,708	806,429	0	0	0	0	806,429	19,569,999	20,517,423
1976	(650,944)	1,710,546	840,927	0	0	0	0	840,927	19,002,859	20,027,213
1977	634,581	2,923,325	872,169	0	0	0	0	872,169	23,267,885	24,213,489
1978	3,088,954	5,306,854	934,119	0	0	0	0	934,119	24,818,739	26,012,786
1979	958,068	3,897,207	871,688	0	0	0	0	871,688	23,421,881	24,675,598
1980	222,549	3,763,417	1,047,396	4,790	0	30	75	1,052,291	30,105,348	32,038,398
1981	1,093,897	5,929,517	1,037,469	4,790	0	30	75	1,042,364	33,884,524	35,516,366
1982	978,624	6,413,862	1,015,555	4,790	0	30	75	1,020,450	39,515,188	41,611,655
1983	3,698,681	8,802,124	1,146,269	4,957	0	30	77	1,151,333	54,543,263	56,802,781
1984	755,136	7,914,418	1,427,192	5,051	0	31	78	1,432,352	63,947,633	67,105,188
1985	1,753,355	10,554,192	1,849,827	5,051	0	31	78	1,854,987	69,700,009	73,272,898
1986	1,338,657	10,993,090	1,714,723	5,051	0	31	78	1,719,883	73,437,761	76,707,917
1987	1,406,519	9,380,463	1,689,141	4,324	0	26	67	1,693,558	71,443,424	75,217,576
1988	1,452,589	9,502,750	1,964,428	4,509	0	28	70	1,969,035	72,349,117	76,060,618
1989	1,505,029	10,938,299	1,768,942	4,509	0	28	70	1,773,549	73,894,076	78,662,348
1990	847,500	12,483,663	2,274,772	0	0	0	0	2,274,772	86,130,115	91,361,385
1991	1,191,090	10,309,916	2,187,841	0	0	0	0	2,187,841	86,877,284	90,982,870
1992	2,259,032	12,652,868	2,465,364	0	0	0	0	2,465,364	94,167,321	99,235,524
1993	1,157,876	12,508,800	2,811,441	0	0	0	0	2,811,441	100,019,568	107,299,130
1994	1,699,254	11,755,449	3,894,600	0	0	0	0	3,894,600	92,371,861	99,979,092
1995	(421,879)	11,691,741	3,481,049	0	0	0	0	3,481,049	98,887,435	105,659,504
1996	1,574,098	15,730,977	5,144,684	0	0	0	0	5,144,684	105,119,193	112,018,784
1997	1,521,491	14,878,134	2,523,741	(33)	0	0	0	2,523,708	107,647,058	113,385,326
1998	1,291,185	14,497,012	4,303,206	1,878,551	1,386	160,400	88,026	6,431,569	120,663,426	127,330,617
1999	2,030,404	18,377,599	4,494,786	2,021,455	11,222	191,192	94,862	6,813,517	126,397,704	135,479,954
2000	1,291,677	13,011,750	4,279,338	2,567,280	2,833	278,171	139,292	7,266,914	118,138,841	126,267,724
2001	3,585,093	20,348,278	4,265,841	1,708,989	0	1,946	5,178	5,981,954	142,253,107	152,489,278
2002	2,801,841	19,863,448	4,547,564	1,644,362	0	1,859	4,944	6,198,729	139,555,434	150,549,809
2003	2,533,636	18,705,389	4,577,533	1,727,480	0	2,029	5,392	6,312,434	136,588,231	146,829,287
2004	2,788,069	18,655,499	4,475,523	1,681,242	0	2,049	5,445	6,164,259	134,737,572	144,611,323
2005	4,395,959	20,203,628	4,464,659	1,680,759	0	1,962	5,213	6,152,593	139,229,257	149,079,461
2006	2,579,461	18,371,877	4,474,182	1,679,709	0	1,787	4,752	6,160,430	133,754,534	143,626,685
2007	3,080,196	18,866,342	4,469,361	1,679,938	0	1,824	4,848	6,155,971	136,150,048	146,011,360
2008	3,260,731	19,059,978	4,471,087	1,680,085	0	1,851	4,915	6,157,938	135,522,401	145,387,387
2009	3,367,869	19,169,954	4,469,759	1,680,242	0	1,876	4,982	6,156,859	136,289,526	146,151,447
2010	3,265,160	19,047,354	4,469,352	1,679,835	0	1,807	4,801	6,155,795	136,045,863	145,907,246
2011	3,452,355	19,316,101	4,485,341	1,687,053	0	1,920	5,107	6,179,421	136,771,235	146,669,596
2012	3,260,363	19,133,130	4,486,309	1,687,175	0	1,942	5,164	6,180,590	136,458,584	146,358,979
2013	3,715,404	19,634,436	4,488,472	1,688,008	0	2,085	5,543	6,184,108	136,353,310	146,257,735
2014	3,364,534	19,344,910	4,488,885	1,689,304	0	2,306	6,126	6,186,621	137,541,956	147,446,154
2015	3,208,619	19,199,317	4,492,304	1,689,263	0	2,302	6,113	6,189,982	135,935,400	145,847,171
2016	3,830,577	19,787,372	4,486,851	1,688,948	0	2,243	5,963	6,184,005	138,104,735	148,004,755
2017	3,632,719	19,606,641	4,488,984	1,689,153	0	2,279	6,058	6,186,474	137,335,479	147,240,024
2018	3,532,166	19,560,156	4,491,522	1,690,131	0	2,446	6,504	6,190,603	137,210,055	147,119,339
2019	4,132,762	20,113,948	4,486,028	1,689,539	0	2,345	6,228	6,184,140	139,136,331	149,034,011
2020	3,914,484	19,899,284	4,490,218	1,689,307	0	2,306	6,129	6,187,960	136,930,032	146,837,172
2021	3,037,970	19,011,946	4,492,724	1,688,878	0	2,236	5,939	6,189,777	135,341,501	145,254,550
2022	3,061,916	19,081,671	4,490,603	1,690,028	0	2,429	6,456	6,189,516	137,523,320	147,430,670
2023	3,462,025	19,416,344	4,487,247	1,688,866	0	2,231	5,926	6,184,270	137,830,846	147,731,823
2024	4,325,781	20,311,345	4,488,511	1,689,443	0	2,329	6,188	6,186,471	137,867,112	147,770,360
2025	2,362,093	18,357,091	4,493,324	1,689,292	0	2,306	6,128	6,191,050	135,504,961	145,418,963
2026	4,357,297	20,333,260	4,484,733	1,689,527	0	2,342	6,222	6,182,824	139,739,411	149,634,244
2027	41,540	16,053,154	4,499,553	1,689,183	0	2,289	6,085	6,197,110	132,648,166	142,576,011
2028	7,896,020	23,881,465	4,484,104	1,689,766	0	2,379	6,327	6,182,576	140,302,288	150,195,529
2029	1,981,425	17,958,249	4,490,645	1,689,108	0	2,272	6,043	6,188,068	136,525,748	146,434,000
2030	3,483,610	19,432,498	4,486,562	1,688,801	0	2,219	5,899	6,183,481	138,080,036	147,979,552
2031	106,395	16,156,137	4,500,309	1,689,938	0	2,421	6,429	6,199,097	133,083,835	143,012,677
2032	7,876,522	23,855,870	4,481,511	1,689,830	0	2,391	6,355	6,180,087	141,637,377	151,524,838
2033	2,324,835	18,284,802	4,491,568	1,688,673	0	2,197	5,843	6,188,281	135,646,517	145,557,192
2034	3,387,351	19,382,416	4,491,784	1,689,400	0	2,324	6,174	6,189,682	136,315,058	146,225,562
2035	4,421,258	20,399,957	4,482,178	1,689,786	0	2,384	6,334	6,180,682	141,258,299	151,147,277
Total	155,113,619	935,164,480	217,589,476	65,586,116	15,441	705,971	524,676	284,421,680	6,689,154,224	7,151,859,170

^aIncludes certain costs to be assigned directly to Kern County Water Agency. Refer to Appendix B text discussion of Table B-16A under "Project Water Charges."

Table B-12
**Variable OMP&R Costs to Be Reimbursed through Variable OMP&R Component
of Transportation Charge^a**
(Dollars)

Sheet 1 of 3

Calendar Year	North Bay Aqueduct				South Bay Aqueduct	California Aqueduct			
	Reach 1	Reach 3A	Reach 3B	Total (4)	Reach 1	Reach 1	Reach 4	Reach 14A	Reach 15A
	Barker Slough Pumping Plant (1)	Cordelia Pumping Plant (Solano) (2)	Cordelia Pumping Plant (Napa) ^b (3)		South Bay & Del Valle Pumping Plants ^c (5)	Banks Pumping Plant (6)	Dos Amigos Pumping Plant (7)	Buena Vista Pumping Plant (8)	Wheeler Ridge Pumping Plant (9)
1962	0	0	0	0	36,970	0	0	0	0
1963	0	0	0	0	57,711	0	0	0	0
1964	0	0	0	0	74,134	0	0	0	0
1965	0	0	0	0	142,609	0	0	0	0
1966	0	0	0	0	192,605	0	0	0	0
1967	0	0	0	0	223,117	13,881	0	0	0
1968	0	0	6,989	6,989	336,671	452,630	202,947	0	0
1969	0	0	8,551	8,551	257,579	293,741	135,425	0	0
1970	0	0	13,598	13,598	396,358	346,215	211,197	1	0
1971	0	0	10,609	10,609	381,662	574,015	225,188	138,001	17,664
1972	0	0	14,434	14,434	598,702	933,292	502,196	241,714	97,004
1973	0	0	14,449	14,449	493,490	688,030	381,232	306,268	278,923
1974	0	0	17,473	17,473	565,575	783,562	447,772	358,739	367,266
1975	0	0	14,779	14,779	349,758	1,341,019	518,816	550,860	595,252
1976	0	0	20,856	20,856	571,361	1,638,453	641,115	755,747	756,175
1977	0	0	22,635	22,635	512,996	1,013,307	284,828	298,300	337,889
1978	0	0	21,692	21,692	586,355	2,339,502	607,042	732,036	658,404
1979	0	0	16,237	16,237	605,136	3,554,256	1,008,564	818,816	791,488
1980	0	0	19,945	19,945	523,369	2,083,336	1,129,152	1,051,629	1,047,495
1981	0	0	23,842	23,842	567,692	3,952,931	1,939,189	1,336,867	1,319,739
1982	0	0	12,157	12,157	605,780	3,082,031	1,363,705	1,200,226	1,213,660
1983	0	0	2,342	2,342	82,222	879,916	343,597	341,584	304,715
1984	0	0	4,822	4,822	271,543	1,695,568	885,941	678,307	602,408
1985	0	0	10,188	10,188	451,020	3,171,920	1,613,745	1,397,490	1,397,098
1986	0	0	15,501	15,501	807,984	6,601,752	2,627,407	2,405,224	2,432,322
1987	0	0	27,223	27,223	886,956	5,753,132	2,523,544	2,240,552	2,223,371
1988	17,813	0	24,020	41,833	909,300	6,280,898	2,611,297	2,562,330	2,560,462
1989	29,819	43,846	26,519	100,184	1,161,160	9,748,180	3,910,492	3,964,188	3,974,290
1990	52,210	67,109	40,775	160,094	1,834,626	10,467,177	4,501,309	5,785,069	6,019,952
1991	10,429	10,118	5,252	25,799	378,966	1,923,595	490,766	903,923	1,031,345
1992	13,319	13,070	9,406	35,795	311,251	3,211,086	1,168,304	1,255,567	1,314,358
1993	(11,941)	(8,753)	(5,392)	(26,086)	(158,214)	532,899	345,215	(124,821)	(102,311)
1994	46,538	39,910	29,105	115,553	799,370	5,658,038	2,298,300	2,504,629	2,516,185
1995	20,014	20,620	52,425	92,425	247,645	4,017,881	1,513,362	919,965	841,178
1996	57,320	47,288	23,483	128,091	619,160	8,305,492	4,016,045	2,503,370	2,310,456
1997	67,416	52,935	21,955	142,306	986,312	6,946,568	2,842,755	2,583,689	2,411,361
1998	(10,647)	(9,488)	(4,554)	(24,689)	(125,142)	243,272	(316,027)	(248,827)	(223,550)
1999	36,079	25,334	9,651	71,064	568,848	6,305,526	1,918,411	1,729,616	1,679,572
2000	83,763	58,963	21,557	164,283	991,936	10,758,870	4,337,740	4,091,378	4,318,694
2001	1,333,518	539,610	1,100,697	2,973,825	8,047,001	75,606,358	34,763,836	40,025,033	45,763,672
2002	580,542	295,483	472,523	1,348,548	6,043,877	44,520,464	20,135,323	22,674,094	26,061,207
2003	488,885	245,071	400,641	1,134,597	5,344,957	38,247,311	16,799,170	19,047,684	21,920,538
2004	306,770	294,965	318,058	919,793	4,455,555	28,959,745	13,205,589	14,994,623	14,567,133
2005	357,385	341,423	372,418	1,071,226	5,363,253	32,821,497	16,105,141	18,940,088	18,507,623
2006	368,671	349,416	388,438	1,106,525	5,550,204	35,576,671	16,759,562	19,960,324	19,528,800
2007	364,413	342,783	388,156	1,095,352	5,445,447	33,523,012	16,613,183	19,964,277	19,546,872
2008	328,080	306,259	353,378	987,717	4,865,869	34,177,622	14,939,301	18,038,244	17,671,995
2009	344,106	318,675	374,360	1,037,141	5,063,750	30,635,974	15,651,472	18,985,311	18,610,889
2010	364,798	335,242	401,027	1,101,067	5,326,425	39,454,654	16,599,886	20,212,350	19,825,710
2011	367,753	335,383	408,468	1,111,604	5,328,649	35,432,658	16,618,353	20,220,556	19,832,360
2012	384,788	348,265	431,778	1,164,831	5,533,329	33,945,555	17,418,710	21,308,365	20,916,982
2013	429,253	386,078	485,571	1,300,902	6,134,105	45,075,111	19,538,650	24,007,281	23,584,027
2014	468,197	417,518	535,665	1,421,380	6,633,655	40,311,989	21,350,499	26,347,378	25,901,361
2015	482,770	424,417	564,190	1,471,377	6,743,243	45,516,457	21,725,980	26,812,246	26,359,272
2016	494,331	429,176	589,046	1,512,553	6,818,872	52,506,971	22,378,679	27,849,603	27,416,321
2017	492,554	422,381	598,037	1,512,972	6,710,897	46,234,278	21,746,660	26,884,014	26,437,701
2018	514,349	435,792	637,228	1,587,369	6,923,987	45,449,331	22,527,175	27,935,970	27,485,516
2019	534,587	447,583	675,575	1,657,745	7,111,320	53,930,678	23,781,896	29,773,938	29,340,325
2020	508,445	420,792	654,391	1,583,628	6,685,645	47,298,003	22,285,486	27,892,523	27,484,425
2021	508,698	420,033	656,386	1,585,117	6,673,591	46,481,363	22,374,500	28,070,628	27,670,783
2022	490,588	405,080	633,019	1,528,687	6,436,010	42,683,111	21,577,415	27,070,142	26,684,243
2023	493,808	407,737	637,170	1,538,715	6,478,226	46,245,302	21,811,036	27,418,676	27,036,698
2024	514,801	425,071	664,260	1,604,132	6,753,644	51,251,440	22,640,182	28,394,054	27,988,191
2025	512,131	422,865	660,814	1,595,810	6,718,622	42,392,880	22,513,699	28,245,661	27,843,212
2026	516,181	426,211	666,041	1,608,433	6,771,750	53,576,996	22,727,470	28,510,528	28,104,141
2027	507,212	418,805	654,468	1,580,485	6,654,086	47,544,098	22,414,830	28,182,422	27,790,783
2028	511,278	422,161	659,713	1,593,152	6,707,424	48,653,662	22,473,736	28,184,631	27,781,349
2029	503,769	415,962	650,026	1,569,757	6,608,926	46,189,381	22,238,666	27,947,416	27,556,659
2030	508,464	419,839	656,083	1,584,386	6,670,505	48,390,896	22,345,382	28,019,299	27,617,646
2031	500,436	413,211	645,724	1,559,371	6,565,186	42,518,468	21,592,780	26,894,270	26,479,772
2032	511,970	422,733	660,609	1,595,312	6,716,519	47,690,253	22,386,698	27,967,266	27,550,825
2033	541,669	447,257	698,929	1,687,855	7,106,136	49,739,184	23,551,132	29,422,803	28,983,872
2034	518,887	428,445	669,533	1,616,865	6,807,257	47,388,638	22,776,070	28,508,136	28,092,104
2035	506,687	418,371	653,790	1,578,848	6,647,201	47,466,663	22,440,697	28,238,125	27,850,495
Total	17,572,906	14,111,045	20,528,100	52,212,051	239,549,696	1,663,028,645	774,039,415	936,230,396	934,886,367

^aIncludes extra peaking costs assigned directly to contractors. Refer to Appendix B text discussion of Table B-17 under "Project Water Charges."

^bCosts for the period 1968 through 1987 are for an interim facility.

^cThe relatively minor costs of Del Valle Pumping Plant have been combined with those of South Bay Pumping Plant to simplify the allocation procedures.

Table B-12

Variable OMP&R Costs to Be Reimbursed through Variable OMP&R Component of Transportation Charge

(Dollars)

Sheet 2 of 3

Calendar Year	California Aqueduct (continued)								
	Reach 16A	Reach 17E	Reach 18A	Reach 22B	Reach 23	Reach 24	Reach 26A	Reach 28J	Reach 29A
	Chrisman Pumping Plant (10)	Edmonston Pumping Plant (11)	Alamo Power Plant (12)	Pearblossom Pumping Plant (13)	Mojave Siphon Power Plant (14)	Silverwood Lake ^d (15)	Devil Canyon Power Plant (16)	Lake Perris ^d (17)	Oso Pumping Plant (18)
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	180,602	542,625	0	25,568	0	0	(3,024)	0	102,315
1973	441,598	1,548,428	0	231,389	0	0	(436,768)	0	158,587
1974	618,864	2,164,223	0	354,093	0	0	(521,656)	0	193,311
1975	1,149,731	4,010,395	0	604,161	0	0	(1,071,023)	0	350,436
1976	1,561,385	5,443,936	0	932,444	0	0	(1,519,156)	0	362,767
1977	703,802	2,360,624	0	358,028	0	0	(1,175,966)	0	111,135
1978	1,186,696	4,180,131	0	1,551,015	0	0	(3,038,194)	0	125,183
1979	1,581,250	5,475,688	0	1,881,587	0	0	(3,419,581)	0	138,384
1980	2,102,439	7,028,235	0	1,762,063	0	0	(3,318,152)	0	236,768
1981	2,838,773	9,351,931	0	2,296,771	0	0	(3,842,971)	0	444,280
1982	2,424,920	8,352,207	0	1,498,620	0	0	(2,736,072)	0	539,245
1983	540,330	1,582,582	0	341,957	0	384,275	(5,478,830)	0	71,197
1984	1,129,131	3,448,759	0	622,123	0	0	(7,326,265)	(10,080)	240,134
1985	2,781,953	9,261,674	0	1,195,768	0	0	(10,477,567)	(56,570)	874,069
1986	4,999,949	16,956,023	(1,013,756)	2,359,599	0	0	(11,484,996)	0	1,269,590
1987	4,456,059	14,684,476	(1,026,193)	1,831,238	0	131,606	(10,814,483)	53,242	1,325,936
1988	5,126,229	16,819,159	(744,374)	2,375,784	0	0	(14,495,967)	0	1,421,097
1989	8,369,623	28,090,313	(766,443)	4,102,557	0	686,468	(18,532,961)	89,890	2,013,335
1990	13,630,073	48,369,421	(834,673)	6,504,876	0	89,075	(20,911,839)	147,163	2,857,409
1991	2,426,220	8,641,086	(269,625)	996,352	0	0	(4,884,013)	0	534,818
1992	2,642,161	8,854,347	(934,311)	1,167,670	0	156,847	(9,513,281)	(61,233)	717,740
1993	(582,580)	(2,649,876)	(56,908)	(253,503)	0	(34,870)	(7,502,549)	0	68,719
1994	5,276,189	18,302,830	(58,712)	2,572,826	0	0	(11,662,318)	147,989	1,203,006
1995	1,677,210	5,571,517	(1,242,189)	1,025,717	0	467,095	(9,742,248)	0	247,869
1996	4,899,576	17,115,554	(2,811,564)	2,673,483	(923,213)	906,220	(12,358,465)	0	895,929
1997	5,410,787	19,364,138	(2,478,032)	3,022,354	(1,672,148)	0	(13,227,863)	125,510	897,657
1998	(497,603)	(1,715,651)	(2,014,963)	(413,513)	(1,252,047)	(4,361)	(10,183,555)	0	(25,895)
1999	4,501,301	14,621,522	(2,980,122)	2,261,839	(2,587,958)	0	(15,232,207)	0	738,127
2000	9,740,264	34,984,791	(5,123,988)	5,187,013	(4,402,610)	0	(25,758,437)	0	1,755,603
2001	97,229,770	342,623,536	(3,554,878)	38,753,043	(5,421,621)	0	(19,038,113)	0	23,745,233
2002	55,407,972	195,365,663	(4,395,901)	24,160,149	(6,162,131)	(286,133)	(23,150,951)	(1,607,534)	12,535,687
2003	46,596,755	164,379,005	(4,175,753)	17,215,088	(5,287,431)	1,632,542	(19,665,715)	(1,280,782)	11,813,308
2004	34,202,203	127,978,115	(5,541,199)	25,984,542	(6,727,531)	0	(32,902,000)	0	3,995,863
2005	43,540,470	163,124,066	(5,248,104)	26,006,021	(6,156,828)	0	(29,858,854)	667,185	7,766,994
2006	45,969,608	172,284,675	(5,323,085)	27,121,399	(6,244,882)	1,791,769	(30,163,997)	(50,628)	8,379,669
2007	46,052,838	172,635,918	(5,304,819)	26,617,170	(6,194,184)	0	(30,531,242)	0	8,649,466
2008	41,623,241	156,056,834	(5,500,514)	24,729,947	(6,467,727)	0	(30,964,896)	(714,425)	7,571,512
2009	43,844,281	164,428,027	(5,496,733)	25,899,317	(6,434,428)	1,181,755	(31,220,706)	0	8,057,569
2010	46,716,622	175,192,803	(5,516,549)	27,630,925	(6,466,141)	380,715	(31,331,159)	0	8,592,971
2011	46,733,409	175,254,161	(5,503,034)	27,610,727	(6,438,368)	0	(31,892,418)	0	8,594,397
2012	49,301,031	184,917,368	(5,692,199)	29,558,844	(6,750,816)	2,227,212	(32,139,303)	1,586,519	8,945,090
2013	55,604,181	208,592,647	(5,617,646)	32,969,461	(6,676,837)	1,372,650	(32,122,397)	0	10,262,029
2014	61,083,612	229,184,297	(5,678,222)	35,895,456	(6,744,887)	0	(32,516,070)	(788,722)	11,414,004
2015	62,164,981	233,243,361	(5,706,068)	36,809,546	(6,857,020)	0	(33,039,940)	0	11,527,011
2016	64,687,737	242,781,352	(5,857,183)	38,656,707	(7,076,457)	3,132,565	(33,731,515)	(1,407,586)	11,922,549
2017	62,357,775	233,982,595	(5,683,534)	36,988,551	(6,906,034)	0	(33,432,731)	0	11,546,175
2018	64,837,126	243,313,247	(5,872,838)	39,237,773	(7,410,581)	5,209,956	(33,733,668)	1,692,684	11,740,273
2019	69,255,249	259,981,561	(5,796,744)	40,176,366	(7,166,234)	0	(33,958,607)	0	13,272,205
2020	64,871,474	243,521,138	(5,834,734)	38,375,377	(7,271,665)	0	(34,383,006)	1,230,408	12,153,694
2021	65,320,445	245,226,744	(5,918,777)	38,912,750	(7,422,007)	(592,426)	(34,530,912)	(1,514,992)	12,138,908
2022	62,991,375	236,483,086	(5,889,104)	37,026,282	(7,328,217)	2,457,320	(34,141,483)	0	11,910,181
2023	63,830,471	239,650,242	(5,960,652)	37,769,639	(7,449,466)	1,199,016	(34,522,186)	(208,084)	11,981,334
2024	66,068,892	248,034,014	(5,851,745)	38,846,776	(7,336,069)	0	(34,504,288)	0	12,492,311
2025	65,727,090	246,753,470	(5,889,452)	38,606,359	(7,337,887)	2,364,907	(34,106,667)	0	12,430,461
2026	66,344,148	249,070,180	(5,903,865)	39,408,479	(7,443,710)	0	(34,841,352)	(977,782)	12,382,509
2027	65,611,335	246,337,703	(5,927,583)	38,782,485	(7,383,647)	607,582	(34,467,434)	0	12,330,880
2028	65,580,382	246,984,924	(5,871,740)	38,831,591	(7,354,075)	0	(34,533,596)	(711,027)	12,279,664
2029	65,057,083	244,252,332	(5,907,521)	38,453,086	(7,405,547)	(2,275)	(34,447,861)	0	12,225,480
2030	65,193,428	244,744,822	(5,875,757)	38,646,818	(7,360,026)	0	(34,526,393)	0	12,184,957
2031	62,480,827	234,507,724	(5,911,410)	37,940,173	(7,723,864)	4,745,400	(34,174,406)	(1,235,707)	11,295,367
2032	65,025,359	244,084,795	(5,808,592)	37,949,895	(7,548,540)	0	(33,966,378)	0	12,346,953
2033	68,401,782	256,759,062	(5,946,630)	41,346,044	(7,552,211)	2,226,634	(34,328,726)	2,442,557	12,462,790
2034	66,309,169	248,919,841	(5,864,045)	38,852,516	(7,712,738)	0	(33,804,804)	0	12,535,722
2035	65,753,961	246,891,698	(5,976,657)	38,964,704	(7,627,273)	2,937,024	(34,713,304)	3,918,493	12,315,853
Total	2,173,093,014	8,079,516,094	(218,159,120)	1,249,803,885	(253,985,056)	35,368,568	(1,366,057,519)	1,476,488	415,667,820

^dThese values represent a proportionate allocation of the total variable OMP&R costs of pumping and recovery plants (Table B-3) associated with net annual withdrawals from storage for Project Transportation Facilities. The allocation is determined annually by applying the following ratio, calculated from the data shown in Table B-6: "Reservoir Storage Changes" (withdrawals, as a positive value) conveyed through each plant, divided by "Total" annual quantity conveyed through each plant, in acre-feet. The costs so determined are accumulated for all upstream plants for each year, for each respective reservoir.

Table B-12

**Variable OMP&R Costs to Be Reimbursed through Variable OMP&R
Component of Transportation Charge**
(Dollars)

Sheet 3 of 3

Calendar Year	California Aqueduct (continued)							Total (25)	Grand Total (26)
	Reach 29G	Reach 29H	Reach 29I	Reach 30	Reach 31A	Reach 33A			
	Warne Power Plant (19)	Pyramid Lake ^d (20)	Castaic Power Plant (21)	Castaic Lake (d (22)	Las Perillas & Badger Hill Pumping Plants (23)	Devil's Den, Bluestone, & Polonio Pumping Plants (24)			
1962	0	0	0	0	0	0	0	36,970	
1963	0	0	0	0	0	0	0	57,711	
1964	0	0	0	0	0	0	0	74,134	
1965	0	0	0	0	0	0	0	142,609	
1966	0	0	0	0	0	0	0	192,605	
1967	0	0	0	0	0	0	13,881	236,998	
1968	0	0	0	0	118,676	0	774,253	1,117,913	
1969	0	0	0	0	78,350	0	507,516	773,646	
1970	0	0	0	0	136,429	0	693,842	1,103,798	
1971	0	0	0	0	166,296	0	1,121,164	1,513,435	
1972	0	0	(211,144)	0	237,638	0	2,648,786	3,261,922	
1973	0	0	(1,057,564)	0	120,913	0	2,661,036	3,168,975	
1974	0	0	(1,547,884)	0	118,582	0	3,336,872	3,919,920	
1975	0	0	(2,455,461)	0	94,848	0	5,689,034	6,053,571	
1976	0	0	(2,827,557)	0	141,260	0	7,886,569	8,478,786	
1977	0	0	(3,734,462)	0	71,311	0	628,796	1,164,427	
1978	0	0	(1,542,479)	0	179,925	0	6,979,261	7,587,308	
1979	0	0	(2,773,323)	0	192,126	0	9,249,255	9,870,628	
1980	0	0	(3,408,863)	0	168,458	0	9,882,560	10,425,874	
1981	0	0	(2,834,322)	0	169,177	0	16,972,365	17,563,899	
1982	(783,626)	0	(3,463,971)	0	168,390	0	12,859,335	13,477,272	
1983	(495,041)	65,741	(3,260,764)	(3,176,515)	17,920	0	(7,537,336)	(7,452,772)	
1984	(2,027,345)	0	(2,336,089)	(2,151,129)	112,679	0	(4,435,858)	(4,159,493)	
1985	(5,930,176)	0	(15,698,638)	0	146,843	0	(10,322,391)	(9,861,183)	
1986	(5,579,301)	0	(11,072,448)	0	297,886	0	10,799,251	11,622,736	
1987	(6,304,539)	68,410	(11,562,269)	(41,897)	245,082	0	5,787,267	6,701,446	
1988	(6,993,235)	54,038	(12,292,638)	(211,526)	214,519	0	5,288,073	6,239,206	
1989	(8,235,085)	14,390	(14,514,469)	126,791	282,180	0	23,323,739	24,585,083	
1990	(11,011,065)	0	(20,116,506)	245,180	416,832	0	46,159,453	48,154,173	
1991	(3,600,495)	439,068	(6,579,194)	0	3,610	0	2,057,456	2,462,221	
1992	(5,508,780)	0	(9,493,502)	(935,650)	101,665	0	(5,857,012)	(5,509,966)	
1993	(4,525,955)	(13,291)	(9,266,007)	(446,527)	(111,306)	0	(24,723,671)	(24,907,971)	
1994	(5,813,538)	20,518	(10,547,914)	(86,993)	206,258	0	12,537,293	13,452,216	
1995	(1,934,202)	0	(4,049,615)	0	243,434	0	(443,026)	(142,956)	
1996	(4,248,531)	0	(8,457,232)	0	296,170	0	15,123,290	15,870,541	
1997	(4,797,589)	0	(8,727,328)	(897)	298,483	208,816	13,208,261	14,336,879	
1998	(740,480)	(931,305)	(3,360,851)	(2,108,804)	(51,634)	(87,016)	(23,932,810)	(24,082,641)	
1999	(5,738,474)	0	(9,655,135)	(87,667)	160,633	(12,528)	(2,377,544)	(1,737,632)	
2000	(10,161,472)	0	(17,461,286)	0	309,851	515,629	13,092,040	14,248,259	
2001	(12,010,016)	(3,618,915)	(20,403,780)	(5,138,844)	4,047,580	10,915,883	644,287,777	655,308,603	
2002	(11,506,805)	0	(19,350,878)	0	2,220,912	5,957,535	342,578,673	349,971,098	
2003	(13,206,052)	0	(22,894,023)	1,006,411	1,838,654	4,941,114	278,927,824	285,407,378	
2004	(8,053,607)	0	(12,859,461)	0	1,570,654	4,473,824	203,848,493	209,223,841	
2005	(13,467,808)	0	(21,531,331)	3,503,510	1,886,393	5,122,845	261,728,908	268,163,387	
2006	(14,013,141)	0	(22,629,452)	261,897	1,846,856	5,242,802	276,298,847	282,955,576	
2007	(14,853,032)	0	(23,788,132)	(510,278)	1,719,760	5,143,280	269,284,089	275,824,888	
2008	(14,614,238)	0	(23,322,254)	0	1,536,512	4,595,238	239,356,392	245,209,978	
2009	(14,954,018)	0	(23,852,901)	(219,074)	1,598,799	4,781,524	251,497,058	257,597,949	
2010	(15,069,932)	0	(24,154,170)	0	1,681,922	5,030,119	278,780,726	285,208,218	
2011	(15,056,958)	0	(24,106,440)	0	1,682,327	5,032,220	274,013,950	280,454,203	
2012	(15,055,809)	0	(24,198,760)	1,763,907	1,746,872	5,225,510	295,025,078	301,723,238	
2013	(15,550,378)	0	(25,006,131)	0	1,936,537	5,792,866	343,762,051	351,197,058	
2014	(15,991,072)	0	(25,690,262)	0	2,094,245	6,264,627	372,438,233	380,493,268	
2015	(15,912,643)	0	(25,535,800)	0	2,128,841	6,368,115	385,604,339	393,818,959	
2016	(16,247,284)	0	(26,111,296)	(196,931)	2,152,716	6,439,542	409,296,490	417,627,915	
2017	(15,951,057)	0	(25,668,766)	0	2,118,630	6,337,570	386,991,827	395,215,696	
2018	(15,734,041)	0	(25,325,121)	3,118,831	2,185,903	6,538,809	413,196,345	421,707,701	
2019	(17,077,558)	0	(27,764,508)	0	2,245,045	6,715,721	436,709,333	445,478,398	
2020	(16,767,575)	0	(27,095,848)	0	2,110,658	6,313,724	402,184,082	410,453,355	
2021	(16,749,441)	0	(27,097,866)	0	2,106,854	6,302,341	400,778,895	409,037,603	
2022	(17,031,662)	0	(27,567,937)	(1,157,284)	2,031,849	6,077,975	383,877,292	391,841,989	
2023	(17,022,534)	0	(27,552,540)	(1,144,530)	2,045,177	6,117,845	391,245,444	399,262,385	
2024	(17,024,458)	0	(27,559,348)	157,362	2,132,126	6,377,939	412,107,379	420,465,155	
2025	(17,028,080)	0	(27,562,559)	(1,087,630)	2,121,070	6,344,867	402,331,401	410,645,833	
2026	(16,828,895)	0	(27,236,779)	0	2,137,842	6,395,043	415,424,953	423,805,136	
2027	(17,055,147)	0	(27,609,367)	375,544	2,100,697	6,283,922	405,919,103	414,153,674	
2028	(16,853,511)	0	(27,272,449)	0	2,117,534	6,334,293	405,839,368	414,139,944	
2029	(17,025,442)	0	(27,560,486)	(99,131)	2,086,439	6,241,275	399,799,554	407,978,237	
2030	(16,811,637)	0	(27,208,633)	0	2,105,879	6,299,429	403,766,110	412,021,001	
2031	(15,919,358)	0	(25,688,934)	7,729,061	2,072,630	6,199,967	393,802,760	401,927,317	
2032	(16,799,527)	0	(27,332,781)	0	2,120,405	6,342,881	402,009,512	410,321,343	
2033	(16,110,702)	0	(26,153,377)	7,251,564	2,243,407	6,710,825	441,150,010	449,944,001	
2034	(16,821,662)	0	(27,378,792)	0	2,149,051	6,428,572	410,377,744	418,801,866	
2035	(16,992,045)	0	(27,672,203)	27,101,172	2,098,521	6,277,417	439,273,341	447,499,390	
Total	(637,596,054)	(3,901,346)	(1,084,052,280)	33,839,923	77,372,781	212,592,360	13,023,164,381	13,314,926,128	

Table B-13

Capital and Operating Costs of Project Conservation Facilities to Be Reimbursed through Delta Water Charge

(Dollars)

Calendar Year	Initial Project Conservation Facilities (Portions of Upper Feather Lakes, Oroville-Thermalito, and California Aqueduct Facilities)					Planning and Pre-operating Costs ^{a, f}	Total (7)
	Capital Costs ^a (1)	Capital Cost Credits ^b (2)	Operating Costs ^c (3)	Application of Oroville Power Revenues to:			
				Capital Costs ^d (4)	Operating Costs ^e (5)		
1952	171,322	0	0	0	0	0	171,322
1953	312,190	0	0	0	0	0	312,190
1954	308,624	0	0	0	0	0	308,624
1955	194,645	0	0	0	0	0	194,645
1956	1,357,077	0	0	0	0	0	1,357,077
1957	6,210,709	0	0	0	0	0	6,210,709
1958	9,510,916	0	0	0	0	0	9,510,916
1959	11,390,586	0	0	0	0	0	11,390,586
1960	14,456,356	(4,850,000)	0	0	0	0	9,606,356
1961	18,682,616	(431,527)	0	0	0	0	18,251,089
1962	9,012,960	(479,280)	0	0	0	0	8,533,680
1963	72,965,728	(478,743)	(14,000)	0	0	0	72,477,985
1964	62,493,755	(751,330)	(14,000)	0	0	107,780	61,836,205
1965	70,920,988	(763,541)	(14,000)	0	0	551,850	70,695,297
1966	125,265,788	(748,649)	(14,000)	0	0	1,081,023	125,584,162
1967	94,374,172	(812,145)	(13,446)	0	0	1,189,212	94,737,793
1968	39,889,088	(431,574)	1,303,821	(951,000)	0	793,399	40,603,734
1969	5,279,981	(259,015)	2,890,772	(11,007,000)	0	601,867	(2,493,395)
1970	4,130,490	(203,733)	4,818,634	(14,650,000)	(1,500,000)	516,659	(6,887,950)
1971	3,877,493	(193,631)	6,026,480	(14,650,000)	(1,500,000)	408,754	(6,030,904)
1972	4,569,024	(196,361)	5,393,011	(14,650,000)	(1,500,000)	287,374	(6,096,952)
1973	3,985,414	(136,997)	6,135,774	(14,650,000)	(1,500,000)	203,384	(5,962,425)
1974	6,660,000	(137,503)	6,944,723	(17,950,000)	(1,500,000)	201,907	(5,780,873)
1975	8,084,450	(234,567)	7,697,390	(14,650,000)	(1,500,000)	146,188	(456,539)
1976	5,870,531	(204,944)	7,067,037	(14,650,000)	(1,500,000)	205,234	(3,212,142)
1977	21,285,849	(150,214)	10,547,977	(14,650,000)	(1,500,000)	857,419	16,391,031
1978	7,713,252	(64,566)	12,851,158	(14,650,000)	(1,500,000)	2,131,286	6,481,130
1979	9,030,801	0	9,547,014	(14,650,000)	(1,500,000)	2,131,884	4,559,699
1980	10,372,763	0	13,258,298	(14,650,000)	(1,500,000)	3,638,851	11,119,912
1981	11,194,479	0	10,326,538	(14,650,000)	(1,500,000)	4,597,474	9,968,491
1982	16,634,428	0	16,154,872	(14,650,000)	(1,500,000)	4,594,682	21,233,982
1983	12,037,206	0	22,253,515	(34,705,000)	(8,735,000)	3,751,993	(5,397,286)
1984	8,706,748	0	22,700,224	(14,650,000)	(10,348,000)	2,979,126	9,388,098
1985	11,921,382	0	23,464,019	(14,650,000)	(8,079,000)	2,069,024	14,725,425
1986	20,464,281	0	26,479,379	(14,650,000)	(9,107,000)	1,602,419	24,789,079
1987	30,814,266	0	23,514,665	(14,650,000)	(9,451,000)	1,762,179	31,990,110
1988	31,587,615	0	26,003,911	(14,650,000)	(8,677,000)	1,808,899	36,073,425
1989	10,125,424	0	28,442,946	(14,650,000)	(8,104,000)	2,678,007	18,492,377
1990	27,882,191	0	37,255,751	(14,650,000)	(8,497,000)	1,436,712	43,427,654
1991	35,966,870	0	76,428,061	(14,650,000)	(9,487,000)	1,727,664	89,985,595
1992	27,622,044	0	32,284,164	(14,650,000)	(8,526,000)	1,707,822	38,438,030
1993	21,156,123	0	36,071,890	(14,650,000)	(8,768,000)	1,708,490	35,518,503
1994	13,755,771	0	39,332,454	(14,650,000)	(7,484,000)	2,134,392	33,088,617
1995	14,253,704	0	44,519,764	(14,650,000)	(7,041,000)	2,042,481	39,124,949
1996	10,874,166	0	48,829,161	(14,650,000)	(7,288,000)	2,448,692	40,214,019
1997	14,362,787	0	49,900,872	(14,650,000)	(7,009,000)	1,699,730	44,304,389
1998	4,247,604	0	52,837,209	(14,650,000)	(8,155,000)	1,193,198	35,473,011
1999	6,459,613	0	55,212,398	(14,650,000)	(9,198,000)	9,863	37,833,874
2000	8,272,419	0	46,996,475	(14,650,000)	(7,893,620)	13,511	32,738,785
2001	24,939,403	0	65,302,569	(14,650,000)	(7,628,250)	3,961,000	71,924,722
2002	11,401,448	0	70,025,270	(14,650,000)	(10,517,635)	4,179,000	60,438,084
2003	8,455,518	0	64,803,892	(14,650,000)	(10,517,635)	3,679,000	51,770,776
2004	7,165,944	0	66,944,894	(14,650,000)	(10,517,635)	3,179,000	52,122,204
2005	1,102,944	0	65,513,167	(14,650,000)	(10,517,635)	3,129,000	44,577,477
2006	661,145	0	56,962,748	(14,650,000)	(10,517,635)	3,129,000	35,585,259
2007	661,145	0	55,794,533	(14,650,000)	(7,153,092)	3,129,000	37,781,586
2008	377,345	0	53,816,014	(14,650,000)	(7,153,092)	3,129,000	35,519,267
2009	377,345	0	53,800,941	(14,650,000)	(7,153,092)	3,129,000	35,504,194
2010	377,345	0	53,059,343	(14,650,000)	(7,153,092)	3,129,000	34,762,596
2011	377,345	0	52,160,759	(14,650,000)	(7,153,092)	0	30,735,012
2012	377,345	0	50,800,510	(14,650,000)	(7,153,092)	0	29,374,763
2013	377,345	0	53,615,684	(14,650,000)	(7,153,092)	0	32,189,937
2014	377,345	0	52,261,421	(14,650,000)	(7,153,092)	0	30,835,674
2015	377,345	0	50,463,974	(14,650,000)	(7,153,092)	0	29,038,227
2016	377,345	0	53,807,851	(14,650,000)	(7,153,092)	0	32,382,104
2017	377,345	0	53,064,530	(14,650,000)	(7,153,092)	0	31,638,783
2018	377,345	0	53,461,695	(14,650,000)	(7,153,092)	0	32,035,948
2019	377,345	0	52,429,096	(14,650,000)	(7,153,092)	0	31,003,349
2020	377,345	0	50,203,295	(14,650,000)	(7,153,092)	0	28,777,548
2021	377,345	0	53,965,061	(14,650,000)	(7,153,092)	0	32,539,314
2022	377,345	0	52,851,000	(14,650,000)	(7,153,092)	0	31,425,253
2023	377,345	0	50,166,118	(14,650,000)	(7,153,092)	0	28,740,371
2024	377,345	0	51,017,321	(14,650,000)	(7,153,092)	0	29,591,574
2025	377,345	0	55,106,760	(14,650,000)	(7,153,092)	0	33,681,013
2026	377,345	0	52,733,760	(14,650,000)	(7,153,092)	0	31,308,013
2027	377,345	0	49,784,419	(14,650,000)	(7,153,092)	0	28,358,672
2028	377,345	0	50,199,280	(14,650,000)	(7,153,092)	0	28,773,533
2029	377,345	0	55,652,153	(14,650,000)	(7,153,092)	0	34,226,406
2030	377,345	0	51,812,801	(14,650,000)	(7,153,092)	0	30,387,054
2031	377,345	0	50,111,623	(14,650,000)	(7,153,092)	0	28,685,876
2032	377,345	0	49,669,877	(14,650,000)	(7,153,092)	0	28,244,130
2033	377,345	0	54,204,442	(14,650,000)	(7,153,092)	0	32,778,695
2034	377,345	0	51,271,958	(14,650,000)	(7,153,092)	0	29,846,211
2035	377,345	0	51,764,844	(14,650,000)	(7,153,092)	0	30,339,097
Total	1,031,669,896	(11,528,320)	2,722,024,514	(1,002,213,000)	(439,003,711)	90,792,429	2,391,741,809

^aReimbursed through the capital cost component of the Delta Water Charge.^bNegotiated settlements as to the magnitude of SWP planning costs from 1952 through 1978.^cReimbursed through the minimum OMP&R component of the Delta Water Charge. Credits for Gianelli power generation are reflected in these net costs.^dRevenues credited through the capital cost component of the Delta Water Charge.^eRevenues credited through the minimum OMP&R component of the Delta Water Charge.^fUnder amendments of Articles 22(e) and 22(g), planning and pre-operating costs of additional Project Conservation Facilities incurred through the previous year (1999) are reflected in the Delta Water Charge.

Table B-14

Capital Costs of Transportation Facilities Allocated to Each Contractor

(Dollars)

Sheet 1 of 4

Calendar Year	North Bay Area			South Bay Area				Central Coastal Area		
	Napa County FC&WCD (1)	Solano County Water Agency ^a (2)	Total (3)	Alameda County FC&WCD, Zone 7 (4)	Alameda County Water District (5)	Santa Clara Valley Water District (6)	Total (7)	San Luis Obispo County FC&WCD (8)	Santa Barbara County FC&WCD (9)	Total (10)
1952	0	0	0	83	114	410	607	121	224	346
1953	0	0	0	323	479	1,808	2,610	336	619	955
1954	0	0	0	819	1,306	5,150	7,275	421	777	1,198
1955	0	0	0	977	1,570	6,297	8,844	211	389	601
1956	0	0	0	8,844	14,459	63,816	87,119	226	418	644
1957	15,199	11,436	26,635	21,564	35,240	649,596	706,400	290	535	825
1958	33,420	16,591	50,011	67,764	71,717	733,414	872,895	719	1,326	2,045
1959	20,697	6,591	27,288	154,255	143,730	493,050	791,035	10,619	69,152	79,772
1960	9,097	8,830	17,927	296,492	275,610	1,018,661	1,590,763	15,234	99,807	115,041
1961	6,950	7,445	14,395	853,506	802,675	1,914,709	3,570,890	10,155	36,676	46,831
1962	(194)	(926)	(1,120)	545,123	615,141	1,686,041	2,846,305	17,271	39,554	56,825
1963	1,319	1,111	2,430	657,426	1,281,271	3,243,838	5,182,535	68,811	140,829	209,640
1964	38,393	35,466	73,859	712,650	1,747,783	7,251,800	9,712,233	138,608	282,002	420,609
1965	198,833	62,221	261,054	360,779	606,025	3,414,457	4,381,261	250,677	497,111	747,789
1966	461,619	49,917	511,536	592,714	592,598	2,245,215	3,430,527	587,645	1,116,932	1,704,576
1967	1,569,498	40,379	1,609,877	796,995	803,951	2,401,862	4,002,808	936,115	1,762,157	2,698,273
1968	859,613	61,691	921,304	736,470	696,075	1,997,924	3,430,469	351,091	675,154	1,026,245
1969	74,388	59,318	133,706	269,698	293,275	764,950	1,327,923	76,955	164,568	241,523
1970	43,361	67,877	111,238	58,676	61,200	135,569	255,445	47,882	109,213	157,095
1971	26,763	34,052	60,815	12,086	18,227	84,089	114,402	28,633	80,714	109,346
1972	19,643	18,905	38,548	12,293	12,763	63,610	88,666	19,287	50,229	69,516
1973	56,510	30,874	87,384	10,494	12,136	39,380	62,010	23,008	56,178	79,186
1974	165,830	65,832	231,662	15,722	24,402	73,119	113,243	25,034	61,381	86,415
1975	91,824	89,234	181,058	16,730	15,806	41,394	73,930	14,734	61,419	76,153
1976	57,765	83,651	141,416	34,004	34,663	109,610	178,277	33,622	130,441	164,063
1977	64,167	80,147	144,314	46,229	45,115	133,375	224,719	108,315	264,714	373,029
1978	69,319	81,717	151,036	71,234	66,008	174,898	312,140	21,410	103,820	125,230
1979	191,273	282,907	474,180	45,468	42,943	110,665	199,076	22,937	125,671	148,608
1980	264,433	386,006	650,439	134,522	124,352	304,614	563,488	103,256	462,898	566,153
1981	227,606	383,086	610,692	(33,738)	(29,856)	(65,637)	(129,231)	(15,419)	(135,239)	(150,658)
1982	549,164	870,611	1,419,775	7,876	8,321	27,065	43,262	4,100	(58,881)	(54,781)
1983	1,254,900	1,433,061	2,687,961	138,413	131,515	339,246	609,174	32,193	110,287	142,481
1984	2,547,878	2,750,040	5,297,918	152,992	140,971	351,921	645,884	35,445	107,723	143,167
1985	7,143,123	6,443,613	13,586,736	19,776	19,245	53,491	92,512	17,419	78,899	96,317
1986	10,565,937	16,926,630	27,492,567	32,034	31,581	88,070	151,685	44,097	306,486	350,583
1987	7,979,832	12,599,507	20,579,339	50,153	48,675	138,959	237,787	126,800	1,342,305	1,469,106
1988	2,312,909	4,343,513	6,656,422	116,181	112,294	302,461	530,936	156,272	1,479,765	1,636,037
1989	1,224,538	1,553,352	2,777,890	108,320	102,804	260,092	471,216	152,007	1,211,093	1,363,100
1990	443,002	824,055	1,267,057	224,283	224,188	625,213	1,073,684	221,992	1,559,672	1,781,664
1991	99,848	89,269	189,117	413,426	383,368	946,246	1,743,040	298,141	2,184,346	2,482,487
1992	57,045	62,083	119,128	182,231	169,968	442,055	794,254	376,958	3,652,175	4,029,133
1993	122,423	128,634	251,057	129,344	125,312	342,416	597,072	1,204,981	12,257,691	13,462,673
1994	71,274	83,270	154,544	46,042	58,050	229,649	333,741	4,326,344	46,745,879	51,072,223
1995	30,605	29,271	59,876	97,808	97,063	257,484	452,355	12,572,502	154,669,802	167,242,303
1996	20,275	19,069	39,344	49,854	48,056	127,493	225,403	11,179,998	138,538,106	149,718,104
1997	20,039	107,784	127,823	82,598	78,996	209,517	371,111	3,024,572	35,262,075	38,286,647
1998	17,309	21,447	38,756	27,020	23,863	62,441	113,324	850,309	9,864,486	10,714,795
1999	67,516	106,301	173,817	74,326	73,685	208,531	356,542	927,210	9,462,338	10,389,548
2000	13,548	21,815	35,363	28,390	30,674	94,019	153,083	482,932	5,396,284	5,879,217
2001	0	0	0	181,560	229,792	896,593	1,307,945	155,688	848,599	1,004,288
2002	0	0	0	300,141	464,628	2,142,622	2,907,391	258,169	1,936,753	2,194,923
2003	0	0	0	134,949	159,551	617,077	911,577	3,233	5,965	9,198
2004	0	0	0	7,830	7,159	17,060	32,049	3,233	5,965	9,198
2005	0	0	0	6,925	6,332	15,088	28,345	3,110	5,737	8,846
2006	0	0	0	6,925	6,332	15,088	28,345	3,110	5,737	8,846
2007	0	0	0	0	0	0	0	0	0	0
2008	0	0	0	0	0	0	0	0	0	0
2009	0	0	0	0	0	0	0	0	0	0
2010	0	0	0	0	0	0	0	0	0	0
Total	39,108,491	50,377,683	89,486,174	9,119,599	11,193,201	37,907,581	58,220,381	39,359,023	433,238,953	472,597,976

^aCosts from Table B-10 allocated to Solano County Water Agency are reduced herein by \$2,102,700 in 1986 and \$1,823,500 in 1987 under provisions of Amendment No. 10 to its water supply contract.

Table B-14

Capital Costs of Transportation Facilities Allocated to Each Contractor

(Dollars)

Sheet 2 of 4

Calendar Year	San Joaquin Valley Area									Total (20)
	Dudley Ridge Water District (11)	Empire West Side Irrigation District ^b (12)	Future Contractor San Joaquin Valley (13)	Kern County Water Agency			County of Kings (17)	Oak Flat Water District (18)	Tulare Lake Basin Water Storage District (19)	
				Municipal and Industrial (14)	Municipal and Industrial ^c (15)	Agricultural (16)				
1952	389	20	58	938	119	9,129	20	12	785	11,470
1953	1,076	53	161	2,887	345	27,383	55	33	2,157	34,150
1954	1,350	68	201	3,373	417	32,369	69	43	2,718	40,608
1955	677	34	101	1,497	197	14,721	35	23	1,371	18,656
1956	726	34	108	2,702	273	24,255	35	25	1,416	29,574
1957	932	38	139	6,048	494	49,932	39	29	1,707	59,358
1958	2,308	102	344	14,374	1,153	119,049	104	61	4,368	141,863
1959	7,384	364	2,517	26,218	2,597	253,891	372	381	14,757	308,481
1960	12,940	630	3,666	34,054	4,155	352,166	644	498	25,696	434,449
1961	21,848	1,063	3,954	51,407	6,500	538,707	1,087	598	43,377	668,541
1962	49,320	2,410	7,867	94,933	13,834	1,017,146	2,465	1,879	98,141	1,287,995
1963	208,757	10,687	32,172	364,014	55,715	3,934,636	10,932	5,990	425,330	5,048,233
1964	328,286	16,961	64,890	600,152	88,904	6,636,279	17,350	11,942	672,013	8,436,777
1965	538,215	27,481	117,996	1,098,999	152,930	11,999,892	28,116	21,802	1,095,126	15,080,557
1966	1,107,757	52,586	279,172	2,218,832	339,222	24,857,487	53,789	38,891	2,173,090	31,120,826
1967	852,537	39,537	445,562	2,012,744	286,990	23,629,026	40,444	34,775	1,653,429	28,995,044
1968	198,739	9,739	166,267	1,104,132	70,086	11,544,942	9,962	12,238	396,075	13,512,180
1969	94,436	4,793	35,473	616,516	27,216	6,416,147	4,903	7,302	191,574	7,398,360
1970	54,344	2,720	21,686	414,659	15,520	4,145,046	2,782	3,999	109,470	4,770,226
1971	25,462	1,291	12,094	190,552	7,114	1,622,274	1,320	540	51,618	1,912,265
1972	11,589	589	8,354	82,886	3,409	723,623	602	343	23,526	854,921
1973	6,657	335	10,201	39,973	1,980	458,527	343	221	13,448	531,685
1974	9,478	469	11,044	45,420	2,766	483,866	479	326	18,979	572,827
1975	13,329	677	5,246	36,467	3,710	382,743	692	425	27,048	470,337
1976	17,506	837	12,615	53,085	5,621	654,026	856	1,152	34,455	780,153
1977	9,672	436	47,790	36,478	3,753	886,672	446	494	18,497	1,004,238
1978	23,499	(30,406)	6,178	54,219	6,579	575,169	1,209	1,402	47,446	685,295
1979	25,051	1,295	5,664	53,866	6,610	559,746	1,325	1,862	51,293	706,712
1980	144,980	(4,617)	31,160	321,890	38,126	3,211,810	7,682	7,144	297,215	4,055,390
1981	(5,427)	(15,464)	200	(44,773)	(1,223)	(385,275)	(296)	1,752	(11,324)	(461,830)
1982	49,916	2,584	6,600	83,283	13,142	654,692	2,638	1,252	102,287	916,394
1983	52,429	(35,295)	12,125	110,465	13,872	1,073,500	2,769	1,327	107,337	1,338,529
1984	86,345	4,474	14,303	154,799	22,764	1,617,225	4,572	2,678	177,020	2,084,180
1985	25,435	1,311	5,649	47,055	6,766	484,485	1,341	1,176	52,013	625,231
1986	38,309	(41,067)	9,862	71,661	10,320	796,097	2,009	778	78,142	966,111
1987	28,769	1,476	7,004	55,537	7,969	616,845	1,509	1,491	58,679	779,279
1988	52,329	2,831	17,078	70,572	12,049	909,046	2,894	4,620	109,713	1,181,132
1989	156,099	8,019	27,551	352,103	42,943	3,834,481	8,201	12,134	318,604	4,760,135
1990	292,361	15,142	50,360	553,394	87,199	6,094,021	15,487	22,729	599,233	7,729,926
1991	349,413	18,103	60,419	580,572	91,765	6,447,565	18,515	23,486	716,292	8,306,130
1992	125,891	6,439	28,019	241,559	34,559	2,711,639	6,585	10,883	256,370	3,421,944
1993	86,113	4,375	30,245	174,630	23,840	2,059,168	4,474	4,698	174,772	2,562,315
1994	64,762	3,323	23,894	124,518	17,633	1,488,418	3,398	2,173	132,095	1,860,214
1995	82,969	(1,000)	72,734	167,698	24,390	2,472,332	4,355	2,824	169,318	2,995,620
1996	27,611	(61,913)	51,990	68,870	8,812	1,233,548	1,437	1,590	56,092	1,388,037
1997	136,503	7,041	48,721	241,400	36,417	2,951,687	7,195	3,706	279,205	3,711,875
1998	70,416	(121,021)	23,012	122,223	18,538	1,467,342	3,725	1,261	144,305	1,729,801
1999	94,520	4,884	28,646	164,497	25,136	1,952,555	4,992	3,855	193,505	2,472,590
2000	22,212	1,128	12,325	47,325	6,324	599,460	1,152	(1,167)	45,066	733,825
2001	236,290	12,267	36,371	382,399	61,673	4,239,233	12,532	3,237	484,908	5,468,910
2002	157,237	8,165	24,444	252,934	41,022	2,796,782	8,340	2,171	322,708	3,613,803
2003	3,425	178	1,545	5,981	893	72,323	182	335	7,029	91,891
2004	3,425	178	1,545	5,981	893	72,323	182	335	7,029	91,891
2005	3,029	157	1,486	5,290	790	65,328	161	296	6,216	82,753
2006	3,029	157	1,486	4,863	790	65,328	161	296	6,216	82,326
2007	0	0	0	0	0	0	0	0	0	0
2008	0	0	0	0	0	0	0	0	0	0
2009	0	0	0	0	0	0	0	0	0	0
2010	0	0	0	0	0	0	0	0	0	0
Total	6,012,654	(33,302)	1,930,294	13,628,151	1,755,611	151,550,807	306,667	264,346	12,088,955	187,504,183

^bCosts from Table B-10 allocated to Empire West Side Irrigation District are reduced herein by \$31,588 in 1978; \$12,129 in 1980; \$15,173 in 1981; \$38,004 in 1983; \$43,033 in 1986; \$5,261 in 1995; \$63,318 in 1996; and \$124,667 in 1998 in accordance with letters of agreement with the district.

^cCosts related to maximum annual entitlement of 15,000 acre-feet under Amendment No. 18 of the water supply contract with Kern County Water Agency.

Table B-14

Capital Costs of Transportation Facilities Allocated to Each Contractor (Dollars)

Sheet 3 of 4

Calendar Year	Southern California Area									
	Antelope Valley-East Kern Water Agency (21)	Castaic Lake Water Agency ^d (22)	Coachella Valley Water District (23)	Crestline-Lake Arrowhead Water Agency (24)	Desert Water Agency (25)	Little Rock Creek Irrigation District (26)	Mojave Water Agency (27)	Palmdale Water District (28)	San Bernardino Valley Municipal Water District (29)	San Gabriel Valley Municipal Water District (30)
1952	3,158	1,042	850	254	1,402	70	1,695	418	6,079	1,550
1953	10,026	3,327	2,668	799	4,401	222	5,318	1,328	19,058	4,852
1954	12,742	4,193	3,465	1,031	5,714	285	6,908	1,691	24,608	6,290
1955	5,411	1,881	1,374	401	2,267	115	2,756	715	9,229	2,377
1956	9,775	3,590	2,196	612	3,622	191	4,449	1,267	13,138	3,438
1957	26,306	9,255	6,343	1,816	10,461	540	12,767	3,450	40,646	10,534
1958	49,204	17,599	11,581	3,290	19,099	991	23,360	6,414	72,708	18,898
1959	70,247	29,740	15,869	4,616	26,171	1,347	31,759	9,030	98,596	25,519
1960	84,552	38,760	22,068	6,797	36,395	1,547	43,260	10,772	147,170	37,469
1961	126,542	54,262	34,613	12,530	57,086	2,245	63,709	16,437	236,164	57,707
1962	198,558	85,352	43,719	13,861	72,102	3,344	84,709	24,943	253,435	64,330
1963	580,138	255,252	116,797	33,149	192,624	9,828	234,926	73,256	610,277	160,624
1964	1,094,365	501,858	209,462	55,445	345,446	18,442	429,605	137,769	1,026,066	276,118
1965	1,908,076	947,523	385,533	103,757	635,825	32,819	786,986	244,587	1,913,090	512,862
1966	3,960,302	2,150,972	812,655	215,858	1,340,235	69,325	1,664,584	517,269	3,943,586	1,062,417
1967	4,976,538	4,100,531	1,077,422	296,069	1,776,892	88,301	2,182,240	653,250	5,821,681	1,550,239
1968	5,924,474	3,998,942	1,350,742	368,156	2,227,646	107,350	2,738,009	783,940	7,982,824	2,122,940
1969	5,822,708	3,079,426	1,690,259	539,851	2,787,631	121,303	3,256,507	865,455	10,898,185	2,769,647
1970	5,032,959	3,277,778	2,050,788	695,345	3,382,251	106,381	3,872,367	736,775	13,814,365	3,457,109
1971	2,577,507	2,146,954	1,071,523	338,581	1,767,179	48,337	2,087,223	347,057	8,454,771	1,987,120
1972	973,436	283,257	331,759	92,079	547,138	19,134	668,550	134,360	2,698,262	697,957
1973	354,407	914,303	158,579	82,223	261,557	6,304	238,094	46,102	1,760,570	403,582
1974	451,450	280,861	259,175	74,113	427,433	8,143	518,453	59,145	1,617,394	425,927
1975	253,438	246,492	193,632	52,821	319,337	4,954	392,110	33,995	1,533,664	407,913
1976	237,539	255,238	136,751	37,235	225,529	4,245	277,807	31,002	962,280	255,901
1977	199,554	371,469	91,384	25,858	150,711	3,757	183,609	26,834	591,445	155,537
1978	302,111	470,176	78,573	22,226	129,584	5,233	157,815	38,654	428,989	111,769
1979	357,678	938,985	81,807	21,795	134,915	5,965	166,931	44,410	403,569	108,408
1980	1,867,517	1,777,294	423,755	113,166	698,855	32,435	864,104	240,899	2,040,757	548,085
1981	(158,728)	610,795	(47,102)	(8,865)	(77,678)	(2,576)	(102,568)	(19,588)	(143,875)	(43,557)
1982	1,557,934	861,928	298,770	78,903	492,728	26,237	613,587	196,672	1,421,407	388,261
1983	2,062,512	521,349	396,033	115,678	653,134	34,699	803,945	259,939	2,126,313	581,672
1984	1,518,361	295,783	297,559	85,097	490,731	27,272	606,124	188,562	1,546,628	423,408
1985	896,226	158,810	217,115	62,532	358,064	13,104	441,299	107,533	1,116,949	305,291
1986	841,555	104,860	221,194	58,152	364,790	9,038	454,702	93,309	1,048,625	286,302
1987	333,052	105,625	166,099	43,992	273,928	5,566	340,485	40,716	783,725	213,202
1988	273,128	174,155	65,831	22,723	108,570	3,384	128,339	26,743	439,811	116,402
1989	1,018,577	434,394	323,138	97,036	532,920	16,777	649,616	125,344	1,463,017	395,394
1990	731,344	374,313	332,566	97,789	548,468	7,335	672,344	67,179	1,732,167	469,192
1991	828,746	401,961	367,196	120,925	605,579	11,966	733,443	92,625	2,473,685	672,407
1992	582,363	356,952	270,826	131,328	446,647	9,556	501,634	76,760	2,487,409	678,760
1993	601,416	332,089	222,347	171,095	366,700	10,194	353,470	73,955	7,764,089	2,094,017
1994	445,686	165,607	132,599	93,839	218,685	7,255	218,494	53,209	5,212,779	1,403,975
1995	439,143	293,308	132,690	78,390	218,835	7,436	232,377	54,544	2,508,425	677,884
1996	290,593	206,742	110,520	44,965	182,270	4,885	211,872	35,808	3,690,119	989,659
1997	426,639	249,699	103,382	24,640	170,497	7,397	214,534	54,452	1,972,986	528,341
1998	226,297	201,192	61,801	40,961	101,923	3,934	104,579	29,137	1,370,229	370,764
1999	286,645	186,843	93,863	41,217	154,801	5,224	177,075	38,490	893,112	240,684
2000	138,900	82,443	59,252	25,019	97,718	2,952	112,441	21,319	653,782	176,147
2001	451,470	398,121	173,146	43,952	285,551	7,661	358,852	55,408	797,068	218,779
2002	284,636	126,093	51,258	13,088	84,535	4,763	106,642	35,749	233,976	64,361
2003	18,014	8,884	3,259	824	5,374	301	6,750	2,262	14,574	4,002
2004	18,014	8,884	3,259	824	5,374	301	6,750	2,262	14,574	4,002
2005	26,415	12,180	4,785	1,210	7,891	442	9,898	3,318	21,397	5,874
2006	15,955	8,041	2,886	730	4,760	267	5,978	2,004	12,908	3,545
2007	0	0	0	0	0	0	0	0	0	0
2008	0	0	0	0	0	0	0	0	0	0
2009	0	0	0	0	0	0	0	0	0	0
2010	0	0	0	0	0	0	0	0	0	0
Total	51,625,611	32,927,363	14,729,614	4,699,778	24,292,303	928,523	28,963,272	6,808,935	109,078,485	28,515,887

^dCosts from Table B-10 allocated to Castaic Lake Water Agency are reduced herein by \$14,088 in 1978 in accordance with a letter of agreement with the district.

Table B-14

Capital Costs of Transportation Facilities Allocated to Each Contractor

(Dollars)

Sheet 4 of 4

Calendar Year	Southern California Area (continued)				Feather River Area				South Bay Area Future Contractor (39)	Grand Total (40)
	San Geronio Pass Water Agency (31)	Metropolitan Water District of Southern California ^a (32)	Ventura County Flood Control District (33)	Total (34)	City of Yuba City (35)	County of Butte (36)	Plumas County FC&WCD (37)	Total (38)		
1952	962	69,020	370	86,870	0	0	0	0	59	99,352
1953	3,011	217,634	1,187	273,831	0	0	0	0	264	311,810
1954	3,904	279,967	1,496	352,294	0	0	0	0	766	402,141
1955	1,474	111,602	670	140,272	0	0	0	0	969	169,342
1956	2,127	179,335	1,299	225,039	0	0	0	0	9,172	351,548
1957	6,526	516,050	3,367	648,061	0	0	0	0	23,172	1,464,451
1958	11,701	945,684	6,390	1,186,919	0	0	2	2	32,888	2,286,623
1959	15,815	1,364,298	9,894	1,702,901	0	0	14	14	57,918	2,967,409
1960	23,307	1,914,521	12,798	2,379,416	0	0	28	28	123,202	4,660,826
1961	36,153	3,212,125	18,770	3,928,343	0	0	10	10	316,220	8,545,230
1962	40,012	3,543,471	29,069	4,456,905	0	0	32	32	228,202	8,875,144
1963	99,266	11,185,928	86,807	13,638,872	0	0	51	51	528,496	24,610,257
1964	170,012	18,065,455	164,709	22,494,752	0	0	7,791	7,791	590,034	41,736,055
1965	316,082	33,763,577	307,475	41,858,192	0	0	3,139	3,139	332,680	62,664,672
1966	654,194	74,485,027	681,898	91,558,322	0	0	(48)	(48)	783,728	129,109,467
1967	958,406	130,599,417	1,279,076	155,360,062	0	0	47	47	1,479,421	194,145,532
1968	1,314,841	147,502,290	1,360,687	177,782,841	0	0	51,573	51,573	1,254,192	197,978,804
1969	1,726,891	140,096,646	1,085,026	174,739,535	0	0	234,232	234,232	398,183	184,473,462
1970	2,160,122	162,326,522	1,147,609	202,060,371	0	0	16,227	16,227	74,028	207,444,630
1971	1,237,573	139,783,598	738,822	162,586,245	0	0	27,204	27,204	12,457	164,822,734
1972	434,507	44,063,755	66,878	51,011,072	0	0	9	9	13,182	52,075,914
1973	256,711	39,723,010	290,020	44,495,462	0	0	25	25	8,099	45,263,851
1974	264,349	18,896,593	86,362	23,369,398	0	0	45	45	28,570	24,402,160
1975	253,838	16,732,939	83,975	20,509,108	0	0	21	21	8,226	21,318,833
1976	158,850	13,545,451	84,623	16,212,451	0	0	51	51	16,486	17,492,897
1977	96,517	11,769,352	110,833	13,776,860	0	0	28	28	21,181	15,544,369
1978	69,152	15,781,696	174,876	17,770,854	0	0	38	38	28,876	19,073,469
1979	66,847	27,627,424	343,361	30,302,095	0	0	23	23	26,668	31,857,362
1980	337,811	59,493,774	641,586	69,080,038	0	0	26	26	59,169	74,974,703
1981	-26,356	15,661,179	224,257	15,865,338	0	0	34	34	(6,746)	15,727,599
1982	238,792	30,873,857	316,107	37,365,183	0	0	11	11	16,086	39,705,930
1983	357,812	25,056,047	187,121	33,156,254	0	0	19	19	72,225	38,006,643
1984	260,327	16,317,441	103,160	22,160,453	0	0	26	26	83,252	30,414,880
1985	187,699	10,243,779	56,162	14,164,563	0	0	29	29	16,338	28,581,726
1986	176,057	8,365,310	34,777	12,058,671	0	0	31	31	16,248	41,035,896
1987	131,163	6,955,356	36,142	9,429,051	0	0	32	32	29,062	32,523,656
1988	71,999	6,680,734	57,117	8,168,936	0	0	55	55	50,083	18,223,601
1989	242,491	18,990,321	153,200	24,442,225	0	0	44	44	43,324	33,857,934
1990	288,689	18,599,460	125,376	24,046,222	0	0	63	63	96,419	35,995,035
1991	414,585	23,389,299	132,558	30,244,975	0	0	54	54	149,922	43,115,725
1992	417,931	23,266,927	116,999	29,344,092	0	0	42	42	80,900	37,789,493
1993	1,307,281	50,046,176	105,693	63,448,522	0	0	30	30	59,324	80,380,993
1994	878,052	31,445,483	50,941	40,326,604	0	0	14	14	34,208	93,781,548
1995	421,515	18,970,815	72,214	24,107,576	0	0	3	3	42,395	194,900,128
1996	620,666	23,568,325	49,282	30,005,706	0	0	0	0	21,388	181,397,982
1997	331,306	16,109,060	72,335	20,265,268	0	0	3	3	34,976	62,797,703
1998	230,616	12,573,124	65,228	15,379,785	0	0	7	7	11,128	27,987,596
1999	148,735	9,439,263	58,166	11,764,118	0	0	2	2	34,672	25,191,289
2000	109,269	5,487,743	24,349	6,991,334	0	0	0	0	16,584	13,809,406
2001	134,358	15,340,182	138,404	18,402,952	0	0	0	0	70,575	26,254,670
2002	39,450	4,297,279	41,788	5,383,618	0	0	0	0	126,901	14,226,636
2003	2,457	269,496	2,631	338,828	0	0	0	0	50,098	1,401,592
2004	2,457	269,496	2,631	338,828	0	0	0	0	2,650	474,616
2005	3,608	395,258	3,857	496,133	0	0	0	0	2,344	618,421
2006	2,176	238,693	2,330	300,273	0	0	0	0	2,344	422,134
2007	0	0	0	0	0	0	0	0	0	0
2008	0	0	0	0	0	0	0	0	0	0
2009	0	0	0	0	0	0	0	0	0	0
2010	0	0	0	0	0	0	0	0	0	0
Total	17,714,096	1,510,646,264	11,052,758	1,841,982,889	0	0	341,067	341,067	7,613,208	2,657,745,878

^aCosts from Table B-10 allocated to MWD are reduced herein by \$16,425,374 in 1972 under provisions of Amendment No. 7 to its water contract.

Table B-15
Capital Cost Component of Transportation Charge for Each Contractor^{a, b}
(Dollars)

Sheet 1 of 4

Calendar Year	North Bay Area			South Bay Area				Central Coastal Area		
	Napa County FC&WCD (1)	Solano County WA (2)	Total (3)	Alameda County FC&WCD, Zone 7 (4)	Alameda County Water District (5)	Santa Clara Valley Water District (6)	Total (7)	San Luis Obispo County FC&WCD (8)	Santa Barbara County FC&WCD (9)	Total (10)
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	148,098	105,763	365,150	619,011	0	0	0
1964	0	0	0	208,545	171,070	530,490	910,105	6,057	20,502	26,559
1965	0	0	0	274,944	260,156	900,118	1,435,218	11,424	31,744	43,167
1966	18,080	0	18,080	310,289	291,045	1,074,154	1,675,488	20,180	49,664	69,843
1967	41,609	0	41,609	380,447	321,250	1,188,594	1,890,291	37,973	84,162	122,136
1968	121,607	0	121,607	496,521	362,228	1,311,018	2,169,767	51,721	111,316	163,037
1969	165,422	0	165,422	598,036	397,707	1,412,853	2,408,596	55,042	118,842	173,884
1970	169,213	0	169,213	632,097	412,655	1,451,843	2,496,595	56,684	123,021	179,705
1971	171,423	0	171,423	638,900	415,775	1,458,753	2,513,428	57,675	125,915	183,590
1972	172,787	0	172,787	640,225	416,704	1,463,039	2,519,968	58,250	128,396	186,645
1973	173,789	31,399	205,188	641,560	417,354	1,466,281	2,525,195	58,526	129,652	188,177
1974	176,669	32,973	209,642	642,539	417,973	1,468,289	2,528,801	58,716	130,703	189,419
1975	185,121	36,329	221,450	644,854	419,217	1,472,016	2,536,087	58,965	131,936	190,901
1976	189,802	40,877	230,679	646,154	420,022	1,474,125	2,540,301	165,712	330,617	496,329
1977	192,746	45,141	237,887	648,762	421,789	1,479,712	2,550,263	167,426	337,265	504,691
1978	196,017	49,226	245,243	652,245	424,089	1,486,510	2,562,844	172,946	350,758	523,705
1979	199,550	53,391	252,941	657,392	427,453	1,495,425	2,580,270	174,038	356,050	530,088
1980	209,299	67,811	277,110	661,115	429,642	1,501,066	2,591,823	175,207	362,455	537,662
1981	222,777	87,486	310,263	671,040	435,980	1,516,592	2,623,612	180,470	386,049	566,519
1982	234,379	107,012	341,391	669,025	434,459	1,513,247	2,616,731	179,684	379,156	558,840
1983	262,370	151,387	413,757	670,301	434,883	1,514,626	2,619,810	179,893	376,155	556,048
1984	326,333	224,431	550,764	681,073	441,586	1,531,918	2,654,577	181,534	381,776	563,310
1985	456,199	364,602	820,801	693,161	448,771	1,549,855	2,691,787	183,340	387,267	570,608
1986	820,287	693,036	1,513,323	695,049	449,752	1,552,582	2,697,383	184,228	391,289	575,517
1987	1,361,763	1,560,480	2,922,243	697,573	451,371	1,557,095	2,706,039	186,488	406,995	593,483
1988	1,773,045	2,209,860	3,982,905	701,700	453,879	1,564,257	2,719,836	193,023	476,178	669,201
1989	1,892,969	2,435,072	4,328,041	710,353	459,702	1,579,940	2,749,995	201,126	552,904	754,030
1990	1,956,864	2,516,123	4,472,987	718,299	465,066	1,593,511	2,776,876	209,058	616,097	825,154
1991	1,980,133	2,559,408	4,539,541	735,145	476,842	1,626,351	2,838,338	220,718	698,020	918,739
1992	1,985,414	2,564,130	4,549,544	764,943	497,120	1,676,403	2,938,466	236,488	813,562	1,050,050
1993	1,988,454	2,567,438	4,555,892	778,964	506,177	1,699,959	2,985,100	256,575	1,008,175	1,264,750
1994	1,995,029	2,574,346	4,569,375	789,096	512,907	1,718,347	3,020,350	321,286	1,666,447	1,987,733
1995	1,998,888	2,578,855	4,577,743	793,441	516,050	1,730,782	3,040,273	355,536	4,197,497	4,753,033
1996	2,000,559	2,580,453	4,581,012	801,099	521,351	1,744,844	3,067,294	1,242,186	12,644,830	13,887,016
1997	2,001,677	2,581,504	4,583,181	805,026	524,000	1,751,871	3,080,897	1,858,385	20,280,520	22,138,905
1998	2,002,792	2,587,502	4,590,294	811,569	528,396	1,763,531	3,103,496	2,026,703	22,242,860	24,269,562
1999	2,003,765	2,588,708	4,592,473	813,713	529,737	1,767,041	3,110,491	2,074,507	22,797,440	24,871,947
2000	2,007,602	2,594,749	4,602,351	971,039	533,925	1,778,892	3,283,856	2,127,199	23,335,172	25,462,371
2001	2,192,738	2,720,042	4,912,780	1,099,064	535,688	1,784,296	3,419,048	2,154,958	23,645,349	25,800,306
2002	2,192,738	2,720,042	4,912,780	1,110,107	549,057	1,836,457	3,495,621	2,164,015	23,694,718	25,858,733
2003	2,192,738	2,720,042	4,912,780	1,138,988	576,435	1,962,710	3,678,133	2,179,228	23,808,840	25,988,068
2004	2,192,738	2,720,042	4,912,780	1,151,712	585,964	1,999,567	3,737,243	2,179,421	23,809,197	25,988,618
2005	2,192,738	2,720,042	4,912,780	1,152,445	586,398	2,000,601	3,739,444	2,179,617	23,809,558	25,989,175
2006	2,192,738	2,720,042	4,912,780	1,153,102	586,788	2,001,529	3,741,419	2,179,808	23,809,911	25,989,719
2007	2,192,738	2,720,042	4,912,780	1,153,772	587,184	2,002,472	3,743,428	2,180,003	23,810,270	25,990,272
2008	2,192,738	2,720,042	4,912,780	1,153,772	587,184	2,002,472	3,743,428	2,180,003	23,810,270	25,990,272
2009	2,192,738	2,720,042	4,912,780	1,153,772	587,184	2,002,472	3,743,428	2,180,003	23,810,270	25,990,272
2010	2,192,738	2,720,042	4,912,780	1,153,772	587,184	2,002,472	3,743,428	2,180,003	23,810,270	25,990,272
2011	2,192,738	2,720,042	4,912,780	1,153,772	587,184	2,002,472	3,743,428	2,180,003	23,810,270	25,990,272
2012	2,192,738	2,720,042	4,912,780	1,153,772	587,184	2,002,472	3,743,428	2,180,003	23,810,270	25,990,272
2013	2,192,738	2,720,042	4,912,780	985,971	481,420	1,637,322	3,104,713	2,180,003	23,810,270	25,990,272
2014	2,192,738	2,720,042	4,912,780	917,988	416,113	1,471,982	2,806,083	2,173,946	23,789,767	25,963,713
2015	2,192,738	2,720,042	4,912,780	844,430	327,028	1,102,354	2,273,812	2,168,579	23,778,526	25,947,105
2016	2,173,375	2,720,042	4,893,417	806,267	296,138	928,318	2,030,723	2,159,823	23,760,606	25,920,429
2017	2,148,206	2,720,042	4,868,248	732,721	265,933	813,878	1,812,532	2,142,029	23,726,107	25,868,136
2018	2,062,652	2,720,042	4,782,694	613,645	224,956	691,454	1,530,055	2,128,282	23,698,954	25,827,235
2019	2,015,788	2,720,042	4,735,830	508,828	189,477	589,619	1,287,924	2,124,960	23,691,428	25,816,388
2020	2,011,724	2,720,042	4,731,766	473,328	174,528	550,629	1,198,485	2,123,319	23,687,248	25,810,567
2021	2,009,347	2,720,042	4,729,389	466,176	171,409	543,719	1,181,304	2,122,327	23,684,355	25,806,682
2022	2,007,882	2,720,042	4,727,924	464,835	170,480	539,433	1,174,748	2,121,753	23,681,874	25,803,627
2023	2,006,809	2,687,583	4,694,392	463,447	169,829	536,191	1,169,467	2,121,477	23,680,618	25,802,095
2024	2,003,723	2,685,978	4,689,701	462,416	169,211	534,184	1,165,811	2,121,286	23,679,567	25,800,853
2025	1,994,672	2,682,513	4,677,185	460,093	167,967	530,457	1,158,517	2,121,038	23,678,333	25,799,371
2026	1,989,651	2,677,862	4,667,513	458,659	167,161	528,347	1,154,167	2,014,291	23,479,653	25,493,944
2027	1,986,487	2,673,513	4,660,000	455,750	165,394	522,760	1,143,904	2,012,577	23,473,004	25,485,581
2028	1,982,975	2,669,341	4,652,316	451,863	163,095	515,962	1,130,920	2,007,056	23,459,512	25,466,568
2029	1,979,183	2,665,075	4,644,258	446,047	159,730	507,047	1,112,824	2,005,965	23,454,220	25,460,185
2030	1,968,709	2,650,140	4,618,849	441,976	157,542	501,407	1,100,925	2,004,796	23,447,814	25,452,610
2031	1,954,234	2,629,776	4,584,010	430,780	151,203	485,880	1,067,863	1,999,533	23,424,220	25,423,753
2032	1,941,760	2,609,548	4,551,308	433,220	152,725	489,226	1,075,171	2,000,319	23,431,113	25,431,432
2033	1,911,676	2,563,651	4,475,327	432,011	152,301	487,846	1,072,158	2,000,110	23,434,115	25,434,224
2034	1,843,015	2,488,830	4,331,845	420,099	145,598	470,555	1,036,252	1,998,469	23,428,493	25,426,962
2035	1,703,749	2,345,603	4,049,352	406,681	138,412	452,617	997,710	1,996,662	23,423,002	25,419,665
Total	104,241,120	130,354,066	234,595,186	50,799,612	27,874,930	94,762,259	173,436,801	88,150,630	945,203,376	1,033,354,006

^aUnadjusted for prior overpayments or underpayments of charges.

^bDetermined at the current Project Interest Rate of 4.615 percent per annum.

Table B-15
Capital Cost Component of Transportation Charge for Each Contractor
(Dollars)

Sheet 2 of 4

Calendar Year	San Joaquin Valley Area									
	Dudley Ridge Water District (11)	Empire West Side Irrigation District (12)	Future Contractor San Joaquin Valley (13)	Kern County Water Agency			County of Kings (17)	Oak Flat Water District (18)	Tulare Lake Basin Water Storage District (19)	Total (20)
				Municipal and Industrial (14)	Municipal and Industrial ^c (15)	Agricultural (16)				
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	2,727	0	0	0	0	0	0	2,727
1965	0	0	6,034	64,339	9,292	0	0	0	0	79,665
1966	0	0	12,049	120,355	17,087	0	0	0	0	149,491
1967	0	0	26,278	233,450	34,377	0	0	0	0	294,105
1968	78,072	1,782	48,989	336,040	49,005	424,824	8,511	4,710	65,825	1,017,758
1969	78,209	5,345	57,463	392,319	52,578	872,449	9,019	5,120	249,062	1,721,564
1970	85,716	5,345	59,271	423,743	53,965	1,061,161	9,269	5,324	184,311	1,888,105
1971	97,727	5,345	60,377	444,878	54,756	1,409,404	9,410	5,734	196,133	2,283,764
1972	109,192	5,345	60,993	454,591	55,119	2,110,460	9,478	10,989	605,057	3,421,224
1973	120,111	5,345	61,419	458,815	55,292	2,434,095	9,508	6,348	234,027	3,384,960
1974	182,296	5,345	61,939	460,853	55,393	2,725,824	9,526	7,108	388,445	3,896,729
1975	221,414	5,345	62,502	463,168	55,534	3,264,787	9,550	7,323	463,508	4,553,131
1976	168,816	5,345	62,769	465,027	55,723	3,519,414	9,586	8,271	331,583	4,626,534
1977	165,972	5,345	63,412	467,732	56,010	3,856,266	9,629	7,577	317,037	4,948,980
1978	177,437	0	65,848	469,592	56,201	4,286,564	9,652	7,987	340,143	5,413,424
1979	210,434	5,345	66,163	472,355	56,537	4,706,837	9,713	8,191	382,814	5,918,389
1980	223,843	5,345	66,452	475,101	56,873	5,136,220	9,781	11,673	385,280	6,370,568
1981	223,843	5,345	68,040	491,508	58,817	5,621,210	10,173	8,806	408,386	6,896,128
1982	223,843	5,345	68,050	489,226	58,754	6,068,837	10,157	9,215	430,955	7,364,382
1983	234,216	5,345	68,387	493,471	59,424	6,578,446	10,292	7,720	51,306	7,508,607
1984	246,228	5,345	69,005	499,101	60,131	6,904,975	10,433	9,830	336,441	8,141,489
1985	257,693	5,345	69,734	506,991	61,292	7,352,592	10,666	10,035	244,758	8,519,106
1986	269,158	5,345	70,022	509,390	61,637	7,472,319	10,734	10,444	522,305	8,931,354
1987	280,623	5,345	70,527	513,062	62,165	8,248,743	10,837	10,649	544,873	9,746,824
1988	292,088	5,345	70,888	515,924	62,576	8,670,839	10,915	11,058	567,442	10,207,075
1989	303,553	5,345	71,773	519,584	63,201	8,975,323	11,065	11,468	590,548	10,551,860
1990	157,509	5,345	73,211	537,956	65,442	9,291,671	11,493	11,673	636,760	10,791,060
1991	291,602	5,345	75,856	567,023	70,022	9,291,671	12,307	11,673	636,760	10,962,259
1992	315,018	5,345	79,052	597,733	74,876	9,291,671	13,286	11,673	636,760	11,025,414
1993	315,018	5,345	80,545	610,605	76,717	9,291,671	13,637	11,673	636,760	11,041,971
1994	315,018	5,345	82,169	619,983	77,997	9,291,671	13,877	11,673	636,760	11,054,493
1995	315,018	5,345	83,463	626,725	78,952	9,291,671	14,061	11,673	636,760	11,063,668
1996	291,384	5,345	87,435	635,884	80,284	8,972,164	14,299	11,673	636,760	10,735,228
1997	291,384	5,345	90,301	639,680	80,770	8,972,164	14,378	11,673	636,760	10,742,455
1998	291,384	5,345	93,012	653,114	82,797	8,717,224	14,778	11,673	636,760	10,506,088
1999	291,384	5,345	94,306	659,985	83,839	8,717,224	14,988	11,673	636,760	10,515,505
2000	291,384	5,345	95,934	669,333	85,267	8,075,839	15,272	11,673	636,760	9,886,807
2001	291,384	5,345	96,642	672,053	85,631	7,930,132	15,338	11,673	636,760	9,744,958
2002	315,018	5,345	98,758	694,300	89,219	8,241,912	16,067	11,673	636,760	10,109,052
2003	315,018	5,345	100,199	709,204	91,636	8,241,912	16,558	11,673	636,760	10,128,305
2004	315,018	5,345	100,291	709,562	91,689	8,241,912	16,569	11,673	636,760	10,128,819
2005	315,018	5,345	100,385	709,924	91,743	8,241,912	16,580	11,673	636,760	10,129,340
2006	315,018	5,345	100,476	710,249	91,792	8,241,912	16,590	11,673	636,760	10,129,815
2007	315,018	5,345	100,569	710,554	91,841	8,241,912	16,600	11,673	636,760	10,130,272
2008	315,018	5,345	100,569	710,554	91,841	8,241,912	16,600	11,673	636,760	10,130,272
2009	315,018	5,345	100,569	710,554	91,841	8,241,912	16,600	11,673	636,760	10,130,272
2010	315,018	5,345	100,569	710,554	91,841	8,241,912	16,600	11,673	636,760	10,130,272
2011	315,018	5,345	100,569	710,554	91,841	8,241,912	16,600	11,673	636,760	10,130,272
2012	315,018	5,345	100,569	710,554	91,841	8,241,912	16,600	11,673	636,760	10,130,272
2013	315,018	5,345	100,569	710,554	91,841	8,241,912	16,600	11,673	636,760	10,130,272
2014	315,018	5,345	97,842	710,554	91,841	8,241,912	16,600	11,673	636,760	10,127,545
2015	315,018	5,345	94,535	646,215	82,549	8,241,912	16,600	11,673	636,760	10,050,607
2016	315,018	5,345	88,520	590,198	74,754	8,241,912	16,600	11,673	636,760	9,980,780
2017	315,018	5,345	74,291	477,104	57,464	8,241,912	16,600	11,673	636,760	9,836,167
2018	315,018	5,345	51,580	374,513	42,836	8,241,912	8,089	11,673	636,760	9,687,726
2019	315,018	5,345	43,106	318,235	39,264	8,241,912	7,581	11,673	636,760	9,618,894
2020	315,018	5,345	41,297	286,811	37,876	8,241,912	7,332	11,673	636,760	9,584,024
2021	315,018	5,345	40,192	265,675	37,085	8,241,912	7,190	11,673	636,760	9,560,850
2022	315,018	5,345	39,576	255,963	36,723	8,241,912	7,122	11,673	636,760	9,550,092
2023	315,018	5,345	39,150	251,738	36,549	8,241,912	7,092	11,673	636,760	9,545,237
2024	315,018	5,345	38,630	249,701	36,448	8,241,912	7,074	11,673	636,760	9,542,561
2025	315,018	5,345	38,067	247,386	36,307	8,241,912	7,050	11,673	636,760	9,539,518
2026	315,018	5,345	37,800	245,527	36,118	8,241,912	7,015	11,673	636,760	9,537,168
2027	315,018	5,345	37,157	242,821	35,832	8,241,912	6,971	11,673	636,760	9,533,489
2028	315,018	5,345	34,721	240,962	35,640	8,241,912	6,948	11,673	636,760	9,528,979
2029	315,018	5,345	34,406	238,198	35,305	8,241,912	6,887	11,673	636,760	9,525,504
2030	315,018	5,345	34,117	235,453	34,968	8,241,912	6,819	11,673	636,760	9,522,065
2031	315,018	5,345	32,529	219,046	33,025	8,241,912	6,428	11,673	636,760	9,501,736
2032	315,018	5,345	32,519	221,328	33,087	8,241,912	6,443	11,673	636,760	9,504,085
2033	315,018	5,345	32,182	217,083	32,417	8,241,912	6,308	11,673	636,760	9,498,698
2034	315,018	5,345	31,564	211,453	31,710	8,241,912	6,167	11,673	636,760	9,491,602
2035	315,018	5,345	30,835	203,562	30,550	8,241,912	5,934	11,673	636,760	9,481,589
Total	18,418,585	354,552	4,731,745	33,687,332	4,311,647	489,061,367	775,032	722,538	37,131,199	589,193,997

^cCharges under Amendment No. 18 of the water supply contract with Kern County Water Agency.

Table B-15

Capital Cost Component of Transportation Charge for Each Contractor

(Dollars)

Sheet 3 of 4

Calendar Year	Southern California Area									
	Antelope Valley-East Kern Water Agency (21)	Castaic Lake Water Agency (22)	Coachella Valley Water District (23)	Crestline-Lake Arrowhead Water Agency (24)	Desert Water Agency (25)	Littlerock Creek Irrigation District (26)	Mojave Water Agency (27)	Palmdale Water District (28)	San Bernardino Valley Municipal Water District (29)	San Gabriel Valley Municipal Water District (30)
1961	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	0	0
1963	33,351	0	0	0	0	0	0	0	51,776	0
1964	62,921	34,172	14,439	4,374	36,574	1,144	28,462	8,212	82,882	34,413
1965	118,701	65,018	25,116	7,200	40,804	2,084	50,359	15,235	135,181	35,374
1966	215,957	122,198	44,766	12,489	73,212	3,756	90,472	27,701	232,692	61,515
1967	417,815	256,202	86,188	23,491	141,524	7,290	175,317	54,067	433,699	115,667
1968	671,472	544,343	141,104	38,582	232,093	11,791	287,016	87,370	730,432	194,683
1969	973,445	840,726	209,952	57,347	345,637	17,262	427,053	127,335	1,137,321	302,890
1970	1,270,231	1,071,663	296,106	84,863	487,724	23,445	593,244	171,451	1,692,806	444,060
1971	1,526,763	1,319,019	400,635	120,305	660,119	28,867	791,007	209,009	2,396,931	620,271
1972	1,658,140	1,478,847	455,251	137,563	750,193	31,331	898,159	226,711	2,827,874	721,555
1973	1,707,757	1,486,654	472,161	142,256	778,081	32,306	932,587	233,564	2,965,406	757,131
1974	1,725,821	1,545,645	480,244	146,447	791,413	32,628	945,038	235,918	3,055,143	777,701
1975	1,748,832	1,563,650	493,454	150,225	813,199	33,043	972,055	238,942	3,137,583	799,411
1976	1,761,749	1,581,973	503,324	152,917	829,476	33,295	992,316	240,679	3,215,754	820,202
1977	1,773,857	1,600,578	510,294	154,815	840,971	33,512	1,006,847	242,264	3,264,802	833,246
1978	1,784,028	1,628,539	514,952	156,133	848,653	33,703	1,016,672	243,640	3,294,948	841,174
1979	1,799,427	1,666,981	518,957	157,266	855,258	33,970	1,025,171	245,617	3,316,814	846,871
1980	1,817,658	1,744,358	523,127	158,377	862,135	34,274	1,034,151	247,886	3,337,384	852,396
1981	1,912,846	1,887,639	544,726	164,145	897,756	35,927	1,078,730	260,173	3,441,402	880,332
1982	1,904,756	1,939,291	542,325	163,693	893,796	35,796	1,073,982	259,182	3,434,069	878,112
1983	1,984,164	2,012,020	557,553	167,715	918,911	37,133	1,105,815	269,214	3,506,519	897,902
1984	2,089,292	2,054,367	577,739	173,611	952,201	38,902	1,143,337	282,468	3,614,898	927,550
1985	2,166,683	2,076,211	592,906	177,948	977,214	40,292	1,174,722	292,087	3,693,730	949,131
1986	2,212,364	2,088,834	603,972	181,136	995,465	40,960	1,206,478	297,575	3,750,662	964,692
1987	2,255,492	2,096,363	615,308	184,116	1,014,159	41,423	1,221,494	302,364	3,804,401	979,364
1988	2,272,657	2,104,224	623,869	186,383	1,028,278	41,710	1,239,501	304,469	3,844,794	990,353
1989	2,286,819	2,117,476	627,282	187,561	1,033,907	41,885	1,246,492	305,860	3,867,598	996,388
1990	2,339,967	2,147,434	644,143	192,624	1,061,714	42,761	1,280,728	312,406	3,943,936	1,017,019
1991	2,378,381	2,170,268	661,611	197,761	1,090,523	43,146	1,316,044	315,934	4,034,921	1,041,664
1992	2,422,218	2,194,914	681,034	204,157	1,122,555	43,779	1,354,839	320,834	4,165,767	1,077,231
1993	2,453,250	2,218,419	695,466	211,155	1,146,356	44,288	1,381,570	324,924	4,298,313	1,113,400
1994	2,485,548	2,241,333	707,406	220,344	1,166,048	44,836	1,400,552	328,896	4,715,266	1,225,855
1995	2,509,680	2,252,933	714,586	225,424	1,177,889	45,228	1,412,383	331,777	4,997,512	1,301,873
1996	2,533,664	2,272,874	721,833	229,706	1,189,841	45,635	1,425,074	334,756	5,134,510	1,338,896
1997	2,549,680	2,287,962	727,924	232,184	1,199,887	45,904	1,436,751	336,729	5,337,895	1,393,442
1998	2,573,423	2,304,882	733,678	233,555	1,209,375	46,315	1,461,810	339,759	5,447,692	1,422,844
1999	2,586,145	2,320,627	737,152	235,858	1,215,105	46,537	1,468,595	341,397	5,692,931	1,443,689
2000	2,602,435	2,803,566	742,486	238,200	1,223,902	46,833	1,979,554	405,327	7,777,406	1,457,366
2001	2,610,419	2,809,746	745,892	239,638	1,229,519	47,003	1,986,710	406,664	7,812,758	1,467,491
2002	2,636,684	2,833,371	755,965	242,195	1,246,131	47,449	2,007,774	409,917	7,860,275	1,480,219
2003	2,653,456	2,841,283	758,985	242,967	1,251,113	47,730	2,014,252	412,053	7,874,077	1,484,012
2004	2,654,532	2,842,031	759,180	243,016	1,251,434	47,748	2,014,781	412,209	7,873,829	1,484,251
2005	2,655,623	2,842,792	759,377	243,066	1,251,759	47,766	2,015,317	412,368	7,875,514	1,484,493
2006	2,657,248	2,843,930	759,672	243,140	1,252,245	47,793	2,016,153	412,609	7,876,914	1,484,855
2007	2,658,246	2,844,636	759,852	243,186	1,252,542	47,810	2,016,642	412,755	7,876,403	1,485,076
2008	2,658,246	2,844,636	759,852	243,186	1,252,542	47,810	2,016,642	412,755	7,876,570	1,485,076
2009	2,658,246	2,844,636	759,852	243,186	1,252,542	47,810	2,016,642	412,755	7,877,790	1,485,076
2010	2,658,246	2,844,636	759,852	243,186	1,252,542	47,810	2,016,642	412,755	7,880,011	1,485,076
2011	2,658,246	2,844,636	759,852	243,186	1,252,542	47,810	2,016,642	412,755	7,876,760	1,485,076
2012	2,658,246	2,844,636	759,852	243,186	1,252,542	47,810	2,016,642	412,755	7,877,212	1,485,076
2013	2,624,895	2,844,636	759,852	243,186	1,239,165	47,810	2,016,642	412,755	7,889,460	1,471,963
2014	2,595,325	2,810,463	745,413	238,812	1,229,346	46,666	1,983,714	403,845	7,856,646	1,463,776
2015	2,539,544	2,779,617	734,737	235,986	1,211,739	45,726	1,958,166	396,243	7,803,724	1,449,702
2016	2,442,289	2,722,438	715,086	230,697	1,179,331	44,053	1,910,651	382,641	7,708,113	1,423,561
2017	2,240,430	2,588,434	673,665	219,695	1,111,018	40,520	1,811,059	354,178	7,503,215	1,369,410
2018	1,986,774	2,300,392	618,748	204,604	1,020,449	36,019	1,673,375	316,927	7,208,397	1,290,393
2019	1,684,801	2,004,117	549,900	185,839	906,905	30,547	1,495,905	270,783	6,803,067	1,182,186
2020	1,388,015	1,773,224	463,747	158,323	764,818	24,364	1,288,629	219,811	6,244,429	1,041,016
2021	1,131,482	1,525,949	359,217	122,881	592,423	18,942	1,055,963	176,386	5,542,597	864,805
2022	1,000,106	1,366,287	304,601	105,623	502,349	16,478	930,493	155,520	5,110,364	763,521
2023	950,489	1,358,557	287,691	100,930	474,461	15,503	889,232	147,477	4,973,692	727,946
2024	932,425	1,299,636	279,608	96,739	461,130	15,182	874,304	144,664	4,886,677	707,375
2025	909,414	1,281,759	266,398	92,961	439,343	14,767	844,482	141,085	4,802,805	685,665
2026	896,496	1,263,496	256,528	90,269	423,067	14,514	822,758	139,064	4,724,777	664,874
2027	884,389	1,244,969	249,558	88,371	411,571	14,298	807,155	137,251	4,674,296	651,830
2028	874,218	1,217,111	244,900	87,053	403,889	14,106	796,850	135,732	4,643,964	643,903
2029	858,819	1,178,768	240,895	85,920	397,284	13,840	787,322	133,518	4,622,571	638,206
2030	840,588	1,101,493	236,726	84,809	390,408	13,536	777,295	131,002	4,339,711	632,680
2031	745,400	958,326	215,127	79,041	354,787	11,882	721,863	116,829	2,235,692	604,744
2032	753,490	906,781	217,527	79,493	358,746	12,014	730,895	118,462	2,243,026	606,964
2033	674,082	834,172	202,299	75,471	333,632	10,676	695,720	107,789	2,170,576	587,174
2034	568,954	791,902	182,113	69,575	300,341	8,908	650,226	93,788	2,062,197	557,526
2035	491,563	770,163	166,946	65,237	275,328	7,518	617,552	83,883	1,983,365	535,945
Total	129,418,815	133,145,862	36,812,534	11,666,579	60,680,931	2,333,209	88,969,466	18,783,715	334,285,024	69,716,605

Table B-15

Capital Cost Component of Transportation Charge for Each Contractor

(Dollars)

Sheet 4 of 4

Calendar Year	Southern California Area (continued)				Feather River Area				South Bay Area Future Contractor (39)	Grand Total (40)
	San Geronio Pass Water Agency (31)	Metropolitan Water District of Southern California (32)	Ventura County Flood Control District (33)	Total (34)	City of Yuba City (35)	County of Butte (36)	Plumas County FC&WCD (37)	Total (38)		
1961	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	0	0
1963	0	691,432	0	776,559	0	0	0	0	42,995	1,438,565
1964	21,378	1,261,584	9,386	1,599,941	0	0	0	0	69,933	2,609,265
1965	21,885	2,182,389	17,781	2,717,127	0	0	405	405	100,007	4,375,589
1966	37,995	3,903,334	33,453	4,859,540	0	0	565	565	116,964	6,889,971
1967	71,340	7,699,870	68,210	9,550,680	0	0	562	562	156,911	12,056,294
1968	120,190	14,356,583	133,405	17,549,064	0	0	565	565	232,318	21,254,116
1969	187,208	21,874,843	202,760	26,703,779	0	0	3,194	3,194	296,245	31,472,684
1970	275,229	29,015,634	258,064	35,684,520	0	0	15,133	15,133	316,540	40,749,811
1971	385,331	37,289,492	316,558	46,064,307	0	0	15,960	15,960	320,314	51,552,786
1972	448,411	44,414,327	354,217	54,402,579	0	0	17,346	17,346	320,948	61,041,497
1973	470,558	46,660,277	357,625	56,996,363	0	0	17,347	17,347	321,620	63,638,851
1974	483,643	48,684,977	372,408	59,277,026	0	0	17,348	17,348	322,033	66,440,998
1975	497,117	49,648,145	376,810	60,472,466	0	0	17,350	17,350	323,489	68,314,874
1976	510,055	50,501,031	381,090	61,523,861	0	0	17,351	17,351	323,909	69,758,963
1977	518,152	51,191,449	385,403	62,356,190	0	0	17,354	17,354	324,749	70,940,114
1978	523,071	51,791,338	391,052	63,067,903	0	0	17,355	17,355	325,828	72,156,301
1979	526,596	52,595,738	399,966	63,988,632	0	0	17,357	17,357	327,300	73,614,976
1980	530,003	54,003,921	417,467	65,563,137	0	0	17,358	17,358	328,660	75,686,318
1981	547,221	57,036,346	450,169	69,137,412	0	0	17,360	17,360	331,675	79,882,969
1982	545,878	57,834,604	461,600	69,967,084	0	0	17,361	17,361	331,332	81,197,121
1983	558,049	59,408,258	477,712	71,900,965	0	0	17,362	17,362	332,152	83,348,701
1984	576,287	60,685,377	487,249	73,603,278	0	0	17,363	17,363	335,833	85,866,614
1985	589,556	61,517,084	492,508	74,740,072	0	0	17,364	17,364	340,076	87,699,814
1986	599,123	62,039,214	495,370	75,475,845	0	0	17,366	17,366	340,909	89,551,697
1987	608,146	62,467,914	497,152	76,087,696	0	0	17,367	17,367	341,742	92,415,394
1988	614,906	62,826,394	499,015	76,576,553	0	0	17,369	17,369	343,240	94,516,179
1989	618,639	63,172,791	501,977	77,004,675	0	0	17,372	17,372	345,836	95,751,809
1990	631,292	64,163,675	509,970	78,287,669	0	0	17,374	17,374	348,097	97,519,217
1991	646,456	65,140,636	516,556	79,553,901	0	0	17,378	17,378	353,161	99,183,317
1992	668,385	66,377,819	523,568	81,157,100	0	0	17,380	17,380	361,092	101,099,046
1993	690,655	67,617,641	529,802	82,725,239	0	0	17,383	17,383	365,403	102,955,738
1994	760,860	70,305,259	535,478	86,137,681	0	0	17,384	17,384	368,588	107,155,604
1995	808,402	72,007,872	538,236	88,323,795	0	0	17,385	17,385	370,441	112,146,338
1996	831,423	73,043,968	542,180	89,644,360	0	0	17,385	17,385	372,756	122,305,051
1997	865,632	74,342,964	544,896	91,301,850	0	0	17,385	17,385	373,935	132,238,608
1998	884,069	75,239,435	548,922	92,945,759	0	0	17,385	17,385	375,881	135,808,465
1999	1,095,755	75,946,295	552,589	94,182,675	0	0	17,386	17,386	376,507	137,666,983
2000	3,506,884	76,482,715	555,895	99,822,569	0	0	17,386	17,386	(1)	143,075,338
2001	3,510,532	76,798,149	557,294	100,221,815	0	0	17,386	17,386	(1)	144,116,292
2002	3,519,703	77,690,594	565,346	101,295,623	0	0	17,386	17,386	3,625	145,692,819
2003	3,522,044	77,943,811	567,808	101,613,591	0	0	17,386	17,386	3,626	146,341,889
2004	3,520,871	77,959,907	567,965	101,631,754	0	0	17,386	17,386	3,626	146,420,226
2005	3,521,968	77,976,236	568,125	101,654,404	0	0	17,386	17,386	3,626	146,446,155
2006	3,522,288	78,000,554	568,362	101,685,763	0	0	17,386	17,386	3,626	146,480,508
2007	3,520,867	78,015,479	568,508	101,702,002	0	0	17,386	17,386	3,625	146,499,765
2008	3,521,063	78,015,479	568,508	101,702,365	0	0	17,386	17,386	3,625	146,500,128
2009	3,522,505	78,015,479	568,508	101,705,027	0	0	17,386	17,386	3,625	146,502,790
2010	3,525,128	78,015,479	568,508	101,709,871	0	0	17,386	17,386	3,625	146,507,634
2011	3,521,288	78,015,479	568,508	101,702,780	0	0	17,386	17,386	3,625	146,500,543
2012	3,521,822	78,015,479	568,508	101,703,766	0	0	17,386	17,386	3,625	146,501,529
2013	3,589,303	77,324,047	568,508	101,032,222	0	0	17,386	17,386	3,626	145,191,271
2014	3,582,225	76,753,895	559,122	100,269,248	0	0	17,386	17,386	3,626	144,100,381
2015	3,572,823	75,833,090	550,727	99,111,824	0	0	16,981	16,981	3,626	142,316,735
2016	3,558,959	74,112,145	535,054	96,965,018	0	0	16,821	16,821	3,625	139,810,813
2017	3,521,014	70,315,609	500,298	92,248,545	0	0	16,823	16,823	3,626	134,654,077
2018	3,474,428	63,658,896	435,103	84,224,505	0	0	16,821	16,821	3,627	126,072,663
2019	3,409,251	56,140,636	365,748	75,029,685	0	0	14,192	14,192	3,626	116,506,539
2020	3,317,507	48,999,845	310,444	65,994,172	0	0	2,253	2,253	3,626	107,324,893
2021	3,210,113	40,725,987	251,949	55,578,694	0	0	1,426	1,426	3,626	96,861,971
2022	3,145,509	33,601,152	214,291	47,216,294	0	0	40	40	3,626	88,476,351
2023	3,124,378	31,355,202	210,883	44,616,441	0	0	39	39	3,626	85,831,297
2024	3,114,509	29,330,502	196,100	42,338,851	0	0	38	38	3,625	83,541,440
2025	3,099,343	28,367,334	191,698	41,137,054	0	0	36	36	3,626	82,315,307
2026	3,086,573	27,514,448	187,418	40,084,282	0	0	35	35	3,626	80,940,735
2027	3,076,785	26,824,030	183,105	39,247,608	0	0	32	32	3,626	80,074,240
2028	3,071,526	26,224,141	177,455	38,534,748	0	0	31	31	3,626	79,317,188
2029	3,068,678	25,419,740	168,542	37,614,103	0	0	29	29	3,625	78,360,528
2030	392,559	24,011,558	151,041	31,103,406	0	0	27	27	3,626	71,801,508
2031	375,341	20,979,133	118,339	27,516,504	0	0	26	26	3,625	68,097,517
2032	376,684	20,180,875	106,908	26,691,865	0	0	24	24	3,626	67,257,511
2033	364,513	18,607,220	90,796	24,754,120	0	0	24	24	3,626	65,238,177
2034	346,275	17,330,102	81,258	23,043,165	0	0	23	23	3,626	63,333,475
2035	333,006	16,498,394	76,000	21,904,900	0	0	21	21	3,625	61,856,862
Total	122,737,161	3,759,992,731	27,852,622	4,796,315,866	0	0	869,191	869,191	11,402,690	6,839,167,737

Table B-16A

Minimum OMP&R Component of Transportation Charge for Each Contractor

(Dollars)

Sheet 1 of 4

Calendar Year	North Bay Area			South Bay Area				Central Coastal Area		
	Napa County FC&WCD (1)	Solano County Water Agency (2)	Total (3)	Alameda County FC&WCD, Zone 7 (4)	Alameda County Water District (5)	Santa Clara Valley Water District (6)	Total (7)	San Luis Obispo County FC&WCD (8)	Santa Barbara County FC&WCD (9)	Total (10)
1961	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	9,699	8,868	21,132	39,699	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	195,793	349,938	0	0	0
1966	0	0	0	79,753	78,779	218,543	377,075	0	0	0
1967	0	0	0	127,896	123,667	335,224	586,787	0	0	0
1968	130	0	130	126,058	120,563	333,506	580,127	11,800	21,769	33,569
1969	80,875	0	80,875	145,411	138,050	372,585	656,046	63,112	116,434	179,546
1970	94,872	0	94,872	128,993	120,245	320,664	569,902	74,187	136,866	211,053
1971	45,579	0	45,579	113,071	108,346	296,004	517,421	74,010	136,540	210,550
1972	37,895	0	37,895	122,407	117,483	334,366	574,256	79,195	146,106	225,301
1973	32,993	0	32,993	122,738	116,785	325,726	565,249	75,713	139,683	215,396
1974	46,498	0	46,498	154,435	146,929	403,080	704,444	76,530	141,188	217,718
1975	37,707	0	37,707	189,175	182,087	513,823	885,085	92,605	170,844	263,449
1976	60,786	0	60,786	203,064	193,435	524,813	921,312	94,934	175,143	270,077
1977	78,400	0	78,400	179,869	169,065	500,101	849,035	102,945	189,921	292,866
1978	56,318	0	56,318	239,301	228,855	647,822	1,115,984	104,061	191,979	296,040
1979	73,852	0	73,852	236,986	232,105	666,748	1,135,833	100,750	185,871	286,621
1980	81,769	0	81,769	389,575	372,185	1,010,830	1,772,590	125,109	234,324	359,433
1981	101,340	0	101,340	317,408	302,272	834,257	1,453,937	139,106	260,146	399,252
1982	191,987	0	191,987	386,742	369,633	1,098,844	1,855,219	140,822	263,314	404,136
1983	80,215	0	80,215	438,536	428,973	1,269,373	2,136,882	169,744	316,792	486,536
1984	106,485	0	106,485	591,243	565,721	1,817,629	2,974,593	200,559	373,711	574,270
1985	215,341	0	215,341	674,975	655,490	1,840,211	3,170,676	241,705	449,621	691,326
1986	203,704	0	203,704	613,273	583,077	1,784,056	2,980,406	231,778	431,306	663,084
1987	295,505	0	295,505	687,629	652,468	2,000,817	3,340,914	229,529	465,206	694,735
1988	312,677	(58)	312,619	676,847	655,274	1,910,092	3,242,213	257,657	562,173	819,830
1989	403,330	688,185	1,091,515	716,831	712,354	1,897,149	3,326,334	243,684	669,735	913,419
1990	658,942	674,944	1,333,886	782,589	780,305	2,129,966	3,692,860	310,383	677,321	987,704
1991	726,717	860,903	1,587,620	543,178	524,741	1,520,569	2,588,488	302,574	674,237	976,811
1992	483,580	712,313	1,195,893	796,058	855,050	2,253,496	3,904,604	340,105	725,352	1,065,457
1993	524,000	708,129	1,232,129	1,280,736	1,261,431	3,338,742	5,880,909	386,509	734,967	1,121,476
1994	573,815	658,277	1,232,092	1,368,651	1,312,740	3,560,294	6,241,685	482,255	889,405	1,371,660
1995	539,407	660,770	1,200,177	1,232,272	1,187,201	3,216,470	5,635,943	477,768	881,026	1,358,794
1996	604,992	1,011,298	1,616,290	1,185,220	1,124,968	3,007,330	5,317,518	641,585	1,183,204	1,824,789
1997	563,579	741,881	1,305,460	1,029,670	968,999	2,667,649	4,666,318	406,664	749,802	1,156,466
1998	461,929	661,478	1,123,407	1,064,804	1,174,966	3,502,898	5,742,668	806,610	3,045,558	3,852,168
1999	587,116	1,005,736	1,592,852	1,215,271	1,256,006	5,051,550	7,522,827	829,303	3,219,979	4,049,282
2000	516,351	1,421,661	1,938,012	1,467,347	1,217,647	3,666,654	6,351,648	861,501	3,780,856	4,642,357
2001	862,133	1,451,112	2,313,245	2,251,045	1,564,376	4,488,048	8,303,469	790,214	2,653,122	3,443,336
2002	912,269	1,537,186	2,449,455	2,345,951	1,743,700	4,772,460	8,862,111	806,301	2,636,448	3,442,749
2003	854,383	1,473,136	2,327,519	2,734,217	1,580,541	4,421,352	8,736,110	802,182	2,718,092	3,520,274
2004	836,301	1,440,948	2,277,249	2,649,910	1,526,155	4,224,891	8,400,956	782,851	2,649,548	3,432,399
2005	834,208	1,437,188	2,271,396	2,643,707	1,522,689	4,215,336	8,381,732	781,343	2,646,115	3,427,458
2006	835,845	1,439,686	2,275,531	2,649,291	1,526,219	4,225,287	8,400,797	782,406	2,646,721	3,429,127
2007	834,975	1,438,259	2,273,234	2,646,494	1,524,534	4,220,575	8,391,603	781,814	2,645,919	3,427,733
2008	835,317	1,438,892	2,274,209	2,647,472	1,525,060	4,222,017	8,394,549	782,067	2,646,580	3,428,647
2009	835,091	1,438,551	2,273,642	2,646,693	1,524,565	4,220,619	8,391,877	781,920	2,646,509	3,428,429
2010	834,961	1,438,199	2,273,160	2,646,499	1,524,565	4,220,676	8,391,740	781,795	2,645,749	3,427,544
2011	837,921	1,443,644	2,281,565	2,657,232	1,530,061	4,235,852	8,423,145	784,827	2,656,888	3,441,715
2012	838,118	1,444,023	2,282,141	2,657,779	1,530,345	4,236,620	8,424,744	784,975	2,657,324	3,442,299
2013	838,638	1,445,167	2,283,805	2,658,938	1,530,787	4,237,732	8,427,457	785,405	2,659,211	3,444,616
2014	838,890	1,446,002	2,284,892	2,659,048	1,530,494	4,236,735	8,426,277	785,686	2,661,423	3,447,109
2015	839,521	1,447,081	2,286,602	2,661,019	1,531,648	4,239,944	8,432,611	786,127	2,662,191	3,448,318
2016	838,460	1,445,155	2,283,615	2,657,912	1,529,933	4,235,228	8,423,073	785,357	2,660,346	3,445,703
2017	838,887	1,445,953	2,284,840	2,659,119	1,530,577	4,236,986	8,426,682	785,673	2,661,199	3,446,872
2018	839,496	1,447,298	2,286,794	2,660,482	1,531,098	4,238,294	8,429,874	786,177	2,663,413	3,449,590
2019	838,389	1,445,209	2,283,598	2,657,378	1,529,461	4,233,834	8,420,673	785,354	2,661,112	3,446,466
2020	839,142	1,446,434	2,285,576	2,659,814	1,530,938	4,237,967	8,428,719	785,862	2,661,751	3,447,613
2021	839,553	1,447,011	2,286,564	2,661,299	1,531,917	4,240,744	8,433,962	786,115	2,661,663	3,447,778
2022	839,311	1,446,949	2,286,260	2,659,963	1,530,825	4,237,553	8,428,341	786,039	2,663,023	3,449,062
2023	838,528	1,445,241	2,283,769	2,658,149	1,530,094	4,235,684	8,423,927	785,395	2,660,310	3,445,705
2024	838,841	1,445,958	2,284,799	2,658,818	1,530,322	4,236,237	8,425,377	785,662	2,661,558	3,447,220
2025	839,720	1,447,429	2,287,149	2,661,601	1,531,978	4,240,857	8,434,436	786,266	2,662,486	3,448,752
2026	838,147	1,444,785	2,282,932	2,656,634	1,529,033	4,232,645	8,418,312	785,181	2,660,776	3,445,957
2027	840,871	1,449,374	2,290,245	2,665,197	1,534,093	4,246,747	8,446,037	787,063	2,663,821	3,450,884
2028	838,062	1,444,712	2,282,774	2,656,250	1,528,744	4,231,811	8,416,805	785,141	2,661,009	3,446,150
2029	839,194	1,446,463	2,285,657	2,660,079	1,531,146	4,238,572	8,429,797	785,883	2,661,533	3,447,416
2030	838,390	1,444,983	2,283,373	2,657,760	1,529,886	4,235,117	8,422,763	785,294	2,660,039	3,445,333
2031	841,115	1,450,026	2,291,141	2,665,558	1,534,093	4,246,637	8,446,288	787,295	2,665,242	3,452,537
2032	837,585	1,443,912	2,281,497	2,654,751	1,527,857	4,229,339	8,411,947	784,813	2,660,487	3,445,300
2033	839,308	1,446,526	2,285,834	2,660,653	1,531,599	4,239,894	8,432,146	785,927	2,661,041	3,446,968
2034	839,445	1,446,990	2,286,435	2,660,704	1,531,428	4,239,314	8,431,446	786,083	2,662,287	3,448,370
2035	837,704	1,444,102	2,281,806	2,655,141	1,528,096	4,230,009	8,413,246	784,892	2,660,574	3,445,466
Total	38,327,405	60,489,101	98,816,506	112,137,993	73,024,347	204,724,637	389,886,977	36,290,176	115,405,889	151,696,065

Table B-16A

Minimum OMP&R Component of Transportation Charge for Each Contractor (Dollars)

Sheet 2 of 4

Calendar Year	San Joaquin Valley Area								
	Dudley Ridge Water District (11)	Empire West Side Irrigation District (12)	Future Contractor San Joaquin Valley (13)	Kern County Water Agency		County of Kings (16)	Oak Flat Water District (17)	Tulare Lake Basin Water Storage District (18)	Total (19)
				Municipal and Industrial (14)	Agricultural (15)				
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	37,806	1,963	5,639	60,701	678,086	2,008	2,073	77,591	865,867
1969	45,479	2,235	30,158	80,554	1,197,126	2,286	2,085	90,773	1,450,696
1970	46,969	2,292	35,450	96,673	1,381,493	2,344	2,158	93,408	1,660,787
1971	47,997	2,314	35,366	106,654	1,643,163	2,366	2,288	94,874	1,935,022
1972	49,866	2,414	37,844	122,313	1,729,169	2,469	2,254	98,777	2,045,106
1973	50,006	2,385	36,180	125,553	1,719,873	2,440	2,310	98,330	2,037,077
1974	52,818	2,556	36,570	135,661	1,823,065	2,614	2,529	104,609	2,160,422
1975	66,963	3,243	44,251	162,738	2,235,242	3,317	3,191	132,663	2,651,608
1976	66,504	3,328	45,364	159,303	2,215,999	3,404	2,919	133,940	2,630,761
1977	75,595	3,812	49,192	189,661	2,522,290	3,898	3,708	152,838	3,000,994
1978	70,688	3,503	49,725	174,897	2,427,163	3,583	3,644	141,672	2,874,875
1979	68,879	3,436	48,142	173,677	2,378,315	3,514	3,492	138,493	2,817,948
1980	95,898	4,722	59,551	235,741	3,146,570	4,830	4,777	191,582	3,743,671
1981	118,448	5,965	66,183	266,353	3,440,557	6,099	5,187	239,323	4,148,115
1982	134,083	6,711	67,061	311,879	3,848,922	6,862	6,382	270,061	4,651,961
1983	184,902	9,242	80,869	426,485	5,030,031	9,450	8,494	372,182	6,121,655
1984	194,228	9,656	95,555	471,854	5,636,134	9,874	8,719	389,892	6,815,912
1985	200,694	9,957	115,227	486,162	6,042,593	10,182	8,982	402,457	7,276,254
1986	207,028	10,302	110,479	530,803	6,372,710	10,536	10,341	415,776	7,667,975
1987	205,002	10,259	109,401	533,451	6,378,437	10,493	10,517	412,889	7,670,449
1988	203,711	10,223	122,903	516,432	6,388,497	10,455	10,341	410,868	7,673,430
1989	224,049	11,269	116,197	564,169	6,747,406	11,526	11,102	452,406	8,137,764
1990	271,051	13,666	148,238	664,040	8,111,616	13,976	13,206	547,974	9,783,767
1991	275,748	13,854	144,486	662,755	8,111,610	14,168	13,218	556,474	9,792,313
1992	317,889	16,027	162,466	764,224	9,115,453	16,393	18,209	642,672	11,053,333
1993	359,879	17,989	184,477	831,662	10,372,245	18,399	19,560	724,397	12,528,608
1994	309,099	15,487	224,254	738,622	9,789,905	15,840	16,434	622,912	11,732,553
1995	395,441	19,918	220,899	898,339	11,190,121	20,373	21,551	799,070	13,565,712
1996	362,634	19,968	301,835	902,162	11,868,342	20,424	21,664	796,711	14,293,740
1997	366,489	20,154	186,450	942,987	10,627,433	20,613	19,344	806,084	12,989,554
1998	453,093	24,563	288,941	1,098,336	12,288,048	25,125	21,596	995,325	15,195,027
1999	385,754	21,291	289,033	977,097	11,311,096	21,776	22,165	848,617	13,876,829
2000	379,834	20,901	277,098	936,694	10,444,364	21,377	21,622	833,873	12,935,763
2001	446,993	24,062	287,357	1,227,065	12,074,527	24,613	26,106	970,875	15,081,599
2002	460,490	22,808	298,168	1,199,126	12,326,866	23,329	25,895	922,630	15,279,312
2003	462,333	22,893	299,934	1,116,827	12,512,962	23,411	25,974	926,194	15,390,528
2004	449,859	22,270	292,926	1,089,369	12,201,956	22,775	25,435	901,114	15,005,704
2005	448,874	22,222	292,231	1,086,858	12,173,742	22,725	25,390	899,153	14,971,195
2006	449,429	22,249	292,795	1,088,447	12,192,378	22,753	25,427	900,258	14,993,736
2007	449,084	22,233	292,500	1,087,516	12,181,685	22,736	25,408	899,572	14,980,734
2008	449,255	22,241	292,613	1,087,945	12,186,464	22,744	25,415	899,913	14,986,590
2009	449,180	22,237	292,534	1,087,727	12,183,908	22,741	25,410	899,763	14,983,500
2010	449,062	22,231	292,496	1,087,472	12,181,241	22,735	25,407	899,528	14,980,172
2011	451,012	22,328	293,594	1,091,862	12,230,593	22,834	25,493	903,439	15,041,155
2012	451,116	22,333	293,658	1,092,120	12,233,444	22,839	25,497	903,648	15,044,655
2013	451,467	22,350	293,820	1,092,925	12,242,104	22,856	25,507	904,345	15,055,374
2014	451,771	22,365	293,886	1,093,551	12,248,454	22,872	25,511	904,950	15,063,360
2015	452,042	22,379	294,099	1,094,263	12,256,552	22,885	25,525	905,489	15,073,234
2016	451,531	22,354	293,747	1,092,970	12,242,069	22,860	25,503	904,472	15,055,506
2017	451,748	22,364	293,887	1,093,510	12,248,074	22,871	25,512	904,904	15,062,870
2018	452,159	22,384	294,077	1,094,455	12,258,241	22,891	25,524	905,723	15,075,454
2019	451,588	22,356	293,714	1,093,041	12,242,533	22,862	25,501	904,585	15,056,180
2020	451,880	22,371	293,969	1,093,835	12,251,681	22,877	25,517	905,167	15,067,297
2021	451,994	22,376	294,113	1,094,191	12,255,958	22,883	25,526	905,395	15,072,436
2022	452,062	22,380	294,016	1,094,217	12,255,592	22,886	25,520	905,530	15,072,203
2023	451,546	22,354	293,770	1,093,021	12,242,690	22,860	25,504	904,503	15,056,248
2024	451,770	22,365	293,867	1,093,530	12,248,133	22,872	25,510	904,948	15,062,995
2025	452,130	22,383	294,163	1,094,491	12,259,123	22,890	25,529	905,666	15,076,375
2026	451,480	22,351	293,633	1,092,760	12,239,351	22,857	25,495	904,370	15,052,297
2027	452,615	22,407	294,550	1,095,771	12,273,713	22,914	25,554	906,631	15,094,155
2028	451,478	22,351	293,601	1,092,725	12,238,814	22,857	25,493	904,367	15,051,686
2029	451,874	22,370	293,990	1,093,844	12,251,893	22,877	25,518	905,154	15,067,520
2030	451,477	22,351	293,725	1,092,848	12,240,769	22,857	25,501	904,365	15,053,893
2031	452,836	22,417	294,621	1,096,247	12,278,681	22,925	25,559	907,070	15,100,356
2032	451,281	22,341	293,441	1,092,200	12,232,823	22,847	25,483	903,973	15,044,389
2033	451,857	22,370	294,034	1,093,858	12,252,307	22,876	25,521	905,121	15,067,944
2034	452,027	22,378	294,070	1,094,207	12,255,849	22,884	25,523	905,461	15,072,399
2035	451,326	22,344	293,481	1,092,323	12,234,250	22,849	25,486	904,063	15,046,122
Total	22,133,150	1,110,173	14,106,564	53,845,749	616,642,134	1,135,357	1,219,741	44,831,852	755,024,720

Table B-16A

Minimum OMP&R Component of Transportation Charge for Each Contractor

(Dollars)

Sheet 3 of 4

Calendar Year	Southern California Area									
	Antelope Valley-East Kern Water Agency (20)	Castaic Lake Water Agency (21)	Coachella Valley Water District (22)	Crestline-Lake Arrowhead Water Agency (23)	Desert Water Agency (24)	Littlerock Creek Irrigation District (25)	Mojave Water Agency (26)	Palmdale Water District (27)	San Bernardino Valley Municipal Water District (28)	San Gabriel Valley Municipal Water District (29)
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	65,074	28,085	11,697	2,958	19,291	1,089	24,380	8,173	52,315	14,399
1969	86,339	70,342	15,522	3,925	25,598	1,445	32,348	10,844	69,419	19,106
1970	107,807	84,577	19,392	4,904	31,981	1,804	40,391	13,540	86,727	23,865
1971	178,820	105,979	32,228	8,150	53,151	2,992	66,999	22,459	144,136	39,636
1972	363,555	202,625	106,740	30,967	176,037	6,601	213,032	48,102	548,123	144,113
1973	404,661	222,765	121,341	34,674	200,116	7,346	243,320	53,975	724,535	190,156
1974	434,868	235,528	130,627	37,062	215,432	7,677	262,735	56,383	786,107	207,019
1975	504,791	289,501	151,031	43,176	249,082	9,082	303,108	65,580	905,424	238,842
1976	559,013	262,420	160,686	44,454	265,004	10,030	325,512	73,253	964,524	256,570
1977	675,504	335,749	184,813	47,743	304,792	11,890	381,161	87,355	1,069,446	289,793
1978	600,343	376,946	187,028	54,156	308,449	10,711	373,192	78,304	1,148,279	300,751
1979	661,123	349,072	196,264	52,211	323,677	12,124	401,469	87,126	1,125,452	302,508
1980	858,039	415,571	253,090	71,921	417,398	15,435	508,379	112,853	1,518,405	401,223
1981	1,001,503	511,087	284,970	73,534	469,970	18,046	588,024	131,992	1,548,350	420,523
1982	1,128,643	557,494	320,938	89,560	529,292	20,193	649,204	148,012	1,870,559	497,871
1983	1,744,932	832,687	450,049	119,275	742,218	30,643	922,072	225,793	2,373,149	639,682
1984	2,105,780	943,524	548,784	150,179	905,055	36,810	1,112,196	271,187	3,018,294	803,394
1985	2,157,936	1,055,744	584,697	157,841	964,282	38,972	1,191,309	277,250	3,230,403	860,780
1986	2,311,841	1,102,466	618,750	162,748	1,020,438	40,051	1,268,806	295,987	3,318,638	893,069
1987	2,366,343	1,032,918	628,222	167,262	1,036,061	41,773	1,283,836	307,844	3,400,838	913,933
1988	2,303,274	1,042,113	649,276	175,694	1,070,784	40,604	1,321,553	298,438	3,587,873	960,968
1989	2,280,051	1,088,176	613,266	169,993	1,011,401	39,501	1,240,888	292,775	3,499,964	932,519
1990	2,636,186	1,275,150	708,829	201,242	1,169,006	45,472	1,424,445	336,069	4,084,211	1,078,392
1991	2,737,441	1,454,172	763,989	210,644	1,259,974	48,936	1,546,583	358,165	4,348,900	1,150,633
1992	2,781,586	1,579,025	750,248	198,232	1,237,307	49,829	1,538,733	362,844	4,131,745	1,115,632
1993	3,109,819	1,689,775	850,589	234,719	1,402,796	56,125	1,722,415	411,539	5,023,595	1,338,111
1994	2,825,181	1,609,511	795,078	225,270	1,311,244	51,258	1,634,795	376,175	4,797,440	1,268,058
1995	3,121,440	1,720,649	848,101	231,718	1,398,686	58,749	1,766,297	444,998	4,828,432	1,272,345
1996	3,093,678	1,966,634	862,720	228,008	1,422,789	56,813	1,817,427	423,444	4,707,473	1,256,549
1997	3,250,394	1,810,292	918,428	281,067	1,514,687	59,547	1,853,224	446,127	5,705,741	1,477,757
1998	3,876,893	2,050,491	1,070,620	299,667	1,765,661	73,841	3,208,176	561,294	6,077,011	1,635,115
1999	3,795,081	2,114,924	1,104,403	310,017	1,821,377	74,845	3,228,053	542,974	6,412,849	1,725,302
2000	3,521,975	3,268,812	1,015,080	283,126	1,674,069	65,644	3,037,172	565,241	5,642,611	1,514,943
2001	4,316,175	4,083,249	1,131,776	316,233	1,866,528	76,189	3,425,785	677,146	6,677,912	1,776,866
2002	4,238,976	4,003,560	1,116,404	312,607	1,841,179	75,107	3,396,035	665,052	6,625,023	1,761,703
2003	4,149,155	3,887,845	1,100,594	288,320	1,815,092	75,153	3,352,073	651,423	6,180,537	1,668,682
2004	4,070,882	3,823,249	1,087,900	292,506	1,794,163	73,720	3,287,752	639,094	6,235,518	1,670,928
2005	4,060,210	3,865,746	1,111,641	324,617	1,833,336	73,516	3,278,544	637,387	6,803,779	1,780,466
2006	4,066,002	3,812,155	1,081,998	287,718	1,784,427	73,597	3,282,118	638,227	6,150,459	1,653,408
2007	4,062,343	3,825,036	1,095,593	305,089	1,806,858	73,536	3,279,390	637,668	6,458,011	1,713,051
2008	4,064,212	3,832,611	1,089,577	297,148	1,796,932	73,573	3,281,072	637,971	6,317,250	1,685,837
2009	4,063,438	3,835,367	1,095,841	304,877	1,807,267	73,563	3,280,615	637,860	6,454,254	1,712,517
2010	4,062,111	3,830,850	1,090,645	299,175	1,798,694	73,530	3,279,101	637,625	6,352,924	1,692,501
2011	4,076,453	3,850,163	1,100,206	306,700	1,814,467	73,807	3,291,584	639,926	6,489,876	1,720,974
2012	4,077,617	3,844,965	1,096,891	302,251	1,808,996	73,831	3,292,674	640,117	6,410,998	1,705,749
2013	4,081,545	3,863,265	1,088,285	290,089	1,794,797	73,921	3,296,782	640,789	6,195,166	1,664,291
2014	4,085,023	3,854,954	1,108,828	313,310	1,828,689	74,013	3,301,008	641,420	6,607,644	1,745,470
2015	4,087,945	3,852,560	1,090,927	290,712	1,799,153	74,065	3,303,357	641,877	6,206,840	1,667,600
2016	4,082,424	3,867,703	1,110,580	316,372	1,831,579	73,958	3,298,528	640,990	6,661,687	1,755,637
2017	4,084,804	3,863,434	1,097,735	299,910	1,810,387	74,006	3,300,694	641,377	6,369,558	1,698,966
2018	4,089,384	3,864,286	1,103,150	304,604	1,819,319	74,111	3,305,479	642,160	6,453,356	1,716,070
2019	4,083,174	3,878,118	1,111,085	316,335	1,832,413	73,986	3,299,796	641,148	6,660,693	1,755,676
2020	4,086,264	3,873,888	1,099,048	301,018	1,812,553	74,036	3,302,054	641,617	6,389,502	1,703,060
2021	4,087,425	3,846,523	1,087,929	287,462	1,794,208	74,048	3,302,537	641,771	6,149,262	1,656,219
2022	4,088,385	3,848,045	1,101,107	302,426	1,815,949	74,091	3,304,580	641,999	6,414,449	1,708,347
2023	4,082,615	3,855,875	1,110,002	315,667	1,830,627	73,960	3,298,614	641,016	6,649,252	1,753,217
2024	4,085,131	3,886,184	1,098,000	299,916	1,810,824	74,019	3,301,293	641,449	6,369,484	1,699,063
2025	4,088,958	3,825,922	1,101,036	302,761	1,815,832	74,085	3,304,236	642,039	6,421,205	1,709,548
2026	4,082,038	3,884,341	1,111,560	317,207	1,833,197	73,965	3,298,872	640,970	6,675,889	1,758,512
2027	4,094,148	3,755,305	1,098,303	298,170	1,811,322	74,177	3,308,345	642,847	6,341,077	1,694,477
2028	4,082,038	3,999,325	1,087,578	287,740	1,793,628	73,970	3,299,116	640,984	6,152,007	1,656,361
2029	4,086,186	3,811,001	1,110,460	315,119	1,831,381	74,031	3,301,790	641,593	6,640,245	1,751,925
2030	4,081,868	3,855,887	1,110,332	316,307	1,831,171	73,945	3,297,939	640,895	6,660,494	1,755,311
2031	4,096,668	3,759,649	1,084,962	280,641	1,789,310	74,240	3,311,228	643,293	6,029,556	1,634,174
2032	4,079,920	3,996,745	1,109,071	314,491	1,829,089	73,933	3,297,459	640,656	6,626,814	1,748,768
2033	4,085,937	3,821,972	1,094,968	296,591	1,805,821	74,016	3,301,114	641,525	6,311,283	1,687,612
2034	4,087,881	3,858,236	1,093,715	294,010	1,803,753	74,068	3,303,481	641,878	6,265,290	1,679,035
2035	4,080,444	3,884,907	1,126,204	335,302	1,857,358	73,942	3,297,861	640,737	6,996,835	1,821,010
Total	200,927,693	166,987,725	54,491,427	15,039,498	89,867,404	3,637,586	151,194,140	30,290,621	316,155,097	84,146,588

Table B-16A

Minimum OMP&R Component of Transportation Charge for Each Contractor

(Dollars)

Sheet 4 of 4

Calendar Year	Southern California Area (continued)				Feather River Area				South Bay Area Future Contractor (38)	Grand Total (39)
	San Geronio Pass Water Agency (30)	Metropolitan Water District of Southern California (31)	Ventura County Flood Control District (32)	Total (33)	City of Yuba City (34)	County of Butte (35)	Plumas County FC&WCD (36)	Total (37)		
1961	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	3,219	42,918
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	378,875
1966	0	0	0	0	0	0	0	0	31,321	408,396
1967	0	0	0	0	0	0	0	0	47,718	634,505
1968	8,821	972,734	9,504	1,218,520	0	0	0	0	46,945	2,745,158
1969	11,704	1,295,607	12,610	1,654,809	0	0	0	0	52,963	4,074,935
1970	14,623	1,624,569	15,746	2,069,926	0	0	0	0	69,744	4,676,284
1971	24,302	2,716,584	26,118	3,421,554	0	0	54	54	55,532	6,185,712
1972	89,131	8,038,463	68,369	10,035,858	0	0	40	40	80,412	12,998,868
1973	117,779	9,890,316	78,313	12,289,297	0	0	1	1	54,219	15,194,232
1974	128,169	11,581,491	83,453	14,166,551	0	0	143	143	76,783	17,372,559
1975	147,899	13,584,548	101,893	16,593,957	0	0	1,069	1,069	84,547	20,517,422
1976	158,664	12,862,489	94,799	16,037,418	0	0	139	139	106,717	20,027,210
1977	178,774	16,203,699	121,966	19,892,685	0	0	892	892	24,213,490	24,213,490
1978	186,384	17,811,770	132,435	21,568,748	0	0	39	39	100,786	26,012,790
1979	186,688	16,414,289	126,756	20,238,759	0	0	3,235	3,235	119,352	24,675,600
1980	248,399	20,926,898	154,096	25,901,707	0	0	416	416	178,812	32,038,398
1981	259,244	23,731,024	186,592	29,224,859	0	0	3,847	3,847	185,347	35,516,697
1982	307,955	27,994,510	209,141	34,323,372	0	0	11,075	11,075	173,894	41,611,644
1983	394,524	38,953,367	326,258	47,754,649	0	0	1,928	1,928	220,926	56,802,791
1984	496,808	45,597,671	382,104	56,371,786	0	0	3,765	3,765	225,959	67,072,770
1985	531,765	50,064,444	416,652	61,532,075	0	0	2,888	2,888	340,322	73,228,882
1986	551,066	52,858,915	442,334	64,885,109	0	0	2,787	2,787	279,227	76,682,292
1987	564,352	50,737,631	411,276	62,892,289	0	0	2,388	2,388	345,116	75,241,396
1988	593,787	51,262,231	406,248	63,712,843	0	0	545	545	365,207	76,126,687
1989	576,852	52,638,942	431,020	64,815,348	0	0	1,800	1,800	422,329	78,708,509
1990	667,687	61,053,824	494,721	75,175,234	0	0	788	788	474,284	91,448,523
1991	711,803	60,874,529	470,139	75,935,908	0	0	3,654	3,654	214,683	91,099,477
1992	688,558	67,460,598	502,131	82,396,468	0	0	647	647	443,676	100,060,078
1993	828,208	68,749,547	538,751	85,955,989	0	0	3,630	3,630	599,571	107,322,312
1994	784,017	63,928,225	474,133	80,080,385	0	0	2,279	2,279	609,932	101,270,586
1995	785,191	68,079,888	523,512	85,080,006	0	0	2,906	2,906	534,971	107,378,509
1996	773,653	72,757,439	561,100	89,927,727	0	0	8,007	8,007	571,857	113,559,928
1997	917,372	75,655,465	564,455	94,454,556	0	0	7,449	7,449	428,638	115,008,442
1998	1,000,665	80,549,464	608,366	102,777,264	0	0	798	798	465,140	129,156,472
1999	1,059,098	85,344,959	633,088	108,166,970	0	0	415	415	553,336	135,762,510
2000	934,507	77,309,502	596,935	99,429,617	0	0	4,000	4,000	590,401	125,891,798
2001	1,090,344	97,747,919	756,655	123,942,777	0	0	4,205	4,205	800,558	153,889,189
2002	1,081,523	95,654,736	736,320	121,508,225	0	0	4,415	4,415	874,122	152,420,389
2003	1,030,103	91,928,579	722,665	116,850,221	0	0	4,524	4,524	0	146,829,176
2004	1,032,743	90,770,021	711,901	115,490,377	0	0	4,524	4,524	0	144,611,209
2005	1,104,701	94,425,295	723,812	120,023,050	0	0	4,524	4,524	0	149,079,355
2006	1,021,393	89,962,206	709,146	114,522,854	0	0	4,524	4,524	0	143,626,569
2007	1,060,523	91,903,492	712,832	116,933,422	0	0	4,524	4,524	0	146,011,250
2008	1,042,657	91,465,206	714,711	116,298,757	0	0	4,524	4,524	0	145,387,276
2009	1,060,145	92,028,107	715,512	117,069,363	0	0	4,524	4,524	0	146,151,335
2010	1,047,064	91,951,403	714,370	116,829,993	0	0	4,524	4,524	0	145,907,133
2011	1,065,479	92,329,313	718,433	117,477,381	0	0	4,524	4,524	0	146,669,485
2012	1,055,480	92,133,938	716,995	117,160,502	0	0	4,524	4,524	0	146,358,865
2013	1,028,224	92,303,058	721,634	117,041,846	0	0	4,524	4,524	0	146,257,622
2014	1,081,317	92,858,856	719,348	118,219,880	0	0	4,524	4,524	0	147,446,042
2015	1,030,248	91,837,983	718,503	116,601,770	0	0	4,524	4,524	0	145,847,059
2016	1,088,032	93,341,879	722,855	118,792,224	0	0	4,524	4,524	0	148,004,645
2017	1,050,853	93,000,818	721,584	118,014,126	0	0	4,524	4,524	0	147,239,914
2018	1,061,955	92,717,520	721,595	117,872,989	0	0	4,524	4,524	0	147,119,225
2019	1,088,024	94,356,398	725,619	119,822,465	0	0	4,524	4,524	0	149,033,906
2020	1,053,508	92,542,530	724,252	117,603,330	0	0	4,524	4,524	0	146,837,059
2021	1,022,811	91,342,068	716,906	116,009,169	0	0	4,524	4,524	0	145,254,433
2022	1,056,913	93,116,501	717,379	118,190,171	0	0	4,524	4,524	0	147,430,561
2023	1,086,445	93,100,532	719,718	118,517,540	0	0	4,524	4,524	0	147,731,713
2024	1,050,900	93,501,477	727,592	118,545,332	0	0	4,524	4,524	0	147,770,247
2025	1,057,717	91,112,854	711,418	116,167,611	0	0	4,524	4,524	0	145,418,847
2026	1,089,900	94,936,322	727,341	120,430,114	0	0	4,524	4,524	0	149,634,136
2027	1,047,766	88,431,686	692,423	113,290,046	0	0	4,524	4,524	0	142,575,891
2028	1,022,956	96,140,118	757,665	120,993,486	0	0	4,524	4,524	0	150,195,425
2029	1,085,535	91,842,041	707,666	117,198,973	0	0	4,524	4,524	0	146,433,887
2030	1,087,831	93,337,809	719,768	118,769,557	0	0	4,524	4,524	0	147,979,443
2031	1,008,184	89,312,327	693,478	113,717,710	0	0	4,524	4,524	0	143,012,556
2032	1,083,537	96,779,451	757,146	122,337,080	0	0	4,524	4,524	0	151,524,737
2033	1,043,412	91,444,888	710,522	116,319,661	0	0	4,524	4,524	0	145,557,077
2034	1,037,736	92,123,166	720,024	116,982,273	0	0	4,524	4,524	0	146,225,447
2035	1,130,868	95,982,904	727,638	121,956,010	0	0	4,524	4,524	0	151,147,174
Total	52,015,276	4,557,289,033	35,440,440	5,757,482,528	0	0	229,536	229,536	10,982,685	7,164,119,017

Table B-16B

Minimum OMP&R Component of Transportation Charge for Each Contractor for Off-Aqueduct Power Facilities

(Dollars)

Sheet 1 of 4

Calendar Year	North Bay Area			South Bay Area				Central Coastal Area		
	Napa County FC&WCD (1)	Solano County Water Agency (2)	Total (3)	Alameda County FC&WCD, Zone 7 (4)	Alameda County Water District (5)	Santa Clara Water District (6)	Total (7)	San Luis Obispo County FC&WCD (8)	Santa Barbara County FC&WCD (9)	Total (10)
1971	0	0	0	0	0	0	0	0	0	0
1972	0	0	0	0	0	0	0	0	0	0
1973	0	0	0	0	0	0	0	0	0	0
1974	0	0	0	0	0	0	0	0	0	0
1975	0	0	0	0	0	0	0	0	0	0
1976	0	0	0	0	0	0	0	0	0	0
1977	0	0	0	0	0	0	0	0	0	0
1978	0	0	0	0	0	0	0	0	0	0
1979	0	0	0	0	0	0	0	0	0	0
1980	0	0	0	0	0	0	0	0	0	0
1981	0	0	0	0	0	0	0	0	0	0
1982	0	0	0	0	0	0	0	0	0	0
1983	10,070	0	10,070	47,473	31,446	863,937	942,856	0	0	0
1984	29,957	0	29,957	157,280	77,388	2,040,188	2,274,856	0	0	0
1985	54,709	0	54,709	458,427	582,679	2,696,449	3,737,555	0	0	0
1986	45,886	0	45,886	312,937	365,147	2,595,766	3,273,850	0	0	0
1987	90,385	0	90,385	622,029	674,111	2,306,079	3,602,219	0	0	0
1988	115,970	114,196	230,166	616,865	804,606	2,116,236	3,537,707	0	0	0
1989	64,584	229,598	294,182	407,353	396,069	1,389,347	2,192,769	0	0	0
1990	77,126	138,805	215,931	535,269	514,372	1,490,250	2,539,891	0	0	0
1991	35,178	245,181	280,359	355,578	477,883	1,065,488	1,898,949	0	165,930	165,930
1992	74,573	230,716	305,289	405,244	529,119	1,183,466	2,117,829	0	0	0
1993	89,213	247,977	337,190	841,383	256,930	1,552,562	2,650,875	0	0	0
1994	111,942	229,598	341,540	501,812	559,683	1,395,238	2,456,733	0	0	0
1995	96,842	235,606	332,448	833,226	492,579	796,524	2,122,329	0	0	0
1996	59,556	192,297	251,853	340,762	284,184	1,110,780	1,735,726	672	(94)	578
1997	48,518	193,255	241,773	455,751	294,951	1,220,497	1,971,199	44,788	298,986	343,774
1998	82,317	251,217	333,534	380,321	380,282	1,103,662	1,864,265	198,376	1,028,220	1,226,596
1999	60,230	203,023	263,253	614,923	463,696	1,079,232	2,157,851	152,820	822,159	974,979
2000	126,899	135,084	261,983	859,816	413,670	925,678	2,199,164	115,835	957,062	1,072,897
2001	124,604	134,594	259,198	623,557	365,164	998,085	1,986,806	397,940	730,107	1,128,047
2002	160,382	169,808	330,190	590,590	473,180	1,126,619	2,190,389	683,224	1,243,086	1,926,310
2003	147,490	154,328	301,818	611,411	427,545	1,017,965	2,056,921	617,332	1,123,199	1,740,531
2004	138,794	144,353	283,147	630,179	395,431	941,502	1,967,112	570,963	1,038,832	1,609,795
2005	153,053	156,596	309,649	687,277	428,700	1,020,713	2,136,690	618,999	1,126,232	1,745,231
2006	154,938	156,527	311,465	685,713	427,724	1,018,390	2,131,827	617,590	1,123,668	1,741,258
2007	157,254	162,510	319,764	686,075	427,949	1,018,927	2,132,951	617,916	1,124,261	1,742,177
2008	188,674	192,589	381,263	811,627	506,265	1,205,392	2,523,284	730,995	1,330,002	2,060,997
2009	191,525	193,138	384,663	812,507	506,813	1,206,698	2,526,018	731,788	1,331,444	2,063,232
2010	193,425	192,735	386,160	809,386	504,867	1,202,064	2,516,317	728,977	1,326,330	2,055,307
2011	195,540	192,562	388,102	807,237	503,526	1,198,872	2,509,635	727,041	1,322,808	2,049,849
2012	198,392	193,117	391,509	808,145	504,092	1,200,220	2,512,457	727,859	1,324,296	2,052,155
2013	93,161	89,834	182,995	375,275	234,084	557,342	1,166,701	337,993	614,959	952,952
2014	33,090	31,488	64,578	131,307	81,905	195,012	408,224	118,263	215,172	333,435
2015	15,075	13,995	29,070	58,258	36,339	86,522	181,119	52,470	95,467	147,937
2016	9,897	8,971	18,868	37,345	23,294	55,462	116,101	33,635	61,196	94,831
2017	6,707	5,939	12,646	24,722	15,421	36,716	76,859	22,266	40,512	62,778
2018	6,893	5,966	12,859	24,835	15,491	36,883	77,209	22,367	40,696	63,063
2019	7,066	5,980	13,046	24,895	15,529	36,973	77,397	22,422	40,795	63,217
2020	7,268	6,024	13,292	25,075	15,641	37,241	77,957	22,584	41,091	63,675
2021	4,538	3,749	8,287	15,605	9,734	23,175	48,514	14,054	25,571	39,625
2022	4,542	3,751	8,293	15,616	9,741	23,192	48,549	14,065	25,590	39,655
2023	7,179	5,929	13,108	24,683	15,396	36,658	76,737	22,231	40,447	62,678
2024	7,169	5,921	13,090	24,649	15,375	36,608	76,632	22,200	40,392	62,592
2025	0	0	0	0	0	0	0	0	0	0
2026	0	0	0	0	0	0	0	0	0	0
2027	0	0	0	0	0	0	0	0	0	0
2028	0	0	0	0	0	0	0	0	0	0
2029	0	0	0	0	0	0	0	0	0	0
2030	0	0	0	0	0	0	0	0	0	0
2031	0	0	0	0	0	0	0	0	0	0
2032	0	0	0	0	0	0	0	0	0	0
2033	0	0	0	0	0	0	0	0	0	0
2034	0	0	0	0	0	0	0	0	0	0
2035	0	0	0	0	0	0	0	0	0	0
Total	3,480,611	4,785,599	8,266,210	18,092,418	13,558,001	41,248,610	72,899,029	8,987,665	18,698,416	27,686,081

Table B-16B

Minimum OMP&R Component of Transportation Charge for Each Contractor for Off-Aqueduct Power Facilities

(Dollars)

Sheet 2 of 4

Calendar Year	San Joaquin Valley Area							
	Dudley Ridge Water District (11)	Empire West Side Irrigation District (12)	Kern County Water Agency		County of Kings (15)	Oak Flat Water District (16)	Tulare Lake Basin Water Storage District (17)	Total (18)
			Municipal and Industrial (13)	Agricultural (14)				
1971	0	0	0	0	0	0	0	0
1972	0	0	0	0	0	0	0	0
1973	0	0	0	0	0	0	0	0
1974	0	0	0	0	0	0	0	0
1975	0	0	0	0	0	0	0	0
1976	0	0	0	0	0	0	0	0
1977	0	0	0	0	0	0	0	0
1978	0	0	0	0	0	0	0	0
1979	0	0	0	0	0	0	0	0
1980	0	0	0	0	0	0	0	0
1981	0	0	0	0	0	0	0	0
1982	0	0	0	0	0	0	0	0
1983	159,191	0	34,366	2,964,185	13,174	9,673	3,733	3,184,322
1984	389,518	0	816,103	9,095,509	26,774	33,576	49,601	10,411,081
1985	527,952	59,324	1,053,957	11,978,046	38,810	42,297	1,253,257	14,953,643
1986	552,171	12,858	885,988	11,788,715	40,659	38,275	872,009	14,190,675
1987	450,941	24,936	1,192,388	10,448,063	39,134	37,538	911,938	13,104,938
1988	425,261	31,146	1,130,988	9,910,050	35,851	26,779	850,225	12,410,300
1989	331,852	17,226	607,908	7,400,983	22,959	24,306	754,007	9,159,241
1990	219,381	7,731	428,482	5,216,562	12,089	12,046	344,943	6,241,234
1991	13,048	3,111	570,942	146,276	0	1,354	30,685	765,416
1992	244,630	13,935	706,155	5,788,599	18,587	15,716	480,903	7,268,525
1993	471,706	25,543	1,202,455	11,405,212	37,276	36,803	1,159,908	14,338,903
1994	262,029	15,161	901,463	6,786,208	19,257	19,061	567,521	8,570,700
1995	626,214	16,830	1,486,494	12,489,555	41,276	36,378	1,051,178	15,747,925
1996	382,688	12,550	958,123	8,683,413	26,880	22,476	1,591,881	11,678,011
1997	423,144	(6)	794,476	7,471,645	(31)	22,025	137,304	8,848,557
1998	471,993	4,597	847,544	8,356,501	127	25,458	175,371	9,881,591
1999	374,310	19,914	922,656	8,004,226	25,081	20,830	1,816,685	11,183,702
2000	290,757	21,253	573,664	6,116,917	16,258	15,844	931,999	7,966,692
2001	298,296	10,938	558,991	5,643,048	9,651	10,054	605,480	7,136,458
2002	223,995	12,591	581,154	4,730,525	16,788	16,316	497,347	6,078,716
2003	202,392	11,377	519,038	4,349,316	15,169	14,743	449,381	5,561,416
2004	187,190	10,522	480,051	3,913,362	14,030	13,635	415,627	5,034,417
2005	202,939	11,407	520,439	3,949,426	15,210	14,782	450,594	5,164,797
2006	202,477	11,381	519,255	4,149,033	15,175	14,749	449,569	5,361,639
2007	202,584	11,387	519,529	4,011,178	15,183	14,757	449,806	5,224,424
2008	239,657	13,471	541,307	5,150,108	17,962	17,457	532,121	6,512,083
2009	239,916	13,486	615,269	4,820,499	17,981	17,476	532,698	6,257,325
2010	238,995	13,434	612,906	5,135,890	17,912	17,409	530,652	6,567,198
2011	238,360	13,399	611,279	5,122,253	17,865	17,363	529,243	6,549,762
2012	238,628	13,414	611,966	5,128,013	17,885	17,382	529,838	6,557,126
2013	110,811	6,229	284,177	2,381,278	8,305	8,072	246,039	3,044,911
2014	38,772	2,179	99,432	833,200	2,906	2,824	86,088	1,065,401
2015	17,202	967	44,116	369,672	1,289	1,253	38,195	472,694
2016	11,027	620	28,279	236,967	826	803	24,484	303,006
2017	7,300	410	18,721	156,873	547	532	16,208	200,591
2018	7,333	412	18,806	157,586	550	534	16,282	201,503
2019	7,351	413	18,852	157,970	551	535	16,322	201,994
2020	7,404	416	18,988	159,114	555	539	16,440	203,456
2021	4,608	259	11,817	99,017	345	336	10,231	126,613
2022	4,611	259	11,825	99,091	346	336	10,238	126,706
2023	7,288	410	18,691	156,622	546	531	16,183	200,271
2024	7,278	409	18,666	156,409	546	530	16,161	199,999
2025	0	0	0	0	0	0	0	0
2026	0	0	0	0	0	0	0	0
2027	0	0	0	0	0	0	0	0
2028	0	0	0	0	0	0	0	0
2029	0	0	0	0	0	0	0	0
2030	0	0	0	0	0	0	0	0
2031	0	0	0	0	0	0	0	0
2032	0	0	0	0	0	0	0	0
2033	0	0	0	0	0	0	0	0
2034	0	0	0	0	0	0	0	0
2035	0	0	0	0	0	0	0	0
Total	9,563,200	445,899	22,397,706	205,117,115	622,284	643,383	19,468,375	258,257,962

Table B-16B
**Minimum OMP&R Component of Transportation Charge
for Each Contractor for Off-Aqueduct Power Facilities**
(Dollars)

Sheet 3 of 4

Calendar Year	Southern California Area									
	Antelope Valley-East Kern Water Agency (19)	Castaic Lake Water Agency (20)	Coachella Valley Water District (21)	Crestline-Lake Arrowhead Water Agency (22)	Desert Water Agency (23)	Littlerock Creek Irrigation District (24)	Mojave Water Agency (25)	Palmdale Water District (26)	San Bernardino Valley Municipal Water District (27)	San Gabriel Valley Municipal Water District (28)
1971	0	0	0	0	0	0	0	0	0	0
1972	0	0	0	0	0	0	0	0	0	0
1973	0	0	0	0	0	0	0	0	0	0
1974	0	0	0	0	0	0	0	0	0	0
1975	0	0	0	0	0	0	0	0	0	0
1976	0	0	0	0	0	0	0	0	0	0
1977	0	0	0	0	0	0	0	0	0	0
1978	0	0	0	0	0	0	0	0	0	0
1979	0	0	0	0	0	0	0	0	0	0
1980	0	0	0	0	0	0	0	0	0	0
1981	0	0	0	0	0	0	0	0	0	0
1982	0	0	0	0	0	0	0	0	0	0
1983	1,083,881	411,247	565,798	35,432	894,572	1,250	0	0	233,134	28,548
1984	2,499,848	1,122,640	1,427,428	102,114	2,263,172	77	0	0	502,967	693,074
1985	3,775,658	1,572,025	2,032,672	170,137	3,230,452	0	0	131,200	884,188	601,582
1986	3,159,858	1,694,487	2,097,407	173,460	3,340,188	15,872	0	301,486	739,563	1,088,902
1987	3,167,759	1,694,698	1,991,841	190,149	3,230,424	95,994	1,786	258,719	1,951,799	1,091,691
1988	2,688,113	1,776,471	1,940,156	187,156	3,194,137	30,395	846	126,639	2,000,664	839,774
1989	2,357,669	1,348,806	1,326,863	132,076	2,218,516	50,948	13,206	493,424	1,257,332	792,087
1990	2,528,625	1,335,341	1,463,452	115,746	2,413,745	110,678	0	545,342	1,192,997	1,054,762
1991	1,048,414	531,160	1,022,405	125,256	1,686,304	65,111	473,291	488,207	540,119	796,531
1992	2,760,199	1,548,472	1,124,775	55,985	1,855,065	22,891	1,130,876	367,996	362,232	853,047
1993	3,559,486	1,332,392	2,256,338	29,498	3,721,492	60,615	1,101,799	640,919	425,969	1,406,255
1994	3,963,982	1,450,328	1,345,145	74,879	2,218,411	88,549	1,371,116	678,876	871,358	1,452,741
1995	4,324,008	1,901,361	2,498,461	44,237	4,120,838	43,893	881,146	636,540	75,278	1,397,624
1996	3,355,414	1,413,141	4,382,187	34,086	7,227,837	29,381	508,426	680,648	426,812	1,125,748
1997	3,411,379	1,468,949	4,294,703	42,135	4,319,206	24,319	891,191	648,652	625,340	1,175,556
1998	3,977,988	1,599,394	7,554,910	16,624	6,174,031	30,365	508,248	657,806	166,952	827,650
1999	3,838,015	1,759,511	3,317,602	74,396	3,818,397	19,003	520,618	737,787	846,094	1,428,054
2000	3,101,663	1,340,419	2,003,439	101,774	2,756,616	82,844	509,732	834,127	1,183,422	716,680
2001	4,370,910	1,989,766	923,877	146,674	1,243,278	49,176	696,973	723,164	2,594,622	728,315
2002	5,147,501	3,468,296	1,016,200	90,182	1,676,070	85,544	593,883	755,017	4,513,510	703,861
2003	4,651,064	3,133,805	918,195	85,460	1,514,425	77,294	735,351	715,807	4,078,216	715,476
2004	4,301,707	2,898,414	849,226	86,393	1,400,672	71,488	1,094,369	662,040	3,771,888	1,058,776
2005	4,663,620	3,142,265	920,674	101,633	1,518,514	77,502	1,385,721	717,739	4,089,226	1,147,853
2006	4,653,004	3,135,112	918,578	107,366	1,515,057	77,326	1,422,332	716,105	4,079,917	1,145,240
2007	4,655,459	3,136,767	919,063	113,391	1,515,856	77,367	1,462,869	716,483	4,082,070	1,145,844
2008	5,507,413	3,710,798	1,087,252	141,202	1,793,260	91,525	1,777,642	847,600	4,829,093	1,355,535
2009	5,513,384	3,714,821	1,088,431	150,778	1,795,204	91,624	1,826,688	848,519	4,834,328	1,357,004
2010	5,492,208	3,700,553	1,084,250	157,240	1,788,309	91,272	1,866,609	845,260	4,815,761	1,351,792
2011	5,477,626	3,978,021	1,081,371	166,185	1,783,561	91,030	1,955,278	843,016	4,802,974	1,348,203
2012	5,483,785	4,046,702	1,082,587	173,401	1,785,566	91,132	2,051,207	843,964	4,808,375	1,349,719
2013	2,546,486	1,879,153	502,717	84,874	829,157	42,319	996,037	391,909	2,232,849	626,765
2014	891,006	657,509	175,899	31,220	290,119	14,807	363,739	137,127	781,265	219,303
2015	395,319	291,722	78,042	14,527	128,719	6,570	168,140	60,840	346,630	97,300
2016	253,407	186,999	50,027	9,637	82,511	4,211	112,112	39,000	222,196	62,371
2017	167,756	123,794	33,118	6,595	54,623	2,788	77,086	25,818	147,094	41,290
2018	168,519	124,357	33,268	6,841	54,871	2,801	80,317	25,935	147,764	41,478
2019	168,929	124,660	33,349	7,074	55,005	2,807	83,400	25,999	148,123	41,578
2020	170,153	125,563	33,591	7,271	55,403	2,828	86,912	26,187	149,196	41,880
2021	105,887	78,138	20,904	4,660	34,478	1,760	56,801	16,296	92,845	26,062
2022	105,966	78,196	20,919	4,754	34,503	1,761	60,465	16,308	92,914	26,081
2023	167,489	123,596	33,065	7,658	54,536	2,783	99,865	25,777	146,860	41,224
2024	167,261	123,428	33,020	7,719	54,461	2,780	104,017	25,742	146,660	41,168
2025	0	0	0	0	0	0	0	0	0	0
2026	0	0	0	0	0	0	0	0	0	0
2027	0	0	0	0	0	0	0	0	0	0
2028	0	0	0	0	0	0	0	0	0	0
2029	0	0	0	0	0	0	0	0	0	0
2030	0	0	0	0	0	0	0	0	0	0
2031	0	0	0	0	0	0	0	0	0	0
2032	0	0	0	0	0	0	0	0	0	0
2033	0	0	0	0	0	0	0	0	0	0
2034	0	0	0	0	0	0	0	0	0	0
2035	0	0	0	0	0	0	0	0	0	0
Total	119,827,818	69,273,277	55,583,205	3,417,875	79,741,561	1,832,680	27,070,094	18,280,020	70,240,596	32,084,424

Table B-16B
**Minimum OMP&R Component of Transportation Charge
for Each Contractor for Off-Aqueduct Power Facilities**
(Dollars)

Sheet 4 of 4

Calendar Year	Southern California Area (continued)				Feather River Area				Total State Water Project ^a (37)
	San Geronio Pass Water Agency (29)	Metropolitan Water District of Southern California (30)	Ventura County Flood Control District (31)	Total (32)	City of Yuba City (33)	County of Butte (34)	Plumas County FC&WCD (35)	Total (36)	
1971	0	0	0	0	0	0	0	0	0
1972	0	0	0	0	0	0	0	0	0
1973	0	0	0	0	0	0	0	0	0
1974	0	0	0	0	0	0	0	0	0
1975	0	0	0	0	0	0	0	0	0
1976	0	0	0	0	0	0	0	0	0
1977	0	0	0	0	0	0	0	0	0
1978	0	0	0	0	0	0	0	0	0
1979	0	0	0	0	0	0	0	0	0
1980	0	0	0	0	0	0	0	0	0
1981	0	0	0	0	0	0	0	0	0
1982	0	0	0	0	0	0	0	0	0
1983	0	12,791,358	0	16,045,220	0	0	0	0	20,182,468
1984	0	39,229,567	0	47,840,887	0	0	0	0	60,556,781
1985	0	77,446,522	0	89,844,436	0	0	0	0	108,590,343
1986	0	77,581,287	0	90,192,510	0	0	0	0	107,702,921
1987	0	68,939,195	0	82,614,055	0	0	0	0	99,411,597
1988	0	79,936,309	0	92,720,660	0	0	0	0	108,898,833
1989	0	68,311,546	0	78,302,473	0	0	0	0	89,857,307
1990	0	83,964,409	277,885	95,002,982	0	0	0	0	104,000,038
1991	0	54,214,229	132,209	61,123,236	0	0	0	0	64,233,890
1992	0	72,401,054	0	82,482,592	0	0	0	0	92,174,235
1993	0	55,312,617	0	69,847,380	0	0	0	0	87,174,348
1994	0	72,838,621	0	86,354,006	0	0	0	0	97,722,979
1995	0	40,862,810	0	56,786,196	0	0	0	0	74,988,898
1996	0	33,951,986	(75)	53,135,591	0	0	0	0	66,801,759
1997	0	37,121,379	108,559	54,131,368	0	0	0	0	65,536,671
1998	0	30,341,609	149,170	52,004,747	0	0	0	0	65,310,733
1999	0	43,869,737	110,278	60,339,492	0	0	0	0	74,919,277
2000	0	69,981,909	214,676	82,827,301	0	0	0	0	94,328,037
2001	16,859	74,248,873	229,371	87,961,958	0	0	0	0	98,472,367
2002	175,965	70,984,429	798,014	90,008,472	0	0	0	0	100,534,077
2003	198,743	64,428,310	721,051	81,973,197	0	0	0	0	91,633,883
2004	336,382	63,647,627	561,855	80,740,837	0	0	0	0	89,635,308
2005	384,610	69,900,858	609,126	88,659,341	0	0	0	0	98,015,708
2006	403,618	69,741,724	607,739	88,523,118	0	0	0	0	98,069,307
2007	423,724	69,778,538	608,060	88,635,491	0	0	0	0	98,054,807
2008	962,524	82,548,079	719,335	105,371,258	0	0	0	0	116,848,885
2009	963,567	82,637,571	720,115	105,542,034	0	0	0	0	116,773,272
2010	959,867	82,320,179	717,349	105,190,649	0	0	0	0	116,715,631
2011	957,318	82,101,608	715,445	105,301,636	0	0	0	0	116,798,984
2012	958,394	82,193,923	716,249	105,585,004	0	0	0	0	117,098,251
2013	445,046	38,168,110	332,602	49,078,024	0	0	0	0	54,425,583
2014	155,720	13,354,882	116,376	17,188,972	0	0	0	0	19,060,610
2015	69,089	5,925,258	51,634	7,633,790	0	0	0	0	8,464,610
2016	44,288	3,798,197	33,098	4,898,054	0	0	0	0	5,430,860
2017	29,319	2,514,419	21,911	3,245,611	0	0	0	0	3,598,485
2018	29,452	2,525,862	22,011	3,263,476	0	0	0	0	3,618,110
2019	29,524	2,532,006	22,064	3,274,518	0	0	0	0	3,630,172
2020	29,737	2,550,348	22,224	3,301,293	0	0	0	0	3,659,673
2021	18,506	1,587,091	13,830	2,057,258	0	0	0	0	2,280,297
2022	18,520	1,588,274	13,840	2,062,501	0	0	0	0	2,285,704
2023	29,272	2,510,409	21,876	3,264,410	0	0	0	0	3,617,204
2024	29,232	2,506,994	21,846	3,264,328	0	0	0	0	3,616,641
2025	0	0	0	0	0	0	0	0	0
2026	0	0	0	0	0	0	0	0	0
2027	0	0	0	0	0	0	0	0	0
2028	0	0	0	0	0	0	0	0	0
2029	0	0	0	0	0	0	0	0	0
2030	0	0	0	0	0	0	0	0	0
2031	0	0	0	0	0	0	0	0	0
2032	0	0	0	0	0	0	0	0	0
2033	0	0	0	0	0	0	0	0	0
2034	0	0	0	0	0	0	0	0	0
2035	0	0	0	0	0	0	0	0	0
Total	7,669,276	1,993,189,713	9,409,723	2,487,620,262	0	0	0	0	2,854,729,544

^aCosts allocated to contractors in 1989 through 1993 are reduced by credits for Off-Aqueduct Power Facility costs allocated to the pumping of non-SWP water.

Table B-17
Unit Variable OMP&R Component of Transportation Charge
(Dollars per Acre-Foot)

Sheet 1 of 4

Calendar Year	North Bay Aqueduct						South Bay Aqueduct		California Aqueduct	
	Reach 1		Reach 3A		Reach 3B		Reach 1		Reach 1	
	Barker Slough Pumping Plant		Cordelia Pumping Plant Solano County Water Agency		Cordelia Pumping Plant Napa County FC&WCD ^a		South Bay and Del Valle Pumping Plants ^b		Banks Pumping Plant	
	Unit Rate (1)	Cumulative Unit Rate (2)	Unit Rate (3)	Cumulative Unit Rate (4)	Unit Rate (5)	Cumulative Unit Rate (6)	Unit Rate (7)	Cumulative Unit Rate (8)	Unit Rate (9)	Cumulative Unit Rate (10)
1961	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	4.1511341	4.1511341	0	0
1963	0	0	0	0	0	0	4.5639383	4.5639383	0	0
1964	0	0	0	0	0	0	3.5452154	3.5452154	0	0
1965	0	0	0	0	0	0	4.1911773	4.1911773	0	0
1966	0	0	0	0	0	0	3.5074573	3.5074573	0	0
1967	0	0	0	0	0	0	3.9306767	4.1752198	0.2445431	0.2445431
1968	0	0	0	0	5.7570017	5.7570017	3.3315620	4.8750942	1.5435322	1.5435322
1969	0	0	0	0	3.1823595	3.1823595	3.6949019	4.8016170	1.1067151	1.1067151
1970	0	0	0	0	3.7584301	3.7584301	4.4256141	5.3721490	0.9465349	0.9465349
1971	0	0	0	0	4.2082507	4.2082507	3.8714396	4.7522833	0.8808437	0.8808437
1972	0	0	0	0	3.9577735	3.9577735	4.3250690	5.2281686	0.9030996	0.9030996
1973	0	0	0	0	3.8103903	3.8103903	5.2455409	6.1841800	0.9386391	0.9386391
1974	0	0	0	0	3.5878850	3.5878850	6.3321503	7.2293909	0.8972406	0.8972406
1975	0	0	0	0	2.1606725	2.1606725	3.7365711	4.8327731	1.0962020	1.0962020
1976	0	0	0	0	2.9283909	2.9283909	4.5191527	5.7132795	1.1941268	1.1941268
1977	0	0	0	0	2.7516411	2.7516411	4.7630172	6.5309908	1.7679736	1.7679736
1978	0	0	0	0	3.5949619	3.5949619	5.2086183	6.8200209	1.6114026	1.6114026
1979	0	0	0	0	2.4747752	2.4747752	4.9524184	7.0944849	2.1420665	2.1420665
1980	0	0	0	0	2.9737588	2.9737588	4.5186576	5.8810391	1.3623815	1.3623815
1981	0	0	0	0	2.6488168	2.6488168	4.3834851	6.4541818	2.0706967	2.0706967
1982	0	0	0	0	10.0222589	10.0222589	5.6383622	7.4005197	1.7621575	1.7621575
1983	0	0	0	0	1.0240490	1.0240490	0.8686401	1.7143947	0.8457546	0.8457546
1984	0	0	0	0	1.6496750	1.6496750	2.7674018	3.9368186	1.1694168	1.1694168
1985	0	0	0	0	2.5224065	2.5224065	3.6942206	5.2987621	1.6045415	1.6045415
1986	0	0	0	0	4.4049446	4.4049446	7.2799222	10.5919299	3.3120077	3.3120077
1987	0	0	0	0	3.5386715	3.5386715	6.4837861	9.2276309	2.7438448	2.7438448
1988	1.1782643	1.1782643	0	1.1782643	4.4547478	5.6330121	6.1750026	8.8623075	2.6873049	2.6873049
1989	1.2715449	1.2715449	2.5423866	3.8139315	4.2807103	5.5522552	8.1617218	11.6840191	3.5222973	3.5222973
1990	2.0026083	2.0026083	4.2324041	6.2350124	5.8753602	7.8779685	11.7200790	15.8516543	4.1315753	4.1315753
1991	1.2486830	1.2486830	2.6246433	3.8733263	3.8057971	5.0544801	7.5402615	11.2354100	3.6951485	3.6951485
1992	0.7094386	0.7094386	1.4175705	2.1270091	2.3509123	3.0603509	4.0600958	6.3925273	2.3324315	2.3324315
1993	-0.3464574	-0.3464574	-0.6048649	-0.9513223	-1.0200530	-1.3665104	-1.4929934	-1.2571378	0.2358556	0.2358556
1994	1.4521343	1.4521343	2.6761886	4.1283229	4.2851885	5.7373228	7.9485522	11.2384516	3.2898994	3.2898994
1995	0.7544766	0.7544766	1.2974265	2.0519031	2.2753763	3.0298529	3.2312761	5.2610469	2.0297708	2.0297708
1996	1.6427835	1.6427835	2.7704025	4.4131860	4.7993051	6.4420886	8.0186492	11.3633990	3.3447498	3.3447498
1997	1.7801484	1.7801484	3.0246843	4.8048327	5.0575904	6.8377388	9.6521246	12.6148371	2.9627125	2.9627125
1998	-0.3031174	-0.3031174	-0.5212041	-0.8243215	-0.8497854	-1.1529028	-1.7656471	-1.6140875	0.1515596	0.1515596
1999	0.6880478	0.6880478	1.1265873	1.8146351	1.7126810	2.4007288	4.5684999	6.3455389	1.7770390	1.7770390
2000	1.9276000	1.9276000	2.6390000	4.5666000	4.4844000	6.4120000	7.5262000	10.6005000	3.0743000	3.0743000
2001	53.1134033	53.1134033	65.5582554	118.6716587	128.6612150	181.7746183	91.4608580	130.3645845	38.9037265	38.9037265
2002	8.9984145	8.9984145	16.2800551	25.2781966	22.3944563	31.3925978	32.9189010	44.8083770	11.8894760	11.8894760
2003	7.4806893	7.4806893	13.5025344	20.9832237	18.6561453	26.1368344	27.4122842	37.2319367	9.8196525	9.8196525
2004	4.6355222	4.6355222	16.0481502	20.6836724	14.5564402	19.1919624	22.0176380	29.3095840	7.2919460	7.2919460
2005	5.3659045	5.3659045	18.5757889	23.9416934	16.7567252	22.1226297	26.4199641	34.8595387	8.4395746	8.4395746
2006	5.5043638	5.5043638	18.9590884	24.4634522	17.2256263	22.7299901	27.3409077	36.3417399	9.0008322	9.0008322
2007	5.1887823	5.1887823	18.5488636	23.7376459	16.9685752	22.1573575	26.8248618	35.2427248	8.4178630	8.4178630
2008	4.6466309	4.6466309	16.5277388	21.1743697	15.2318035	19.8784344	23.9697994	32.4513271	8.4815277	8.4815277
2009	4.8478573	4.8478573	17.1515070	21.9993643	15.9133022	20.7611595	24.9445807	32.6058841	7.6613034	7.6613034
2010	5.1123699	5.1123699	17.9947397	23.1071096	16.8145462	21.9269161	26.2385478	36.0236032	9.7850554	9.7850554
2011	5.1268285	5.1268285	17.9541221	23.0809506	16.8962779	22.0231064	26.2495030	35.0179315	8.7684285	8.7684285
2012	5.3364192	5.3364192	18.5939669	23.9303861	17.6235870	22.9600062	27.2577787	35.7972338	8.5394551	8.5394551
2013	5.9263679	5.9263679	20.5579340	26.4843019	19.5992333	25.5256012	30.2172662	41.3930198	11.1757536	11.1757536
2014	6.4263377	6.4263377	22.1730218	28.5993595	21.2987875	27.7251252	32.6781056	42.6491609	9.9710553	9.9710553
2015	6.5610740	6.5610740	22.4797140	29.0407880	21.8466512	28.4077252	33.2179482	44.4574510	11.2395028	11.2395028
2016	6.6616077	6.6616077	22.7317797	29.3933874	22.2701569	28.9317646	33.5905026	46.6407871	13.0502845	13.0502845
2017	6.5822227	6.5822227	22.3718750	28.9540977	22.0881462	28.6703689	33.0586067	44.4632534	11.4046467	11.4046467
2018	6.8165468	6.8165468	23.0822034	29.8987502	23.0046201	29.8211669	34.1083090	45.5411856	11.4328766	11.4328766
2019	7.0265460	7.0265460	23.7067267	30.7332727	23.8508295	30.8773755	35.0311341	48.3201625	13.2890284	13.2890284
2020	6.6306495	6.6306495	22.2877119	28.9183614	22.6237124	29.2543619	32.9342107	44.6327157	11.6985050	11.6985050
2021	6.6253124	6.6253124	22.2475106	28.8728230	22.6145022	29.2398146	32.8748350	44.3166294	11.4417944	11.4417944
2022	6.3894471	6.3894471	21.4555085	27.8449556	21.8094385	28.1988856	31.7044851	42.2424371	10.5379520	10.5379520
2023	6.4313828	6.4313828	21.5962394	28.0276222	21.9524630	28.3838458	31.9124454	43.3260643	11.4136189	11.4136189
2024	6.7047975	6.7047975	22.5143538	29.2191513	22.8857733	29.5905708	33.2691837	45.8809925	12.6118088	12.6118088
2025	6.6700203	6.6700203	22.3975106	29.0675309	22.7670686	29.4370889	33.0966622	45.3394750	10.4428128	10.4428128
2026	6.7227718	6.7227718	22.5747352	29.2975070	22.9471581	29.6699299	33.3583731	46.5129878	13.1546147	13.1546147
2027	6.6059585	6.6059585	22.1824682	28.7884267	22.5484327	29.1543912	32.7787484	44.4943345	11.7155861	11.7155861
2028	6.6589182	6.6589182	22.3602225	29.0191407	22.7291423	29.3880605	33.0414992	44.9915143	11.9500151	11.9500151
2029	6.5611204	6.5611204	22.0318856	28.5930060	22.3953841	28.9565045	32.5562875	43.9193215	11.3630340	11.3630340
2030	6.6222668	6.6222668	22.2372352	28.8595020	22.6040648	29.2263316	32.8596283	44.7292012	11.8695729	11.8695729
2031	6.5177010	6.5177010	21.8861759	28.4038769	22.2471581	28.7648591	32.3408158	43.0260360	10.6852202	10.6852202
2032	6.6679248	6.6679248	22.3905191	29.0584439	22.7600069	29.4279317	33.0863019	47.7838741	11.6975722	11.6975722
2033	7.0547298	7.0547298	23.6894598	30.7441896	24.0802274	31.1349572	35.0055961	47.4956325	12.4900364	12.4900364
2034	6.7580175	6.7580175	22.6930614	29.4510789	23.0674475	29.8254650	33.5332840	45.1567329	11.6234489	11.6234489
2035	6.5991254	6.5991254	22.1594809	28.7586063	22.5250775	29.1242029	32.7448332	45.1242320	12.3793988	12.3793988

^aFor the period 1968 through 1987, rates are for an interim facility.

^bThe relatively minor costs of Del Valle Pumping Plant have been combined with those of South Bay Pumping Plant to simplify the allocation procedure.

Table B-17
Unit Variable OMP&R Component of Transportation Charge
(Dollars per Acre-Foot)

Sheet 2 of 4

Calendar Year	California Aqueduct (continued)									
	Reach 4		Reach 14A		Reach 15A		Reach 16A		Reach 17E	
	Dos Amigos Pumping Plant		Buena Vista Pumping Plant		Teerink Pumping Plant		Chrisman Pumping Plant		Edmonston Pumping Plant	
	Unit Rate (11)	Cumulative Unit Rate (12)	Unit Rate (13)	Cumulative Unit Rate (14)	Unit Rate (15)	Cumulative Unit Rate (16)	Unit Rate (17)	Cumulative Unit Rate (18)	Unit Rate (19)	Cumulative Unit Rate (20)
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	1.0732031	2.6167353	0	0	0	0	0	0	0	0
1969	0.7028165	1.8095316	0	0	0	0	0	0	0	0
1970	0.7813430	1.7278779	0.3333333	2.0612112	0	0	0	0	0	0
1971	0.4125312	1.2933749	1.1407617	2.4341366	0.7218469	3.1559835	0	0	0	0
1972	0.5662758	1.4693754	0.8894941	2.3588695	0.8040021	3.1628716	1.8113853	4.9742569	7.3206022	12.2948591
1973	0.5996892	1.5383283	0.8469026	2.3852309	1.0302066	3.4154375	1.8458304	5.2612679	7.4512435	12.7125114
1974	0.5736894	1.4709300	0.8122890	2.2832190	0.9665911	3.2498101	1.7739395	5.0237496	6.9004732	11.9242228
1975	0.4606980	1.5569000	0.7554447	2.3123447	0.894108	3.2017555	1.8682537	5.0700092	6.9962702	12.0662794
1976	0.5163828	1.7105096	0.9081491	2.6186587	0.9640628	3.5827215	2.1499640	5.7326855	7.9384515	13.6711370
1977	0.6138931	2.3818667	0.9835371	3.3654038	1.2303967	4.5958005	2.7357728	7.3315733	9.9990004	17.3305737
1978	0.4545898	2.0659924	0.9044582	2.9704506	0.9762058	3.9466564	1.8872449	5.8339013	7.0810192	12.9149205
1979	0.6587934	2.8008599	1.0519199	3.8527798	1.1976258	5.0504056	2.6012890	7.6516946	9.6345625	17.2862571
1980	0.8021465	2.1645280	1.3516057	3.5161337	1.5041463	5.0202800	3.1923433	8.2126233	10.9860288	19.1986521
1981	1.0923907	3.1630874	1.2409168	4.4040042	1.3219771	5.7259813	2.9592932	8.6852745	9.9649551	18.6502296
1982	0.8326785	2.5948360	1.2041660	3.7990020	1.3723736	5.1713756	2.8986491	8.0700247	10.2096358	18.2796605
1983	0.3647859	1.2105405	0.7590265	1.9695670	0.8857383	2.8553053	1.7623405	4.6176458	5.5086367	10.1262825
1984	0.6581523	1.8275691	1.0533611	2.8809302	1.2188270	4.0997572	2.5407768	6.6405340	8.2344665	14.8750005
1985	0.8726163	2.4771578	1.4204831	3.8976409	1.6516291	5.5492700	3.4695783	9.0188483	11.8181234	20.8369717
1986	1.3996542	4.7116619	2.3713282	7.0829901	2.7567970	9.8397871	5.9534613	15.7932484	20.6010240	36.3942724
1987	1.2912643	4.0351091	2.2344385	6.2695476	2.5459999	8.8155475	5.3141190	14.1296665	17.7628277	31.8924942
1988	1.1947837	3.8820886	2.1129991	5.9950877	2.4017135	8.3968012	5.0055748	13.4023760	16.6001692	30.0025454
1989	1.4935226	5.0158199	2.6947446	7.7105645	3.0084211	10.7189956	6.5499538	17.2689394	22.1795336	39.4484731
1990	1.8962463	6.0278216	3.3080372	9.3358588	3.7483036	13.0841624	8.6832678	21.7674302	31.0405219	52.8079521
1991	1.0437991	4.7389476	2.1132495	6.8521971	2.4154810	9.2676781	5.6823745	14.9500526	20.4744695	35.4245221
1992	0.9002103	3.2326418	1.4836761	4.7163179	1.7077297	6.4240474	3.5445788	9.9686264	12.0459599	22.0145863
1993	0.1605206	0.3963762	-0.1405164	0.2558598	-0.1312944	0.1245654	-0.7754796	-0.6509142	-3.5829899	-4.2383131
1994	1.4220553	4.7119547	2.5074599	7.2194146	2.7989861	10.0184007	6.0684073	16.0868080	21.4679840	37.5547920
1995	0.7974861	2.8272569	1.3474564	4.1747133	1.4945529	5.6692662	3.1250716	8.7943378	10.7461772	19.5405150
1996	1.6726383	5.0173881	2.5952092	7.6125973	2.8425227	10.4551200	6.3087407	16.7638607	22.6420778	39.4059385
1997	1.2769880	4.2397005	2.5012144	6.7409149	2.6893394	9.4302543	6.2890095	15.7192638	23.0714697	38.7907335
1998	-0.2050857	-0.0535261	-0.3945877	-0.4481138	-0.4188957	-0.8670090	-0.9854414	-1.8524509	-3.5434867	-5.3959376
1999	0.7610727	2.5381117	1.2565353	3.7946470	1.1373520	4.9319995	3.0528327	7.9848317	12.2153994	20.2002311
2000	1.2545000	4.3288000	2.1792000	6.5080000	2.4016000	8.9096000	5.6538000	14.5634000	20.6430000	35.2064000
2001	18.7547062	57.6584327	32.2664645	89.9248972	40.3646567	130.2895539	86.6276691	216.9172230	310.1083642	527.0255872
2002	5.4965719	17.3860479	9.7910627	27.1771106	11.9213515	39.0984621	25.8216519	64.9201140	92.0973572	157.0174712
2003	4.5380140	14.3576665	8.1182106	22.4758771	9.8893022	32.3651793	21.4110866	53.7762659	76.3917151	130.1679810
2004	3.5089453	10.8008913	6.0973976	16.8982889	6.2001412	23.0984301	14.8113805	37.9098106	56.0156744	93.9254850
2005	4.3760416	12.8156162	7.9690261	20.7846423	7.9894318	28.7740741	19.1284692	47.9025433	72.4444306	120.3469739
2006	4.4765007	13.4773329	8.1794146	21.6567475	8.3285141	29.9852616	19.9476539	49.9329155	75.5630564	125.4959719
2007	4.4023989	12.8026219	8.0824416	20.9027035	8.3520076	29.2547111	19.6775046	48.9322157	74.5444142	123.4766299
2008	3.9098354	12.3913631	7.1655173	19.5568804	7.4013620	26.9582424	17.7318773	44.6901197	67.0558071	111.7459268
2009	4.1295736	11.7908770	7.6353308	19.4262078	7.8966504	27.3228582	18.9268850	46.2497432	71.1160667	117.3658098
2010	4.3416170	14.1266724	8.0212575	22.1479299	8.2947626	30.4422692	19.8806997	50.3233922	75.3404665	125.6638587
2011	4.3364639	13.1048924	7.9708123	21.0757047	8.2390237	29.3147284	19.7451898	49.0599182	74.8205996	123.8805178
2012	4.6247108	13.1641659	8.6169016	21.7810675	8.9268374	30.7079049	21.4086375	52.1165424	81.1625959	133.2791383
2013	5.1086847	16.2844383	9.4852610	25.7696993	9.8213214	35.5910207	23.5510246	59.1420453	89.2753451	148.4173904
2014	5.5684350	15.5394903	10.3704723	25.9099626	10.7433739	36.6533365	25.7669894	62.4203259	97.6867278	160.1070537
2015	5.6563550	16.8958578	10.5253381	27.4211959	10.9026230	38.3238189	26.1483051	64.4721240	99.1301632	163.6022872
2016	5.8663785	18.9166630	11.0463930	29.9630560	11.4643134	41.4273694	27.5132444	68.9406138	104.3480785	173.2886923
2017	5.6554076	17.0600543	10.5357269	27.5957812	10.9156488	38.5114300	26.1820443	64.6934743	99.2629370	163.9564113
2018	5.9807417	17.4136183	11.2962384	28.7098567	11.7292402	40.4390969	28.1529295	68.5920264	106.7850440	175.3770704
2019	6.1777803	19.4668087	11.6486455	31.1154542	12.0926206	43.2080748	29.0256703	72.2337451	110.0917049	182.3254500
2020	5.8120167	17.5105217	10.9778722	28.4883939	11.3991462	39.8875401	27.3627513	67.2502914	103.7896504	171.0399418
2021	5.8059499	17.2477443	10.9645196	28.2122639	11.3851246	39.5973885	27.3292091	66.9265976	103.6622098	170.5888074
2022	5.6166057	16.1545577	10.6235242	26.7780819	11.0336956	37.8117775	26.4877537	64.2995312	100.4758119	164.7753431
2023	5.6754273	17.0890462	10.7546193	27.8436655	11.1732098	39.0168753	26.8253979	65.8422732	101.7632181	167.6054913
2024	5.8728390	18.4846478	11.0850188	29.5696666	11.5093434	41.0790100	27.6267802	68.7057902	104.7892309	173.4950211
2025	5.8464581	16.2892709	11.0453652	27.3346361	11.4697184	38.8043545	27.5326578	66.3370123	104.4352596	170.7722719
2026	5.8815963	19.0362110	11.0910833	30.1272943	11.5139331	41.6412274	27.6367046	69.2779320	104.8239431	174.1018751
2027	5.8228021	17.5383882	11.0263921	28.5647803	11.4544204	40.0192007	27.4995475	67.5187482	104.3182339	171.8369821
2028	5.8180949	17.7681100	10.9704324	28.7385424	11.3883892	40.1269316	27.3348971	67.4618287	103.6782021	171.1400308
2029	5.7670182	17.1300522	10.9059044	28.0359566	11.3266948	39.3626514	27.1910135	66.5536649	103.1429617	169.6966266
2030	5.7767083	17.6462812	10.8829716	28.5292528	11.2960226	39.8252754	27.1119638	66.9372392	102.8296381	169.7668773
2031	5.7267911	16.4120113	10.8580407	27.2700520	11.2814345	38.5514865	27.0843355	65.6358220	102.7461562	168.3819782
2032	5.7873145	17.4848867	10.8625505	28.3474372	11.2684614	39.6158986	27.0415065	66.6574051	102.5501734	169.2075785
2033	6.2410101	18.7310465	11.8639234	30.5949699	12.3318677	42.9186376	29.6108661	72.5377037	112.3414911	184.8791948
2034	5.8878971	17.5113460	11.0724106	28.5837566	11.4896129	40.0733695	27.5748197	67.6481892	104.5793803	172.2275695
2035	6.1894665	18.5688653	12.1087602	30.6776255	12.6458594	43.3234849	30.4129113	73.7363962	115.5026725	189.2390687

Table B-17
Unit Variable OMP&R Component of Transportation Charge
(Dollars per Acre-Foot)

Sheet 3 of 4

Calendar Year	California Aqueduct (continued)									
	Reach 18A		Reach 22B		Reach 23		Reach 26A		Reach 29A	
	Alamo Power Plant		Pearblossom Pumping Plant		Mojave Siphon Power Plant		Devil Canyon Power Plant		Oso Pumping Plant	
	Unit Rate (21)	Cumulative Unit Rate (22)	Unit Rate (23)	Cumulative Unit Rate (24)	Unit Rate (25)	Cumulative Unit Rate (26)	Unit Rate (27)	Cumulative Unit Rate (28)	Unit Rate (29)	Cumulative Unit Rate (30)
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	0	12.2948591	1.9331104	14.2279695	0	14.2279695	-2.3717647	11.8562048	1.1017349	13.3965940
1973	0	12.7125114	3.8751940	16.5877054	0	16.5877054	-8.9027252	7.6849802	0.7905574	13.5030688
1974	0	11.9242228	3.1602116	15.0844344	0	15.0844344	-5.3440968	9.7403376	0.7530214	12.6772442
1975	0	12.0662794	3.0210558	15.0873352	0	15.0873352	-5.7803309	9.3070043	0.8405850	12.9068644
1976	0	13.6711370	3.7579009	17.4290379	0	17.4290379	-6.6439666	10.7850713	0.7771828	14.4483198
1977	0	17.3305737	3.0796474	20.4102211	0	20.4102211	-12.0911833	8.3190378	0.6152458	17.9458195
1978	0	12.9149205	4.0233030	16.9382235	0	16.9382235	-8.2569506	8.6812729	0.5222831	13.4372036
1979	0	17.2862571	5.0776468	22.3639039	0	22.3639039	-9.7140035	12.6499004	0.7045701	17.9908272
1980	0	19.1986521	4.3918283	23.5904804	0	23.5904804	-8.3797007	15.2107797	1.4269064	20.6255585
1981	0	18.6502296	3.9973528	22.6475824	0	22.6475824	-6.7528590	15.8947234	1.5684309	20.2186605
1982	0	18.2796605	3.6829998	21.9626603	0	21.9626603	-6.9238898	15.0387705	1.4942585	19.7739190
1983	0	10.1262825	1.7205305	11.8468130	0	11.8468130	-23.7923457	-11.9455327	1.2818887	11.4081712
1984	0	14.8750005	2.4763871	17.3513876	0	17.3513876	-29.2940447	-11.9426571	1.7796296	16.6546301
1985	0	20.8369717	3.4967556	24.3337273	0	24.3337273	-30.7672356	-6.4335083	2.1683838	23.0053555
1986	-2.3583180	34.0359544	5.9864597	40.0224141	0	40.0224141	-29.2499580	10.7724561	3.2288411	39.6231135
1987	-2.5482255	29.3442687	5.0535029	34.3977716	0	34.3977716	-29.7006534	4.6971182	3.1272967	35.0197909
1988	-1.3847067	28.6178385	4.7392460	33.3570845	0	33.3570845	-29.0334518	4.3236327	2.9875851	32.9904033
1989	-1.1019487	38.3465243	6.4066114	44.7531357	0	44.7531357	-28.3706997	16.3824360	3.5262089	42.9746819
1990	-1.0673268	51.7406253	8.9787944	60.7194197	0	60.7194197	-28.8797266	31.8396931	3.6810660	56.4890181
1991	-1.5206590	33.9038631	6.0785417	39.9824048	0	39.9824048	-30.3294563	9.6529485	2.1853025	37.6098246
1992	-2.6080003	19.4065860	3.6219501	23.0285361	0	23.0285361	-29.7938993	-6.7653632	1.9048343	23.9194206
1993	-0.1885524	-4.4223655	-1.0192774	-5.4416429	0	-5.4416429	-30.6629489	-36.1045918	0.1569728	-4.0768403
1994	-0.1279266	37.4268654	6.4500766	43.8769420	0	43.8769420	-30.4781656	13.3987764	3.0563161	40.6111081
1995	-3.4425314	16.0979836	3.3643070	19.4622906	0	19.4622906	-30.3517624	-10.8894718	1.5724835	21.1129985
1996	-5.9839345	33.4220040	6.6794995	40.1015035	-2.3423415	37.7591620	-29.5900574	8.1691046	3.1318961	42.5378346
1997	-4.7847600	34.0059735	6.8397922	40.8457657	-3.8632009	36.9825648	-30.6066647	6.3759001	2.7928728	41.5830603
1998	-5.0614104	-10.4573480	-1.2355351	-11.6928831	-3.7700558	-15.4629389	-30.6550762	-46.1180151	-0.3008662	-5.6968002
1999	-4.7679511	15.4322800	3.1639562	18.5962362	-4.9754645	13.6207717	-29.6766184	-16.0558467	1.7237780	21.9240071
2000	-5.6109000	29.5955000	6.1819000	35.7774000	-5.3508000	30.4266000	-30.1184000	0.3082000	2.4288000	37.6352000
2001	-6.7790985	520.2464887	85.9801139	606.2266026	-12.2185350	594.0080676	-43.0745063	550.9335613	40.9074016	567.9329888
2002	-3.3774119	153.6400593	21.1827261	174.8227854	-5.4674434	169.3553420	-20.5784587	148.7768833	15.2923470	172.3098182
2003	-3.5376793	126.6303017	16.9046344	143.5349361	-5.2881448	138.2467913	-19.7107537	118.5360376	12.1607909	142.3287719
2004	-4.0055686	89.9199164	21.3010046	111.2209210	-5.6468671	105.5740539	-27.6714345	77.9026194	4.4333948	98.3588798
2005	-3.8253275	116.5216464	21.5203955	138.0420419	-5.2401393	132.8019026	-25.4684498	107.3334528	8.8283665	129.1753404
2006	-3.9032906	121.5926813	22.5965900	144.1892713	-5.3569975	138.8322738	-25.5714208	113.2608530	9.1454248	134.6413967
2007	-3.8129522	119.6636777	21.6794037	141.3430814	-5.1953169	136.1477645	-25.6691678	110.4785967	9.3546472	132.8312771
2008	-3.9292729	107.8166539	20.0018823	127.8185362	-5.3903073	122.4282289	-25.8713240	96.5569049	8.1643501	119.9102769
2009	-3.9530534	113.4127565	21.1077865	134.5205430	-5.4093412	129.1112018	-26.0343289	103.0768729	8.7429742	126.1087841
2010	-3.9461392	121.7177195	22.3829874	144.1007069	-5.4066487	138.6940582	-26.1264340	112.5676242	9.2657873	134.9296460
2011	-3.9118414	119.9686764	22.2082756	142.1769520	-5.3529817	136.8239703	-26.5944566	110.2295137	9.1863464	133.0668642
2012	-4.1636545	129.1154838	24.5583677	153.6738515	-5.8140757	147.8597758	-27.3219280	120.5378478	9.8163827	143.0955210
2013	-4.0151225	144.4022679	26.6824813	171.0847492	-5.6055023	165.4792469	-26.7862315	138.6930154	10.9474836	159.3648740
2014	-4.0307443	156.0763094	28.8264126	184.9027220	-5.6267033	179.2760187	-27.2185736	152.0574451	12.1764050	172.2834587
2015	-4.0310957	159.5711915	29.4002909	188.9714824	-5.6975035	183.2739789	-27.5513522	155.7226267	12.2969605	175.8992477
2016	-4.1939504	169.0947419	31.3497410	200.4444829	-5.9839191	194.4605638	-28.1578394	166.3027244	12.8189800	186.1076723
2017	-4.0030157	159.9533956	29.4421463	189.3955419	-5.7367998	183.6587421	-27.8788933	155.7798488	12.3174046	176.2738159
2018	-4.2808529	171.0962175	32.4712513	203.5674688	-6.4222869	197.1451819	-28.6015246	168.5436573	12.9490974	188.3261678
2019	-4.0704240	178.2550260	31.8704998	210.1255258	-5.9514632	204.1740626	-28.3174109	175.8566517	14.1587248	196.4841748
2020	-4.1413167	166.8986251	30.8134983	197.7121234	-6.1265617	191.5855617	-29.0911021	162.4944596	12.9655027	184.0054445
2021	-4.1440880	166.4447194	30.7672449	197.2119643	-6.1683207	191.0436436	-28.8042044	162.2394392	12.9497293	183.5385367
2022	-4.1581083	160.6172348	29.5549644	190.1721992	-6.1722004	183.9999988	-28.4699072	155.5300916	12.7063886	177.4817317
2023	-4.2037850	163.4017063	30.1091247	193.5108310	-6.2815659	187.2292651	-28.9908482	158.2384169	12.7861727	180.3916640
2024	-4.0648044	169.4302167	30.4414862	199.8717029	-6.0899797	193.7817232	-28.7724431	165.0092801	13.4707308	186.9657519
2025	-4.1293323	166.6429396	30.5732888	197.2162284	-6.1743441	191.0418843	-28.4408752	162.6010091	12.8734162	184.0546881
2026	-4.1036281	169.9982470	30.9039084	200.9021554	-6.1984735	194.7036819	-29.1463333	165.5573486	13.2096018	187.3114769
2027	-4.1288292	167.7081529	30.4856126	198.1937655	-6.1640471	192.0297184	-28.7417117	163.2880067	13.3198959	185.1568780
2028	-4.0853765	167.0546543	30.4858464	197.5405007	-6.1311652	191.4093355	-28.9260495	162.4832860	13.0998869	184.2399177
2029	-4.1057497	165.5908769	30.1512192	195.7420961	-6.1659405	189.5761556	-28.7253900	160.8507656	13.1562304	182.8528751
2030	-4.0727140	165.6941633	30.2114020	195.9055653	-6.1083464	189.7972189	-28.7908759	161.0063430	12.9988544	182.7657317
2031	-4.1874972	164.1944810	30.3963715	194.5908525	-6.5797674	188.0110851	-28.5443949	159.4666902	12.9724743	181.3544525
2032	-4.0260196	165.1815589	29.6654365	194.8469954	-6.2645409	188.5824545	-28.3238905	160.2585640	13.1716705	182.3729490
2033	-4.2329020	180.6462928	33.3070803	213.9533731	-6.7282044	207.2251687	-29.1962078	178.0289609	14.1515832	199.0307780
2034	-4.0643138	168.1632557	30.3698283	198.5330840	-6.4005437	192.1325403	-28.1891859	163.9433544	13.3730487	185.6006182
2035	-4.2886642	184.9504045	31.6762000	216.6266045	-6.5991631	210.0274414	-29.7259189	180.3015225	16.5547451	205.7938138

Table B-17
Unit Variable OMP&R Component of Transportation Charge
(Dollars per Acre-Foot)

Sheet 4 of 4

Calendar Year	California Aqueduct (continued)							
	Reach 29G		Reach 29J		Reach 31A		Reach 33A	
	Warne Power Plant		Castaic Power Plant		Las Perillas and Badger Hill Pumping Plants		Devil's Den, Bluestone, and Polonio Pass Pumping Plants, and San Luis Obispo Power Plant	
	Unit Rate (31)	Cumulative Unit Rate (32)	Unit Rate (33)	Cumulative Unit Rate (34)	Unit Rate (35)	Cumulative Unit Rate (36)	Unit Rate (37)	Cumulative Unit Rate (38)
1961	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0	0
1967	0	0	0	0	0	0	0	0
1968	0	0	0	0	1.5014866	4.1182219	0	0
1969	0	0	0	0	1.2624066	3.0719382	0	0
1970	0	0	0	0	1.6309699	3.3588478	0	0
1971	0	0	0	0	1.4985537	2.7919286	0	0
1972	0	13.3965940	-2.9350830	10.4615110	1.9517720	3.4211474	0	0
1973	0	13.5030688	-6.8099448	6.6931240	1.5374531	3.0757814	0	0
1974	0	12.6772442	-7.4013274	5.2759168	1.5168982	2.9878282	0	0
1975	0	12.9068644	-6.5604921	6.3463723	1.1130304	2.6699304	0	0
1976	0	14.4483198	-6.7213324	7.7269874	1.5685447	3.2790543	0	0
1977	0	17.9458195	-30.4985994	-12.5527799	1.7573375	4.1392042	0	0
1978	0	13.4372036	-9.0130187	4.4241849	1.9429506	4.0089430	0	0
1979	0	17.9908272	-19.0478097	-1.0569825	1.5600341	4.3608940	0	0
1980	0	20.6255585	-20.5438586	0.0816999	1.5124754	3.6770034	0	0
1981	0	20.2186605	-10.0059379	10.2127226	1.5414199	4.7045073	0	0
1982	-2.1714430	17.6024760	-9.5987314	8.0037446	1.7581649	4.3530009	0	0
1983	-8.9130752	2.4950960	-39.8193120	-37.3242160	0.1782765	1.3888170	0	0
1984	-15.0246012	1.6300289	-17.3126964	-15.6826675	0.8546712	2.6822403	0	0
1985	-14.7115359	8.2938196	-38.9450629	-30.6512433	1.2014351	3.6785929	0	0
1986	-14.1893653	25.4337482	-28.1596224	-2.7258742	2.2635886	6.9752505	0	0
1987	-14.8696165	20.1501744	-27.0536484	-6.9034740	1.9135072	5.9486163	0	0
1988	-14.7032843	18.2871190	-25.6857024	-7.3985834	1.7733386	5.6554272	0	0
1989	-14.4231503	28.5515316	-25.3986130	3.1529186	2.4159040	7.4317239	0	0
1990	-14.1850383	42.3039798	-26.0776142	16.2263656	3.7962150	9.8240366	0	0
1991	-14.7118704	22.8979542	-25.0234633	-2.1255091	2.4131016	7.1520492	0	0
1992	-14.6199430	9.2994776	-25.1951357	-15.8956581	1.2766372	4.5092790	0	0
1993	-10.3386607	-14.4155010	-21.1218973	-35.5373983	-1.1726172	-0.7762410	0	0
1994	-14.7696788	25.8414293	-26.7437304	-0.9023011	2.3664839	7.0784386	0	0
1995	-12.2705974	8.8424011	-25.6907993	-16.8483982	2.5750402	5.4022971	0	0
1996	-14.8515762	27.6862584	-29.5639188	-1.8776604	2.5837041	7.6010922	0	0
1997	-14.9272063	26.6564000	-27.1541858	-0.4977858	2.7029648	6.9426653	24.4572499	31.3999152
1998	-8.6041243	-14.3009245	-22.2303491	-36.5312736	-0.4719744	-0.5255005	-3.9178748	-4.4433753
1999	-15.4517685	6.4722406	-27.8324731	-21.3602325	1.1588810	3.6969927	8.5479242	12.2449169
2000	-14.1594000	23.4758000	-25.6574000	-2.1816000	2.5989000	6.9277000	19.8169000	26.7446000
2001	-20.6904066	547.2425822	-35.0994739	512.1431083	40.2339970	97.8924297	506.7491381	604.6415678
2002	-14.0372081	158.2726101	-23.6972938	134.5753163	11.3551694	28.7412173	84.5208210	113.2620383
2003	-13.5945009	128.7342710	-23.6441083	105.0901627	9.4007424	23.7584089	70.1006393	93.8590482
2004	-8.9354467	89.4234331	-14.2675233	75.1559098	8.0305009	18.8313922	63.4711024	82.3024946
2005	-15.3082070	113.8671334	-24.4736235	89.3935099	9.6448256	22.4604418	72.6789018	95.1393436
2006	-15.2936972	119.3476995	-24.6973892	94.6503103	9.4426798	22.9200127	74.3807604	97.3007731
2007	-16.0639831	116.7672940	-25.7275518	91.0397422	8.7928590	21.6131209	72.9688110	94.5819319
2008	-15.7585104	104.1517665	-25.1483516	79.0034149	7.8559382	20.2473013	65.1936264	85.4409277
2009	-16.2260601	109.8827240	-25.8819133	84.0008107	8.1744048	19.9652818	67.8365017	87.8017835
2010	-16.2498850	118.6797610	-26.0454054	92.6343556	8.5994002	22.7260726	71.3633766	94.0894492
2011	-16.0940248	116.9728394	-25.7668006	91.2060388	8.9766701	22.0815625	71.3931794	93.4747419
2012	-16.5223133	126.5732077	-26.5558287	100.0173790	9.4127358	22.5769017	74.1354352	96.7123369
2013	-16.5890697	142.7758043	-26.6764216	116.0993827	10.4347168	26.7191551	82.1846304	108.9037855
2014	-17.0591992	155.2242595	-27.4062496	127.8180099	11.2844979	26.8239882	88.8776062	115.7015944
2015	-16.9755322	158.9237155	-27.2414703	131.6822452	11.4709155	28.3667733	90.3458089	118.7125822
2016	-17.4688833	168.6387890	-28.0745493	140.5642397	11.5995611	30.5162241	91.3591615	121.8753856
2017	-17.0165120	159.2573039	-27.3833179	137.8739860	11.4158959	28.4759502	89.9124586	118.3884088
2018	-17.3540790	170.9720888	-27.9326943	143.0393945	11.7783817	29.1920000	92.7674899	121.9594899
2019	-18.2182574	178.2659174	-29.6190451	148.6468723	12.0970610	31.5638697	95.2773770	126.8412467
2020	-17.8875695	166.1178750	-28.9057225	137.2121525	11.3729371	28.8834588	89.5741605	118.4576193
2021	-17.8682242	165.6703125	-28.9078750	136.7624375	11.3524422	28.6001865	89.4126567	118.0128432
2022	-18.1702456	159.3114861	-29.4108820	129.9060041	10.9482907	27.1028484	86.2295397	113.3323881
2023	-18.1660123	162.2256517	-29.4033640	132.8222877	11.0201032	28.1091494	86.7951852	114.9043346
2024	-18.3578436	168.6079083	-29.7178437	138.8900646	11.4886152	29.9732630	90.4851905	120.4584535
2025	-18.1828157	165.8628724	-29.4316762	136.4311962	11.4290405	27.7183114	90.0159835	117.7342949
2026	-17.9529854	169.3584915	-29.0560665	140.3024250	11.5194165	30.5556275	90.7278424	121.2834699
2027	-18.4230793	166.7337987	-29.8238153	136.9099834	11.3192641	28.8576523	89.1513480	118.0090003
2028	-17.9792456	166.2606721	-29.0941194	137.1665527	11.4098888	29.1780988	89.8659792	119.0440780
2029	-18.3216230	164.5312340	-29.6587224	134.8725116	11.2424351	28.3724873	88.5463097	116.9187970
2030	-17.9345743	164.8311574	-29.0260408	135.8051166	11.3471844	28.9934656	89.3713542	118.3648198
2031	-18.2830234	163.0714291	-29.5031614	133.5682677	11.1680312	27.5800425	87.9602676	115.5403101
2032	-17.9216553	164.4575937	-29.1584805	135.2991132	11.4254566	28.9103433	89.9878073	118.8981506
2033	-18.2938119	180.7369661	-29.6973384	151.0396277	12.0882353	30.8192818	95.2079125	126.0271943
2034	-17.9452690	167.6553492	-29.2075656	138.4477836	11.5798120	29.0911580	91.2035277	120.2946857
2035	-22.8403971	182.9534167	-37.1964714	145.7569453	11.3075413	29.8764066	89.0590682	118.9354748

Table B-18

Variable OMP&R Component of Transportation Charge for Each Contractor

(Dollars)

Sheet 1 of 4

Calendar Year	North Bay Area			South Bay Area				Central Coastal Area		
	Napa County FC&WCD (1)	Solano County Water Agency (2)	Total (3)	Alameda County FC&WCD, Zone 7 (4)	Alameda County Water District (5)	Santa Clara Valley Water District (6)	Total (7)	San Luis Obispo County FC&WCD (8)	Santa Barbara County Fc&wcd (9)	Total (10)
1961	0	0	0	0	0	0	0	0	0	0
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	121,141	192,606	0	0	0
1967	0	0	0	19,958	53,785	163,255	236,998	0	0	0
1968	6,989	0	6,989	29,899	120,985	341,768	492,652	0	0	0
1969	8,551	0	8,551	31,859	3,904	298,968	334,731	0	0	0
1970	13,598	0	13,598	49,687	0	431,443	481,130	0	0	0
1971	10,609	0	10,609	23,842	28,328	416,329	468,499	0	0	0
1972	14,434	0	14,434	54,838	144,669	524,208	723,715	0	0	0
1973	14,449	0	14,449	18,398	15,590	547,807	581,795	0	0	0
1974	17,473	0	17,473	9,499	29	636,186	645,714	0	0	0
1975	14,779	0	14,779	22,318	4,765	425,284	452,367	0	0	0
1976	20,856	0	20,856	97,874	121,693	502,769	722,336	0	0	0
1977	22,635	0	22,635	82,578	123,044	497,792	703,414	0	0	0
1978	21,692	0	21,692	74,911	39,986	652,860	767,757	0	0	0
1979	16,237	0	16,237	137,101	77,145	652,629	866,875	0	0	0
1980	19,945	0	19,945	98,743	64,891	517,531	681,165	0	0	0
1981	23,842	0	23,842	126,437	141,456	567,968	835,861	0	0	0
1982	12,157	0	12,157	97,117	46,742	651,246	795,105	0	0	0
1983	2,342	0	2,342	8,171	5,412	148,743	162,326	0	0	0
1984	4,822	0	4,822	26,707	13,141	349,314	389,162	0	0	0
1985	10,188	0	10,188	79,863	102,790	466,291	648,944	0	0	0
1986	15,501	0	15,501	112,370	131,118	932,090	1,175,578	0	0	0
1987	27,223	0	27,223	216,212	234,290	812,633	1,263,135	0	0	0
1988	31,264	11,559	42,823	229,575	297,129	779,537	1,306,241	0	0	0
1989	37,873	67,251	105,124	306,533	304,275	1,051,562	1,662,370	0	0	0
1990	54,737	105,421	160,158	524,089	502,545	1,456,008	2,482,642	0	0	0
1991	6,975	18,824	25,799	105,736	142,105	316,839	564,680	0	(2,636)	(2,636)
1992	12,344	23,551	35,895	93,772	122,436	273,849	490,057	0	0	0
1993	(7,223)	(17,293)	(24,516)	(36,162)	(12,912)	(78,024)	(127,098)	0	0	0
1994	38,968	77,344	116,312	231,756	257,484	641,884	1,131,124	0	0	0
1995	15,701	36,724	52,425	160,663	93,610	151,287	405,560	0	0	0
1996	31,526	96,570	128,096	214,883	186,694	735,431	1,137,008	502	0	502
1997	29,683	116,555	146,238	351,185	219,799	912,861	1,483,845	34,932	233,584	268,516
1998	(6,178)	(18,511)	(24,689)	(6,218)	(16,448)	(65,208)	(87,874)	(15,961)	(82,727)	(98,688)
1999	12,733	45,950	58,683	223,132	177,623	412,108	812,863	45,833	246,572	292,409
2000	31,534	128,153	159,687	474,352	297,469	926,561	1,698,382	106,577	607,584	714,161
2001	1,555,082	1,418,743	2,973,825	3,838,302	2,205,117	6,027,146	12,070,565	4,594,671	8,429,913	13,024,584
2002	662,384	686,164	1,348,548	2,369,066	1,881,952	4,480,838	8,731,856	2,831,551	5,151,837	7,983,388
2003	561,289	573,309	1,134,598	2,245,493	1,563,741	3,723,194	7,532,428	2,346,476	4,269,273	6,615,749
2004	419,344	500,448	919,792	1,959,710	1,231,003	2,930,958	6,121,671	2,057,562	3,743,611	5,801,173
2005	491,675	579,551	1,071,226	2,344,297	1,464,101	3,485,954	7,294,352	2,378,484	4,327,508	6,705,992
2006	512,561	593,964	1,106,525	2,445,961	1,526,353	3,634,174	7,606,488	2,432,519	4,425,823	6,858,342
2007	506,850	588,503	1,095,353	2,367,751	1,480,194	3,524,272	7,372,217	2,364,548	4,302,154	6,666,702
2008	461,180	526,537	987,717	2,190,184	1,362,956	3,245,133	6,798,273	2,136,023	3,886,366	6,022,389
2009	488,406	548,735	1,037,141	2,189,404	1,369,447	3,260,588	6,819,439	2,195,045	3,993,752	6,188,797
2010	522,957	578,110	1,101,067	2,437,593	1,512,991	3,602,360	7,552,944	2,352,236	4,279,753	6,631,989
2011	532,409	579,194	1,111,603	2,358,877	1,470,753	3,501,793	7,331,423	2,336,869	4,251,792	6,588,661
2012	562,520	602,311	1,164,831	2,407,422	1,503,484	3,579,723	7,490,629	2,417,808	4,399,057	6,816,865
2013	632,397	668,505	1,300,902	2,801,810	1,738,507	4,139,302	8,679,619	2,722,595	4,953,598	7,676,193
2014	697,287	724,093	1,421,380	2,865,770	1,791,265	4,264,916	8,921,951	2,892,540	5,262,803	8,155,343
2015	733,630	737,748	1,471,378	2,999,134	1,867,213	4,445,745	9,312,092	2,967,815	5,399,761	8,367,576
2016	765,245	747,308	1,512,553	3,166,671	1,958,913	4,664,079	9,789,663	3,046,885	5,543,624	8,590,509
2017	776,250	736,722	1,512,972	3,002,279	1,867,457	4,446,325	9,316,061	2,959,710	5,385,015	8,344,725
2018	826,046	761,323	1,587,369	3,074,044	1,912,730	4,554,119	9,540,893	3,048,987	5,547,449	8,596,436
2019	874,602	783,143	1,657,745	3,278,466	2,029,447	4,832,016	10,139,929	3,171,031	5,769,501	8,940,532
2020	846,182	737,445	1,583,627	3,020,275	1,874,574	4,463,272	9,358,121	2,961,440	5,388,163	8,349,603
2021	848,686	736,431	1,585,117	2,996,526	1,861,298	4,431,663	9,289,487	2,950,321	5,367,932	8,318,253
2022	818,473	710,214	1,528,687	2,851,416	1,774,182	4,224,244	8,849,842	2,833,310	5,155,037	7,988,347
2023	823,841	714,874	1,538,715	2,933,404	1,819,695	4,332,606	9,085,705	2,872,608	5,226,539	8,099,147
2024	858,866	745,265	1,604,131	3,112,980	1,927,002	4,588,099	9,628,081	3,011,461	5,479,173	8,490,634
2025	854,412	741,398	1,595,810	2,932,826	1,828,658	4,353,947	9,115,431	2,943,357	5,355,262	8,298,619
2026	861,170	747,264	1,608,434	3,160,908	1,953,545	4,651,299	9,765,752	3,032,087	5,516,700	8,548,787
2027	846,206	734,279	1,580,485	3,012,307	1,868,762	4,449,433	9,330,502	2,950,225	5,367,757	8,317,982
2028	852,988	740,164	1,593,152	3,046,540	1,889,644	4,499,151	9,435,335	2,976,102	5,414,839	8,390,941
2029	840,463	729,295	1,569,758	2,970,290	1,844,612	4,391,932	9,206,834	2,922,970	5,318,168	8,241,138
2030	848,294	736,092	1,584,386	3,028,468	1,878,626	4,472,920	9,380,014	2,959,120	5,383,942	8,343,062
2031	834,900	724,470	1,559,370	2,903,592	1,807,094	4,302,604	9,013,290	2,888,508	5,255,467	8,143,975
2032	854,146	741,166	1,595,312	3,029,059	1,880,923	4,478,387	9,388,369	2,972,454	5,408,201	8,380,655
2033	903,692	784,163	1,687,855	3,215,661	1,994,817	4,749,563	9,960,041	3,150,680	5,732,473	8,883,153
2034	865,684	751,181	1,616,865	3,052,254	1,896,583	4,515,673	9,464,510	3,007,367	5,471,724	8,479,091
2035	845,330	733,519	1,578,849	3,068,249	1,895,218	4,512,423	9,475,890	2,973,387	5,409,899	8,383,286
Total	26,773,706	25,433,729	52,207,435	103,014,797	66,052,262	165,995,727	335,062,786	98,830,635	180,576,247	279,406,882

Note: B-18 includes Extra Peaking Charges for additional power shown in Table 8.

Table B-18

Variable OMP&R Component of Transportation Charge for Each Contractor

(Dollars)

Sheet 2 of 4

Calendar Year	San Joaquin Valley Area								
	Dudley Ridge Water District (11)	Empire West Side Irrigation District (12)	Future Contractor San Joaquin Valley (13)	Kern County Water Agency		County of Kings (16)	Oak Flat Water District (17)	Tulare Lake Basin Water Storage District (18)	Total (19)
				Municipal and Industrial (14)	Agricultural (15)				
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	68,977	5,176	0	0	440,922	2,355	4,760	65,680	587,870
1969	56,774	101	0	0	321,387	181	3,338	17,956	399,737
1970	69,818	6,811	0	0	470,867	0	5,595	16,550	569,641
1971	53,097	7,747	0	0	769,054	4,785	6,353	158,419	999,455
1972	62,365	8,515	0	0	1,151,788	2,057	7,375	379,686	1,611,786
1973	33,931	4,615	0	0	770,121	2,307	3,017	77,630	891,621
1974	49,114	4,413	0	46,752	677,660	2,206	3,114	106,332	889,591
1975	63,140	4,671	0	34,580	848,249	2,491	3,920	134,295	1,091,346
1976	70,851	5,132	0	94,653	966,820	2,737	4,910	100,597	1,245,700
1977	26,565	1,758	0	84,875	498,624	3,644	2,602	43,067	661,135
1978	108,944	938	0	190,675	1,616,975	4,319	6,294	24,901	1,953,046
1979	107,956	4,871	0	194,048	2,371,175	5,602	13,172	434,472	3,131,296
1980	88,746	1,935	0	121,603	1,731,588	4,762	7,766	163,301	2,119,701
1981	129,687	18,533	0	263,077	2,398,339	7,275	8,904	263,922	3,089,737
1982	108,561	937	0	145,246	2,375,404	4,541	6,763	48,137	2,689,589
1983	61,380	0	0	13,954	929,183	5,652	3,232	1,218	1,014,619
1984	82,423	0	0	216,437	1,996,259	5,946	7,475	10,496	2,319,036
1985	114,571	12,938	0	242,645	2,567,184	8,422	8,815	271,970	3,226,545
1986	236,756	5,513	0	377,798	4,876,960	17,433	16,927	376,113	5,907,500
1987	187,090	10,273	0	504,163	4,230,947	16,140	15,529	375,604	5,339,746
1988	188,170	14,894	0	524,953	4,249,840	15,528	11,928	374,528	5,379,841
1989	285,262	15,450	0	681,233	6,158,642	20,063	21,693	649,606	7,831,949
1990	218,786	7,710	0	844,382	4,778,185	12,056	12,072	344,008	6,217,199
1991	4,393	1,047	0	185,013	47,869	0	521	10,331	249,174
1992	76,840	4,409	0	224,775	1,699,824	6,491	5,222	151,055	2,168,616
1993	20,064	4,843	0	78,585	340,598	2,090	1,467	123,913	571,550
1994	135,671	7,857	0	471,391	3,418,219	9,971	10,103	293,847	4,347,059
1995	181,772	4,611	0	409,656	3,437,735	11,619	10,492	288,010	4,343,895
1996	286,064	9,577	0	715,404	6,328,965	21,039	16,403	1,196,303	8,573,755
1997	308,515	0	0	650,416	5,627,735	0	15,559	94,838	6,697,063
1998	19,652	(28)	0	63,221	63,450	(1)	1,318	(1,107)	146,505
1999	151,518	8,061	0	445,134	3,116,589	10,152	8,656	742,302	4,482,412
2000	264,931	7,788	0	548,314	5,528,267	15,584	14,191	901,663	7,280,738
2001	2,138,609	78,415	0	4,012,600	40,790,776	69,190	71,311	4,340,930	51,501,831
2002	927,893	52,158	0	2,409,857	19,654,369	69,544	67,770	2,060,247	25,241,838
2003	766,269	43,073	0	1,968,043	16,528,031	57,431	55,972	1,701,383	21,120,202
2004	576,444	32,403	0	1,469,252	12,103,279	43,204	41,564	1,279,906	15,546,052
2005	683,969	38,447	0	1,760,576	13,535,449	51,262	48,106	1,518,651	17,636,460
2006	719,285	40,432	0	1,848,325	14,887,364	53,909	51,305	1,597,064	19,197,684
2007	684,217	38,461	0	1,766,331	13,760,952	51,281	47,982	1,519,201	17,868,425
2008	661,327	37,174	0	1,495,261	14,180,681	49,565	48,345	1,468,377	17,940,730
2009	629,279	35,373	0	1,631,202	12,887,629	47,164	43,669	1,397,219	16,671,535
2010	753,941	42,380	0	1,925,196	16,082,952	56,507	55,775	1,674,011	20,590,762
2011	699,408	39,315	0	1,799,582	15,191,263	52,420	49,980	1,552,930	19,384,898
2012	702,572	39,493	0	1,823,854	15,488,733	52,657	48,675	1,559,954	19,715,938
2013	869,100	48,853	0	2,225,673	18,671,967	65,138	63,702	1,929,706	23,874,139
2014	829,343	46,618	0	2,158,101	18,362,427	62,158	56,835	1,841,430	23,356,912
2015	901,732	50,688	0	2,327,024	19,650,585	67,583	64,065	2,002,159	25,063,836
2016	1,009,582	56,750	0	2,586,650	21,641,667	75,667	74,387	2,241,625	27,686,328
2017	910,495	51,180	0	2,347,304	19,795,428	68,240	65,006	2,021,616	25,259,269
2018	929,365	52,241	0	2,410,458	20,384,169	69,654	65,167	2,063,514	25,974,568
2019	1,038,944	58,400	0	2,669,230	22,373,356	77,867	75,747	2,306,817	28,600,361
2020	934,537	52,532	0	2,414,002	20,330,297	70,042	66,681	2,074,997	25,943,088
2021	920,512	51,743	0	2,381,700	20,087,425	68,991	65,218	2,043,858	25,619,447
2022	862,169	48,464	0	2,239,973	18,955,980	64,618	60,066	1,914,315	24,145,585
2023	912,042	51,267	0	2,357,070	19,844,755	68,356	65,058	2,025,052	25,323,600
2024	986,526	55,454	0	2,535,216	21,252,140	73,939	71,887	2,190,431	27,165,593
2025	869,358	48,868	0	2,267,258	19,257,573	65,157	59,524	1,930,279	24,498,017
2026	1,015,963	57,109	0	2,602,413	21,753,757	76,145	74,981	2,255,791	27,836,159
2027	936,024	52,615	0	2,418,740	20,364,223	70,154	66,779	2,078,299	25,986,834
2028	948,284	53,304	0	2,445,077	20,563,845	71,072	68,115	2,105,521	26,255,218
2029	914,231	51,390	0	2,365,914	19,951,727	68,520	64,769	2,029,911	25,446,462
2030	941,782	52,939	0	2,427,966	20,420,793	70,585	67,657	2,091,084	26,072,806
2031	875,909	49,236	0	2,277,434	19,283,143	65,648	60,906	1,944,823	24,557,099
2032	933,168	52,455	0	2,407,697	20,277,686	69,940	66,676	2,071,959	25,879,581
2033	999,676	56,193	0	2,585,628	21,775,904	74,924	71,193	2,219,629	27,783,147
2034	934,581	52,534	0	2,416,416	20,381,981	70,045	66,254	2,075,095	25,996,906
2035	991,020	55,707	0	2,573,364	21,620,223	74,275	70,563	2,200,411	27,585,563
Total	35,329,940	1,914,760	0	87,723,370	748,897,943	2,490,299	2,431,176	77,567,838	956,355,326

Table B-18
Variable OMP&R Component of Transportation Charge for Each Contractor
(Dollars)

Sheet 3 of 4

Calendar Year	Southern California Area									
	Antelope Valley-East Kern Water Agency (20)	Castaic Lake Water Agency (21)	Coachella Valley Water District (22)	Crestline-Lake Arrowhead Water Agency (23)	Desert Water Agency (24)	Littlerock Creek Irrigation District (25)	Mojave Water Agency (26)	Palmdale Water District (27)	San Bernardino Valley Municipal Water District (28)	San Gabriel Valley Municipal Water District (29)
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	30,401	0	0	0	0	0	0	0	0
1969	0	30,627	0	0	0	0	0	0	0	0
1970	0	39,430	0	0	0	0	0	0	0	0
1971	0	34,871	0	0	0	0	0	0	0	0
1972	780	47,571	0	12,785	0	4,496	1,515	0	32,107	0
1973	286	28,968	102,812	6,896	159,536	3,855	0	0	301,444	0
1974	15,558	28,982	100,955	9,890	157,742	4,932	221	0	177,173	6,530
1975	99,186	28,568	108,253	12,758	170,111	6,391	0	0	136,066	53,484
1976	385,090	38,365	135,276	17,835	213,594	8,164	0	0	139,354	68,933
1977	199,166	21,006	0	23,598	0	1,974	1,702	0	239,663	86,820
1978	581,729	45,550	174,116	20,875	264,178	2,731	0	0	37,043	70,989
1979	1,058,904	83,940	228,437	28,603	340,510	2,328	90,803	0	236	3,804
1980	1,390,117	51,143	256,759	29,229	401,038	3,667	94,362	0	0	16,504
1981	1,480,362	118,583	274,149	33,632	430,304	23,861	90,590	0	254,649	57,523
1982	923,973	132,575	292,674	27,190	461,216	0	230,608	0	126,461	189,895
1983	333,772	(335,734)	172,336	10,792	272,477	385	0	0	(71,602)	(8,768)
1984	485,847	(142,910)	273,597	19,572	433,785	15	0	0	(66,353)	(91,433)
1985	821,069	(335,343)	413,406	34,603	657,011	0	0	32,464	(47,544)	(32,348)
1986	1,109,046	54,812	728,808	60,274	1,160,650	5,548	0	105,375	69,170	101,843
1987	1,019,604	(39,907)	668,383	63,601	1,083,530	32,652	585	157,843	88,076	49,930
1988	1,019,790	(74,007)	688,891	66,914	1,134,141	11,991	300	50,654	92,465	38,688
1989	1,736,901	178,359	978,885	97,114	1,633,489	38,269	8,951	350,954	340,460	210,334
1990	2,442,558	422,502	1,402,619	110,934	2,313,410	90,468	0	446,355	599,573	530,099
1991	286,485	(3,054)	277,078	33,945	456,999	17,698	128,405	132,700	35,339	52,116
1992	587,340	(207,831)	240,119	11,952	396,022	4,871	241,338	78,306	(22,718)	(53,500)
1993	(190,611)	(491,161)	(809,033)	(2,389)	(1,334,429)	(3,246)	(61,112)	(29,466)	(157,452)	(519,798)
1994	1,839,643	65,577	188,950	34,443	311,615	41,151	730,391	315,059	122,398	204,063
1995	761,209	(247,735)	(251,547)	7,960	(414,889)	7,727	165,622	114,342	(7,579)	(140,714)
1996	1,883,530	72,171	508,274	18,313	838,330	16,510	289,044	385,745	49,537	133,848
1997	2,121,818	22,440	365,342	24,076	330,153	15,099	414,596	438,212	61,553	115,882
1998	(553,432)	(722,825)	(3,952,729)	(2,892)	(3,258,099)	(4,225)	(44,233)	(80,469)	(86,610)	(429,359)
1999	1,065,954	(600,346)	(810,499)	15,419	(932,845)	5,278	146,895	216,486	(206,703)	(298,790)
2000	2,473,503	(10,110)	13,044	36,329	17,948	0	331,825	268,135	5,671	4,461
2001	31,906,717	13,365,017	6,048,784	1,033,574	8,125,719	358,970	5,023,956	5,278,941	16,957,735	4,760,066
2002	21,263,784	11,753,229	3,436,746	347,178	5,668,399	353,372	2,360,108	3,118,893	15,264,508	2,380,430
2003	17,525,634	9,191,266	2,738,182	297,231	4,516,223	291,250	2,655,396	2,697,225	12,161,797	2,133,649
2004	12,444,916	6,591,597	1,799,551	248,099	2,968,090	206,816	3,304,676	1,915,294	7,992,809	2,243,595
2005	16,126,596	7,840,931	2,479,403	338,645	4,089,405	268,000	4,799,191	2,481,911	11,012,412	3,091,203
2006	16,828,427	8,293,407	2,616,326	374,847	4,315,238	279,663	5,156,919	2,589,924	11,620,564	3,261,913
2007	16,561,453	7,972,717	2,552,056	388,021	4,209,235	275,226	5,197,175	2,548,836	11,335,104	3,181,784
2008	14,921,825	6,933,564	2,230,465	367,285	3,678,818	247,978	4,827,102	2,296,495	9,906,738	2,780,839
2009	15,696,326	7,356,522	2,381,076	413,156	3,927,229	260,849	5,214,639	2,415,692	10,575,687	2,968,614
2010	16,845,732	8,119,708	2,600,312	464,625	4,288,826	279,951	5,730,454	2,592,587	11,549,438	3,241,948
2011	16,603,665	8,556,663	2,546,302	485,725	4,199,744	275,928	5,938,120	2,555,333	11,309,548	3,174,610
2012	17,869,583	9,521,654	2,784,424	547,081	4,592,492	296,966	6,724,812	2,750,160	12,367,183	3,471,490
2013	19,985,274	11,052,661	3,203,809	645,369	5,284,204	332,125	7,829,875	3,075,768	14,229,903	3,994,359
2014	21,600,961	12,168,275	3,512,527	735,032	5,793,389	358,976	8,832,091	3,324,425	15,601,094	4,379,254
2015	22,084,653	12,536,150	3,597,193	788,078	5,933,032	367,014	9,404,474	3,398,866	15,977,142	4,484,812
2016	23,402,712	13,381,716	3,841,593	865,350	6,336,134	388,918	10,376,088	3,601,718	17,062,660	4,789,518
2017	22,137,550	12,554,403	3,598,515	844,830	5,935,212	367,893	10,183,196	3,407,007	15,983,012	4,486,460
2018	23,679,716	13,617,350	3,893,358	936,440	6,421,513	393,521	11,351,071	3,644,349	17,292,579	4,854,057
2019	24,670,496	14,151,182	4,062,289	1,000,453	6,700,138	409,987	12,139,475	3,796,832	18,042,892	5,064,672
2020	23,098,770	13,062,597	3,753,622	957,928	6,191,039	383,867	11,816,507	3,554,941	16,671,932	4,679,840
2021	23,035,949	13,019,784	3,747,731	983,875	6,181,323	382,823	12,378,203	3,545,273	16,645,766	4,672,496
2022	22,229,425	12,366,538	3,592,745	966,000	5,925,696	369,420	12,697,205	3,421,147	15,957,387	4,479,267
2023	22,614,796	12,644,682	3,655,307	1,001,677	6,028,884	375,824	13,500,594	3,480,456	16,235,262	4,557,266
2024	23,449,142	13,222,334	3,811,714	1,046,421	6,286,854	389,690	14,544,972	3,608,864	16,929,952	4,752,267
2025	23,063,383	12,988,250	3,756,083	1,041,178	6,195,098	383,279	14,903,130	3,549,495	16,682,864	4,682,909
2026	23,527,757	13,356,791	3,824,375	1,070,870	6,307,735	390,996	15,182,028	3,620,963	16,986,184	4,768,052
2027	23,210,808	13,033,830	3,771,953	1,065,765	6,221,273	385,729	14,977,359	3,572,184	16,753,349	4,702,695
2028	23,120,364	13,058,256	3,753,364	1,071,892	6,190,613	384,226	14,927,841	3,558,264	16,670,785	4,679,519
2029	22,917,777	12,839,863	3,715,653	1,071,105	6,128,414	380,859	14,792,024	3,527,086	16,503,289	4,632,502
2030	22,932,072	12,928,647	3,719,247	1,081,844	6,134,342	381,097	14,804,325	3,529,286	16,519,251	4,636,983
2031	22,724,516	12,715,699	3,683,681	1,076,363	6,075,681	377,647	14,704,392	3,497,342	16,361,282	4,592,641
2032	22,861,128	12,880,476	3,701,973	1,084,349	6,105,851	379,918	14,724,904	3,518,367	16,442,529	4,615,447
2033	25,001,447	14,378,973	4,112,469	1,196,725	6,782,903	415,486	16,167,705	3,847,766	18,265,771	5,127,234
2034	23,273,795	13,180,229	3,787,091	1,114,369	6,246,242	386,775	15,003,253	3,581,877	16,820,588	4,721,569
2035	25,597,136	13,876,061	4,164,965	1,218,159	6,869,488	425,386	16,372,782	3,939,444	18,498,936	5,192,684
Total	770,193,462	402,876,500	123,244,239	29,033,790	204,552,003	12,549,015	361,408,450	117,825,706	527,429,809	144,657,680

Table B-18

Variable OMP&R Component of Transportation Charge for Each Contractor

(Dollars)

Sheet 4 of 4

Calendar Year	Southern California Area (continued)				Feather River Area				South Bay Area Future Contractor (38)	Grand Total (39)
	San Gorgonio Pass Water Agency (30)	Metropolitan Water District of Southern California (31)	Ventura County Flood Control District (32)	Total (33)	City of Yuba City (34)	County of Butte (35)	Plumas County FC&WCD (36)	Total (37)		
1961	0	0	0	0	0	0	0	0	0	0
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	192,606
1967	0	0	0	0	0	0	0	0	0	236,998
1968	0	0	0	30,401	0	0	0	0	0	1,117,912
1969	0	0	0	30,627	0	0	0	0	0	773,646
1970	0	0	0	39,430	0	0	0	0	0	1,103,799
1971	0	0	0	34,871	0	0	0	0	0	1,513,434
1972	0	848,011	0	947,265	0	0	0	0	0	3,297,200
1973	0	1,083,328	0	1,687,125	0	0	0	0	0	3,174,990
1974	0	1,872,297	0	2,374,280	0	0	0	0	0	3,927,058
1975	0	3,887,152	0	4,501,969	0	0	0	0	0	6,060,461
1976	0	5,485,263	0	6,491,874	0	0	0	0	0	8,480,766
1977	0	(796,686)	0	(222,757)	0	0	0	0	0	1,164,427
1978	0	3,696,428	0	4,893,639	0	0	0	0	0	7,636,134
1979	0	4,021,960	0	5,859,525	0	0	0	0	0	9,873,933
1980	0	5,362,245	0	7,605,064	0	0	0	0	0	10,425,875
1981	0	10,862,932	0	13,626,585	0	0	0	0	0	17,576,025
1982	0	7,685,168	0	10,069,760	0	0	0	0	0	13,566,611
1983	0	(8,994,497)	0	(8,620,839)	0	0	0	0	0	(7,441,552)
1984	0	(7,633,741)	0	(6,721,621)	0	0	0	0	0	(4,008,601)
1985	0	(15,213,299)	0	(13,669,981)	0	0	0	0	0	(9,784,304)
1986	0	1,135,478	0	4,531,004	0	0	0	0	0	11,629,583
1987	0	(3,007,097)	0	117,200	0	0	0	0	0	6,747,304
1988	0	(3,407,929)	0	(378,102)	0	0	0	0	0	6,350,803
1989	0	9,488,536	0	15,062,252	0	0	0	0	0	24,661,695
1990	0	30,759,725	204,582	39,322,825	0	0	0	0	0	48,182,824
1991	0	184,870	22,623	1,625,204	0	0	0	0	0	2,462,221
1992	0	(9,471,028)	0	(8,195,129)	0	0	0	0	0	(5,500,561)
1993	0	(21,473,875)	0	(25,072,572)	0	0	0	0	0	(24,652,636)
1994	0	4,018,533	0	7,871,823	0	0	0	0	0	13,466,318
1995	0	(4,895,977)	0	(4,901,581)	0	0	0	0	0	(99,701)
1996	0	1,859,275	0	6,054,577	0	0	0	0	0	15,893,938
1997	0	2,428,729	(921)	6,336,979	0	0	0	0	0	14,932,641
1998	0	(14,440,371)	(67,583)	(23,642,827)	0	0	0	0	0	(23,707,573)
1999	0	(12,244,237)	(39,516)	(13,682,904)	0	0	0	0	0	(8,036,537)
2000	0	(337,335)	47,615	2,851,086	0	0	0	0	0	12,704,054
2001	110,187	492,167,914	1,576,794	586,714,374	0	0	0	0	0	666,285,179
2002	595,108	240,602,065	2,766,153	309,909,973	0	0	0	0	0	353,215,603
2003	592,680	190,796,884	2,176,282	247,773,699	0	0	0	0	0	284,176,676
2004	712,809	139,140,522	1,266,377	180,835,151	0	0	0	0	0	209,223,839
2005	1,035,768	182,191,174	1,506,281	237,260,920	0	0	0	0	0	269,968,950
2006	1,149,598	192,507,532	1,594,858	250,589,216	0	0	0	0	0	285,358,255
2007	1,176,597	186,652,425	1,534,020	243,584,649	0	0	0	0	0	276,587,346
2008	1,974,589	162,903,561	1,331,208	214,400,467	0	0	0	0	0	246,149,576
2009	2,107,922	173,337,751	1,415,414	228,070,877	0	0	0	0	0	258,787,789
2010	2,302,008	190,289,922	1,560,889	249,866,400	0	0	0	0	0	285,743,162
2011	2,254,194	186,600,965	1,536,822	246,037,619	0	0	0	0	0	280,454,204
2012	2,464,999	204,050,842	1,685,293	269,126,979	0	0	0	0	0	304,315,242
2013	2,836,272	235,851,924	1,956,275	310,277,818	0	0	0	0	0	351,808,671
2014	3,109,575	258,554,257	2,153,733	340,123,589	0	0	0	0	0	381,979,175
2015	3,184,528	265,629,294	2,218,846	349,604,082	0	0	0	0	0	393,818,964
2016	3,400,891	283,797,794	2,368,507	373,613,599	0	0	0	0	0	421,192,652
2017	3,185,698	265,876,814	2,222,077	350,782,667	0	0	0	0	0	395,215,694
2018	3,446,718	287,749,947	2,410,214	379,690,833	0	0	0	0	0	425,390,099
2019	3,596,269	300,000,449	2,504,700	396,139,834	0	0	0	0	0	445,478,401
2020	3,323,012	276,994,394	2,312,025	366,800,474	0	0	0	0	0	412,034,913
2021	3,317,797	276,319,181	2,304,447	366,534,648	0	0	0	0	0	411,346,952
2022	3,180,590	263,820,708	2,188,825	351,194,953	0	0	0	0	0	393,707,414
2023	3,235,976	269,089,830	2,238,056	358,658,610	0	0	0	0	0	402,705,777
2024	3,374,440	281,054,086	2,340,298	374,811,034	0	0	0	0	0	421,699,473
2025	3,325,191	276,210,668	2,298,866	369,080,394	0	0	0	0	0	412,588,271
2026	3,385,648	282,870,556	2,364,096	377,656,051	0	0	0	0	0	425,415,183
2027	3,339,240	277,533,143	2,306,933	370,874,261	0	0	0	0	0	416,090,064
2028	3,322,783	276,997,258	2,311,256	370,046,421	0	0	0	0	0	415,721,067
2029	3,289,398	273,366,358	2,272,602	365,436,930	0	0	0	0	0	409,901,122
2030	3,292,580	274,392,742	2,288,316	366,640,732	0	0	0	0	0	412,021,000
2031	3,261,094	270,781,385	2,250,625	362,102,348	0	0	0	0	0	405,376,082
2032	3,277,288	273,205,408	2,279,790	365,077,428	0	0	0	0	0	410,321,345
2033	3,640,692	303,970,377	2,545,018	405,452,566	0	0	0	0	0	453,766,762
2034	3,352,642	279,443,218	2,332,845	373,244,493	0	0	0	0	0	418,801,865
2035	3,687,166	301,819,063	2,456,005	404,117,275	0	0	0	0	0	451,140,863
Total	92,841,947	8,889,334,269	73,041,546	11,748,988,416	0	0	0	0	0	13,372,020,845

Table B-19
Total Transportation Charge for Each Contractor
(Dollars)

Sheet 1 of 4

Calendar Year	North Bay Area			South Bay Area				Central Coastal Area		
	Napa County FC&WCD (1)	Solano County Water Agency (2)	Total (3)	Alameda County FC&WCD, Zone 7 (4)	Alameda County Water District (5)	Santa Clara Valley Water District (6)	Total (7)	San Luis Obispo County FC&WCD (8)	Santa Barbara County FC&WCD (9)	Total (10)
1961	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	11,750	43,787	21,132	76,669	0	0	0
1963	0	0	0	194,046	190,362	448,046	832,454	0	0	0
1964	0	0	0	255,624	277,596	621,810	1,155,030	6,057	20,502	26,559
1965	0	0	0	364,391	404,537	1,158,837	1,927,765	11,424	31,744	43,167
1966	18,080	0	18,080	409,372	421,959	1,413,838	2,245,169	20,180	49,664	69,843
1967	41,609	0	41,609	528,301	498,702	1,687,073	2,714,076	37,973	84,162	122,136
1968	128,726	0	128,726	652,478	603,776	1,986,292	3,242,546	63,521	133,085	196,606
1969	254,848	0	254,848	775,306	539,661	2,084,406	3,399,373	118,155	235,276	353,430
1970	277,683	0	277,683	810,777	532,900	2,203,950	3,547,627	130,871	259,887	390,758
1971	227,611	0	227,611	775,813	552,449	2,171,086	3,499,348	131,685	262,455	394,140
1972	225,116	0	225,116	817,470	678,856	2,321,613	3,817,939	137,445	274,502	411,946
1973	221,231	31,399	252,630	782,696	549,729	2,339,814	3,672,239	134,239	269,335	403,574
1974	240,640	32,973	273,613	806,473	564,931	2,507,555	3,878,959	135,246	271,891	407,137
1975	237,607	36,329	273,936	856,347	606,069	2,411,123	3,873,539	151,569	302,780	454,350
1976	271,444	40,877	312,321	947,092	735,150	2,501,707	4,183,949	260,646	505,760	766,406
1977	293,781	45,141	338,922	911,209	713,898	2,477,605	4,102,712	270,371	527,186	797,557
1978	274,027	49,226	323,253	966,457	692,930	2,787,198	4,446,585	277,007	542,737	819,744
1979	289,639	53,391	343,030	1,031,479	736,703	2,814,796	4,582,978	274,788	541,921	816,709
1980	311,013	67,811	378,824	1,149,433	866,718	3,029,427	5,045,578	300,315	596,779	897,095
1981	347,959	87,486	435,445	1,114,885	879,708	2,918,817	4,913,410	319,575	646,195	965,771
1982	438,523	107,012	545,535	1,152,884	850,834	3,263,337	5,267,055	320,506	642,470	962,976
1983	354,997	151,387	506,384	1,164,481	900,714	3,796,679	5,861,874	349,637	692,947	1,042,584
1984	467,597	224,431	692,028	1,456,303	1,097,836	2,579,049	8,293,188	382,092	755,487	1,137,580
1985	736,437	364,602	1,101,039	1,906,426	1,789,730	6,552,806	10,248,962	425,045	836,888	1,261,933
1986	1,085,378	693,036	1,778,414	1,733,629	1,529,094	6,864,494	10,127,217	416,006	822,595	1,238,601
1987	1,774,876	1,560,480	3,335,356	2,223,443	2,012,240	6,676,624	10,912,307	416,017	872,201	1,288,218
1988	2,232,956	2,335,557	4,568,513	2,224,987	2,210,888	6,370,122	10,805,997	450,680	1,038,351	1,489,031
1989	2,398,756	3,328,748	5,727,504	2,141,070	1,872,400	5,917,998	9,931,468	444,810	1,222,639	1,667,449
1990	2,747,669	3,435,293	6,182,962	2,560,246	2,262,288	6,669,735	11,492,269	519,441	1,293,418	1,812,858
1991	2,749,003	3,684,316	6,433,319	1,739,637	1,621,571	4,529,247	7,890,455	523,292	1,535,551	2,058,844
1992	2,555,911	3,530,710	6,086,621	2,060,017	2,003,725	5,387,214	9,450,956	576,593	1,538,914	2,115,507
1993	2,594,444	3,506,251	6,100,695	2,864,921	2,011,626	6,513,239	11,389,786	643,084	1,743,142	2,386,226
1994	2,719,754	3,539,565	6,259,319	2,891,315	2,642,814	7,315,763	12,849,892	803,541	2,555,852	3,359,393
1995	2,650,838	3,511,955	6,162,793	3,019,602	2,289,440	5,895,063	11,204,105	1,033,303	5,078,523	6,111,827
1996	2,696,633	3,880,618	6,577,251	2,541,964	2,117,197	6,598,385	11,257,546	1,884,945	13,827,940	15,712,885
1997	2,643,457	3,633,195	6,276,652	2,641,632	2,007,749	6,552,878	11,202,259	2,344,769	21,562,892	23,907,661
1998	2,540,860	3,481,686	6,022,546	2,250,476	2,067,196	6,304,883	10,622,555	3,015,728	26,233,911	29,249,638
1999	2,663,844	3,843,417	6,507,261	2,867,039	2,427,062	8,309,931	13,604,032	3,102,463	27,086,154	30,188,617
2000	2,682,386	4,279,647	6,962,033	3,772,554	2,462,711	7,297,785	13,533,050	3,211,112	28,680,674	31,891,786
2001	4,734,557	5,724,491	10,459,048	7,811,968	4,670,345	13,297,575	25,779,888	7,937,783	35,458,491	43,396,273
2002	3,927,773	5,113,200	9,040,973	6,415,714	4,647,889	12,216,374	23,279,977	6,485,091	32,726,089	39,211,180
2003	3,755,900	4,920,815	8,676,715	6,730,109	4,148,262	11,125,221	22,003,592	5,945,218	31,919,404	37,864,622
2004	3,587,177	4,805,791	8,392,968	6,391,511	3,738,553	10,096,918	20,226,982	5,590,797	31,241,188	36,831,985
2005	3,671,674	4,893,377	8,565,051	6,827,726	4,001,888	10,722,604	21,552,218	5,958,443	31,909,413	37,867,856
2006	3,696,082	4,910,219	8,606,301	6,934,067	4,067,084	10,879,380	21,880,531	6,012,323	32,006,123	38,018,446
2007	3,691,817	4,909,314	8,601,131	6,854,092	4,019,861	10,766,246	21,640,199	5,944,281	31,882,604	37,826,884
2008	3,677,909	4,878,060	8,555,969	6,803,055	3,981,465	10,675,014	21,459,534	5,829,087	31,673,218	37,502,305
2009	3,707,760	4,906,466	8,608,226	6,802,376	3,988,009	10,690,377	21,480,762	5,888,755	31,781,975	37,670,730
2010	3,744,081	4,929,086	8,673,167	7,047,250	4,129,607	11,027,572	22,204,429	6,043,011	32,062,102	38,105,112
2011	3,758,608	4,935,442	8,694,050	6,977,118	4,091,524	10,938,989	22,007,631	6,028,739	32,041,758	38,070,497
2012	3,791,768	4,959,493	8,751,261	7,027,118	4,125,105	11,019,035	22,171,258	6,110,645	32,190,947	38,301,592
2013	3,756,934	4,923,548	8,680,482	6,821,994	3,984,798	10,571,698	21,378,490	6,025,995	32,038,038	38,064,033
2014	3,762,005	4,921,625	8,683,630	6,574,113	3,819,777	10,168,645	20,562,535	5,970,435	31,929,165	37,899,601
2015	3,780,964	4,918,866	8,699,830	6,562,841	3,762,228	9,874,565	20,199,634	5,974,991	31,935,945	37,910,936
2016	3,786,977	4,921,476	8,708,453	6,668,195	3,808,278	9,883,087	20,359,560	6,025,700	32,025,772	38,051,472
2017	3,770,050	4,908,656	8,678,706	6,418,841	3,679,388	9,533,905	19,632,134	5,909,678	31,812,833	37,722,512
2018	3,735,087	4,934,629	8,669,716	6,373,006	3,684,275	9,520,750	19,578,031	5,985,813	31,950,512	37,936,325
2019	3,735,845	4,954,374	8,690,219	6,469,567	3,763,914	9,692,442	19,925,923	6,103,767	32,162,836	38,266,603
2020	3,704,316	4,909,945	8,614,261	6,178,492	3,595,681	9,289,109	19,063,282	5,893,204	31,778,253	37,671,458
2021	3,702,124	4,907,233	8,609,357	6,139,606	3,574,358	9,239,303	18,953,267	5,872,817	31,739,521	37,612,338
2022	3,670,208	4,880,956	8,551,164	5,991,830	3,485,228	9,024,422	18,501,480	5,755,167	31,525,524	37,280,691
2023	3,676,357	4,853,627	8,529,984	6,079,683	3,535,014	9,141,139	18,755,836	5,801,711	31,607,914	37,409,625
2024	3,708,599	4,883,122	8,591,721	6,258,863	3,641,910	9,395,128	19,295,901	5,940,610	31,860,690	37,801,299
2025	3,688,804	4,871,340	8,560,144	6,054,520	3,528,603	9,125,261	18,708,384	5,850,661	31,696,081	37,546,742
2026	3,688,968	4,869,911	8,558,879	6,276,201	3,649,739	9,412,291	19,338,231	5,831,559	31,657,129	37,488,688
2027	3,673,564	4,857,166	8,530,730	6,133,254	3,568,249	9,218,940	18,920,443	5,749,865	31,504,582	37,254,447
2028	3,674,025	4,854,217	8,528,242	6,154,653	3,581,483	9,246,924	18,983,060	5,768,299	31,535,360	37,303,659
2029	3,658,840	4,840,833	8,499,673	6,076,416	3,535,488	9,137,551	18,749,455	5,714,818	31,433,921	37,148,738
2030	3,655,393	4,831,215	8,486,608	6,128,204	3,566,054	9,209,444	18,903,702	5,749,209	31,491,795	37,241,005
2031	3,630,249	4,804,272	8,434,521	5,999,930	3,492,390	9,035,121	18,527,441	5,675,336	31,344,929	37,020,265
2032	3,633,491	4,794,626	8,428,117	6,117,030	3,561,505	9,196,952	18,875,487	5,757,585	31,499,801	37,257,387
2033	3,654,676	4,794,340	8,449,016	6,308,325	3,678,717	9,477,303	19,464,345	5,936,717	31,827,629	37,764,345
2034	3,548,144	4,687,001	8,235,145	6,133,057	3,573,609	9,225,542	18,932,208	5,791,919	31,562,504	37,354,423
2035	3,386,783	4,523,224	7,910,007	6,130,071	3,561,726	9,195,049	18,886,846	5,754,941	31,493,475	37,248,417
Total	172,822,842	221,062,495	393,885,337	284,044,820	180,509,540	506,731,233	971,285,593	232,259,106	1,259,883,928	1,492,143,034

Table B-19
Total Transportation Charge for Each Contractor
(Dollars)

Sheet 2 of 4

Calendar Year	San Joaquin Valley Area								Total (19)
	Dudley Ridge Water District (11)	Empire West Side Irrigation District (12)	Future Contractor San Joaquin Valley (13)	Kern County Water Agency		County of Kings (16)	Oak Flat Water District (17)	Tulare Lake Basin Water Storage District (18)	
				Municipal and Industrial (14)	Agricultural (15)				
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	2,727	0	0	0	0	0	2,727
1965	0	0	6,034	73,631	0	0	0	0	79,665
1966	0	0	12,049	137,442	0	0	0	0	149,491
1967	0	0	26,278	267,827	0	0	0	0	294,105
1968	184,855	8,921	54,628	445,746	1,543,832	12,874	11,543	209,096	2,471,495
1969	180,462	7,681	87,621	525,451	2,390,962	11,486	10,543	357,791	3,571,997
1970	202,503	14,448	94,721	574,381	2,913,521	11,613	13,077	294,269	4,118,533
1971	198,821	15,406	95,743	606,288	3,821,621	16,561	14,375	449,426	5,218,241
1972	221,423	16,274	98,837	632,023	4,991,417	14,004	20,618	1,083,520	7,078,116
1973	204,048	12,345	97,599	639,660	4,924,089	14,255	11,675	409,987	6,313,658
1974	284,228	12,314	98,509	698,659	5,226,549	14,346	12,751	599,386	6,946,742
1975	351,517	13,259	106,753	716,020	6,348,278	15,358	14,434	730,466	8,296,085
1976	306,171	13,805	108,133	774,706	6,702,233	15,727	16,100	566,120	8,502,995
1977	268,132	10,915	112,604	798,278	6,877,180	17,171	13,887	512,942	8,611,109
1978	357,069	4,441	115,573	891,365	8,330,702	17,554	17,925	506,716	10,241,345
1979	387,269	13,652	114,305	896,617	9,456,327	18,829	24,855	955,779	11,867,633
1980	408,487	12,002	126,003	889,318	10,014,378	19,373	24,216	740,163	12,233,940
1981	471,978	29,843	134,223	1,079,755	11,460,106	23,547	22,897	911,631	14,133,980
1982	466,487	12,993	135,111	1,005,105	12,293,163	21,560	22,360	749,153	14,705,932
1983	639,689	14,587	149,256	1,027,700	15,501,845	38,568	29,119	428,439	17,829,203
1984	912,397	15,001	164,560	2,063,626	23,632,877	53,027	59,600	786,430	27,687,518
1985	1,100,910	87,564	184,961	2,351,047	27,940,415	68,080	70,129	2,172,442	33,975,548
1986	1,265,113	34,018	180,501	2,365,616	30,510,704	79,362	75,987	2,186,203	36,697,504
1987	1,123,656	50,813	179,928	2,805,229	29,306,190	76,604	74,233	2,245,304	35,861,957
1988	1,109,230	61,608	193,791	2,750,873	29,219,226	72,749	60,106	2,203,063	35,670,646
1989	1,144,716	49,290	187,970	2,436,095	29,281,994	65,613	68,569	2,446,567	35,680,814
1990	866,727	34,452	221,449	2,540,302	27,398,034	49,614	48,997	1,873,685	33,033,260
1991	584,791	23,357	220,342	2,055,755	17,597,426	26,475	26,766	1,234,250	21,769,162
1992	954,377	39,716	241,518	2,367,763	25,895,547	54,757	50,820	1,911,390	31,515,888
1993	1,166,667	53,720	265,022	2,800,024	31,409,716	71,402	69,503	2,644,978	38,481,032
1994	1,021,817	43,850	306,423	2,809,456	29,286,003	58,945	57,271	2,121,040	35,704,805
1995	1,518,445	46,704	304,362	3,500,166	36,409,082	87,329	80,094	2,775,018	44,721,200
1996	1,322,770	47,440	389,270	3,291,857	35,852,884	82,642	72,216	4,221,655	45,280,734
1997	1,389,533	25,493	276,751	3,108,329	32,698,977	34,960	68,601	1,674,986	39,277,630
1998	1,236,122	34,477	381,953	2,745,012	29,425,223	40,029	60,045	1,806,349	35,729,210
1999	1,202,966	54,611	383,339	3,088,711	31,149,135	71,997	63,324	4,044,364	40,058,447
2000	1,226,906	55,287	373,032	2,813,272	30,165,386	68,491	63,330	3,304,295	38,070,000
2001	3,175,283	118,760	383,999	6,556,340	66,438,483	118,792	119,144	6,554,045	83,464,846
2002	1,927,396	92,902	396,926	4,973,656	44,953,672	125,728	121,654	4,116,984	56,708,918
2003	1,746,012	82,688	400,133	4,404,748	41,632,221	112,569	108,362	3,713,718	52,200,451
2004	1,528,511	70,540	393,217	3,839,923	36,460,509	96,578	92,307	3,233,407	45,714,992
2005	1,650,800	77,421	392,616	4,169,540	37,900,529	105,777	99,951	3,505,158	47,901,792
2006	1,686,209	79,407	393,271	4,258,068	39,470,687	108,427	103,154	3,583,651	49,682,874
2007	1,650,903	77,426	393,069	4,175,771	38,195,727	105,800	99,820	3,505,339	48,203,855
2008	1,665,257	78,231	393,182	3,926,908	39,759,165	106,871	102,890	3,537,171	49,569,675
2009	1,633,393	76,441	393,103	4,136,593	38,133,948	104,486	98,228	3,466,440	48,042,632
2010	1,757,016	83,390	393,065	4,427,969	41,641,995	113,754	110,264	3,740,951	52,268,404
2011	1,703,798	80,387	394,163	4,305,118	40,786,021	109,719	104,509	3,622,372	51,106,087
2012	1,707,334	80,585	394,227	4,330,335	41,092,102	109,981	103,227	3,630,200	51,447,991
2013	1,746,396	82,777	394,389	4,405,170	41,537,261	112,899	108,954	3,716,850	52,104,696
2014	1,634,904	76,507	391,728	4,153,479	39,685,993	104,536	96,843	3,469,228	49,613,218
2015	1,685,994	79,379	388,634	4,194,167	40,518,721	108,357	102,516	3,582,603	50,660,371
2016	1,787,158	85,069	382,267	4,372,851	42,362,615	115,953	112,366	3,807,341	53,025,620
2017	1,684,561	79,299	368,178	3,994,103	40,442,287	108,258	102,723	3,579,488	50,358,897
2018	1,703,875	80,382	345,657	3,941,068	41,041,908	101,184	102,898	3,622,279	50,939,251
2019	1,812,901	86,514	336,820	4,138,622	43,015,771	108,861	113,456	3,864,484	53,477,429
2020	1,708,839	80,664	335,266	3,851,512	40,983,004	100,806	104,410	3,633,364	50,797,865
2021	1,692,132	79,723	334,305	3,790,468	40,684,312	99,409	102,753	3,596,244	50,379,346
2022	1,633,860	76,448	333,592	3,638,701	39,552,575	94,972	97,595	3,466,843	48,894,586
2023	1,685,894	79,376	332,920	3,757,069	40,485,979	98,854	102,766	3,582,498	50,125,356
2024	1,760,592	83,573	332,497	3,933,561	41,898,594	104,431	109,600	3,748,300	51,971,148
2025	1,636,506	76,596	332,230	3,645,442	39,758,608	95,097	96,726	3,472,705	49,113,910
2026	1,782,461	84,805	331,433	3,976,818	42,235,020	106,017	112,149	3,796,921	52,425,624
2027	1,703,657	80,367	331,707	3,793,164	40,879,848	100,039	104,006	3,621,690	50,614,478
2028	1,714,780	81,000	328,322	3,814,404	41,044,571	100,877	105,281	3,646,648	50,835,883
2029	1,681,123	79,105	328,396	3,733,261	40,445,532	98,284	101,960	3,571,825	50,039,486
2030	1,708,277	80,635	327,842	3,791,235	40,903,474	100,261	104,831	3,632,209	50,648,764
2031	1,643,763	76,998	327,150	3,625,752	39,803,736	95,001	98,138	3,488,653	49,159,191
2032	1,699,467	80,141	325,960	3,754,312	40,752,421	99,230	103,832	3,612,692	50,428,055
2033	1,766,551	83,908	326,216	3,928,986	42,270,123	104,108	108,387	3,761,510	52,349,789
2034	1,701,626	80,257	325,634	3,753,786	40,879,742	99,096	103,450	3,617,316	50,560,907
2035	1,757,364	83,396	324,316	3,899,799	42,096,385	103,058	107,722	3,741,234	52,113,274
Total	85,444,875	3,825,384	18,838,309	201,965,804	2,059,718,560	5,022,972	5,016,838	178,999,264	2,558,832,006

Table B-19
Total Transportation Charge for Each Contractor
(Dollars)

Sheet 3 of 4

Calendar Year	Southern California Area									
	Antelope Valley-East Kern Water Agency (20)	Castaic Lake Water Agency (21)	Coachella Valley Water District (22)	Crestline-Lake Arrowhead Water Agency (23)	Desert Water Agency (24)	Littlerock Creek Irrigation District (25)	Mojave Water Agency (26)	Palmdale Water District (27)	San Bernardino Valley Municipal Water District (28)	San Gabriel Valley Municipal Water District (29)
1961	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	0	0
1963	33,351	0	0	0	0	0	0	0	51,776	0
1964	62,921	34,172	14,439	4,374	36,574	1,144	28,462	8,212	82,882	34,413
1965	118,701	65,018	25,116	7,200	40,804	2,084	50,359	15,235	135,181	35,374
1966	215,957	122,198	44,766	12,489	73,212	3,756	90,472	27,701	232,692	61,515
1967	417,815	256,202	86,188	23,491	141,524	7,290	175,317	54,067	433,699	115,667
1968	736,546	602,829	152,801	41,540	251,384	12,980	311,396	95,543	782,747	209,082
1969	1,059,784	941,695	225,474	61,272	371,235	18,707	459,401	138,179	1,206,740	321,996
1970	1,378,038	1,195,670	315,498	89,767	519,705	25,249	633,635	184,991	1,779,533	467,925
1971	1,705,583	1,459,869	432,863	128,455	713,270	31,859	858,006	231,468	2,541,067	659,907
1972	2,022,475	1,729,043	561,991	181,315	926,230	42,428	1,112,706	274,813	3,408,104	865,668
1973	2,112,704	1,738,387	696,314	183,826	1,137,733	43,507	1,175,907	287,539	3,991,385	947,287
1974	2,176,247	1,810,155	711,826	193,399	1,164,587	45,237	1,207,994	292,301	4,018,423	991,250
1975	2,352,809	1,881,719	752,738	206,159	1,232,392	48,516	1,275,163	304,522	4,179,073	1,091,737
1976	2,705,852	1,882,758	799,286	215,206	1,308,074	51,489	1,317,828	313,932	4,319,632	1,145,705
1977	2,648,527	1,957,333	695,107	226,156	1,145,763	47,376	1,389,710	329,619	4,573,911	1,209,859
1978	2,966,100	2,051,035	876,096	231,164	1,421,280	47,145	1,389,864	321,944	4,490,270	1,212,914
1979	3,519,454	2,099,993	943,658	238,080	1,519,445	48,422	1,517,443	332,743	4,442,502	1,153,183
1980	4,065,814	2,211,072	1,032,976	259,527	1,680,571	53,376	1,636,892	360,739	4,855,789	1,270,123
1981	4,394,711	2,517,309	1,103,845	271,311	1,798,030	77,834	1,757,344	392,165	5,244,401	1,358,378
1982	3,957,372	2,629,360	1,155,937	280,443	1,884,304	55,989	1,953,794	407,194	5,431,089	1,565,878
1983	5,146,749	2,920,220	1,745,736	333,214	2,828,178	69,411	2,027,887	495,007	6,041,200	1,557,364
1984	7,180,767	3,977,621	2,827,548	445,476	4,554,213	75,804	2,255,533	553,655	7,069,806	2,332,585
1985	8,921,346	4,368,637	3,623,681	540,529	5,828,959	79,264	2,366,031	733,001	7,760,777	2,379,145
1986	8,793,109	4,940,599	4,048,937	577,618	6,516,741	102,431	2,475,284	1,000,423	7,878,033	3,048,506
1987	8,809,198	4,784,072	3,903,754	605,128	6,364,174	211,842	2,507,701	1,026,770	9,245,114	3,034,918
1988	8,283,834	4,848,801	3,902,192	616,147	6,427,340	124,700	2,562,200	780,200	9,525,796	2,829,783
1989	8,661,440	4,732,817	3,546,296	586,744	5,897,313	170,603	2,509,537	1,443,013	8,965,354	2,931,328
1990	9,947,336	5,180,427	4,219,043	620,546	6,957,875	289,379	2,705,173	1,640,172	9,820,717	3,680,272
1991	6,450,721	4,152,546	2,725,083	567,606	4,493,800	174,891	3,464,323	1,295,006	8,959,279	3,040,944
1992	8,551,343	5,114,580	2,796,176	470,326	4,610,949	121,370	4,265,786	1,129,980	8,637,026	2,992,410
1993	8,931,944	4,749,425	2,993,360	472,983	4,936,215	157,782	4,144,672	1,347,916	9,590,425	3,337,968
1994	11,114,354	5,366,749	3,036,579	554,936	5,007,318	225,794	5,136,854	1,699,006	10,506,462	4,150,717
1995	10,716,337	5,627,208	3,809,601	509,339	6,282,524	155,597	4,225,448	1,527,657	9,893,643	3,831,128
1996	10,866,286	5,724,820	6,475,014	510,113	10,678,797	148,339	4,039,971	1,824,593	10,318,332	3,855,041
1997	11,333,271	5,589,643	6,306,397	579,462	7,363,933	144,869	4,595,762	1,869,720	11,730,529	4,162,637
1998	9,874,872	5,231,942	5,406,479	546,954	5,890,968	146,296	5,634,001	1,478,390	11,605,045	3,456,250
1999	11,285,195	5,594,716	4,348,658	635,690	5,922,034	145,663	5,864,161	1,838,644	12,745,171	4,298,255
2000	11,699,576	7,402,687	3,774,049	659,429	5,672,535	195,321	5,858,283	2,072,830	14,609,110	3,693,450
2001	43,204,221	22,247,778	8,850,329	1,736,119	12,465,044	531,338	11,133,424	7,085,915	34,043,027	8,732,738
2002	33,286,945	22,058,456	6,325,315	1,927,162	10,431,779	561,472	8,357,800	4,948,879	34,263,316	6,326,210
2003	28,979,309	19,054,199	5,515,956	913,978	9,096,853	491,427	8,757,072	4,476,508	30,294,627	6,001,819
2004	23,472,037	16,155,291	4,495,857	870,014	7,414,359	399,772	9,701,578	3,628,637	25,874,044	6,457,550
2005	27,506,049	17,691,734	5,271,095	1,007,961	8,693,014	466,784	11,478,773	4,249,405	29,780,931	7,504,015
2006	28,204,681	18,084,604	5,376,574	1,013,071	8,866,967	478,379	11,877,522	4,356,865	29,727,854	7,545,416
2007	27,937,501	17,779,156	5,326,564	1,049,687	8,784,491	473,939	11,956,076	4,315,742	29,751,588	7,525,755
2008	27,151,696	17,321,609	5,167,146	1,048,821	8,521,552	460,886	11,902,458	4,194,821	28,929,651	7,307,287
2009	27,931,394	17,751,346	5,325,200	1,111,997	8,782,242	473,846	12,338,584	4,314,826	29,742,059	7,523,211
2010	29,058,297	18,495,747	5,535,059	1,164,226	9,128,371	492,563	12,892,806	4,488,227	30,598,134	7,771,317
2011	28,815,990	19,229,483	5,487,731	1,201,796	9,050,314	488,575	13,201,624	4,451,030	30,479,158	7,728,863
2012	30,089,231	20,257,957	5,723,754	1,265,919	9,439,596	509,739	14,085,335	4,646,996	31,463,768	8,012,034
2013	29,238,200	19,639,715	5,554,663	1,263,518	9,147,323	496,175	14,139,336	4,521,221	30,547,378	7,757,378
2014	29,172,315	19,491,201	5,542,667	1,318,374	9,141,543	494,462	14,480,552	4,506,817	30,846,649	7,807,803
2015	29,107,461	19,460,049	5,500,899	1,329,303	9,072,643	493,375	14,834,137	4,497,826	30,334,336	7,699,414
2016	30,180,832	20,158,856	5,717,286	1,422,056	9,429,555	511,140	15,697,379	4,664,349	31,654,656	8,031,087
2017	28,630,540	19,130,065	5,403,033	1,371,030	8,911,240	485,207	15,372,035	4,428,380	30,002,879	7,596,126
2018	29,924,393	19,906,385	5,648,524	1,452,489	9,316,152	506,452	16,410,242	4,629,371	31,102,096	7,901,998
2019	30,607,400	20,158,077	5,756,623	1,509,701	9,494,461	517,327	17,018,576	4,734,762	31,654,775	8,044,112
2020	28,743,202	18,835,272	5,350,008	1,424,540	8,823,813	485,095	16,494,102	4,442,556	29,455,059	7,465,796
2021	28,360,743	18,470,394	5,215,781	1,398,878	8,602,432	477,573	16,793,504	4,379,726	28,430,470	7,219,582
2022	27,423,882	17,659,066	5,019,372	1,378,803	8,278,497	461,750	16,992,743	4,234,974	27,575,114	6,977,216
2023	27,815,389	17,982,710	5,086,065	1,425,932	8,388,508	468,070	17,788,305	4,294,726	28,005,066	7,079,653
2024	28,633,959	18,531,582	5,222,342	1,450,795	8,613,269	481,671	18,824,586	4,420,719	28,332,773	7,199,873
2025	28,061,755	18,095,931	5,123,517	1,436,900	8,450,273	472,131	19,051,848	4,332,619	27,906,874	7,078,122
2026	28,506,291	18,504,628	5,192,463	1,478,346	8,563,999	479,475	19,303,658	4,400,997	28,386,850	7,191,438
2027	28,189,345	18,034,104	5,119,814	1,452,306	8,444,166	474,204	19,092,859	4,352,282	27,768,722	7,049,002
2028	28,076,620	18,274,692	5,085,842	1,446,685	8,388,130	472,302	19,023,807	4,334,990	27,466,656	6,979,783
2029	27,862,782	17,829,632	5,067,008	1,472,144	8,357,079	468,730	18,881,136	4,302,197	27,766,105	7,022,633
2030	27,854,528	17,886,027	5,066,305	1,482,960	8,355,921	468,578	18,879,559	4,301,183	25,519,456	7,024,974
2031	27,566,584	17,433,674	4,983,770	1,436,045	8,219,778	463,769	18,737,483	4,257,464	24,626,530	6,831,559
2032	27,694,538	17,784,002	5,028,571	1,478,333	8,293,686	465,865	18,753,258	4,277,485	25,312,369	6,971,179
2033	29,761,466	19,035,117	5,409,736	1,568,787	8,922,356	500,178	20,164,539	4,597,080	26,747,630	7,402,020
2034	27,930,630	17,830,367	5,062,919	1,477,954	8,350,336	469,751	18,956,960	4,317,543	25,148,075	6,958,130
2035	30,169,143	18,531,131	5,458,115	1,618,698	9,002,174	506,846	20,288,195	4,664,064	27,479,136	7,549,639
Total	1,220,367,788	772,283,364	270,131,405	59,157,742	434,841,899	20,352,490	628,642,150	185,180,062	1,248,110,526	330,605,297

Table B-19
Total Transportation Charge for Each Contractor
(Dollars)

Sheet 4 of 4

Calendar Year	Southern California Area (continued)				Feather River Area				South Bay Area Future Contractor (38)	Grand Total (39)
	San Geronio Pass Water Agency (30)	Metropolitan Water District of Southern California (31)	Ventura County Flood Control District (32)	Total (33)	City of Yuba City (34)	County of Butte (35)	Plumas County FC&WCD (36)	Total (37)		
1961	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	3,219	79,888
1963	0	691,432	0	776,559	0	0	0	0	55,621	1,664,634
1964	21,378	1,261,584	9,386	1,599,941	0	0	0	0	83,871	2,868,128
1965	21,885	2,182,389	17,781	2,717,127	0	0	405	405	128,944	4,897,073
1966	37,995	3,903,334	33,453	4,859,540	0	0	565	565	148,285	7,490,973
1967	71,340	7,699,870	68,210	9,550,680	0	0	562	562	204,629	12,927,797
1968	129,011	15,329,317	142,909	18,797,985	0	0	565	565	279,263	25,117,186
1969	198,912	23,170,450	215,370	28,389,215	0	0	3,194	3,194	349,208	36,321,265
1970	289,852	30,640,203	273,810	37,793,876	0	0	15,133	15,133	386,284	46,529,894
1971	409,633	40,006,076	342,676	49,520,732	0	0	16,014	16,014	375,846	59,251,932
1972	537,542	53,300,801	422,586	65,385,702	0	0	17,386	17,386	401,360	77,337,565
1973	588,337	57,633,921	435,938	70,972,785	0	0	17,348	17,348	375,839	82,008,073
1974	611,812	62,138,765	455,861	75,817,857	0	0	17,491	17,491	398,816	87,740,615
1975	645,016	67,119,845	478,703	81,568,392	0	0	18,419	18,419	408,036	94,892,757
1976	668,719	68,848,783	475,889	84,053,153	0	0	17,490	17,490	430,626	98,266,940
1977	696,926	66,598,462	507,369	82,026,118	0	0	18,246	18,246	423,367	96,318,031
1978	709,455	73,299,536	523,487	89,530,290	0	0	17,394	17,394	426,614	105,805,225
1979	713,284	73,031,987	526,722	90,086,916	0	0	20,592	20,592	446,652	108,164,509
1980	778,402	80,293,064	571,563	99,069,908	0	0	17,774	17,774	507,472	118,150,590
1981	806,465	91,630,302	636,761	111,988,856	0	0	21,207	21,207	517,022	132,975,690
1982	853,833	93,514,282	670,741	114,360,216	0	0	28,436	28,436	505,226	136,375,376
1983	952,573	102,158,486	803,970	127,079,995	0	0	19,290	19,290	553,078	152,892,408
1984	1,073,095	137,878,874	869,353	171,094,330	0	0	21,128	21,128	561,792	209,487,564
1985	1,121,321	173,814,751	909,160	212,446,602	0	0	20,252	20,252	680,398	259,734,735
1986	1,150,189	193,614,894	937,704	235,084,468	0	0	20,153	20,153	620,136	285,566,493
1987	1,172,498	179,137,643	908,428	221,711,240	0	0	19,755	19,755	686,858	273,815,691
1988	1,208,693	190,617,005	905,263	232,631,954	0	0	17,914	17,914	708,447	285,892,502
1989	1,195,491	193,611,815	932,997	235,184,748	0	0	19,172	19,172	768,165	288,979,321
1990	1,298,979	239,941,633	1,487,158	287,788,710	0	0	18,162	18,162	822,381	341,150,602
1991	1,358,259	180,414,264	1,141,527	218,238,249	0	0	21,032	21,032	567,844	256,978,905
1992	1,356,943	196,768,443	1,025,699	237,841,031	0	0	18,027	18,027	804,768	287,832,798
1993	1,518,863	170,205,930	1,068,553	213,456,036	0	0	21,013	21,013	964,974	272,799,762
1994	1,544,877	211,090,638	1,009,611	260,443,895	0	0	19,663	19,663	978,520	319,615,487
1995	1,593,593	176,054,593	1,061,748	225,288,416	0	0	20,291	20,291	905,412	294,414,044
1996	1,605,076	181,612,668	1,103,205	238,762,255	0	0	25,392	25,392	944,613	318,560,677
1997	1,783,004	189,548,537	1,216,989	246,224,753	0	0	24,834	24,834	802,573	327,716,362
1998	1,884,734	171,690,137	1,238,875	224,084,943	0	0	18,183	18,183	841,021	306,568,096
1999	2,154,853	192,916,754	1,256,439	249,006,233	0	0	17,801	17,801	929,843	340,312,234
2000	4,441,391	223,436,791	1,415,121	284,930,573	0	0	21,386	21,386	590,400	375,999,227
2001	4,727,922	740,962,855	3,120,114	898,840,824	0	0	21,591	21,591	800,557	1,062,763,026
2002	5,372,299	484,931,824	4,865,833	622,722,293	0	0	21,801	21,801	877,747	1,151,862,888
2003	5,343,570	425,097,584	4,187,806	548,210,708	0	0	21,910	21,910	3,626	668,981,624
2004	5,602,805	371,518,077	3,108,098	478,698,119	0	0	21,910	21,910	3,626	589,890,582
2005	6,047,047	424,493,563	3,407,344	547,597,715	0	0	21,910	21,910	3,626	663,510,168
2006	6,096,897	430,212,016	3,480,105	555,320,951	0	0	21,910	21,910	3,626	673,534,639
2007	6,181,711	426,349,934	3,423,420	550,855,564	0	0	21,910	21,910	3,625	667,153,168
2008	7,500,833	414,932,325	3,333,762	537,772,847	0	0	21,910	21,910	3,625	654,885,865
2009	7,654,139	466,018,908	3,419,549	552,387,301	0	0	21,910	21,910	3,625	668,215,186
2010	7,834,067	442,576,983	3,561,116	573,596,913	0	0	21,910	21,910	3,625	694,873,560
2011	7,798,279	439,047,365	3,539,208	570,519,416	0	0	21,910	21,910	3,625	690,423,216
2012	8,000,695	456,394,182	3,687,045	593,576,251	0	0	21,910	21,910	3,625	714,273,888
2013	7,898,845	443,647,139	3,579,019	577,429,910	0	0	21,910	21,910	3,626	697,683,147
2014	7,928,837	441,521,890	3,548,579	575,801,689	0	0	21,910	21,910	3,626	692,586,209
2015	7,856,688	439,225,625	3,539,710	572,951,466	0	0	21,505	21,505	3,626	690,447,368
2016	8,092,170	455,050,015	3,659,514	594,268,895	0	0	21,345	21,345	3,625	714,438,970
2017	7,786,884	431,707,660	3,465,870	564,290,949	0	0	21,347	21,347	3,626	680,708,171
2018	8,012,553	446,652,225	3,588,923	585,051,803	0	0	21,345	21,345	3,627	702,200,098
2019	8,123,068	453,029,489	3,618,131	594,266,502	0	0	18,716	18,716	3,626	714,649,018
2020	7,723,764	421,087,117	3,368,945	553,699,269	0	0	6,777	6,777	3,626	669,856,538
2021	7,569,227	409,974,327	3,287,132	540,179,769	0	0	5,950	5,950	3,626	655,743,653
2022	7,401,532	392,126,635	3,134,335	518,663,919	0	0	4,564	4,564	3,626	631,900,030
2023	7,476,071	396,055,973	3,190,533	525,057,001	0	0	4,563	4,563	3,626	639,885,991
2024	7,569,081	406,393,059	3,285,836	538,959,545	0	0	4,562	4,562	3,625	656,627,801
2025	7,482,251	395,690,856	3,201,982	526,385,059	0	0	4,560	4,560	3,626	640,322,425
2026	7,562,121	405,321,326	3,278,855	538,170,447	0	0	4,559	4,559	3,626	655,990,054
2027	7,463,791	392,788,859	3,182,461	523,411,915	0	0	4,556	4,556	3,626	638,740,195
2028	7,417,265	399,361,517	3,246,376	529,574,655	0	0	4,555	4,555	3,626	645,233,680
2029	7,443,611	390,628,139	3,148,810	520,250,006	0	0	4,553	4,553	3,625	634,695,536
2030	4,772,970	391,742,109	3,159,125	516,513,695	0	0	4,551	4,551	3,626	631,801,951
2031	4,644,619	381,072,845	3,062,442	503,336,562	0	0	4,550	4,550	3,625	616,486,155
2032	4,737,509	390,165,734	3,143,844	514,106,373	0	0	4,548	4,548	3,626	629,103,593
2033	5,048,617	414,022,485	3,346,336	546,526,347	0	0	4,548	4,548	3,626	664,562,016
2034	4,736,653	388,896,486	3,134,127	513,269,931	0	0	4,547	4,547	3,626	628,360,787
2035	5,151,040	414,300,361	3,259,643	547,978,185	0	0	4,545	4,545	3,625	664,144,899
Total	275,263,660	19,199,805,746	145,664,943	24,790,407,072	0	0	1,098,727	1,098,727	22,385,375	30,230,037,143

Table B-20A
Calculation of Delta Water Rates

Calculation in accordance with Article 53(i) of the Monterey Amendment
(Values in millions of dollars [\$] or in millions of acre-feet [AF] discounted to 2001 at 4.615 percent per annum)

Procedure	Capital Cost Component (1)		Minimum Operation Maintenance, Power and Replacement Component ^a (2)		Total Delta Water Rate (3)	
Commencing in 2002 Total Costs of "Initial" Project Conservation Facilities to be Reimbursed and Table A Amounts during the Project Repayment Period	\$3,769.77 ^b	237.30 AF	\$2,404.52 ^c	237.30 AF	\$6,174.29	237.30 AF
Less, Project Power Revenues to be Realized During the Project Repayment Period	(1,383.56)		(433.01)		(1,816.57)	
Less, Delta Water Charges Paid and Project Table A Amounts, Prior to 2001	(1,575.11) ^d	(166.52) AF	(1,071.66)	(166.52) AF	(2,646.77)	(166.52) AF
Total	\$811.10	70.78 AF	\$899.85	70.78 AF	\$1,710.95	70.78 af
Rate Applicable in 2002	\$11.46	per acre-foot	\$12.71	per acre-foot	\$24.17	per acre-foot

Calculation under original provisions, without the Monterey Amendment
(for Plumas County and Empire)

Procedure	Capital Cost Component (4)		Minimum Operation Maintenance, Power and Replacement Component ^a (5)		Total Delta Water Rate (6)	
Commencing in 2002 Total Costs of "Initial" Project Conservation Facilities to be Reimbursed and Table A Amounts during the Project Repayment Period	\$3,759.10 ^b	237.30 AF	\$2,396.16 ^c	237.30 AF	\$6,155.26	237.30
Less, Project Power Revenues to be Realized During the Project Repayment Period	(1,383.56)		(433.01)		(1,816.57)	
Less, Delta Water Charges Paid and Table A Amounts, Prior to 2002	(1,575.11) ^d	(166.52) AF	(1,071.66)	(166.52) AF	(2,646.77)	(166.52)
Total	\$800.43	70.78 AF	\$891.49	70.78 AF	\$1,691.92	70.78
Rate Applicable in 2002	\$11.31	per acre-foot	\$12.60	per acre-foot	\$23.91	per acre-foot

^aConsidering 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.

^bIncluding net credits of \$4,850,000 for settlements as to the magnitude of Project Capital costs incurred prior to December 31, 1960, and net credits of \$6,678,320 for settlement as to the magnitude of Project Capital costs incurred during the 1961 through 1978 period.

^cIncludes conservation power costs and credits at San Luis.

^dApplying all Delta Water Charges paid prior to 1970 to reimburse Capital costs (the charge was not divided into components until 1970).

Table B-20B
Delta Water Rates by Facility
(Dollars per Acre-Foot)

Item	Capital Cost Component (1)	Minimum Operation, Maintenance, Power and Replacement Component (2)	Total Delta Water Rate (3)
Initial Conservation Facilities			
Oroville Division			
Water Supply and Power Costs ^a	32.56	17.61	50.17
Less, Oroville Power Revenues	-19.55	-6.12	-25.66
<i>Subtotal</i>	13.01	11.49	24.50
Delta Facilities ^b	8.88	8.19	17.07
California Aqueduct, portion			
Reach 1	2.07	3.22	5.29
Reach 2A	1.25	0.59	1.83
Reach 2B	0.63	0.30	0.93
Reach 3	0.45	0.18	0.63
<i>Subtotal</i>	4.40	4.29	8.69
San Luis Facilities	6.27	3.77	10.04
Planning and preoperating costs through 2000	1.88	0.00	1.88
45,000 AF relinquished costs	0.15	0.12	0.27
Less, Capital Cost Credits	-0.88	0.00	-0.88
Less, Delta Water Charges paid prior to 2002	-22.25	-15.14	-37.39
Rate applicable in 2002	11.46	12.71	24.17

^aIncludes revenue received from non-contractors.

^bIncludes (1) Delta Facility planning costs, (2) Delta Studies costs, and (3) Suisun Marsh Facilities costs.

Table B-21
Total Delta Water Charge for Each Contractor
(Dollars)

Sheet 1 of 4

Calendar Year	North Bay Area			South Bay Area				Central Coastal Area		
	Napa County FC&WCD (1)	Solano County Water Agency (2)	Total (3)	Alameda County FC&WCD, Zone 7 (4)	Alameda County Water District (5)	Santa Clara Valley Water District (6)	Total (7)	San Luis Obispo County (8)	Santa Barbara County (9)	Total (10)
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	14,000	50,050	177,100	241,150	0	0	0
1968	0	0	0	19,156	29,701	193,245	242,102	0	0	0
1969	0	0	0	30,324	44,096	215,483	289,903	0	0	0
1970	0	0	0	80,908	107,730	585,200	773,838	0	0	0
1971	0	0	0	57,320	123,080	637,120	817,520	0	0	0
1972	0	0	0	99,668	143,877	707,328	950,873	0	0	0
1973	0	0	0	120,880	167,099	782,167	1,070,146	0	0	0
1974	0	0	0	137,684	182,339	818,664	1,138,687	0	0	0
1975	0	0	0	146,204	187,324	804,123	1,137,651	0	0	0
1976	0	0	0	168,489	208,652	862,036	1,239,177	0	0	0
1977	0	0	0	172,931	208,645	827,062	1,208,638	0	0	0
1978	0	0	0	206,378	243,231	926,594	1,376,203	0	0	0
1979	0	0	0	237,771	273,208	1,005,955	1,516,934	0	0	0
1980	0	18,325	18,325	272,717	307,426	1,090,867	1,671,010	12,396	3,479	15,875
1981	0	25,440	25,440	415,564	469,768	1,589,984	2,475,316	18,068	10,414	28,482
1982	0	34,917	34,917	457,988	519,053	1,679,289	2,656,330	38,166	99,788	137,954
1983	0	12,035	12,035	316,703	359,775	1,114,795	1,791,273	38,004	68,902	106,906
1984	0	22,453	22,453	334,587	380,914	1,132,448	1,847,949	57,909	105,498	163,407
1985	0	22,001	22,001	381,970	435,728	1,244,939	2,062,637	106,103	192,937	299,040
1986	35,358	21,767	57,125	423,378	485,372	1,330,615	2,239,365	151,206	275,347	426,553
1987	0	22,984	22,984	430,024	493,786	1,304,900	2,228,710	185,355	336,664	522,019
1988	88,878	150,466	239,344	464,114	533,731	1,361,400	2,359,245	239,792	436,607	676,399
1989	102,688	305,328	408,016	513,853	591,760	1,491,833	2,597,446	331,518	602,402	933,920
1990	112,723	355,132	467,855	534,787	616,676	1,537,512	2,688,975	417,802	760,166	1,177,968
1991	129,296	395,515	524,811	603,028	681,067	1,667,194	2,951,289	443,403	806,745	1,250,148
1992	158,879	489,808	648,687	729,545	808,579	1,945,453	3,483,577	506,628	921,780	1,428,408
1993	172,457	530,778	703,235	771,894	840,958	1,990,673	3,603,525	507,825	923,957	1,431,782
1994	177,824	546,610	724,434	778,647	817,579	1,946,615	3,542,841	486,654	885,437	1,372,091
1995	203,738	713,497	917,235	874,946	874,946	2,083,205	3,833,097	520,801	947,567	1,468,368
1996	213,506	774,152	987,658	901,129	860,168	2,048,020	3,809,317	512,005	931,562	1,443,567
1997	250,558	866,141	1,116,699	1,041,633	951,056	2,264,420	4,257,109	566,105	1,029,994	1,596,099
1998	266,952	882,469	1,149,421	1,048,658	957,470	2,279,691	4,285,819	141,683	888,760	1,030,443
1999	290,688	923,459	1,214,147	1,084,480	990,178	2,357,566	4,432,224	589,391	1,072,362	1,661,753
2000	390,936	948,784	1,339,720	1,628,402	1,005,778	2,394,709	5,028,889	598,677	1,089,257	1,687,934
2001	496,412	1,097,880	1,594,292	1,868,283	1,005,998	2,395,234	5,269,515	598,809	1,089,496	1,688,305
2002	510,020	1,119,047	1,629,067	1,885,382	1,015,206	2,417,156	5,317,744	604,289	1,099,468	1,703,757
2003	519,084	1,130,165	1,649,249	1,885,382	1,015,206	2,417,156	5,317,744	604,289	1,099,468	1,703,757
2004	528,149	1,141,043	1,669,192	1,885,382	1,015,206	2,417,156	5,317,744	604,289	1,099,468	1,703,757
2005	537,213	1,142,251	1,679,464	1,885,382	1,015,206	2,417,156	5,317,744	604,289	1,099,468	1,703,757
2006	545,069	1,143,460	1,688,529	1,885,382	1,015,206	2,417,156	5,317,744	604,289	1,099,468	1,703,757
2007	552,924	1,144,668	1,697,592	1,885,382	1,015,206	2,417,156	5,317,744	604,289	1,099,468	1,703,757
2008	560,780	1,145,877	1,706,657	1,885,382	1,015,206	2,417,156	5,317,744	604,289	1,099,468	1,703,757
2009	568,636	1,147,086	1,715,722	1,885,382	1,015,206	2,417,156	5,317,744	604,289	1,099,468	1,703,757
2010	576,492	1,148,294	1,724,786	1,885,382	1,015,206	2,417,156	5,317,744	604,289	1,099,468	1,703,757
2011	584,347	1,149,503	1,733,850	1,885,382	1,015,206	2,417,156	5,317,744	604,289	1,099,468	1,703,757
2012	592,203	1,150,711	1,742,914	1,885,382	1,015,206	2,417,156	5,317,744	604,289	1,099,468	1,703,757
2013	598,850	1,151,920	1,750,770	1,885,382	1,015,206	2,417,156	5,317,744	604,289	1,099,468	1,703,757
2014	607,915	1,153,128	1,761,043	1,885,382	1,015,206	2,417,156	5,317,744	604,289	1,099,468	1,703,757
2015	624,231	1,154,337	1,778,568	1,885,382	1,015,206	2,417,156	5,317,744	604,289	1,099,468	1,703,757
2016	639,338	1,154,337	1,793,675	1,885,382	1,015,206	2,417,156	5,317,744	604,289	1,099,468	1,703,757
2017	654,445	1,154,337	1,808,782	1,885,382	1,015,206	2,417,156	5,317,744	604,289	1,099,468	1,703,757
2018	669,552	1,154,337	1,823,889	1,885,382	1,015,206	2,417,156	5,317,744	604,289	1,099,468	1,703,757
2019	684,659	1,154,337	1,838,996	1,885,382	1,015,206	2,417,156	5,317,744	604,289	1,099,468	1,703,757
2020	699,162	1,154,337	1,853,499	1,885,382	1,015,206	2,417,156	5,317,744	604,289	1,099,468	1,703,757
2021	701,580	1,154,337	1,855,917	1,885,382	1,015,206	2,417,156	5,317,744	604,289	1,099,468	1,703,757
2022	701,580	1,154,337	1,855,917	1,885,382	1,015,206	2,417,156	5,317,744	604,289	1,099,468	1,703,757
2023	701,580	1,154,337	1,855,917	1,885,382	1,015,206	2,417,156	5,317,744	604,289	1,099,468	1,703,757
2024	701,580	1,154,337	1,855,917	1,885,382	1,015,206	2,417,156	5,317,744	604,289	1,099,468	1,703,757
2025	701,580	1,154,337	1,855,917	1,885,382	1,015,206	2,417,156	5,317,744	604,289	1,099,468	1,703,757
2026	701,580	1,154,337	1,855,917	1,885,382	1,015,206	2,417,156	5,317,744	604,289	1,099,468	1,703,757
2027	701,580	1,154,337	1,855,917	1,885,382	1,015,206	2,417,156	5,317,744	604,289	1,099,468	1,703,757
2028	701,580	1,154,337	1,855,917	1,885,382	1,015,206	2,417,156	5,317,744	604,289	1,099,468	1,703,757
2029	701,580	1,154,337	1,855,917	1,885,382	1,015,206	2,417,156	5,317,744	604,289	1,099,468	1,703,757
2030	701,580	1,154,337	1,855,917	1,885,382	1,015,206	2,417,156	5,317,744	604,289	1,099,468	1,703,757
2031	701,580	1,154,337	1,855,917	1,885,382	1,015,206	2,417,156	5,317,744	604,289	1,099,468	1,703,757
2032	701,580	1,154,337	1,855,917	1,885,382	1,015,206	2,417,156	5,317,744	604,289	1,099,468	1,703,757
2033	701,580	1,154,337	1,855,917	1,885,382	1,015,206	2,417,156	5,317,744	604,289	1,099,468	1,703,757
2034	701,580	1,154,337	1,855,917	1,885,382	1,015,206	2,417,156	5,317,744	604,289	1,099,468	1,703,757
2035	701,580	1,154,337	1,855,917	1,885,382	1,015,206	2,417,156	5,317,744	604,289	1,099,468	1,703,757
Total	24,867,662	48,268,171	73,135,833	81,471,031	51,473,802	128,976,743	261,921,576	27,614,126	50,861,033	78,475,159

Table B-21
Total Delta Water Charge for Each Contractor
(Dollars)

Sheet 2 of 4

Calendar Year	San Joaquin Valley Area								
	Dudley Ridge Water District (11)	Empire West Side Irrigation District (12)	Future Contractor San Joaquin Valley (13)	Kern County Water Agency		County of Kings (16)	Oak Flat Water District (17)	Tulare Lake Basin Water Storage District (18)	Total (19)
				Municipal and Industrial (14)	Agricultural (15)				
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	40,695	10,469	0	0	165,522	3,177	8,073	98,608	326,544
1969	61,267	3,281	0	0	337,686	4,200	8,805	102,478	517,717
1970	104,405	19,950	0	0	964,915	8,645	17,290	228,095	1,343,300
1971	129,596	21,720	0	0	1,377,772	9,412	20,272	264,260	1,823,032
1972	160,756	24,113	0	0	2,175,835	11,253	43,131	905,057	3,320,145
1973	195,541	26,664	0	386,638	2,373,167	13,333	27,553	373,307	3,396,203
1974	224,202	27,909	0	446,545	2,781,595	13,954	29,770	445,138	3,969,113
1975	329,688	27,413	0	481,560	3,041,048	14,620	33,702	827,591	4,755,622
1976	414,245	29,388	0	549,549	3,931,785	15,673	35,966	877,151	5,853,757
1977	312,532	28,195	0	569,545	4,071,218	15,977	40,289	626,210	5,663,966
1978	342,208	31,588	0	674,939	4,950,959	20,006	41,065	666,516	6,727,281
1979	395,523	34,294	0	772,757	5,901,986	22,863	45,725	771,613	7,944,761
1980	555,341	37,679	0	881,371	6,984,026	27,272	70,658	933,481	9,489,828
1981	740,789	54,204	0	1,351,487	11,140,730	41,556	77,692	1,373,168	14,779,626
1982	782,396	57,248	0	1,518,993	12,703,436	47,707	85,873	1,530,443	16,726,096
1983	543,462	38,004	0	1,057,789	9,141,315	35,471	58,273	78,506	10,952,820
1984	580,379	13,572	0	1,333,200	9,741,623	39,893	61,770	756,132	12,526,569
1985	667,740	42,441	0	1,540,611	11,403,920	48,100	69,320	644,383	14,416,515
1986	745,447	45,362	0	1,714,679	12,925,113	55,946	77,115	1,469,725	17,033,387
1987	762,180	44,485	0	1,766,065	13,410,817	59,314	77,108	1,503,601	17,623,570
1988	827,669	46,411	0	1,916,790	14,707,763	61,882	83,540	1,633,680	19,277,735
1989	921,621	49,728	0	2,125,033	16,312,361	66,304	92,825	1,821,693	21,389,565
1990	964,288	50,136	0	1,998,766	17,276,959	66,848	95,259	1,980,383	22,432,639
1991	1,023,374	53,208	0	2,121,239	18,335,590	70,944	101,096	2,101,729	23,807,180
1992	1,169,299	60,795	0	2,727,688	20,646,125	81,061	115,511	2,401,419	27,201,898
1993	1,172,060	60,939	0	2,734,129	20,694,874	81,252	115,784	2,407,089	27,266,127
1994	1,123,198	58,398	0	2,156,809	20,295,455	77,865	110,957	2,306,739	26,129,421
1995	1,202,009	62,497	0	2,803,995	21,223,694	83,328	118,743	2,468,598	27,962,864
1996	534,818	69,191	0	2,756,635	19,492,814	81,921	102,219	2,426,904	25,464,502
1997	1,208,521	67,162	0	3,047,908	22,148,973	90,576	129,072	2,683,338	29,375,550
1998	1,216,671	77,807	0	2,726,511	22,070,376	91,188	129,942	2,820,148	29,132,643
1999	1,258,233	69,974	0	2,819,648	22,824,299	94,303	134,381	2,793,715	29,994,553
2000	1,278,056	70,943	0	3,223,279	21,220,235	95,788	136,498	2,837,730	28,862,529
2001	1,278,336	71,058	0	2,864,700	21,110,372	95,809	136,528	2,838,352	28,395,155
2002	1,290,036	71,708	0	2,890,919	21,303,580	96,686	137,778	2,864,330	28,655,037
2003	1,290,036	71,708	0	2,890,919	21,303,580	96,686	137,778	2,864,330	28,655,037
2004	1,290,036	71,708	0	2,890,919	21,303,580	96,686	137,778	2,864,330	28,655,037
2005	1,290,036	71,708	0	2,890,919	21,303,580	96,686	137,778	2,864,330	28,655,037
2006	1,290,036	71,708	0	2,890,919	21,303,580	96,686	137,778	2,864,330	28,655,037
2007	1,290,036	71,708	0	2,890,919	21,303,580	96,686	137,778	2,864,330	28,655,037
2008	1,290,036	71,708	0	2,890,919	21,303,580	96,686	137,778	2,864,330	28,655,037
2009	1,290,036	71,708	0	2,890,919	21,303,580	96,686	137,778	2,864,330	28,655,037
2010	1,290,036	71,708	0	2,890,919	21,303,580	96,686	137,778	2,864,330	28,655,037
2011	1,290,036	71,708	0	2,890,919	21,303,580	96,686	137,778	2,864,330	28,655,037
2012	1,290,036	71,708	0	2,890,919	21,303,580	96,686	137,778	2,864,330	28,655,037
2013	1,290,036	71,708	0	2,890,919	21,303,580	96,686	137,778	2,864,330	28,655,037
2014	1,290,036	71,708	0	2,890,919	21,303,580	96,686	137,778	2,864,330	28,655,037
2015	1,290,036	71,708	0	2,890,919	21,303,580	96,686	137,778	2,864,330	28,655,037
2016	1,290,036	71,708	0	2,890,919	21,303,580	96,686	137,778	2,864,330	28,655,037
2017	1,290,036	71,708	0	2,890,919	21,303,580	96,686	137,778	2,864,330	28,655,037
2018	1,290,036	71,708	0	2,890,919	21,303,580	96,686	137,778	2,864,330	28,655,037
2019	1,290,036	71,708	0	2,890,919	21,303,580	96,686	137,778	2,864,330	28,655,037
2020	1,290,036	71,708	0	2,890,919	21,303,580	96,686	137,778	2,864,330	28,655,037
2021	1,290,036	71,708	0	2,890,919	21,303,580	96,686	137,778	2,864,330	28,655,037
2022	1,290,036	71,708	0	2,890,919	21,303,580	96,686	137,778	2,864,330	28,655,037
2023	1,290,036	71,708	0	2,890,919	21,303,580	96,686	137,778	2,864,330	28,655,037
2024	1,290,036	71,708	0	2,890,919	21,303,580	96,686	137,778	2,864,330	28,655,037
2025	1,290,036	71,708	0	2,890,919	21,303,580	96,686	137,778	2,864,330	28,655,037
2026	1,290,036	71,708	0	2,890,919	21,303,580	96,686	137,778	2,864,330	28,655,037
2027	1,290,036	71,708	0	2,890,919	21,303,580	96,686	137,778	2,864,330	28,655,037
2028	1,290,036	71,708	0	2,890,919	21,303,580	96,686	137,778	2,864,330	28,655,037
2029	1,290,036	71,708	0	2,890,919	21,303,580	96,686	137,778	2,864,330	28,655,037
2030	1,290,036	71,708	0	2,890,919	21,303,580	96,686	137,778	2,864,330	28,655,037
2031	1,290,036	71,708	0	2,890,919	21,303,580	96,686	137,778	2,864,330	28,655,037
2032	1,290,036	71,708	0	2,890,919	21,303,580	96,686	137,778	2,864,330	28,655,037
2033	1,290,036	71,708	0	2,890,919	21,303,580	96,686	137,778	2,864,330	28,655,037
2034	1,290,036	71,708	0	2,890,919	21,303,580	96,686	137,778	2,864,330	28,655,037
2035	1,290,036	71,708	0	2,890,919	21,303,580	96,686	137,778	2,864,330	28,655,037
Total	67,127,769	3,924,298	0	149,360,104	1,122,206,078	4,934,765	7,216,257	145,384,200	1,500,153,471

Table B-21
Total Delta Water Charge for Each Contractor
(Dollars)

Sheet 3 of 4

Calendar Year	Southern California Area									
	Antelope Valley-East Kern Water Agency (20)	Castaic Lake Water Agency (21)	Coachella Valley Water District (22)	Crestline-Lake Arrowhead Water Agency (23)	Desert Water Agency (24)	Littlerock Creek Irrigation District (25)	Mojave Water Agency (26)	Palmdale Water District (27)	San Bernardino Valley Municipal Water District (28)	San Gabriel Municipal Water District (29)
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	13,060	0	0	0	0	0	0	0	0
1969	0	17,804	0	0	0	0	0	0	0	0
1970	0	37,905	0	0	0	0	0	0	0	0
1971	0	48,508	0	0	0	0	0	0	0	0
1972	160,756	74,751	41,797	4,662	64,303	1,367	67,518	13,021	369,739	85,202
1973	222,207	107,163	51,552	7,279	79,994	2,577	95,104	26,131	54,908	14,338
1974	279,090	143,266	59,539	10,791	93,030	3,721	121,869	39,631	465,150	114,427
1975	319,822	166,307	63,964	13,250	100,515	4,752	140,722	50,989	479,733	119,705
1976	431,018	207,673	74,449	17,045	117,550	6,269	174,366	67,591	538,772	137,142
1977	469,922	226,502	79,144	19,079	122,180	6,861	189,848	77,255	540,410	139,097
1978	600,180	274,819	97,313	24,428	147,413	9,687	236,913	98,345	631,768	165,313
1979	720,173	320,077	115,033	29,836	171,470	11,889	284,640	117,285	714,457	189,760
1980	857,818	376,845	134,920	35,949	210,736	14,256	337,177	138,590	811,952	215,694
1981	1,355,100	592,631	218,713	57,637	343,292	22,946	534,813	211,396	1,237,658	330,644
1982	1,551,434	664,082	254,298	66,408	400,739	26,335	313,057	235,100	1,341,923	364,482
1983	1,110,994	472,521	184,283	47,759	291,367	19,002	434,517	163,925	943,775	252,096
1984	450,405	509,602	202,914	52,247	321,718	20,719	472,282	174,500	1,003,760	266,383
1985	565,881	591,346	240,344	61,540	381,970	24,474	551,734	200,605	1,152,983	308,405
1986	635,066	659,259	275,347	70,160	438,498	27,822	625,994	223,785	1,285,253	350,799
1987	652,450	676,176	288,131	73,104	467,095	28,064	648,002	228,654	1,319,729	364,779
1988	711,641	742,582	319,496	80,756	525,996	32,024	711,641	248,146	1,438,752	402,232
1989	2,083,593	830,453	362,565	91,333	605,021	36,301	803,932	276,155	1,607,864	454,180
1990	2,207,667	869,029	386,049	96,930	636,731	38,438	848,974	289,119	1,696,277	481,308
1991	2,454,678	961,298	409,704	102,869	675,746	40,793	900,994	306,835	1,819,725	510,800
1992	2,804,695	1,098,371	468,125	117,538	772,102	46,610	1,029,469	350,587	2,079,203	583,636
1993	2,811,318	1,100,964	469,230	117,815	773,925	46,720	1,031,900	351,415	2,084,113	585,014
1994	2,694,116	1,055,065	449,668	112,905	741,661	44,772	988,880	336,766	1,997,227	560,625
1995	2,883,156	1,129,097	481,220	120,826	793,702	47,914	1,058,269	360,394	2,137,369	599,963
1996	2,834,460	1,110,027	473,093	118,785	780,296	47,104	1,040,394	354,307	2,101,269	589,830
1997	3,133,957	1,227,316	523,081	131,336	862,744	52,082	1,150,325	391,745	2,323,295	652,153
1998	3,155,093	1,235,593	526,609	132,222	868,562	52,433	1,728,006	394,387	2,338,963	656,551
1999	3,262,870	1,277,800	544,598	136,739	898,233	54,224	1,787,034	407,859	2,418,863	678,979
2000	3,314,278	2,279,763	553,178	138,893	912,384	55,078	1,815,190	510,073	2,456,972	689,676
2001	3,315,004	2,280,263	553,299	138,924	912,584	55,090	1,815,587	510,185	2,457,510	689,827
2002	3,345,344	2,301,133	558,363	140,195	920,936	55,595	1,832,204	514,854	2,480,002	696,141
2003	3,345,344	2,301,133	558,363	140,195	920,936	55,595	1,832,204	514,854	2,480,002	696,141
2004	3,345,344	2,301,133	558,363	140,195	920,936	55,595	1,832,204	514,854	2,480,002	696,141
2005	3,345,344	2,301,133	558,363	140,195	920,936	55,595	1,832,204	514,854	2,480,002	696,141
2006	3,345,344	2,301,133	558,363	140,195	920,936	55,595	1,832,204	514,854	2,480,002	696,141
2007	3,345,344	2,301,133	558,363	140,195	920,936	55,595	1,832,204	514,854	2,480,002	696,141
2008	3,345,344	2,301,133	558,363	140,195	920,936	55,595	1,832,204	514,854	2,480,002	696,141
2009	3,345,344	2,301,133	558,363	140,195	920,936	55,595	1,832,204	514,854	2,480,002	696,141
2010	3,345,344	2,301,133	558,363	140,195	920,936	55,595	1,832,204	514,854	2,480,002	696,141
2011	3,345,344	2,301,133	558,363	140,195	920,936	55,595	1,832,204	514,854	2,480,002	696,141
2012	3,345,344	2,301,133	558,363	140,195	920,936	55,595	1,832,204	514,854	2,480,002	696,141
2013	3,345,344	2,301,133	558,363	140,195	920,936	55,595	1,832,204	514,854	2,480,002	696,141
2014	3,345,344	2,301,133	558,363	140,195	920,936	55,595	1,832,204	514,854	2,480,002	696,141
2015	3,345,344	2,301,133	558,363	140,195	920,936	55,595	1,832,204	514,854	2,480,002	696,141
2016	3,345,344	2,301,133	558,363	140,195	920,936	55,595	1,832,204	514,854	2,480,002	696,141
2017	3,345,344	2,301,133	558,363	140,195	920,936	55,595	1,832,204	514,854	2,480,002	696,141
2018	3,345,344	2,301,133	558,363	140,195	920,936	55,595	1,832,204	514,854	2,480,002	696,141
2019	3,345,344	2,301,133	558,363	140,195	920,936	55,595	1,832,204	514,854	2,480,002	696,141
2020	3,345,344	2,301,133	558,363	140,195	920,936	55,595	1,832,204	514,854	2,480,002	696,141
2021	3,345,344	2,301,133	558,363	140,195	920,936	55,595	1,832,204	514,854	2,480,002	696,141
2022	3,345,344	2,301,133	558,363	140,195	920,936	55,595	1,832,204	514,854	2,480,002	696,141
2023	3,345,344	2,301,133	558,363	140,195	920,936	55,595	1,832,204	514,854	2,480,002	696,141
2024	3,345,344	2,301,133	558,363	140,195	920,936	55,595	1,832,204	514,854	2,480,002	696,141
2025	3,345,344	2,301,133	558,363	140,195	920,936	55,595	1,832,204	514,854	2,480,002	696,141
2026	3,345,344	2,301,133	558,363	140,195	920,936	55,595	1,832,204	514,854	2,480,002	696,141
2027	3,345,344	2,301,133	558,363	140,195	920,936	55,595	1,832,204	514,854	2,480,002	696,141
2028	3,345,344	2,301,133	558,363	140,195	920,936	55,595	1,832,204	514,854	2,480,002	696,141
2029	3,345,344	2,301,133	558,363	140,195	920,936	55,595	1,832,204	514,854	2,480,002	696,141
2030	3,345,344	2,301,133	558,363	140,195	920,936	55,595	1,832,204	514,854	2,480,002	696,141
2031	3,345,344	2,301,133	558,363	140,195	920,936	55,595	1,832,204	514,854	2,480,002	696,141
2032	3,345,344	2,301,133	558,363	140,195	920,936	55,595	1,832,204	514,854	2,480,002	696,141
2033	3,345,344	2,301,133	558,363	140,195	920,936	55,595	1,832,204	514,854	2,480,002	696,141
2034	3,345,344	2,301,133	558,363	140,195	920,936	55,595	1,832,204	514,854	2,480,002	696,141
2035	3,345,344	2,301,133	558,363	140,195	920,936	55,595	1,832,204	514,854	2,480,002	696,141
Total	161,790,538	101,616,440	27,885,998	6,995,675	45,823,381	2,771,554	84,234,087	24,659,812	126,169,440	35,221,834

Table B-21
Total Delta Water Charge for Each Contractor
(Dollars)

Sheet 4 of 4

Calendar Year	Southern California Area (continued)				Feather River Area				South Bay Area Future Contractor (38)	Grand Total (39)
	San Geronio Pass Water Agency (30)	Metropolitan Water District of Southern California (31)	Ventura County Flood Control District (32)	Total (33)	City of Yuba City (34)	County of Butte (35)	Plumas County FC&WCD (36)	Total (37)		
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	241,150
1968	0	0	0	13,060	0	1,050	875	1,925	0	583,631
1969	0	0	0	17,804	0	1,225	929	2,154	0	827,578
1970	0	0	0	37,905	0	3,848	1,995	5,843	0	2,160,886
1971	0	0	0	48,508	0	4,546	3,186	7,732	0	2,696,792
1972	0	2,043,211	0	2,926,327	0	4,929	3,778	8,707	0	7,206,052
1973	0	2,317,893	0	2,979,146	0	7,059	4,444	11,503	0	7,456,998
1974	0	4,231,933	0	5,562,447	0	8,336	4,931	13,267	0	10,683,514
1975	0	5,073,286	0	6,533,045	0	9,416	5,117	14,533	0	12,440,851
1976	0	6,422,167	0	8,194,042	0	7,004	5,780	12,784	0	15,299,760
1977	0	7,104,278	0	8,974,576	0	16,917	5,827	22,744	0	15,869,924
1978	0	9,016,389	0	11,302,568	0	12,635	6,844	19,479	0	19,425,531
1979	0	10,935,192	0	13,609,812	0	16,575	7,773	24,348	0	23,095,855
1980	84,294	13,102,796	12,396	16,333,423	0	19,834	8,801	28,635	0	27,557,096
1981	140,930	20,910,099	36,136	25,991,995	0	21,682	13,370	35,052	0	43,335,911
1982	167,929	23,998,560	57,248	29,441,595	0	16,117	14,694	30,811	0	49,027,703
1983	124,148	17,203,307	50,672	21,298,366	0	15,202	10,134	25,336	0	34,186,736
1984	138,982	18,766,458	64,344	22,444,314	20,590	15,442	10,681	46,713	0	37,051,405
1985	166,935	22,050,974	84,882	26,382,073	24,050	16,976	12,166	53,192	0	43,235,458
1986	195,056	25,089,658	120,965	29,997,662	31,753	18,145	13,457	63,355	0	49,817,447
1987	207,598	26,095,043	148,284	31,198,109	37,071	17,794	13,642	68,507	0	51,663,899
1988	233,604	28,781,238	201,116	34,429,224	46,722	18,565	14,852	80,139	0	57,062,086
1989	268,530	32,505,376	265,215	40,190,518	61,184	19,891	16,576	97,651	0	65,617,116
1990	289,119	33,616,369	334,242	41,790,252	63,506	20,055	17,381	100,942	0	68,658,631
1991	306,835	35,676,185	354,722	44,521,184	170,267	21,283	19,155	210,705	0	73,265,317
1992	350,587	40,763,329	405,303	50,869,555	194,545	24,318	22,697	241,560	0	83,873,685
1993	351,415	40,859,579	406,260	50,989,668	195,005	24,376	23,563	242,944	0	84,237,281
1994	336,766	39,156,173	389,323	48,863,947	186,875	23,360	23,360	233,595	0	80,866,329
1995	360,394	41,903,674	416,641	52,292,619	199,987	24,999	26,040	251,026	0	86,725,209
1996	0	41,195,923	409,604	51,055,092	196,610	24,576	26,624	247,810	0	83,007,946
1997	0	45,548,810	447,746	56,444,590	214,918	27,173	30,223	272,314	0	93,062,361
1998	0	45,855,992	450,529	57,394,940	107,459	27,356	31,537	166,352	0	93,159,618
1999	47,152	47,422,430	466,491	59,403,272	226,327	28,291	33,820	288,438	0	96,994,387
2000	71,841	48,169,576	478,942	61,445,844	229,892	69,207	35,708	334,807	0	98,699,723
2001	95,809	48,180,135	479,047	61,483,264	229,942	83,833	37,187	350,962	0	98,781,493
2002	96,686	48,621,093	483,431	62,045,977	232,047	664,718	38,961	935,726	0	100,287,308
2003	120,858	48,621,093	483,431	62,070,149	232,047	664,718	40,395	937,160	0	100,333,096
2004	145,029	48,621,093	483,431	62,094,320	232,047	664,718	41,830	938,595	0	100,378,645
2005	157,115	48,621,093	483,431	62,106,406	232,047	664,718	43,264	940,029	0	100,402,437
2006	169,201	48,621,093	483,431	62,118,492	232,047	664,718	44,937	941,702	0	100,425,261
2007	181,287	48,621,093	483,431	62,130,578	232,047	664,718	46,610	943,375	0	100,448,083
2008	418,168	48,621,093	483,431	62,367,459	232,047	664,718	48,283	945,048	0	100,695,702
2009	418,168	48,621,093	483,431	62,367,459	232,047	664,718	49,956	946,721	0	100,706,440
2010	418,168	48,621,093	483,431	62,367,459	232,047	664,718	51,630	948,395	0	100,717,178
2011	418,168	48,621,093	483,431	62,367,459	232,047	664,718	53,542	950,307	0	100,728,154
2012	418,168	48,621,093	483,431	62,367,459	232,047	664,718	55,454	952,219	0	100,739,130
2013	418,168	48,621,093	483,431	62,367,459	232,047	664,718	57,605	954,370	0	100,749,137
2014	418,168	48,621,093	483,431	62,367,459	232,047	664,718	59,757	956,522	0	100,761,562
2015	418,168	48,621,093	483,431	62,367,459	232,047	664,718	62,147	958,912	0	100,781,477
2016	418,168	48,621,093	483,431	62,367,459	232,047	664,718	64,537	961,302	0	100,798,974
2017	418,168	48,621,093	483,431	62,367,459	232,047	664,718	64,537	961,302	0	100,814,081
2018	418,168	48,621,093	483,431	62,367,459	232,047	664,718	64,537	961,302	0	100,829,188
2019	418,168	48,621,093	483,431	62,367,459	232,047	664,718	64,537	961,302	0	100,844,295
2020	418,168	48,621,093	483,431	62,367,459	232,047	664,718	64,537	961,302	0	100,858,798
2021	418,168	48,621,093	483,431	62,367,459	232,047	664,718	64,537	961,302	0	100,861,216
2022	418,168	48,621,093	483,431	62,367,459	232,047	664,718	64,537	961,302	0	100,861,216
2023	418,168	48,621,093	483,431	62,367,459	232,047	664,718	64,537	961,302	0	100,861,216
2024	418,168	48,621,093	483,431	62,367,459	232,047	664,718	64,537	961,302	0	100,861,216
2025	418,168	48,621,093	483,431	62,367,459	232,047	664,718	64,537	961,302	0	100,861,216
2026	418,168	48,621,093	483,431	62,367,459	232,047	664,718	64,537	961,302	0	100,861,216
2027	418,168	48,621,093	483,431	62,367,459	232,047	664,718	64,537	961,302	0	100,861,216
2028	418,168	48,621,093	483,431	62,367,459	232,047	664,718	64,537	961,302	0	100,861,216
2029	418,168	48,621,093	483,431	62,367,459	232,047	664,718	64,537	961,302	0	100,861,216
2030	418,168	48,621,093	483,431	62,367,459	232,047	664,718	64,537	961,302	0	100,861,216
2031	418,168	48,621,093	483,431	62,367,459	232,047	664,718	64,537	961,302	0	100,861,216
2032	418,168	48,621,093	483,431	62,367,459	232,047	664,718	64,537	961,302	0	100,861,216
2033	418,168	48,621,093	483,431	62,367,459	232,047	664,718	64,537	961,302	0	100,861,216
2034	418,168	48,621,093	483,431	62,367,459	232,047	664,718	64,537	961,302	0	100,861,216
2035	418,168	48,621,093	483,431	62,367,459	232,047	664,718	64,537	961,302	0	100,861,216
Total	16,516,804	2,437,113,195	22,516,762	3,093,315,520	10,326,301	23,272,427	2,492,258	36,090,986	0	5,043,092,545

Table B-22
Water System Revenue Bond Surcharge for Each Contractor
(Dollars)

Sheet 1 of 4

Calendar Year	North Bay Area			South Bay Area				Central Coastal Area		
	Napa County FC&WCD (1)	Solano County Water Agency (2)	Total (3)	Alameda County FC&WCD, Zone 7 (4)	Alameda County Water District (5)	Santa Clara Valley Water District (6)	Total (7)	San Luis Obispo County (8)	Santa Barbara County (9)	Total (10)
1971	0	0	0	0	0	0	0	0	0	0
1972	0	0	0	0	0	0	0	0	0	0
1973	0	0	0	0	0	0	0	0	0	0
1974	0	0	0	0	0	0	0	0	0	0
1975	0	0	0	0	0	0	0	0	0	0
1976	0	0	0	0	0	0	0	0	0	0
1977	0	0	0	0	0	0	0	0	0	0
1978	0	0	0	0	0	0	0	0	0	0
1979	0	0	0	0	0	0	0	0	0	0
1980	0	0	0	0	0	0	0	0	0	0
1981	0	0	0	0	0	0	0	0	0	0
1982	0	0	0	0	0	0	0	0	0	0
1983	0	0	0	0	0	0	0	0	0	0
1984	0	0	0	0	0	0	0	0	0	0
1985	0	0	0	0	0	0	0	0	0	0
1986	0	0	0	0	0	0	0	0	0	0
1987	0	0	0	0	0	0	0	0	0	0
1988	29,131	40,505	69,636	25,436	30,176	100,035	155,647	13,126	24,392	37,518
1989	48,804	69,621	118,425	43,343	51,681	170,303	265,327	26,828	49,634	76,462
1990	41,166	60,482	101,648	38,407	51,185	149,440	239,032	27,956	51,795	79,751
1991	63,389	92,401	155,790	62,470	81,991	235,712	380,173	44,887	83,709	128,596
1992	84,320	126,227	210,547	89,247	115,208	325,629	530,084	61,137	113,925	175,062
1993	90,152	137,473	227,625	98,432	125,174	347,457	571,063	67,725	126,662	194,387
1994	91,785	141,222	233,007	102,021	126,216	352,415	580,652	81,420	159,156	240,576
1995	108,311	181,787	290,098	126,000	149,378	416,955	692,333	131,674	270,727	402,401
1996	132,304	232,343	364,647	158,514	180,787	505,043	844,344	242,654	534,448	777,102
1997	135,556	237,492	373,048	171,263	187,162	522,127	880,552	141,810	846,616	988,426
1998	130,346	228,366	358,712	164,682	179,971	502,065	846,718	136,361	814,087	950,448
1999	182,507	316,416	498,923	227,072	248,031	691,830	1,166,933	188,835	1,124,110	1,312,945
2000	391,377	597,828	989,205	571,037	467,339	1,303,756	2,342,132	358,219	2,237,677	2,595,896
2001	386,129	589,812	975,941	924,257	461,073	1,286,275	2,671,605	353,415	2,207,673	2,561,088
2002	393,952	601,761	995,713	792,437	470,414	1,312,334	2,575,185	360,575	2,252,397	2,612,972
2003	391,569	598,122	989,691	787,645	467,569	1,304,397	2,559,611	358,935	2,238,775	2,597,170
2004	396,346	605,418	1,001,764	797,253	473,273	1,320,309	2,590,835	362,766	2,266,085	2,628,851
2005	394,313	602,313	996,626	793,164	470,845	1,313,537	2,577,546	360,906	2,254,462	2,615,368
2006	387,976	592,633	980,609	780,417	463,278	1,292,427	2,536,122	355,106	2,218,230	2,573,336
2007	386,615	590,555	977,170	777,680	461,654	1,287,895	2,527,229	353,861	2,210,453	2,564,314
2008	391,795	598,467	990,262	788,099	467,839	1,305,150	2,561,088	358,601	2,240,067	2,598,668
2009	392,577	599,662	992,239	789,673	468,773	1,307,756	2,566,202	359,317	2,244,540	2,603,857
2010	393,208	600,626	993,834	790,942	469,526	1,309,857	2,570,325	359,895	2,248,146	2,608,041
2011	394,025	601,873	995,898	792,584	470,501	1,312,577	2,575,662	360,642	2,252,814	2,613,456
2012	394,733	602,956	997,689	794,010	471,347	1,314,938	2,580,295	361,291	2,256,867	2,618,158
2013	392,449	599,467	991,916	789,415	468,620	1,307,329	2,565,364	359,200	2,243,807	2,603,007
2014	407,494	622,448	1,029,942	819,679	486,585	1,357,448	2,663,712	372,971	2,329,827	2,702,798
2015	398,553	608,789	1,007,342	801,692	475,908	1,327,660	2,605,260	364,786	2,278,702	2,643,488
2016	397,334	606,928	1,004,262	799,241	474,453	1,323,601	2,597,295	363,671	2,271,735	2,635,406
2017	395,755	604,516	1,000,271	796,065	472,568	1,318,342	2,586,975	362,226	2,262,709	2,624,935
2018	396,234	605,247	1,001,481	797,027	473,139	1,319,935	2,590,101	362,664	2,265,443	2,628,107
2019	397,905	607,800	1,005,705	800,389	475,134	1,325,503	2,601,026	364,193	2,274,999	2,639,192
2020	398,877	609,286	1,008,163	802,346	476,296	1,328,743	2,607,385	365,084	2,280,560	2,645,644
2021	457,057	698,156	1,155,213	919,375	545,768	1,522,552	2,987,695	418,335	2,613,201	3,031,536
2022	345,581	527,875	873,456	695,139	412,655	1,151,201	2,258,995	316,302	1,975,840	2,292,142
2023	441,256	674,019	1,115,275	887,591	526,900	1,469,915	2,884,406	403,872	2,522,859	2,926,731
2024	385,651	589,082	974,733	775,740	460,502	1,284,682	2,520,924	352,978	2,204,937	2,557,915
2025	224,436	342,826	567,262	451,454	267,996	747,641	1,467,091	205,421	1,283,198	1,488,619
2026	89,064	136,046	225,110	179,154	106,351	296,692	582,197	81,519	509,220	590,739
2027	54,535	83,302	137,837	109,697	65,119	181,667	356,483	49,914	311,800	361,714
2028	0	0	0	0	0	0	0	0	0	0
2029	0	0	0	0	0	0	0	0	0	0
2030	0	0	0	0	0	0	0	0	0	0
2031	0	0	0	0	0	0	0	0	0	0
2032	0	0	0	0	0	0	0	0	0	0
2033	0	0	0	0	0	0	0	0	0	0
2034	0	0	0	0	0	0	0	0	0	0
2035	0	0	0	0	0	0	0	0	0	0
Total	11,414,567	17,562,148	28,976,715	21,910,089	13,798,385	38,553,130	74,261,604	10,570,538	62,956,284	73,526,822

Table B-22
Water System Revenue Bond Surcharge for Each Contractor
(Dollars)

Sheet 2 of 4

Calendar Year	San Joaquin Valley Area								
	Dudley Ridge Water District (11)	Empire West Side Irrigation District (12)	Future Contractor San Joaquin Valley (13)	Kern County Water Agency		County of Kings (16)	Oak Flat Water District (17)	Tulare Lake Basin Water Storage District (18)	Total (19)
				Municipal and Industrial (14)	Agricultural (15)				
1971	0	0	0	0	0	0	0	0	0
1972	0	0	0	0	0	0	0	0	0
1973	0	0	0	0	0	0	0	0	0
1974	0	0	0	0	0	0	0	0	0
1975	0	0	0	0	0	0	0	0	0
1976	0	0	0	0	0	0	0	0	0
1977	0	0	0	0	0	0	0	0	0
1978	0	0	0	0	0	0	0	0	0
1979	0	0	0	0	0	0	0	0	0
1980	0	0	0	0	0	0	0	0	0
1981	0	0	0	0	0	0	0	0	0
1982	0	0	0	0	0	0	0	0	0
1983	0	0	0	0	0	0	0	0	0
1984	0	0	0	0	0	0	0	0	0
1985	0	0	0	0	0	0	0	0	0
1986	0	0	0	0	0	0	0	0	0
1987	0	0	0	0	0	0	0	0	0
1988	33,986	1,657	0	67,288	726,501	2,228	2,851	66,748	901,259
1989	59,273	2,785	0	116,689	1,251,452	3,733	4,927	116,736	1,555,595
1990	53,349	2,419	0	287,811	947,351	3,248	4,367	109,118	1,407,663
1991	82,252	3,731	0	359,380	1,564,983	5,035	6,771	168,217	2,190,369
1992	112,566	5,127	0	452,691	2,153,423	6,927	9,285	230,217	2,970,236
1993	119,670	5,459	0	272,449	2,491,672	7,381	9,894	244,813	3,151,338
1994	118,265	5,379	0	244,671	2,485,820	7,300	9,766	241,933	3,113,134
1995	139,227	6,339	0	317,885	2,894,182	8,598	11,490	284,798	3,662,519
1996	169,333	7,703	0	354,341	2,722,241	10,460	13,978	346,366	3,624,422
1997	165,364	7,980	0	366,285	2,673,847	10,826	14,465	357,986	3,596,753
1998	159,011	7,672	0	352,211	2,571,110	10,410	13,909	344,232	3,458,555
1999	218,784	10,373	0	485,897	3,371,115	14,376	19,166	476,017	4,595,728
2000	412,322	19,251	0	914,245	5,939,190	27,068	36,074	896,380	8,244,530
2001	406,794	18,992	0	901,987	5,692,528	26,706	35,591	884,360	7,966,958
2002	415,035	19,377	0	920,260	5,978,261	27,245	36,311	902,276	8,298,765
2003	412,525	19,260	0	914,695	5,942,107	27,081	36,092	896,820	8,248,580
2004	417,558	19,495	0	925,852	6,014,592	27,411	36,532	907,760	8,349,200
2005	415,416	19,395	0	921,104	5,983,744	27,270	36,345	903,104	8,306,378
2006	408,740	19,084	0	906,301	5,887,578	26,832	35,760	888,590	8,172,885
2007	407,307	19,017	0	903,123	5,866,934	26,738	35,635	885,474	8,144,228
2008	412,763	19,271	0	915,222	5,945,535	27,096	36,112	897,337	8,253,336
2009	413,588	19,310	0	917,050	5,957,408	27,150	36,185	899,129	8,269,820
2010	414,252	19,341	0	918,523	5,966,979	27,194	36,243	900,574	8,283,106
2011	415,112	19,381	0	920,431	5,979,369	27,251	36,318	902,444	8,300,306
2012	415,859	19,416	0	922,086	5,990,126	27,300	36,383	904,067	8,315,237
2013	413,453	19,304	0	916,751	5,955,464	27,142	36,173	898,836	8,267,123
2014	429,303	20,044	0	951,896	6,183,775	28,182	37,560	933,294	8,584,054
2015	419,882	19,604	0	931,008	6,048,081	27,564	36,735	912,814	8,395,688
2016	418,599	19,544	0	928,161	6,029,590	27,479	36,623	910,023	8,370,019
2017	416,935	19,466	0	924,473	6,005,632	27,370	36,477	906,407	8,336,760
2018	417,439	19,490	0	925,590	6,012,890	27,403	36,522	907,503	8,346,837
2019	419,200	19,572	0	929,495	6,038,252	27,519	36,676	911,331	8,382,045
2020	420,225	19,620	0	931,767	6,053,012	27,586	36,765	913,558	8,402,533
2021	481,518	22,481	0	1,067,673	6,935,900	31,610	42,128	1,046,809	9,628,119
2022	364,076	16,998	0	807,267	5,244,230	23,900	31,853	791,492	7,279,816
2023	464,872	21,704	0	1,030,762	6,696,115	30,517	40,671	1,010,619	9,295,260
2024	406,290	18,969	0	900,870	5,852,296	26,671	35,546	883,265	8,123,907
2025	236,447	11,039	0	524,275	3,405,836	15,522	20,687	514,030	4,727,836
2026	93,831	4,381	0	208,052	1,351,561	6,160	8,209	203,986	1,876,180
2027	57,453	2,682	0	127,392	827,571	3,772	5,027	124,902	1,148,799
2028	0	0	0	0	0	0	0	0	0
2029	0	0	0	0	0	0	0	0	0
2030	0	0	0	0	0	0	0	0	0
2031	0	0	0	0	0	0	0	0	0
2032	0	0	0	0	0	0	0	0	0
2033	0	0	0	0	0	0	0	0	0
2034	0	0	0	0	0	0	0	0	0
2035	0	0	0	0	0	0	0	0	0
Total	12,257,874	572,112	0	27,683,909	181,638,253	801,261	1,068,102	26,524,365	250,545,876

Table B-22
Water System Revenue Bond Surcharge for Each Contractor
(Dollars)

Sheet 3 of 4

Calendar Year	Southern California Area									
	Antelope Valley-East Kern Water Agency (20)	Castaic Lake Water Agency (21)	Coachella Valley Water District (22)	Crestline Lake Arrowhead Water Agency (23)	Desert Water Agency (24)	Little Rock Creek Irrigation District (25)	Mojave Water Agency (26)	Palmdale Water District (27)	San Bernardino Valley Municipal Water District (28)	San Gabriel Valley Municipal Water District (29)
1971	0	0	0	0	0	0	0	0	0	0
1972	0	0	0	0	0	0	0	0	0	0
1973	0	0	0	0	0	0	0	0	0	0
1974	0	0	0	0	0	0	0	0	0	0
1975	0	0	0	0	0	0	0	0	0	0
1976	0	0	0	0	0	0	0	0	0	0
1977	0	0	0	0	0	0	0	0	0	0
1978	0	0	0	0	0	0	0	0	0	0
1979	0	0	0	0	0	0	0	0	0	0
1980	0	0	0	0	0	0	0	0	0	0
1981	0	0	0	0	0	0	0	0	0	0
1982	0	0	0	0	0	0	0	0	0	0
1983	0	0	0	0	0	0	0	0	0	0
1984	0	0	0	0	0	0	0	0	0	0
1985	0	0	0	0	0	0	0	0	0	0
1986	0	0	0	0	0	0	0	0	0	0
1987	0	0	0	0	0	0	0	0	0	0
1988	64,266	57,111	27,032	7,656	44,492	2,154	55,996	16,240	151,182	39,907
1989	205,668	98,720	46,993	13,263	78,104	3,763	97,138	27,981	259,860	69,104
1990	185,010	87,808	42,449	11,905	69,970	3,385	87,327	24,956	231,650	61,851
1991	296,854	140,371	65,947	18,548	108,704	5,236	135,623	38,641	363,310	96,172
1992	402,015	234,421	89,358	25,192	147,297	7,053	183,813	52,160	491,537	130,372
1993	424,871	247,076	93,981	26,566	154,919	7,437	193,361	55,045	517,379	137,298
1994	424,023	247,222	94,502	26,865	155,776	7,431	194,191	54,968	525,394	139,422
1995	500,083	290,999	111,729	31,823	184,169	8,769	229,530	64,852	623,848	165,594
1996	606,387	353,131	135,428	38,635	223,236	10,640	278,178	78,696	760,333	201,821
1997	626,151	362,776	139,565	39,802	230,058	10,972	286,779	81,146	808,482	207,472
1998	602,091	348,838	134,202	38,273	221,218	10,550	275,761	78,028	777,418	199,501
1999	826,108	479,470	184,524	52,650	304,166	14,475	642,815	107,060	1,041,566	277,200
2000	1,542,605	1,888,161	345,248	98,778	569,101	27,046	1,207,668	199,974	1,954,721	519,810
2001	1,521,921	1,862,843	340,619	97,454	561,470	26,684	1,191,475	222,988	1,928,510	512,840
2002	1,552,753	1,900,583	347,519	99,428	572,845	27,225	1,215,614	201,289	1,967,580	523,229
2003	1,543,362	1,889,089	345,418	98,827	569,381	27,061	1,208,262	200,072	1,955,681	520,065
2004	1,562,189	1,912,133	349,631	100,032	576,326	27,391	1,223,001	202,512	1,979,537	526,409
2005	1,554,177	1,902,326	347,838	99,519	573,370	27,250	1,216,728	201,474	1,969,385	523,709
2006	1,529,199	1,871,754	342,248	97,920	564,156	26,812	1,197,174	198,236	1,937,734	515,292
2007	1,523,838	1,865,191	341,048	97,576	562,177	26,718	1,192,976	197,541	1,930,940	513,485
2008	1,544,253	1,890,179	345,617	98,884	569,709	27,076	1,208,959	200,187	1,956,809	520,365
2009	1,547,337	1,893,954	346,307	99,081	570,847	27,130	1,211,373	200,587	1,960,717	521,404
2010	1,549,822	1,896,997	346,863	99,240	571,764	27,174	1,213,319	200,909	1,963,867	522,241
2011	1,553,041	1,900,936	347,584	99,446	572,951	27,230	1,215,839	201,326	1,967,945	523,326
2012	1,555,834	1,904,355	348,209	99,625	573,982	27,279	1,218,026	201,689	1,971,485	524,267
2013	1,546,832	1,893,336	346,194	99,049	570,660	27,121	1,210,978	200,522	1,960,077	521,234
2014	1,606,132	1,965,919	359,466	102,846	592,538	28,161	1,257,403	208,209	2,035,219	541,216
2015	1,570,887	1,922,780	351,578	100,589	579,535	27,543	1,229,811	203,640	1,990,559	529,340
2016	1,566,085	1,916,901	350,503	100,281	577,763	27,459	1,226,051	203,017	1,984,473	527,721
2017	1,559,862	1,909,285	349,110	99,883	575,468	27,350	1,221,179	202,211	1,976,588	525,624
2018	1,561,747	1,911,592	349,532	100,004	576,163	27,383	1,222,655	202,455	1,978,977	526,260
2019	1,568,334	1,919,655	351,007	100,426	578,593	27,499	1,227,812	203,309	1,987,324	528,479
2020	1,572,168	1,924,348	351,865	100,671	580,008	27,566	1,230,813	203,806	1,992,182	529,771
2021	1,801,483	2,205,032	403,187	115,355	664,607	31,586	1,410,339	233,533	2,282,760	607,043
2022	1,362,100	1,667,223	304,850	87,220	502,509	23,882	1,066,356	176,574	1,725,994	458,985
2023	1,739,203	2,128,800	389,249	111,367	641,631	30,494	1,361,581	225,459	2,203,842	586,057
2024	1,520,035	1,860,537	340,197	97,333	560,775	26,652	1,190,000	197,048	1,926,122	512,204
2025	884,609	1,082,769	197,983	56,644	326,352	15,510	692,539	114,675	1,120,937	298,085
2026	351,045	429,683	78,567	22,479	129,508	6,155	274,825	45,507	444,829	118,291
2027	214,948	263,098	48,107	13,764	79,299	3,769	168,278	27,864	272,372	72,431
2028	0	0	0	0	0	0	0	0	0	0
2029	0	0	0	0	0	0	0	0	0	0
2030	0	0	0	0	0	0	0	0	0	0
2031	0	0	0	0	0	0	0	0	0	0
2032	0	0	0	0	0	0	0	0	0	0
2033	0	0	0	0	0	0	0	0	0	0
2034	0	0	0	0	0	0	0	0	0	0
2035	0	0	0	0	0	0	0	0	0	0
Total	45,669,328	52,527,402	10,231,254	2,924,899	16,865,597	802,071	34,371,546	5,956,386	57,879,125	15,374,897

Table B-22

Water System Revenue Bond Surcharge for Each Contractor

(Dollars)

Sheet 4 of 4

Calendar Year	Southern California Area (continued)				Feather River Area				South Bay Area Future Contractor (38)	Grand Total (39)
	San Geronio Pass Water Agency (30)	Metropolitan Water District of Southern California (31)	Ventura County Flood Control District (32)	Total (33)	City of Yuba City (34)	County of Butte (35)	Plumas County FC&WCD (36)	Total (37)		
1971	0	0	0	0	0	0	0	0	0	0
1972	0	0	0	0	0	0	0	0	0	0
1973	0	0	0	0	0	0	0	0	0	0
1974	0	0	0	0	0	0	0	0	0	0
1975	0	0	0	0	0	0	0	0	0	0
1976	0	0	0	0	0	0	0	0	0	0
1977	0	0	0	0	0	0	0	0	0	0
1978	0	0	0	0	0	0	0	0	0	0
1979	0	0	0	0	0	0	0	0	0	0
1980	0	0	0	0	0	0	0	0	0	0
1981	0	0	0	0	0	0	0	0	0	0
1982	0	0	0	0	0	0	0	0	0	0
1983	0	0	0	0	0	0	0	0	0	0
1984	0	0	0	0	0	0	0	0	0	0
1985	0	0	0	0	0	0	0	0	0	0
1986	0	0	0	0	0	0	0	0	0	0
1987	0	0	0	0	0	0	0	0	0	0
1988	24,019	2,642,354	18,118	3,150,527	1,336	552	853	2,741	0	4,317,328
1989	42,040	4,587,641	34,565	5,564,840	0	918	1,454	2,372	0	7,583,021
1990	38,023	4,037,980	34,994	4,917,308	2,535	800	1,283	4,618	0	6,750,020
1991	59,122	6,259,893	54,115	7,642,536	9,945	1,243	2,027	13,215	0	10,510,679
1992	80,131	8,435,312	72,892	10,351,553	13,671	1,710	2,806	18,187	0	14,255,669
1993	84,371	8,885,273	76,858	10,904,435	14,608	1,827	3,026	19,461	0	15,068,309
1994	85,698	8,926,755	76,794	10,959,041	14,409	1,801	3,070	19,280	0	15,145,690
1995	101,792	10,539,433	90,436	12,943,057	16,957	2,119	3,704	22,780	0	18,013,188
1996	124,074	12,810,361	109,783	15,730,703	20,640	2,580	4,621	27,841	0	21,369,059
1997	28,259	13,168,230	112,960	16,102,652	21,382	2,674	4,872	28,928	0	21,970,359
1998	27,174	12,662,268	108,619	15,483,941	20,562	2,571	4,685	27,818	0	21,126,192
1999	53,545	17,454,651	149,123	21,587,353	28,348	3,543	6,765	38,656	0	29,200,538
2000	115,027	32,491,471	276,029	41,235,639	52,940	16,067	13,118	82,125	0	55,489,527
2001	113,485	32,055,804	272,328	40,708,421	52,230	15,851	12,942	81,023	0	54,965,036
2002	115,784	32,705,213	277,846	41,506,908	53,288	16,172	13,205	82,665	0	56,072,208
2003	115,083	32,507,424	276,165	41,255,890	52,965	16,075	13,125	82,165	0	55,733,107
2004	116,487	32,903,968	279,534	41,759,150	53,612	16,271	13,285	83,168	0	56,412,968
2005	115,890	32,735,210	278,100	41,544,976	53,337	16,187	13,217	82,741	0	56,123,635
2006	114,027	32,209,116	273,631	40,877,299	52,479	15,927	13,005	81,411	0	55,221,662
2007	113,627	32,096,182	272,672	40,733,971	52,295	15,871	12,959	81,125	0	55,028,037
2008	115,150	32,526,181	276,325	41,279,694	52,996	16,084	13,133	82,213	0	55,765,261
2009	115,380	32,591,137	276,876	41,362,130	53,102	16,116	13,159	82,377	0	55,876,625
2010	115,565	32,643,496	277,321	41,428,578	53,187	16,142	13,180	82,509	0	55,966,393
2011	115,805	32,711,279	277,897	41,514,605	53,298	16,175	13,207	82,680	0	56,082,607
2012	116,013	32,770,127	278,397	41,589,288	53,393	16,204	13,231	82,828	0	56,183,495
2013	115,342	32,580,495	276,786	41,348,626	53,084	16,111	13,155	82,350	0	55,858,386
2014	119,764	33,829,518	287,397	42,933,788	55,120	16,728	13,659	85,507	0	57,999,801
2015	117,136	33,087,178	281,091	41,991,667	53,910	16,361	13,359	83,630	0	56,727,075
2016	116,778	32,986,016	280,231	41,863,279	53,745	16,311	13,318	83,374	0	56,553,635
2017	116,314	32,854,954	279,118	41,696,946	53,532	16,246	13,265	83,043	0	56,328,930
2018	116,454	32,894,659	279,455	41,747,336	53,596	16,266	13,281	83,143	0	56,397,005
2019	116,945	33,033,407	280,634	41,923,424	53,822	16,335	13,338	83,495	0	56,634,887
2020	117,231	33,114,153	281,320	42,025,902	53,954	16,375	13,370	83,699	0	56,773,326
2021	134,331	37,944,159	322,353	48,155,768	61,824	18,763	15,320	95,907	0	65,054,238
2022	101,567	28,689,556	243,731	36,410,547	46,745	14,187	11,584	72,516	0	49,187,472
2023	129,686	36,632,377	311,209	46,490,955	59,686	18,114	14,791	92,591	0	62,805,218
2024	113,344	32,016,097	271,991	40,632,335	52,165	15,832	12,927	80,924	0	54,890,738
2025	65,962	18,632,273	158,290	23,646,628	30,358	9,213	7,523	47,094	0	31,944,530
2026	26,176	7,393,974	62,815	9,383,854	12,047	3,656	2,985	18,688	0	12,676,768
2027	16,028	4,527,386	38,462	5,745,806	7,377	2,239	1,828	11,444	0	7,762,083
2028	0	0	0	0	0	0	0	0	0	0
2029	0	0	0	0	0	0	0	0	0	0
2030	0	0	0	0	0	0	0	0	0	0
2031	0	0	0	0	0	0	0	0	0	0
2032	0	0	0	0	0	0	0	0	0	0
2033	0	0	0	0	0	0	0	0	0	0
2034	0	0	0	0	0	0	0	0	0	0
2035	0	0	0	0	0	0	0	0	0	0
Total	3,768,629	963,572,961	8,187,261	1,218,131,356	1,554,480	444,217	383,635	2,382,332	0	1,647,824,705

Table B-23

Total Transportation and Delta Water Charge for Each Contractor

(Dollars)

Sheet 1 of 4

Calendar Year	North Bay Area			South Bay Area				Central Coastal Area		
	Napa County FC&WCD (1)	Solano County Water Agency (2)	Total (3)	Alameda County FC&WCD, Zone 7 (4)	Alameda County Water District (5)	Santa Clara Valley Water District (6)	Total (7)	San Luis Obispo County FC&WCD (8)	Santa Barbara County FC&WCD (9)	Total (10)
1961	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	11,750	43,787	21,132	76,669	0	0	0
1963	0	0	0	194,046	190,362	448,046	832,454	0	0	0
1964	0	0	0	255,624	277,596	621,810	1,155,030	6,057	20,502	26,559
1965	0	0	0	364,391	404,537	1,158,837	1,927,765	11,424	31,744	43,167
1966	18,080	0	18,080	409,372	421,959	1,413,838	2,245,169	20,180	49,664	69,843
1967	41,609	0	41,609	542,301	548,752	1,864,173	2,955,226	37,973	84,162	122,136
1968	128,726	0	128,726	671,634	633,477	2,179,537	3,484,648	63,521	133,085	196,606
1969	254,848	0	254,848	805,630	583,757	2,299,889	3,689,276	118,155	235,276	353,430
1970	277,683	0	277,683	891,685	640,630	2,789,150	4,321,465	130,871	259,887	390,758
1971	227,611	0	227,611	833,133	675,529	2,808,206	4,316,868	131,685	262,455	394,140
1972	225,116	0	225,116	917,138	822,733	3,028,941	4,768,812	137,445	274,502	411,946
1973	221,231	31,399	252,630	903,576	716,828	3,121,981	4,742,385	134,239	269,335	403,574
1974	240,640	32,973	273,613	944,157	747,270	3,326,219	5,017,646	135,246	271,891	407,137
1975	237,607	36,329	273,936	1,002,551	793,393	3,215,246	5,011,190	151,569	302,780	454,350
1976	271,444	40,877	312,321	1,115,581	943,802	3,363,743	5,423,126	260,646	505,760	766,406
1977	293,781	45,141	338,922	1,084,140	922,543	3,304,667	5,311,350	270,371	527,186	797,557
1978	274,027	49,226	323,253	1,172,835	936,161	3,713,792	5,822,788	277,007	542,737	819,744
1979	289,639	53,391	343,030	1,269,250	1,009,911	3,820,751	6,099,912	274,788	541,921	816,709
1980	311,013	86,136	397,149	1,422,150	1,174,144	4,120,294	6,716,588	312,711	600,258	912,970
1981	347,959	112,926	460,885	1,530,449	1,349,476	4,508,801	7,388,726	337,643	656,609	994,253
1982	438,523	141,929	580,452	1,610,872	1,369,887	4,942,626	7,923,385	358,672	742,258	1,100,930
1983	354,997	163,422	518,419	1,481,184	1,260,489	4,911,474	7,653,147	387,641	761,849	1,149,490
1984	467,597	246,884	714,481	1,790,890	1,478,750	6,871,497	10,141,137	440,001	860,985	1,300,987
1985	736,437	386,603	1,123,040	2,288,396	2,225,458	7,797,745	12,311,599	531,148	1,029,825	1,560,973
1986	1,120,736	714,803	1,835,539	2,157,007	2,014,466	8,195,109	12,366,582	567,212	1,097,942	1,665,154
1987	1,774,876	1,583,464	3,358,340	2,653,467	2,506,026	7,981,524	13,141,017	601,372	1,208,865	1,810,237
1988	2,350,965	2,526,528	4,877,493	2,714,537	2,774,795	7,831,557	13,320,889	703,598	1,499,350	2,202,948
1989	2,550,248	3,703,697	6,253,945	2,698,266	2,515,841	7,580,134	12,794,241	803,156	1,874,675	2,677,831
1990	2,901,558	3,850,907	6,752,465	3,133,440	2,930,149	8,356,687	14,420,276	965,199	2,105,379	3,070,577
1991	2,941,688	4,172,232	7,113,920	2,405,135	2,384,629	6,432,153	11,221,917	1,011,582	2,426,005	3,437,588
1992	2,799,110	4,146,745	6,945,855	2,878,809	2,927,512	7,658,296	13,464,617	1,144,358	2,574,619	3,718,977
1993	2,857,053	4,174,502	7,031,555	3,735,247	2,977,758	8,851,369	15,564,374	1,218,634	2,793,761	4,012,395
1994	2,989,363	4,227,397	7,216,760	3,771,983	3,586,609	9,614,723	16,973,385	1,371,615	3,600,445	4,972,060
1995	2,962,887	4,407,239	7,370,126	4,020,548	3,313,764	8,395,293	15,729,535	1,685,778	6,296,817	7,982,596
1996	3,042,443	4,887,113	7,929,556	3,601,607	3,158,152	9,151,448	15,911,207	2,639,604	15,293,950	17,933,554
1997	3,029,571	4,736,828	7,766,399	3,854,528	3,145,967	9,339,425	16,339,920	3,052,684	23,439,562	26,492,186
1998	2,938,158	4,592,521	7,530,679	3,463,816	3,204,637	9,086,639	15,755,092	3,293,772	27,936,758	31,230,529
1999	3,137,039	5,083,292	8,220,331	4,178,591	3,665,271	11,359,327	19,203,189	3,880,689	29,282,626	33,163,315
2000	3,464,699	5,826,259	9,290,958	5,971,993	3,935,828	10,996,250	20,904,071	4,168,008	32,007,608	36,175,616
2001	5,617,098	7,412,183	13,029,281	10,604,508	6,137,416	16,979,084	33,721,008	8,890,007	38,755,660	47,645,666
2002	4,831,745	6,834,008	11,665,753	9,093,533	6,133,509	15,945,864	31,172,906	7,449,955	36,077,954	43,527,909
2003	4,666,553	6,649,102	11,315,655	9,403,136	5,631,037	14,846,774	29,880,947	6,907,902	35,257,647	42,165,549
2004	4,511,672	6,552,252	11,063,924	9,074,146	5,227,032	13,834,383	28,135,561	6,557,852	34,606,741	41,164,593
2005	4,603,200	6,637,941	11,241,141	9,506,272	5,487,939	14,453,297	29,447,508	6,923,638	35,263,343	42,186,981
2006	4,629,127	6,646,312	11,275,439	9,599,866	5,545,568	14,588,963	29,734,397	6,971,718	35,323,821	42,295,539
2007	4,631,356	6,644,537	11,275,893	9,517,154	5,496,721	14,471,297	29,485,172	6,902,431	35,192,525	42,094,955
2008	4,630,484	6,622,404	11,252,888	9,476,536	5,464,510	14,397,320	29,338,366	6,791,977	35,012,753	41,804,730
2009	4,668,973	6,647,214	11,316,187	9,477,431	5,471,988	14,415,289	29,364,708	6,852,361	35,125,983	41,978,344
2010	4,713,781	6,678,006	11,391,787	9,723,574	5,614,339	14,754,585	30,092,498	7,007,195	35,409,716	42,416,910
2011	4,736,980	6,686,818	11,423,798	9,655,084	5,577,231	14,668,722	29,901,037	6,993,670	35,394,040	42,387,710
2012	4,778,704	6,713,160	11,491,864	9,706,510	5,611,658	14,751,129	30,069,297	7,076,225	35,547,282	42,623,507
2013	4,748,233	6,674,935	11,423,168	9,496,791	5,468,624	14,296,183	29,261,598	6,989,484	35,381,313	42,370,797
2014	4,777,414	6,697,201	11,474,615	9,279,174	5,321,568	13,943,249	28,543,991	6,947,695	35,358,460	42,306,156
2015	4,803,748	6,681,992	11,485,740	9,249,915	5,253,342	13,619,381	28,122,638	6,944,066	35,314,115	42,258,181
2016	4,823,649	6,682,741	11,506,390	9,352,818	5,297,937	13,623,844	28,274,599	6,993,660	35,396,975	42,390,635
2017	4,820,250	6,667,509	11,487,759	9,100,288	5,167,162	13,269,403	27,536,853	6,876,193	35,175,010	42,051,204
2018	4,800,873	6,694,213	11,495,086	9,055,415	5,172,620	13,257,841	27,485,876	6,952,766	35,315,423	42,268,189
2019	4,818,409	6,716,511	11,534,920	9,155,338	5,254,254	13,435,101	27,844,693	7,072,249	35,537,303	42,609,552
2020	4,802,355	6,673,568	11,475,923	8,866,220	5,087,183	13,035,008	26,988,411	6,862,577	35,158,281	42,020,859
2021	4,860,761	6,759,726	11,620,487	8,944,363	5,135,332	13,179,011	27,258,706	6,895,441	35,452,190	42,347,631
2022	4,717,369	6,563,168	11,280,537	8,752,351	4,913,089	12,592,779	26,078,219	6,675,758	34,600,832	41,276,590
2023	4,819,193	6,681,983	11,501,176	8,852,656	5,077,120	13,028,210	26,957,986	6,809,872	35,230,241	42,040,113
2024	4,795,830	6,626,541	11,422,371	8,919,985	5,117,618	13,096,966	27,134,569	6,897,877	35,165,095	42,062,971
2025	4,614,820	6,368,503	10,983,323	8,391,356	4,811,805	12,290,058	25,493,219	6,660,371	34,078,747	40,739,118
2026	4,479,612	6,160,294	10,639,906	8,340,737	4,771,296	12,126,139	25,238,172	6,517,367	33,265,817	39,783,184
2027	4,429,679	6,094,805	10,524,484	8,128,333	4,648,574	11,817,763	24,594,670	6,404,068	32,915,850	39,319,918
2028	4,375,605	6,008,554	10,384,159	8,040,035	4,596,689	11,664,080	24,300,804	6,372,588	32,634,828	39,007,416
2029	4,360,420	5,995,170	10,355,590	7,961,798	4,550,694	11,554,707	24,067,199	6,319,107	32,533,389	38,852,495
2030	4,356,973	5,985,552	10,342,525	8,013,586	4,581,260	11,626,600	24,221,446	6,353,498	32,591,263	38,944,762
2031	4,331,829	5,958,609	10,290,438	7,885,312	4,507,596	11,452,277	23,845,185	6,279,625	32,444,397	38,724,022
2032	4,335,071	5,948,963	10,284,034	8,002,412	4,576,711	11,614,108	24,193,231	6,361,874	32,599,269	38,961,144
2033	4,356,256	5,948,677	10,304,933	8,193,707	4,693,923	11,894,459	24,782,089	6,541,006	32,927,097	39,468,102
2034	4,249,724	5,841,338	10,091,062	8,018,439	4,588,815	11,642,698	24,249,952	6,396,208	32,661,972	39,058,180
2035	4,088,363	5,677,561	9,765,924	8,015,453	4,576,932	11,612,205	24,204,590	6,359,230	32,592,943	38,952,174
Total	209,105,071	286,892,814	495,997,885	387,425,940	245,781,727	674,261,106	1,307,468,773	270,443,770	1,373,701,245	1,644,145,015

Table B-23

Total Transportation and Delta Water Charge for Each Contractor

(Dollars)

Sheet 2 of 4

Calendar Year	San Joaquin Valley Area								
	Dudley Ridge Water District (11)	Empire West Side Irrigation District (12)	Future Contractor San Joaquin Valley (13)	Kern County Water Agency		County of Kings (16)	Oak Flat Water District (17)	Tulare Lake Basin Water Storage District (18)	Total (19)
				Municipal and Industrial (14)	Agricultural (15)				
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	2,727	0	0	0	0	0	2,727
1965	0	0	6,034	73,631	0	0	0	0	79,665
1966	0	0	12,049	137,442	0	0	0	0	149,491
1967	0	0	26,278	267,827	0	0	0	0	294,105
1968	225,550	19,390	54,628	445,746	1,709,354	16,051	19,616	307,704	2,798,039
1969	241,729	10,962	87,621	525,451	2,728,648	15,686	19,348	460,269	4,089,714
1970	306,908	34,398	94,721	574,381	3,878,436	20,258	30,367	522,364	5,461,833
1971	328,417	37,126	95,743	606,288	5,199,393	25,973	34,647	713,686	7,041,273
1972	382,179	40,387	98,837	632,023	7,167,252	25,257	63,749	1,988,577	10,398,261
1973	399,589	39,009	97,599	1,026,298	7,297,256	27,588	39,228	783,294	9,709,861
1974	508,430	40,223	98,509	1,145,204	8,008,144	28,300	42,521	1,044,524	10,915,855
1975	681,205	40,672	106,753	1,197,580	9,389,326	29,978	48,136	1,558,057	13,051,707
1976	720,416	43,193	108,133	1,324,255	10,634,018	31,400	52,066	1,443,271	14,356,752
1977	580,664	39,110	112,604	1,367,823	10,948,398	33,148	54,176	1,139,152	14,275,075
1978	699,277	36,029	115,573	1,566,304	13,281,661	37,560	58,990	1,173,232	16,968,626
1979	782,792	47,946	114,305	1,669,374	15,358,313	41,692	70,580	1,727,392	19,812,393
1980	963,828	49,681	126,003	1,770,689	16,998,404	46,645	94,874	1,673,644	21,723,768
1981	1,212,767	84,047	134,223	2,431,242	22,600,836	65,103	100,589	2,284,799	28,913,606
1982	1,248,883	70,241	135,111	2,524,098	24,996,599	69,267	108,233	2,279,596	31,432,028
1983	1,183,151	52,591	149,256	2,085,489	24,643,160	74,039	87,392	506,945	28,782,023
1984	1,492,776	28,573	164,560	3,396,826	33,374,500	92,920	121,370	1,542,562	40,214,087
1985	1,768,650	130,005	184,961	3,891,658	39,344,335	116,180	139,449	2,816,825	48,392,063
1986	2,010,560	79,380	180,501	4,080,295	43,435,817	135,308	153,102	3,655,928	53,730,891
1987	1,885,836	95,298	179,928	4,571,294	42,717,007	135,918	151,341	3,748,905	53,485,527
1988	1,970,885	109,676	193,791	4,734,951	44,653,490	136,859	146,497	3,903,491	55,849,640
1989	2,125,610	101,803	187,970	4,677,817	46,845,807	135,650	166,321	4,384,996	58,625,974
1990	1,884,364	87,007	221,449	4,826,879	45,622,344	119,710	148,623	3,963,186	56,873,562
1991	1,690,417	80,296	220,342	4,536,374	37,497,999	102,454	134,633	3,504,196	47,766,711
1992	2,236,242	105,638	241,518	5,548,142	48,695,095	142,745	175,616	4,543,026	61,688,022
1993	2,458,397	120,118	265,022	5,806,602	54,596,262	160,035	195,181	5,296,880	68,898,497
1994	2,263,280	107,627	306,423	5,210,936	52,067,278	144,110	177,994	4,669,712	64,947,360
1995	2,859,681	115,540	304,362	6,622,046	60,526,958	179,255	210,327	5,528,414	76,346,583
1996	2,026,921	124,334	389,270	6,402,833	58,067,939	175,023	188,413	6,994,925	74,369,658
1997	2,763,418	100,635	276,751	6,522,522	57,521,797	136,362	212,138	4,716,310	72,249,933
1998	2,611,804	119,956	381,953	5,823,734	54,066,709	141,627	203,896	4,970,729	68,320,408
1999	2,679,983	134,958	383,339	6,394,256	57,344,549	180,676	216,871	7,314,096	74,648,728
2000	2,917,284	145,481	373,032	6,950,796	57,324,811	191,347	235,902	7,038,405	75,177,059
2001	4,860,413	208,810	383,999	10,323,027	93,241,383	241,307	291,263	10,276,757	119,826,959
2002	3,632,467	183,987	396,926	8,784,835	72,235,513	249,659	295,743	7,883,590	93,662,720
2003	3,448,573	173,656	400,133	8,210,362	68,877,908	236,336	282,232	7,474,868	89,104,068
2004	3,236,105	161,743	393,217	7,656,694	63,778,681	220,675	266,617	7,005,497	82,719,229
2005	3,356,252	168,524	392,616	7,981,563	65,187,853	229,733	274,074	7,272,592	84,863,207
2006	3,384,985	170,199	393,271	8,055,288	66,661,845	231,945	276,692	7,336,571	86,510,796
2007	3,348,246	168,151	393,069	7,969,813	65,366,241	229,224	273,233	7,255,143	85,003,120
2008	3,368,056	169,210	393,182	7,733,049	67,008,280	230,653	276,780	7,298,838	86,478,048
2009	3,337,017	167,459	393,103	7,944,562	65,394,936	228,322	272,191	7,229,899	84,967,489
2010	3,461,304	174,439	393,065	8,237,411	68,912,554	237,634	284,285	7,505,855	89,206,547
2011	3,408,946	171,476	394,163	8,116,468	68,068,970	233,656	278,605	7,389,146	88,061,430
2012	3,413,229	171,709	394,227	8,143,340	68,385,808	233,967	277,388	7,398,597	88,418,265
2013	3,449,885	173,789	394,389	8,212,840	68,796,305	236,727	282,905	7,480,016	89,026,856
2014	3,354,243	168,259	391,728	7,996,294	67,173,348	229,404	272,181	7,266,852	86,852,309
2015	3,395,912	170,691	388,634	8,016,094	67,870,382	232,607	277,029	7,359,747	87,711,096
2016	3,495,793	176,321	382,267	8,191,931	69,695,785	240,118	286,767	7,581,694	90,050,676
2017	3,391,532	170,473	368,178	7,809,495	67,751,499	232,314	276,978	7,350,225	87,350,694
2018	3,411,350	171,580	345,657	7,757,577	68,358,378	225,273	277,198	7,394,112	87,941,125
2019	3,522,137	177,794	336,820	7,959,036	70,357,603	233,066	287,910	7,640,145	90,514,511
2020	3,419,100	171,992	335,266	7,674,198	68,339,596	225,078	278,953	7,411,252	87,855,435
2021	3,463,686	173,912	334,305	7,749,060	68,923,792	227,705	282,659	7,507,383	88,662,502
2022	3,287,972	165,154	333,592	7,336,887	66,100,385	215,558	267,226	7,122,665	84,829,439
2023	3,440,802	172,788	332,920	7,678,750	68,485,674	226,057	281,215	7,457,447	88,075,653
2024	3,456,918	174,250	332,497	7,725,350	69,054,470	227,788	282,924	7,495,895	88,750,092
2025	3,162,989	159,343	332,230	7,060,636	64,468,024	207,305	255,191	6,851,065	82,496,783
2026	3,166,328	160,894	331,433	7,075,789	64,890,161	208,863	258,136	6,865,237	82,956,841
2027	3,051,146	154,757	331,707	6,811,475	63,010,999	200,497	246,811	6,610,922	80,418,314
2028	3,004,816	152,708	328,322	6,705,323	62,348,151	197,563	243,059	6,510,978	79,490,920
2029	2,971,159	150,813	328,396	6,624,180	61,749,112	194,970	239,738	6,436,155	78,694,523
2030	2,998,313	152,343	327,842	6,682,154	62,207,054	196,947	242,609	6,496,539	79,303,801
2031	2,933,799	148,706	327,150	6,516,671	61,107,316	191,687	235,916	6,352,983	77,814,228
2032	2,989,503	151,849	325,960	6,645,231	62,056,001	195,916	241,610	6,477,022	79,083,092
2033	3,056,587	155,616	326,216	6,819,905	63,573,703	200,794	246,165	6,625,840	81,004,826
2034	2,991,662	151,965	325,634	6,644,705	62,183,322	195,782	241,228	6,481,646	79,215,944
2035	3,047,400	155,104	324,316	6,790,718	63,399,965	199,744	245,500	6,605,564	80,768,311
Total	164,830,518	8,321,794	18,838,309	379,009,817	3,363,562,891	10,758,998	13,301,197	350,907,829	4,309,531,353

Table B-23
Total Transportation and Delta Water Charge for Each Contractor
(Dollars)

Sheet 3 of 4

Calendar Year	Southern California Area									
	Antelope Valley-East Kern Water Agency (20)	Castaic Lake Water Agency (21)	Coachella Valley Water District (22)	Crestline-Lake Arrowhead Water Agency (23)	Desert Water Agency (24)	Littlerock Creek Irrigation District (25)	Mojave Water Agency (26)	Palmdale Water District (27)	San Bernardino Valley Municipal Water District (28)	San Gabriel Valley Municipal Water District (29)
1961	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	0	0
1963	33,351	0	0	0	0	0	0	0	51,776	0
1964	62,921	34,172	14,439	4,374	36,574	1,144	28,462	8,212	82,882	34,413
1965	118,701	65,018	25,116	7,200	40,804	2,084	50,359	15,235	135,181	35,374
1966	215,957	122,198	44,766	12,489	73,212	3,756	90,472	27,701	232,692	61,515
1967	417,815	256,202	86,188	23,491	141,524	7,290	175,317	54,067	433,699	115,667
1968	736,546	615,889	152,801	41,540	251,384	12,880	311,396	95,543	782,747	209,082
1969	1,059,784	959,499	225,474	61,272	371,235	18,707	459,401	138,179	1,206,740	321,996
1970	1,378,038	1,233,575	315,498	89,767	519,705	25,249	633,635	184,991	1,779,533	467,925
1971	1,705,583	1,508,377	432,863	128,455	713,270	31,859	858,006	231,468	2,541,067	659,907
1972	2,183,231	1,803,794	603,788	185,977	990,533	43,795	1,180,224	287,834	3,777,843	950,870
1973	2,334,911	1,845,550	747,866	191,105	1,217,727	46,084	1,271,011	313,670	4,046,293	961,625
1974	2,455,337	1,953,421	771,365	204,190	1,257,617	48,958	1,329,863	331,932	4,483,573	1,105,677
1975	2,672,631	2,048,026	816,702	219,409	1,332,907	53,268	1,415,885	355,511	4,658,806	1,211,442
1976	3,136,870	2,090,431	873,735	232,251	1,425,624	57,758	1,492,194	381,523	4,858,404	1,282,847
1977	3,118,449	2,183,835	774,251	245,235	1,267,943	54,237	1,579,558	406,874	5,114,321	1,348,956
1978	3,566,280	2,325,854	973,409	255,592	1,568,693	56,832	1,626,777	420,289	5,112,038	1,378,227
1979	4,239,627	2,420,070	1,058,691	267,916	1,690,915	60,311	1,802,083	450,028	5,156,959	1,342,943
1980	4,923,632	2,587,917	1,167,896	295,476	1,891,307	67,632	1,974,069	499,329	5,667,741	1,485,817
1981	5,749,811	3,109,940	1,322,558	328,948	2,141,322	100,780	2,292,157	603,561	6,482,059	1,689,022
1982	5,508,806	3,293,442	1,410,235	346,851	2,285,043	82,324	2,266,851	642,294	6,773,012	1,930,360
1983	6,257,743	3,392,741	1,930,019	380,973	3,119,545	88,413	2,462,404	658,932	6,984,975	1,809,460
1984	7,631,172	4,487,223	3,030,462	497,723	4,875,931	96,523	2,727,815	728,155	8,073,566	2,598,968
1985	9,487,227	4,959,983	3,864,025	602,069	6,210,929	103,738	2,917,765	933,606	8,913,760	2,687,550
1986	9,428,175	5,599,858	4,324,284	647,778	6,955,239	130,253	3,101,278	1,224,208	9,163,286	3,399,305
1987	9,461,648	5,460,248	4,191,885	678,232	6,831,269	240,906	3,155,703	1,255,424	10,564,843	3,399,697
1988	9,059,741	5,648,494	4,248,720	704,559	6,997,828	158,878	3,329,837	1,044,586	11,115,730	3,271,922
1989	10,950,701	5,661,990	3,955,854	691,340	6,580,438	210,667	3,410,607	1,747,149	10,833,078	3,454,612
1990	12,340,013	6,137,264	4,647,541	729,381	7,664,576	331,202	3,641,474	1,954,247	11,748,644	4,223,431
1991	9,202,253	5,254,215	3,200,734	689,023	5,278,250	220,920	4,500,940	1,640,482	11,142,314	3,647,916
1992	11,758,053	6,447,372	3,353,659	613,056	5,530,348	175,033	5,479,068	1,532,727	11,207,766	3,706,418
1993	12,168,133	6,097,465	3,556,571	617,364	5,865,059	211,939	5,369,933	1,754,376	12,191,917	4,060,280
1994	14,232,493	6,669,036	3,580,749	694,706	5,904,755	277,997	6,319,925	2,090,740	13,029,083	4,850,764
1995	14,099,576	7,047,304	4,402,550	661,988	7,260,395	212,280	5,513,247	1,952,903	12,654,860	4,596,685
1996	14,307,133	7,187,978	7,083,535	667,533	11,682,329	206,083	5,358,543	2,257,596	13,179,934	4,646,692
1997	15,093,379	7,179,735	6,969,043	750,600	8,456,735	207,923	6,032,866	2,342,611	14,862,306	5,022,262
1998	13,632,056	6,816,373	6,067,290	717,449	6,980,748	209,279	7,637,768	1,950,805	14,721,426	4,312,302
1999	15,374,173	7,351,986	5,077,780	825,079	7,124,433	214,362	8,294,010	2,353,563	16,205,600	5,254,434
2000	16,556,459	11,570,611	4,672,475	897,100	7,154,020	277,445	8,881,141	2,782,877	19,020,803	4,902,936
2001	48,041,146	26,390,884	9,744,247	1,972,497	13,939,098	613,112	14,140,486	7,819,088	38,429,047	9,935,405
2002	38,185,042	26,260,172	7,231,197	1,231,785	11,925,560	644,292	11,405,618	5,665,022	38,710,898	7,545,583
2003	33,868,015	23,244,421	6,419,737	1,153,000	10,587,170	574,083	11,797,538	5,191,434	34,730,310	7,218,025
2004	28,379,570	20,368,557	5,403,851	1,110,241	8,911,621	482,758	12,756,783	4,346,003	30,333,583	7,680,100
2005	32,405,570	21,895,193	6,177,296	1,247,675	10,187,320	549,629	14,527,705	4,965,733	34,230,318	8,723,865
2006	33,079,224	22,257,491	6,277,185	1,251,186	10,352,059	560,786	14,906,900	5,069,955	34,145,590	8,756,849
2007	32,806,683	21,945,480	6,225,975	1,287,458	10,267,604	556,252	14,981,256	5,028,137	34,162,530	8,735,381
2008	32,041,293	21,512,921	6,071,126	1,287,900	10,012,197	543,557	14,943,621	4,909,862	33,366,462	8,523,793
2009	32,824,075	21,946,433	6,229,870	1,351,273	10,274,025	556,571	15,382,161	5,030,267	34,182,778	8,740,756
2010	33,953,463	22,693,877	6,440,285	1,403,661	10,621,071	575,332	15,938,329	5,203,990	35,042,003	8,989,699
2011	33,714,375	23,431,552	6,393,678	1,441,437	10,544,201	571,400	16,249,667	5,167,210	34,927,105	8,948,330
2012	34,990,409	24,463,445	6,630,326	1,505,739	10,934,514	592,613	17,135,565	5,363,539	35,915,255	9,232,442
2013	34,130,376	23,834,184	6,459,220	1,502,762	10,638,919	578,891	17,182,518	5,236,597	34,987,457	8,974,753
2014	34,123,791	23,758,253	6,460,496	1,561,415	10,655,017	578,218	17,570,159	5,229,880	35,361,870	9,045,160
2015	34,023,692	23,683,962	6,410,840	1,570,087	10,573,114	576,513	17,896,152	5,216,320	34,804,897	8,924,895
2016	35,092,261	24,376,890	6,626,152	1,662,532	10,928,254	594,194	18,755,634	5,382,220	36,119,131	9,254,949
2017	33,535,746	23,340,483	6,310,506	1,611,108	10,407,644	568,152	18,425,418	5,145,445	34,459,469	8,817,891
2018	34,831,484	24,119,110	6,556,419	1,692,688	10,813,251	589,430	19,465,101	5,346,680	35,561,075	9,124,399
2019	35,521,078	24,378,865	6,665,993	1,750,322	10,993,990	600,421	20,078,592	5,452,925	36,122,101	9,268,731
2020	33,660,714	23,060,753	6,260,236	1,665,406	10,324,757	568,256	19,557,119	5,161,216	33,927,243	8,691,708
2021	33,507,570	22,976,559	6,177,331	1,654,428	10,187,975	564,754	20,036,047	5,128,113	33,193,232	8,522,766
2022	32,131,326	21,627,422	5,882,585	1,606,218	9,701,942	541,227	19,891,303	4,926,402	31,781,110	8,132,342
2023	32,899,936	22,412,643	6,033,677	1,677,494	9,951,075	554,159	20,982,090	5,035,039	32,688,910	8,361,851
2024	33,499,338	22,693,252	6,120,902	1,688,323	10,094,980	563,918	21,846,790	5,132,621	32,738,897	8,408,218
2025	32,291,708	21,479,833	5,879,863	1,633,739	9,697,561	543,236	21,576,591	4,962,148	31,507,813	8,072,348
2026	32,202,680	21,235,444	5,829,393	1,641,020	9,614,443	541,225	21,410,687	4,961,358	31,311,681	8,005,870
2027	31,749,637	20,598,335	5,726,284	1,606,265	9,444,401	533,568	21,093,341	4,895,000	30,521,096	7,817,574
2028	31,421,964	20,575,825	5,644,205	1,586,880	9,309,066	527,897	20,856,011	4,849,834	29,946,658	7,675,924
2029	31,208,126	20,130,765	5,625,371	1,612,339	9,278,015	524,325	20,713,340	4,817,051	30,246,107	7,718,774
2030	31,199,872	20,187,160	5,624,668	1,623,155	9,276,857	524,173	20,711,763	4,816,037	27,999,458	7,721,115
2031	30,911,928	19,734,807	5,542,133	1,576,240	9,140,714	519,364	20,569,687	4,772,318	27,106,532	7,527,700
2032	31,039,882	20,085,135	5,586,934	1,618,528	9,214,622	521,460	20,585,462	4,792,339	27,792,371	7,667,320
2033	33,106,810	21,336,250	5,968,099	1,708,982	9,843,292	555,773	21,996,743	5,111,934	29,227,632	8,098,161
2034	31,275,974	20,131,500	5,621,282	1,618,149	9,271,272	525,346	20,789,164	4,832,397	27,628,077	7,654,271
2035	33,514,487	20,832,264	6,016,478	1,758,893	9,923,110	562,441	22,120,399	5,178,918	29,959,138	8,245,780
Total	1,427,827,654	926,427,206	308,248,657	69,078,316	497,530,877	23,926,115	747,247,783	215,796,260	1,432,159,091	381,202,028

Table B-23

Total Transportation and Delta Water Charge for Each Contractor

(Dollars)

Sheet 4 of 4

Calendar Year	Southern California Area (continued)				Feather River Area				South Bay Area Future Contractor (38)	Grand Total (39)
	San Geronio Pass Water Agency (30)	Metropolitan Water District of Southern California (31)	Ventura County Flood Control District (32)	Total (33)	City of Yuba City (34)	County of Butte (35)	Plumas County FC&WCD (36)	Total (37)		
1961	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	3,219	79,888
1963	0	691,432	0	776,559	0	0	0	0	55,621	1,664,634
1964	21,378	1,261,584	9,386	1,599,941	0	0	0	0	83,871	2,868,128
1965	21,885	2,182,389	17,781	2,717,127	0	0	405	405	128,944	4,897,073
1966	37,995	3,903,334	33,453	4,859,540	0	0	565	565	148,285	7,490,973
1967	71,340	7,699,870	68,210	9,550,680	0	0	562	562	204,629	13,168,947
1968	129,011	15,329,317	142,909	18,811,045	0	1,050	1,440	2,490	279,263	25,700,817
1969	198,912	23,170,450	215,370	28,407,019	0	1,225	4,123	5,348	349,208	37,148,843
1970	289,852	30,640,203	273,810	37,831,781	0	3,848	17,128	20,976	386,284	48,690,780
1971	409,633	40,006,076	342,676	49,569,240	0	4,546	19,200	23,746	375,846	61,948,724
1972	537,542	55,344,012	422,586	68,312,029	0	4,929	21,164	26,093	401,360	84,543,617
1973	588,337	59,951,814	435,938	73,951,931	0	7,059	21,792	28,851	375,839	89,465,071
1974	611,812	66,370,698	455,861	81,380,304	0	8,336	22,422	30,758	398,816	98,424,129
1975	645,016	72,193,131	478,703	88,101,437	0	9,416	23,536	32,952	408,036	107,333,608
1976	668,719	75,270,950	475,889	92,247,195	0	7,004	23,270	30,274	430,626	113,566,700
1977	696,926	73,702,740	507,369	91,000,694	0	16,917	24,073	40,990	423,367	112,187,955
1978	709,455	82,315,925	523,487	100,832,858	0	12,635	24,238	36,873	426,614	125,230,756
1979	713,284	83,967,179	526,722	103,696,728	0	16,575	28,365	44,940	446,652	131,260,364
1980	862,696	93,395,860	583,959	115,403,331	0	19,834	26,575	46,409	507,472	145,707,686
1981	947,395	112,540,401	672,897	137,980,851	0	21,682	34,577	56,259	517,022	176,311,601
1982	1,021,762	117,512,842	727,989	143,801,811	0	16,117	43,130	59,247	505,226	185,403,079
1983	1,076,721	119,361,793	854,642	148,378,361	0	15,202	29,424	44,626	553,078	187,079,144
1984	1,212,077	156,645,332	933,697	193,538,644	20,590	15,442	31,809	67,841	561,792	246,538,969
1985	1,288,256	195,865,725	994,042	238,828,675	24,050	16,976	32,418	73,444	680,398	302,970,193
1986	1,345,245	218,704,552	1,058,669	265,082,130	31,753	18,145	33,610	83,508	620,136	335,383,940
1987	1,380,096	205,232,686	1,056,712	252,909,349	37,071	17,794	33,397	88,262	686,858	325,479,590
1988	1,466,316	222,040,597	1,124,497	270,211,705	48,058	19,117	33,619	100,794	708,447	347,271,916
1989	1,506,061	230,704,832	1,232,777	280,940,106	61,184	20,809	37,202	119,195	768,165	362,179,458
1990	1,626,121	277,595,982	1,856,394	334,496,270	66,041	20,855	36,826	123,722	822,381	416,559,253
1991	1,724,216	222,350,342	1,550,364	270,401,969	180,212	22,526	42,214	244,952	567,844	340,754,901
1992	1,787,661	245,967,084	1,503,894	299,062,139	208,216	26,028	43,530	277,774	804,768	385,962,152
1993	1,954,649	219,950,782	1,551,671	275,350,139	209,613	26,203	47,602	283,418	964,974	372,105,352
1994	1,967,341	259,173,566	1,475,728	320,266,883	201,284	25,161	46,093	272,538	978,520	415,627,506
1995	2,055,779	228,497,700	1,568,825	290,524,092	216,944	27,118	50,035	294,097	905,412	399,152,441
1996	1,729,150	235,618,952	1,622,592	305,548,050	217,250	27,156	56,637	301,043	944,613	422,937,682
1997	1,811,263	248,265,577	1,777,695	318,771,995	236,300	29,847	59,929	326,076	802,573	442,749,082
1998	1,911,908	230,208,397	1,798,023	296,963,824	128,021	29,927	54,405	212,353	841,021	420,853,906
1999	2,255,550	257,793,835	1,872,053	329,996,858	254,675	31,834	58,386	344,895	929,843	466,507,159
2000	4,628,259	304,097,838	2,170,092	387,612,056	282,832	85,274	70,212	438,318	590,400	530,188,477
2001	4,937,216	821,198,794	3,871,489	1,001,032,509	282,172	99,684	71,720	453,576	800,557	1,216,509,555
2002	5,584,769	566,258,130	5,627,110	1,262,751,178	285,335	680,890	73,967	1,040,192	908,222,404	1,877,747
2003	5,579,511	506,226,101	4,947,402	651,536,747	285,012	680,793	75,430	1,041,235	3,626	825,047,827
2004	5,864,321	453,043,138	3,871,063	582,551,589	285,659	680,989	77,025	1,043,673	3,626	746,682,195
2005	6,320,052	505,849,866	4,168,875	651,249,097	285,384	680,905	78,391	1,044,680	3,626	820,036,240
2006	6,380,125	511,042,225	4,237,167	658,316,742	284,526	680,645	79,852	1,045,023	3,626	829,181,562
2007	6,476,625	507,067,209	4,179,523	658,720,113	284,342	680,589	81,479	1,046,410	3,626	828,629,288
2008	8,034,151	496,079,599	4,093,518	641,420,000	285,043	680,802	83,326	1,049,171	3,625	811,346,828
2009	8,187,687	507,231,138	4,179,856	656,116,890	285,149	680,834	85,025	1,051,008	3,625	824,798,251
2010	8,367,800	523,841,572	4,321,868	677,392,950	285,234	680,860	86,720	1,052,814	3,625	851,557,131
2011	8,332,252	520,379,737	4,300,536	674,401,480	285,345	680,893	88,659	1,054,897	3,625	847,233,977
2012	8,534,876	537,785,402	4,448,873	697,532,998	285,440	680,922	90,595	1,056,957	3,625	871,196,513
2013	8,432,355	524,848,727	4,339,236	681,145,995	285,131	680,829	92,670	1,058,630	3,626	854,290,670
2014	8,466,769	523,972,501	4,319,407	681,102,936	287,167	681,446	95,326	1,063,939	3,626	851,347,572
2015	8,391,992	520,933,896	4,304,232	677,310,592	285,957	681,079	97,011	1,064,047	3,626	847,955,920
2016	8,627,116	536,657,124	4,423,176	698,499,633	285,792	681,029	99,200	1,066,021	3,625	871,791,579
2017	8,321,366	513,183,707	4,228,419	668,355,354	285,579	680,964	99,149	1,065,692	3,626	837,851,182
2018	8,547,175	528,167,977	4,351,809	689,166,598	285,643	680,984	99,163	1,065,790	3,627	859,426,291
2019	8,658,181	534,683,989	4,382,196	698,557,385	285,869	681,053	96,591	1,063,513	3,626	872,128,200
2020	8,259,163	502,822,363	4,133,696	658,092,630	286,001	681,093	84,684	1,051,778	3,626	827,488,662
2021	8,121,726	496,539,579	4,092,916	650,702,996	293,871	683,481	85,807	1,063,159	3,626	821,659,107
2022	7,921,267	469,437,284	3,861,497	617,441,925	278,792	678,905	80,685	1,038,382	3,626	781,948,718
2023	8,023,925	481,309,443	3,985,173	633,915,415	291,733	682,832	83,891	1,058,456	3,626	803,552,425
2024	8,100,593	487,030,249	4,041,258	641,959,339	284,212	680,550	82,026	1,046,788	3,625	812,379,755
2025	7,966,381	462,944,222	3,843,703	612,399,146	262,405	673,931	76,620	1,012,956	3,626	773,128,171
2026	8,006,465	461,336,393	3,825,101	609,921,760	244,094	668,374	72,081	984,549	3,626	769,528,038
2027	7,897,987	445,937,338	3,704,354	591,525,180	239,424	666,957	70,921	977,302	3,626	747,363,494
2028	7,835,433	447,982,610	3,729,807	591,942,114	232,047	664,718	69,092	965,857	3,626	746,094,896
2029	7,861,779	439,249,232	3,632,241	582,617,465	232,047	664,718	69,090	965,855	3,625	735,556,752
2030	5,191,138	440,363,202	3,642,556	578,881,154	232,047	664,718	69,088	965,853	3,626	732,663,167
2031	5,062,787	429,693,938	3,545,873	565,704,021	232,047	664,718	69,087	965,852	3,625	717,347,371
2032	5,155,677	438,786,827	3,627,275	576,473,832	232,047	664,718	69,085	965,850	3,626	729,964,809
2033	5,466,785	462,643,578	3,829,767	608,893,806	232,047	664,718	69,085	965,850	3,626	765,423,232
2034	5,154,821	437,517,579	3,617,558	575,637,390	232,047	664,718	69,084	965,849	3,626	729,222,003
2035	5,569,208	462,921,454	3,743,074	610,345,644	232,047	664,718	69,082	965,847	3,625	765,006,115
Total	295,549,093	22,600,491,902	176,368,966	29,101,853,948	11,880,781	23,716,644	3,974,620	39,572,045	22,385,375	36,920,954,393

Table B-24

Equivalent Unit Charge for Water Supply for Each Contractor^a

(Dollars per Acre-Foot)

Project Service Area and Water Supply Contractor	Transportation Charge					Delta Water Charge (6)	Water System Revenue Bond Surcharge (7)	Total Equivalent Unit Charge (8)
	Capital Cost Component (1)	Minimum OMP&R Component (2)	Off-Aqueduct Component (3)	Variable OMP&R Component (4)	Total (5)			
Feather River Area								
City of Yuba City	0.00	0.00	0.00	0.00	0.00	32.75	4.30	37.05
County of Butte	0.00	0.00	0.00	0.00	0.00	14.80	1.94	16.74
Plumas County Flood Control and Water Conservation District	21.85	3.20	0.00	0.00	25.05	21.82	8.77	55.64
Feather River Area	2.11	0.31	0.00	0.00	2.42	18.62	3.02	24.06
North Bay Area								
Napa County Flood Control and Water Conservation District	115.54	38.14	4.86	9.36	167.90	16.54	33.40	217.84
Solano County Water Agency	87.22	32.02	4.04	5.86	129.14	24.58	26.80	180.52
North Bay Area	98.41	34.44	4.33	7.24	144.42	21.40	29.41	195.23
South Bay Area								
Alameda County Flood Control and Water Conservation District, Zone 7	15.19	33.10	9.50	13.27	71.06	18.51	6.54	96.11
Alameda County Water District	20.83	26.50	7.72	10.86	65.91	20.46	8.32	94.69
Santa Clara Valley Water District	18.90	19.65	6.88	9.20	54.63	15.04	7.08	76.75
South Bay Area	21.05	24.49	7.43	9.90	62.87	16.60	7.87	87.34
San Joaquin Valley Area								
County of Kings	4.62	4.15	3.85	4.49	17.11	19.00	3.74	39.85
Dudley Ridge Water District	5.26	4.67	3.27	3.95	17.15	15.98	3.52	36.65
Empire West Side Irrigation District	2.01	3.87	2.52	3.73	12.13	16.64	2.73	31.50
Kern County Water Agency	9.02	8.45	5.05	5.56	28.08	20.88	5.18	54.14
Oak Flat Water District	1.99	2.20	2.03	2.58	8.80	15.22	2.54	26.56
Tulare Lake Basin Water Storage District	5.29	4.73	3.20	4.21	17.43	16.31	3.57	37.31
San Joaquin Valley Area	8.93	8.61	4.74	5.27	27.55	18.82	4.89	51.26
Central Coastal Area								
San Luis Obispo County Flood Control and Water Conservation District	142.55	61.52	16.15	52.48	272.70	42.80	44.15	359.65
Santa Barbara County Flood Control and Water Conservation District	636.46	93.35	22.77	50.45	803.03	40.59	177.35	1,020.97
Central Coastal Area	469.33	82.58	20.49	51.14	623.54	41.33	132.27	797.14
Southern California Area								
Antelope Valley-East Kern Water Agency	40.50	35.98	27.50	46.26	150.24	28.41	14.68	193.33
Castaic Lake Water Agency	39.42	38.21	19.60	19.17	116.40	18.69	13.11	148.20
Coachella Valley Water District	36.77	32.13	53.48	21.63	144.01	16.85	12.15	173.01
Crestline-Lake Arrowhead Water Agency	93.73	73.48	25.38	26.01	218.60	34.92	29.92	283.44
Desert Water Agency	40.31	35.23	51.36	24.88	151.78	18.27	13.29	183.34
Littlerock Creek Irrigation District	49.05	42.86	32.15	50.24	174.30	33.41	17.65	225.36
Mojave Water Agency	74.36	82.52	26.04	73.47	256.39	38.46	25.15	320.00
Palmdale Water District	44.96	42.79	39.78	55.65	183.18	33.14	16.50	232.82
San Bernardino Valley Municipal Water District	129.48	102.01	27.42	35.33	294.24	43.89	40.76	378.89
San Gabriel Valley Municipal Water District	89.59	72.40	36.52	27.01	225.52	32.27	28.45	286.24
San Geronio Pass Water Agency	213.43	171.61	22.57	47.05	454.66	49.67	64.21	568.54
The Metropolitan Water District of Southern California	77.29	56.75	35.20	21.10	190.34	31.18	24.98	246.50
Ventura County Flood Control District	105.71	77.32	26.69	40.64	250.36	43.26	34.25	327.87
Southern California Area	74.28	56.31	34.45	24.35	189.39	30.66	24.10	244.15
All Areas	45.46	33.33	19.05	15.09	112.93	24.61	15.52	153.06

^aHypothetical charges, which, if assessed on all Table A water delivered to date, all surplus water delivered prior to May 1, 1973, and all Table A 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, 4.615 percent per annum.

Table B-25

Equivalent Unit Transportation Costs of Water Delivered from or through Each Aqueduct Reach^a

(Dollars per Acre-Foot)

Aqueduct Reach	Unit Costs of Reach ^b						Cumulative Unit Costs from the Delta					Total (12)
	Capital Costs (1)	Water System Revenue Bond Surcharge ^c (2)	Minimum OMP&R (3)	Aqueduct Costs (4)	Variable OMP&R (5)	Total (6)	Capital Costs (7)	Water System Revenue Bond Surcharge ^c (8)	Minimum OMP&R (9)	Aqueduct Costs (10)	Variable OMP&R (11)	
North Bay Aqueduct												
1	38.91	10.52	12.31	1.32	1.96	65.02	38.91	10.52	12.31	1.32	1.96	65.02
2	41.41	11.19	5.38	0.00	0.00	57.98	80.32	21.71	17.69	1.32	1.96	123.00
3A	7.38	1.99	10.70	2.46	3.17	25.70	87.70	23.70	28.39	3.78	5.13	148.70
3B	47.48	12.83	24.19	3.17	7.04	94.71	127.80	34.54	41.88	4.49	9.00	217.71
South Bay Aqueduct												
1	6.80	1.84	14.43	5.42	7.34	35.83	8.70	2.35	17.27	7.19	10.77	46.28
2	0.64	0.17	1.63	0.00	0.00	2.44	9.34	2.52	18.90	7.19	10.77	48.72
4	2.14	0.58	2.78	0.00	0.00	5.50	11.48	3.10	21.68	7.19	10.77	54.22
5	4.49	1.21	2.18	0.00	0.00	7.88	15.97	4.31	23.86	7.19	10.77	62.10
6	0.26	0.07	0.23	0.00	0.00	0.56	16.23	4.38	24.09	7.19	10.77	62.66
7	1.99	0.54	0.42	0.00	0.00	2.95	18.22	4.92	24.51	7.19	10.77	65.61
8	2.70	0.73	0.70	0.00	0.00	4.13	20.92	5.65	25.21	7.19	10.77	69.74
9	5.58	1.51	2.62	0.00	0.00	9.71	26.50	7.16	27.83	7.19	10.77	79.45
California Aqueduct												
1	1.90	0.51	2.84	1.77	3.43	10.45	1.90	0.51	2.84	1.77	3.43	10.45
2A	1.21	0.33	0.56	0.00	0.00	2.10	3.11	0.84	3.40	1.77	3.43	12.55
2B	0.62	0.17	0.28	0.00	0.00	1.07	3.73	1.01	3.68	1.77	3.43	13.62
3	0.54	0.15	0.21	0.00	0.00	0.90	4.27	1.16	3.89	1.77	3.43	14.52
4	0.86	0.23	1.41	0.82	1.55	4.87	5.13	1.39	5.30	2.59	4.98	19.39
5	0.66	0.18	0.28	0.00	0.00	1.12	5.79	1.57	5.58	2.59	4.98	20.51
6	0.17	0.05	0.14	0.00	0.00	0.36	5.96	1.62	5.72	2.59	4.98	20.87
7	0.99	0.27	0.34	0.00	0.00	1.60	6.95	1.89	6.06	2.59	4.98	22.47
8C	0.02	0.01	0.06	0.00	0.00	0.09	6.97	1.90	6.12	2.59	4.98	22.56
8D	0.38	0.10	0.27	0.00	0.00	0.75	7.35	2.00	6.39	2.59	4.98	23.31
9	0.32	0.09	0.25	0.00	0.00	0.66	7.67	2.09	6.64	2.59	4.98	23.97
10A	0.34	0.09	0.33	0.00	0.00	0.76	8.01	2.18	6.97	2.59	4.98	24.73
11B	0.50	0.14	0.21	0.00	0.00	0.85	8.51	2.32	7.18	2.59	4.98	25.58
12D	0.47	0.13	0.19	0.00	0.00	0.79	8.98	2.45	7.37	2.59	4.98	26.37
12E	0.33	0.09	0.32	0.00	0.00	0.74	9.31	2.54	7.69	2.59	4.98	27.11
13B	0.71	0.19	0.37	0.00	0.00	1.27	10.02	2.73	8.06	2.59	4.98	28.38
14A	2.74	0.74	2.85	1.40	2.92	10.65	12.76	3.47	10.91	3.99	7.90	39.03
14B	0.43	0.12	0.35	0.00	0.00	0.90	13.19	3.59	11.26	3.99	7.90	39.93
14C	0.36	0.10	0.26	0.00	0.00	0.72	13.55	3.69	11.52	3.99	7.90	40.65
15A	2.03	0.55	2.97	1.69	3.17	10.41	15.58	4.24	14.49	5.68	11.07	51.06
16A	3.36	0.91	4.60	3.65	7.40	19.92	18.94	5.15	19.09	9.33	18.47	70.98
17E	11.34	3.06	12.92	12.76	27.32	67.40	30.28	8.21	32.01	22.09	45.79	138.38
17F	2.94	0.79	0.16	0.00	0.00	3.89	33.22	9.00	32.17	22.09	45.79	142.27
18A	2.64	0.71	1.55	0.00	-2.87	2.03	35.86	9.71	33.72	22.09	42.92	144.30
19	1.95	0.53	0.94	0.00	0.00	3.42	37.81	10.24	34.66	22.09	42.92	147.72
19C	2.12	0.57	0.00	0.00	0.00	2.69	39.93	10.81	34.66	22.09	42.92	150.41
20A	1.55	0.42	1.55	0.00	0.00	3.52	41.48	11.23	36.21	22.09	42.92	153.93
20B	1.88	0.51	1.02	0.00	0.00	3.41	43.36	11.74	37.23	22.09	42.92	157.34
21	0.95	0.26	0.71	0.00	0.00	1.92	44.31	12.00	37.94	22.09	42.92	159.26
22A	0.99	0.27	0.37	0.00	0.00	1.63	45.30	12.27	38.31	22.09	42.92	160.89
22B	9.72	2.63	10.00	4.12	9.01	35.48	55.02	14.90	48.31	26.21	51.93	196.37
23	2.67	0.72	0.69	0.00	-3.66	0.42	57.69	15.62	49.00	26.21	48.27	196.79
24	5.18	1.40	1.94	0.00	0.00	8.52	62.87	17.02	50.94	26.21	48.27	205.31
25	3.78	1.02	0.11	0.00	0.00	4.91	66.65	18.04	51.05	26.21	48.27	210.22
26A	4.13	1.12	6.48	0.00	-24.98	(13.25)	70.78	19.16	57.53	26.21	23.29	196.97
28G	7.69	2.08	2.45	0.00	0.00	12.22	78.47	21.24	59.98	26.21	23.29	209.19
28H	7.40	2.00	2.57	0.00	0.00	11.97	85.87	23.24	62.55	26.21	23.29	221.16
28J	83.01	22.44	35.73	0.00	0.00	141.18	168.88	45.68	98.28	26.21	23.29	362.34
West Branch												
29A	3.85	1.04	7.42	1.57	3.21	17.09	37.07	10.04	39.59	23.66	49.00	159.36
29F	2.81	0.76	0.89	0.00	0.00	4.46	39.88	10.80	40.48	23.66	49.00	163.82
29G	9.33	2.52	4.22	0.00	-11.55	4.52	49.21	13.32	44.70	23.66	37.45	168.34
29H	5.81	1.57	4.00	0.00	0.00	11.38	55.02	14.89	48.70	23.66	37.45	179.72
29J	9.74	2.63	1.15	0.00	-21.60	(8.08)	64.76	17.52	49.85	23.66	15.85	171.64
30	15.63	4.22	3.59	0.00	0.00	23.44	80.39	21.74	53.44	23.66	15.85	195.08
Coastal Branch												
31A	7.07	1.91	16.94	1.74	2.76	30.42	14.42	3.91	23.33	4.33	7.74	53.73
33A	264.18	71.40	31.95	14.76	36.08	418.37	278.60	75.31	55.28	19.09	43.82	472.10
34	188.75	51.01	0.89	0.00	0.00	240.65	467.35	126.32	56.17	19.09	43.82	712.75
35	0.00	0.00	0.00	0.00	0.00	0.00	467.35	126.32	56.17	19.09	43.82	712.75

^aRepresentative of transportation unit costs only; does not include a unit cost of conservation. The Delta Water Rate should be added to these values in order to approximate unit costs at canal-side. Includes surplus water prior to May 1, 1973.

^bHypothetical charges which, if assessed on all Table A water delivered to date, all surplus water delivered prior to May 1, 1973, and all Table A 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 Charges required under the water supply contract considering interest rate at the Project Interest Rate of 4.615 percent per annum.

^cThe Water System Revenue Bond Surcharge equivalent unit rate is calculated by dividing the WSRB surcharge for 2002 (from 132-01, Table B-22) by the total Transportation Capital (132-01, B-15) and the Capital component of the Delta Water Charge (132-01, B-4 * 11.77671248). This rate is multiplied by the equivalent rate for the Transportation Capital cost (column 1).

Table B-26

**Capital Costs of Each Aqueduct Reach to Be Reimbursed
through the Capital Cost Component of the East Branch Enlargement
Transportation Charge**

(Dollars)

Sheet 1 of 2

Calendar Year	California Aqueduct							
	Mojave Division							
	Reach 18A (1)	Reach 19 (2)	Reach 20A (3)	Reach 20B (4)	Reach 21 (5)	Reach 22A (6)	Reach 22B (7)	Reach 23B (8)
1952	0	0	0	0	0	0	0	0
1953	0	0	0	0	0	0	0	0
1954	0	0	0	0	0	0	0	0
1955	0	0	0	0	0	0	0	0
1956	0	0	0	0	0	0	0	0
1957	0	0	0	0	0	0	0	0
1958	0	0	0	0	0	0	0	0
1959	0	0	0	0	0	0	0	0
1960	0	0	0	0	0	0	0	0
1961	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0	0
1967	0	0	0	0	0	0	0	0
1968	0	0	0	0	0	0	0	0
1969	0	0	0	0	0	0	0	0
1970	0	0	0	0	0	0	0	0
1971	0	0	0	0	0	0	0	0
1972	0	0	0	0	0	0	0	0
1973	0	0	0	0	0	0	0	0
1974	0	0	0	0	0	0	0	0
1975	0	0	0	0	0	0	0	0
1976	0	0	0	0	0	0	0	0
1977	0	0	0	0	0	0	0	0
1978	0	0	0	0	0	0	0	0
1979	117,000	0	0	0	0	0	0	0
1980	200,000	0	0	0	0	0	0	74,000
1981	135,000	0	0	0	0	0	0	385,000
1982	1,503,000	0	0	0	0	0	0	1,586,000
1983	2,260,000	0	0	0	0	0	0	2,965,000
1984	735,000	0	0	0	0	0	796,000	1,380,000
1985	93,000	435,000	75,000	544,000	859,000	703,000	970,000	146,000
1986	784,000	4,477,000	3,144,000	2,234,000	1,569,000	1,203,000	1,808,000	34,000
1987	11,000	951,000	1,076,000	666,000	399,000	47,000	16,421,000	43,000
1988	1,000	125,000	1,681,000	1,730,000	2,024,000	40,000	13,326,000	70,000
1989	0	206,000	2,089,000	2,174,000	2,510,000	61,000	11,242,000	229,000
1990	1,000	577,000	903,000	735,000	928,000	194,000	20,131,000	887,000
1991	1,000	280,000	413,000	333,000	422,000	93,000	20,702,000	1,215,000
1992	0	40,000	41,000	39,000	35,000	13,000	9,599,000	3,719,000
1993	0	19,000	16,000	19,000	12,000	6,000	2,319,000	19,654,000
1994	0	2,000	3,000	2,000	4,000	3,000	803,000	3,173,000
1995	0	0	0	0	0	0	223,000	1,465,000
1996	0	0	0	0	0	0	6,014,000	478,000
1997	0	0	0	0	0	0	391,000	1,327,000
1998	0	0	0	0	0	0	13,000	0
1999	0	0	0	0	0	0	0	0
2000	0	0	0	0	0	0	0	0
Total	5,841,000	7,112,000	9,441,000	8,476,000	8,762,000	2,363,000	104,758,000	38,830,000

Table B-26

**Capital Costs of Each Aqueduct Reach to Be Reimbursed
through the Capital Cost Component of the East Branch Enlargement
Transportation Charge**

(Dollars)

Sheet 2 of 2

Calendar Year	California Aqueduct (continued)							Grand Total (16)
	Mojave Division (continued)			Santa Ana Division				
	Reach 23C (9)	Reach 24 (10)	Total (11)	Reach 25 (12)	Reach 26A (13)	Reach 26B (14)	Total (15)	
1952	0	0	0	0	0	0	0	0
1953	0	0	0	0	0	0	0	0
1954	0	0	0	0	0	0	0	0
1955	0	0	0	0	0	0	0	0
1956	0	0	0	0	0	0	0	0
1957	0	0	0	0	0	0	0	0
1958	0	0	0	0	0	0	0	0
1959	0	0	0	0	0	0	0	0
1960	0	0	0	0	0	0	0	0
1961	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0	0
1967	0	0	0	0	0	0	0	0
1968	0	0	0	0	0	0	0	0
1969	0	0	0	0	0	0	0	0
1970	0	0	0	0	0	0	0	0
1971	0	0	0	0	0	0	0	0
1972	0	0	0	0	0	0	0	0
1973	0	0	0	0	0	0	0	0
1974	0	0	0	0	0	0	0	0
1975	0	0	0	0	0	0	0	0
1976	0	0	0	0	0	0	0	0
1977	0	0	0	0	0	0	0	0
1978	0	0	0	0	0	0	0	0
1979	0	0	117,000	0	0	0	0	117,000
1980	0	0	274,000	0	0	0	0	274,000
1981	0	0	520,000	0	0	0	0	520,000
1982	0	0	3,089,000	0	0	0	0	3,089,000
1983	0	0	5,225,000	0	0	0	0	5,225,000
1984	0	0	2,911,000	0	0	0	0	2,911,000
1985	0	0	3,825,000	0	528,000	89,000	617,000	4,442,000
1986	25,000	0	15,278,000	0	1,926,000	154,000	2,080,000	17,358,000
1987	178,000	0	19,792,000	0	3,699,000	437,000	4,136,000	23,928,000
1988	632,000	0	19,629,000	0	5,667,000	3,329,000	8,996,000	28,625,000
1989	1,130,000	0	19,641,000	0	40,879,000	1,650,000	42,529,000	62,170,000
1990	2,066,000	0	26,422,000	0	29,853,000	1,650,000	31,503,000	57,925,000
1991	4,980,000	0	28,439,000	0	26,027,000	999,000	27,026,000	55,465,000
1992	11,920,000	0	25,406,000	0	15,317,000	299,000	15,616,000	41,022,000
1993	16,303,000	0	38,348,000	0	4,878,000	0	4,878,000	43,226,000
1994	7,081,000	0	11,071,000	0	3,151,000	0	3,151,000	14,222,000
1995	5,350,000	0	7,038,000	0	2,137,000	0	2,137,000	9,175,000
1996	1,706,000	0	8,198,000	0	9,181,000	0	9,181,000	17,379,000
1997	1,905,000	0	3,623,000	0	175,000	0	175,000	3,798,000
1998	28,000	0	41,000	0	0	0	0	41,000
1999	0	0	0	0	0	0	0	0
2000	0	0	0	0	0	0	0	0
Total	53,304,000	0	238,887,000	0	143,418,000	8,607,000	152,025,000	390,912,000

Table B-27

**Minimum OMP&R Costs of Each Aqueduct Reach to Be Reimbursed
through Minimum OMP&R Component of the East Branch
Enlargement Transportation Charge^a**

(Dollars)

Sheet 1 of 2

Calendar Year	California Aqueduct							
	Mojave Division							
	Reach 18A (1)	Reach 19 (2)	Reach 20A (3)	Reach 20B (4)	Reach 21 (5)	Reach 22A (6)	Reach 22B (7)	Reach 23B (8)
1971	0	0	0	0	0	0	0	0
1972	0	0	0	0	0	0	0	0
1973	0	0	0	0	0	0	0	0
1974	0	0	0	0	0	0	0	0
1975	0	0	0	0	0	0	0	0
1976	0	0	0	0	0	0	0	0
1977	0	0	0	0	0	0	0	0
1978	0	0	0	0	0	0	0	0
1979	0	0	0	0	0	0	0	0
1980	0	0	0	0	0	0	0	0
1981	0	0	0	0	0	0	0	0
1982	0	0	0	0	0	0	0	0
1983	0	0	0	0	0	0	0	0
1984	0	0	0	0	0	0	0	0
1985	0	0	0	0	0	0	0	0
1986	0	0	0	0	0	0	0	0
1987	0	0	0	0	0	0	0	0
1988	0	0	0	0	0	0	0	0
1989	0	0	0	0	0	0	0	0
1990	0	0	0	0	0	0	0	0
1991	0	0	0	0	0	0	0	0
1992	0	0	0	0	0	0	0	0
1993	0	0	0	0	0	0	0	0
1994	0	0	0	0	0	0	1,048,625	0
1995	0	0	0	0	0	0	953,814	0
1996	0	0	0	0	0	0	1,171,411	0
1997	0	0	0	0	0	0	1,110,038	0
1998	0	0	0	0	0	0	1,213,002	0
1999	1,229	517	646	409	383	169	668,466	0
2000	4,452	1,875	2,340	1,484	1,386	614	1,377,953	0
2001	0	0	0	0	0	0	1,267,553	0
2002	0	0	0	0	0	0	1,491,473	0
2003	0	0	0	0	0	0	1,330,930	0
2004	0	0	0	0	0	0	1,330,930	0
2005	0	0	0	0	0	0	1,330,930	0
2006	0	0	0	0	0	0	1,330,930	0
2007	0	0	0	0	0	0	1,330,930	0
2008	0	0	0	0	0	0	1,330,930	0
2009	0	0	0	0	0	0	1,330,930	0
2010	0	0	0	0	0	0	1,330,930	0
2011	0	0	0	0	0	0	1,330,930	0
2012	0	0	0	0	0	0	1,330,930	0
2013	0	0	0	0	0	0	1,330,930	0
2014	0	0	0	0	0	0	1,330,930	0
2015	0	0	0	0	0	0	1,330,930	0
2016	0	0	0	0	0	0	1,330,930	0
2017	0	0	0	0	0	0	1,330,930	0
2018	0	0	0	0	0	0	1,330,930	0
2019	0	0	0	0	0	0	1,330,930	0
2020	0	0	0	0	0	0	1,330,930	0
2021	0	0	0	0	0	0	1,330,930	0
2022	0	0	0	0	0	0	1,330,930	0
2023	0	0	0	0	0	0	1,330,930	0
2024	0	0	0	0	0	0	1,330,930	0
2025	0	0	0	0	0	0	1,330,930	0
2026	0	0	0	0	0	0	1,330,930	0
2027	0	0	0	0	0	0	1,330,930	0
2028	0	0	0	0	0	0	1,330,930	0
2029	0	0	0	0	0	0	1,330,930	0
2030	0	0	0	0	0	0	1,330,930	0
2031	0	0	0	0	0	0	1,330,930	0
2032	0	0	0	0	0	0	1,330,930	0
2033	0	0	0	0	0	0	1,330,930	0
2034	0	0	0	0	0	0	1,330,930	0
2035	0	0	0	0	0	0	1,330,930	0
Total	5,681	2,392	2,986	1,893	1,769	783	54,223,025	0

^aPresently, this table shows only the estimated incremental minimum OMP&R costs attributable to East Branch Enlargement. Under Article 49(e)(1), the contractors participating in the East Branch Enlargement will also share in the remaining minimum OMP&R costs of the affected reaches according to a formula to be developed by the Department in consultation with the affected contractors. Once the formula is developed, subsequent versions of this table will reflect the transfer of a share of the minimum OMP&R costs presently shown in Table B-11.

Table B-27

**Minimum OMP&R Costs of Each Aqueduct Reach to Be Reimbursed
through Minimum OMP&R Component of the East Branch
Enlargement Transportation Charge**

(Dollars)

Sheet 2 of 2

Calendar Year	California Aqueduct (continued)							Total (16)
	Mojave Division (continued)			Santa Ana Division				
	Reach 23C (9)	Reach 24 (10)	Subtotal (11)	Reach 25 (12)	Reach 26A (13)	Reach 26B (14)	Subtotal (15)	
1971	0	0	0	0	0	0	0	0
1972	0	0	0	0	0	0	0	0
1973	0	0	0	0	0	0	0	0
1974	0	0	0	0	0	0	0	0
1975	0	0	0	0	0	0	0	0
1976	0	0	0	0	0	0	0	0
1977	0	0	0	0	0	0	0	0
1978	0	0	0	0	0	0	0	0
1979	0	0	0	0	0	0	0	0
1980	0	0	0	0	0	0	0	0
1981	0	0	0	0	0	0	0	0
1982	0	0	0	0	0	0	0	0
1983	0	0	0	0	0	0	0	0
1984	0	0	0	0	0	0	0	0
1985	0	0	0	0	0	0	0	0
1986	0	0	0	0	0	0	0	0
1987	0	0	0	0	0	0	0	0
1988	0	0	0	0	0	0	0	0
1989	0	0	0	0	0	0	0	0
1990	0	0	0	0	0	0	0	0
1991	0	0	0	0	0	0	0	0
1992	0	0	0	0	0	0	0	0
1993	0	0	0	0	0	0	0	0
1994	0	0	1,048,625	0	1,713,260	0	1,713,260	2,761,885
1995	0	0	953,814	0	1,452,549	0	1,452,549	2,406,363
1996	0	0	1,171,411	0	1,350,581	0	1,350,581	2,521,992
1997	679,826	0	1,789,864	0	1,528,509	0	1,528,509	3,318,373
1998	825,038	0	2,038,040	0	1,619,068	0	1,619,068	3,657,108
1999	382,178	0	1,053,997	0	956,229	0	956,229	2,010,226
2000	728,679	0	2,118,783	0	1,304,844	0	1,304,844	3,423,627
2001	1,030,837	0	2,298,390	0	1,675,579	0	1,675,579	3,973,969
2002	1,242,895	0	2,734,368	0	2,020,269	0	2,020,269	4,754,637
2003	1,109,108	0	2,440,038	0	1,802,805	0	1,802,805	4,242,843
2004	1,109,108	0	2,440,038	0	1,802,805	0	1,802,805	4,242,843
2005	1,109,108	0	2,440,038	0	1,802,805	0	1,802,805	4,242,843
2006	1,109,108	0	2,440,038	0	1,802,805	0	1,802,805	4,242,843
2007	1,109,108	0	2,440,038	0	1,802,805	0	1,802,805	4,242,843
2008	1,109,108	0	2,440,038	0	1,802,805	0	1,802,805	4,242,843
2009	1,109,108	0	2,440,038	0	1,802,805	0	1,802,805	4,242,843
2010	1,109,108	0	2,440,038	0	1,802,805	0	1,802,805	4,242,843
2011	1,109,108	0	2,440,038	0	1,802,805	0	1,802,805	4,242,843
2012	1,109,108	0	2,440,038	0	1,802,805	0	1,802,805	4,242,843
2013	1,109,108	0	2,440,038	0	1,802,805	0	1,802,805	4,242,843
2014	1,109,108	0	2,440,038	0	1,802,805	0	1,802,805	4,242,843
2015	1,109,108	0	2,440,038	0	1,802,805	0	1,802,805	4,242,843
2016	1,109,108	0	2,440,038	0	1,802,805	0	1,802,805	4,242,843
2017	1,109,108	0	2,440,038	0	1,802,805	0	1,802,805	4,242,843
2018	1,109,108	0	2,440,038	0	1,802,805	0	1,802,805	4,242,843
2019	1,109,108	0	2,440,038	0	1,802,805	0	1,802,805	4,242,843
2020	1,109,108	0	2,440,038	0	1,802,805	0	1,802,805	4,242,843
2021	1,109,108	0	2,440,038	0	1,802,805	0	1,802,805	4,242,843
2022	1,109,108	0	2,440,038	0	1,802,805	0	1,802,805	4,242,843
2023	1,109,108	0	2,440,038	0	1,802,805	0	1,802,805	4,242,843
2024	1,109,108	0	2,440,038	0	1,802,805	0	1,802,805	4,242,843
2025	1,109,108	0	2,440,038	0	1,802,805	0	1,802,805	4,242,843
2026	1,109,108	0	2,440,038	0	1,802,805	0	1,802,805	4,242,843
2027	1,109,108	0	2,440,038	0	1,802,805	0	1,802,805	4,242,843
2028	1,109,108	0	2,440,038	0	1,802,805	0	1,802,805	4,242,843
2029	1,109,108	0	2,440,038	0	1,802,805	0	1,802,805	4,242,843
2030	1,109,108	0	2,440,038	0	1,802,805	0	1,802,805	4,242,843
2031	1,109,108	0	2,440,038	0	1,802,805	0	1,802,805	4,242,843
2032	1,109,108	0	2,440,038	0	1,802,805	0	1,802,805	4,242,843
2033	1,109,108	0	2,440,038	0	1,802,805	0	1,802,805	4,242,843
2034	1,109,108	0	2,440,038	0	1,802,805	0	1,802,805	4,242,843
2035	1,109,108	0	2,440,038	0	1,802,805	0	1,802,805	4,242,843
Total	41,490,017	0	95,728,546	0	73,113,453	0	73,113,453	168,841,999

Table B-28

Capital Costs of East Branch Enlargement Transportation Facilities Allocated to Each Contractor

(Dollars)

Calendar Year	Southern California Area							Total (8)
	Antelope Valley-East Kern Water Agency (1)	Coachella Valley Water District (2)	Desert Water Agency (3)	Mojave Water Agency (4)	Palmdale Water District (5)	San Bernardino Valley Municipal Water District (6)	Metropolitan Water District of Southern California (7)	
1971	0	0	0	0	0	0	0	0
1972	0	0	0	0	0	0	0	0
1973	0	0	0	0	0	0	0	0
1974	0	0	0	0	0	0	0	0
1975	0	0	0	0	0	0	0	0
1976	0	0	0	0	0	0	0	0
1977	0	0	0	0	0	0	0	0
1978	0	0	0	0	0	0	0	0
1979	0	11,731	1,010	10,566	466	0	93,227	117,000
1980	0	28,241	4,708	27,495	797	0	212,759	274,000
1981	0	56,134	16,676	61,271	538	0	385,381	520,000
1982	0	326,180	76,872	337,913	5,988	0	2,342,047	3,089,000
1983	0	554,658	138,964	582,070	9,004	0	3,940,304	5,225,000
1984	0	306,514	68,842	314,468	2,928	0	2,218,248	2,911,000
1985	49,675	447,266	65,773	347,262	4,514	21,614	3,505,896	4,442,000
1986	185,353	1,757,633	236,324	1,363,586	41,900	78,842	13,694,362	17,358,000
1987	49,735	2,455,279	378,535	1,774,447	10,615	151,421	19,107,968	23,928,000
1988	124,534	2,689,959	500,466	1,712,431	13,783	231,982	23,351,845	28,625,000
1989	155,446	7,118,094	2,423,000	1,671,088	17,419	1,673,409	49,111,544	62,170,000
1990	62,786	6,459,229	1,943,918	2,234,452	8,680	1,222,053	45,993,882	57,925,000
1991	28,686	6,265,822	1,875,066	2,168,712	4,024	1,065,433	44,057,257	55,465,000
1992	2,911	4,826,764	1,610,921	1,359,335	471	627,012	32,594,586	41,022,000
1993	1,205	5,094,237	1,828,410	2,722,156	212	199,684	33,380,096	43,226,000
1994	273	1,726,376	631,816	478,543	27	128,988	11,255,977	14,222,000
1995	0	1,130,963	423,243	206,978	0	87,480	7,326,336	9,175,000
1996	0	2,025,987	645,296	606,205	0	375,830	13,725,682	17,379,000
1997	0	449,702	154,253	204,617	0	7,164	2,982,264	3,798,000
1998	0	4,859	1,406	1,179	0	0	33,556	41,000
1999	0	0	0	0	0	0	0	0
2000	0	0	0	0	0	0	0	0
Total	660,604	43,735,628	13,025,499	18,184,774	121,366	5,870,912	309,313,217	390,912,000

Table B-29

Capital Cost Component of East Branch Enlargement Facilities Transportation Charge for Each Contractor

(Dollars)

Calendar Year	Southern California Area							Total (8)
	Antelope Valley-East Kern Water Agency (1)	Coachella Valley Water District (2)	Desert Water Agency (3)	Mojave Water Agency (4)	Palmdale Water District (5)	San Bernardino Valley Municipal Water District ^a (6)	Metropolitan Water District of Southern California (7)	
1971	0	0	0	0	0	0	0	0
1972	0	0	0	0	0	0	0	0
1973	0	0	0	0	0	0	0	0
1974	0	0	0	0	0	0	0	0
1975	0	0	0	0	0	0	0	0
1976	0	0	0	0	0	0	0	0
1977	0	0	0	0	0	0	0	0
1978	0	0	0	0	0	0	0	0
1979	0	0	0	0	0	0	0	0
1980	0	0	0	0	0	0	0	0
1981	0	0	0	0	0	0	0	0
1982	0	0	0	0	0	0	0	0
1983	0	0	0	0	0	0	0	0
1984	0	0	0	0	0	0	0	0
1985	0	0	0	0	0	0	0	0
1986	0	0	0	0	0	0	0	0
1987	0	0	0	0	0	0	0	0
1988	18,266	1,209,293	360,156	502,810	3,356	0	8,552,529	10,646,410
1989	19,175	1,269,524	378,094	527,854	3,523	0	8,978,505	11,176,675
1990	19,186	1,270,244	378,308	528,153	3,525	0	8,983,597	11,183,013
1991	19,187	1,270,261	378,314	528,160	3,525	0	8,983,717	11,183,164
1992	38,420	2,543,616	757,549	1,057,606	7,059	0	17,989,315	22,393,565
1993	40,029	2,650,136	789,273	1,101,896	7,354	0	18,742,663	23,331,351
1994	39,705	2,628,706	782,890	1,092,986	7,295	0	18,591,100	23,142,682
1995	39,632	2,623,828	781,438	1,090,958	7,281	0	18,556,603	23,099,740
1996	39,825	2,636,667	785,261	1,096,296	7,317	0	18,647,407	23,212,773
1997	41,743	2,763,629	823,074	1,149,085	7,669	0	19,545,322	24,330,522
1998	42,642	2,823,126	840,793	1,173,824	7,834	0	19,966,108	24,854,327
1999	44,738	2,961,888	882,120	1,231,519	8,219	0	20,947,475	26,075,959
2000	57,692	3,819,546	1,137,550	1,588,123	10,599	0	27,013,129	33,626,639
2001	68,984	4,803,521	1,461,863	1,898,946	12,675	0	33,770,055	42,016,044
2002	70,471	4,753,338	1,427,264	1,939,881	12,947	0	33,542,182	41,746,083
2003	70,398	4,748,145	1,425,665	1,937,888	12,934	0	33,505,803	41,700,833
2004	67,869	4,585,997	1,378,065	1,868,295	12,470	0	32,354,560	40,267,256
2005	67,833	4,583,452	1,377,293	1,867,279	12,463	0	32,336,649	40,244,969
2006	68,999	4,652,245	1,396,671	1,899,375	12,677	0	32,830,362	40,860,329
2007	68,813	4,658,267	1,400,885	1,894,268	12,643	0	32,857,310	40,892,186
2008	67,391	4,553,243	1,368,173	1,855,106	12,381	0	32,123,794	39,980,088
2009	67,482	4,559,442	1,370,041	1,857,616	12,399	0	32,167,498	40,034,478
2010	67,603	4,567,531	1,372,466	1,860,928	12,420	0	32,224,616	40,105,564
2011	67,937	4,590,458	1,379,401	1,870,123	12,481	0	32,386,065	40,306,465
2012	68,037	4,597,353	1,381,486	1,872,895	12,501	0	32,434,631	40,366,903
2013	68,235	4,597,937	1,380,005	1,878,342	12,536	0	32,449,464	40,386,519
2014	67,275	4,534,155	1,360,976	1,851,927	12,360	0	31,998,591	39,825,591
2015	68,075	4,587,280	1,376,822	1,873,940	12,507	0	32,374,149	40,292,773
2016	68,143	4,591,931	1,378,230	1,875,798	12,520	0	32,406,884	40,333,506
2017	68,595	4,624,889	1,388,439	1,888,268	12,603	0	32,637,442	40,620,236
2018	68,703	4,632,228	1,390,654	1,891,228	12,623	0	32,689,153	40,684,589
2019	68,649	4,626,773	1,388,784	1,889,727	12,612	0	32,652,150	40,638,695
2020	68,780	4,635,747	1,391,496	1,893,335	12,637	0	32,715,366	40,717,361
2021	69,883	4,709,150	1,413,401	1,923,717	12,839	0	33,234,211	41,363,201
2022	69,936	4,734,202	1,423,711	1,925,176	12,849	0	33,392,977	41,558,851
2023	58,009	3,938,857	1,186,095	1,596,821	10,657	0	27,772,837	34,563,276
2024	58,263	3,956,218	1,191,328	1,603,838	10,705	0	27,895,202	34,715,554
2025	47,143	3,215,892	970,302	1,297,717	8,661	0	22,662,854	28,202,569
2026	23,244	1,622,854	494,424	639,863	4,271	0	11,405,634	14,190,290
2027	18,158	1,257,318	381,746	499,865	3,337	0	8,845,081	11,005,505
2028	15,803	1,079,635	325,950	435,036	2,904	0	7,607,052	9,466,380
2029	15,875	1,084,724	327,502	437,037	2,917	0	7,642,793	9,510,848
2030	0	0	0	0	0	0	0	0
2031	0	0	0	0	0	0	0	0
2032	0	0	0	0	0	0	0	0
2033	0	0	0	0	0	0	0	0
2034	0	0	0	0	0	0	0	0
2035	0	0	0	0	0	0	0	0
Total	2,204,826	148,553,246	44,583,958	60,693,505	405,085	0	1,048,412,835	1,304,853,455

^aUnder Article 49(d)(4)(A) of its contract, San Bernardino Valley Municipal Water District elected to pay a portion of its allocated costs of East Branch Enlargement in advance rather than to participate in payment of Water System Revenue Bonds. This election made via a letter of agreement signed June 1, 1987. As of June 2001, \$6,347,938 has been received from the San Bernardino Valley Municipal Water District.

Table B-30

**Minimum OMP&R Component of East Branch Enlargement Facilities
Transportation Charge for Each Contractor**
(Dollars)

Calendar Year	Southern California Area							Total (8)
	Antelope Valley-East Kern Water Agency (1)	Coachella Valley Water District (2)	Desert Water Agency (3)	Mojave Water Agency (4)	Palmdale Water District (5)	San Bernardino Valley Municipal Water District (6)	Metropolitan Water District of Southern California (7)	
1971	0	0	0	0	0	0	0	0
1972	0	0	0	0	0	0	0	0
1973	0	0	0	0	0	0	0	0
1974	0	0	0	0	0	0	0	0
1975	0	0	0	0	0	0	0	0
1976	0	0	0	0	0	0	0	0
1977	0	0	0	0	0	0	0	0
1978	0	0	0	0	0	0	0	0
1979	0	0	0	0	0	0	0	0
1980	0	0	0	0	0	0	0	0
1981	0	0	0	0	0	0	0	0
1982	0	0	0	0	0	0	0	0
1983	0	0	0	0	0	0	0	0
1984	0	0	0	0	0	0	0	0
1985	0	0	0	0	0	0	0	0
1986	0	0	0	0	0	0	0	0
1987	0	0	0	0	0	0	0	0
1988	0	0	0	0	0	0	0	0
1989	0	0	0	0	0	0	0	0
1990	0	0	0	0	0	0	0	0
1991	0	0	0	0	0	0	0	0
1992	0	0	0	0	0	0	0	0
1993	0	0	0	0	0	0	0	0
1994	0	320,415	101,486	95,075	0	70,133	2,174,776	2,761,885
1995	0	278,176	86,604	86,479	0	59,461	1,895,643	2,406,363
1996	0	287,293	82,991	106,208	0	55,287	1,990,213	2,521,992
1997	0	389,636	123,446	100,643	0	62,571	2,642,077	3,318,373
1998	0	429,772	135,927	109,979	0	66,278	2,915,152	3,657,108
1999	37	236,006	75,040	60,907	11	39,144	1,599,081	2,010,226
2000	132	395,958	116,065	126,020	40	53,415	2,731,997	3,423,627
2001	0	468,448	148,950	114,925	0	68,591	3,173,055	3,973,969
2002	0	561,106	179,272	135,227	0	82,701	3,796,331	4,754,637
2003	0	500,708	159,975	120,671	0	73,799	3,387,690	4,242,843
2004	0	500,708	159,975	120,671	0	73,799	3,387,690	4,242,843
2005	0	500,708	159,975	120,671	0	73,799	3,387,690	4,242,843
2006	0	500,708	159,975	120,671	0	73,799	3,387,690	4,242,843
2007	0	500,708	159,975	120,671	0	73,799	3,387,690	4,242,843
2008	0	500,708	159,975	120,671	0	73,799	3,387,690	4,242,843
2009	0	500,708	159,975	120,671	0	73,799	3,387,690	4,242,843
2010	0	500,708	159,975	120,671	0	73,799	3,387,690	4,242,843
2011	0	500,708	159,975	120,671	0	73,799	3,387,690	4,242,843
2012	0	500,708	159,975	120,671	0	73,799	3,387,690	4,242,843
2013	0	500,708	159,975	120,671	0	73,799	3,387,690	4,242,843
2014	0	500,708	159,975	120,671	0	73,799	3,387,690	4,242,843
2015	0	500,708	159,975	120,671	0	73,799	3,387,690	4,242,843
2016	0	500,708	159,975	120,671	0	73,799	3,387,690	4,242,843
2017	0	500,708	159,975	120,671	0	73,799	3,387,690	4,242,843
2018	0	500,708	159,975	120,671	0	73,799	3,387,690	4,242,843
2019	0	500,708	159,975	120,671	0	73,799	3,387,690	4,242,843
2020	0	500,708	159,975	120,671	0	73,799	3,387,690	4,242,843
2021	0	500,708	159,975	120,671	0	73,799	3,387,690	4,242,843
2022	0	500,708	159,975	120,671	0	73,799	3,387,690	4,242,843
2023	0	500,708	159,975	120,671	0	73,799	3,387,690	4,242,843
2024	0	500,708	159,975	120,671	0	73,799	3,387,690	4,242,843
2025	0	500,708	159,975	120,671	0	73,799	3,387,690	4,242,843
2026	0	500,708	159,975	120,671	0	73,799	3,387,690	4,242,843
2027	0	500,708	159,975	120,671	0	73,799	3,387,690	4,242,843
2028	0	500,708	159,975	120,671	0	73,799	3,387,690	4,242,843
2029	0	500,708	159,975	120,671	0	73,799	3,387,690	4,242,843
2030	0	500,708	159,975	120,671	0	73,799	3,387,690	4,242,843
2031	0	500,708	159,975	120,671	0	73,799	3,387,690	4,242,843
2032	0	500,708	159,975	120,671	0	73,799	3,387,690	4,242,843
2033	0	500,708	159,975	120,671	0	73,799	3,387,690	4,242,843
2034	0	500,708	159,975	120,671	0	73,799	3,387,690	4,242,843
2035	0	500,708	159,975	120,671	0	73,799	3,387,690	4,242,843
Total	169	19,890,174	6,328,956	4,917,606	51	2,992,948	134,712,095	168,841,999

Table B-31
**Total East Branch Enlargement Facilities Transportation
Charge for Each Contractor**
(Dollars)

Calendar Year	Southern California Area							Total (8)
	Antelope Valley-East Kern Water Agency (1)	Coachella Valley Water District (2)	Desert Water Agency (3)	Mojave Water Agency (4)	Palmdale Water District (5)	San Bernardino Valley Municipal Water District (6)	Metropolitan Water District of Southern California (7)	
1971	0	0	0	0	0	0	0	0
1972	0	0	0	0	0	0	0	0
1973	0	0	0	0	0	0	0	0
1974	0	0	0	0	0	0	0	0
1975	0	0	0	0	0	0	0	0
1976	0	0	0	0	0	0	0	0
1977	0	0	0	0	0	0	0	0
1978	0	0	0	0	0	0	0	0
1979	0	0	0	0	0	0	0	0
1980	0	0	0	0	0	0	0	0
1981	0	0	0	0	0	0	0	0
1982	0	0	0	0	0	0	0	0
1983	0	0	0	0	0	0	0	0
1984	0	0	0	0	0	0	0	0
1985	0	0	0	0	0	0	0	0
1986	0	0	0	0	0	0	0	0
1987	0	0	0	0	0	0	0	0
1988	18,266	1,209,293	360,156	502,810	3,356	0	8,552,529	10,646,410
1989	19,175	1,269,524	378,094	527,854	3,523	0	8,978,505	11,176,675
1990	19,186	1,270,244	378,308	528,153	3,525	0	8,983,597	11,183,013
1991	19,187	1,270,261	378,314	528,160	3,525	0	8,983,717	11,183,164
1992	38,420	2,543,616	757,549	1,057,606	7,059	0	17,989,315	22,393,565
1993	40,029	2,650,136	789,273	1,101,896	7,354	0	18,742,663	23,331,351
1994	39,705	2,949,121	884,376	1,188,061	7,295	70,133	20,765,876	25,904,567
1995	39,632	2,902,004	868,042	1,177,437	7,281	59,461	20,452,246	25,506,103
1996	39,825	2,923,960	868,252	1,202,504	7,317	55,287	20,637,620	25,734,765
1997	41,743	3,153,265	946,520	1,249,728	7,669	62,571	22,187,399	27,648,895
1998	42,642	3,252,898	976,720	1,283,803	7,834	66,278	22,881,260	28,511,435
1999	44,775	3,197,894	957,160	1,292,426	8,230	39,144	22,546,556	28,086,185
2000	57,824	4,215,504	1,253,615	1,714,143	10,639	53,415	29,745,126	37,050,266
2001	68,984	5,271,969	1,610,813	2,013,871	12,675	68,591	36,943,110	45,990,013
2002	70,471	5,314,444	1,606,536	2,075,108	12,947	82,701	37,338,513	46,500,720
2003	70,398	5,248,853	1,585,640	2,058,559	12,934	73,799	36,893,493	45,943,676
2004	67,869	5,086,705	1,538,040	1,988,966	12,470	73,799	35,742,250	44,510,099
2005	67,833	5,084,160	1,537,268	1,987,950	12,463	73,799	35,724,339	44,487,812
2006	68,999	5,152,953	1,556,646	2,020,046	12,677	73,799	36,218,052	45,103,172
2007	68,813	5,158,975	1,560,860	2,014,939	12,643	73,799	36,245,000	45,135,029
2008	67,391	5,053,951	1,528,148	1,975,777	12,381	73,799	35,511,484	44,222,931
2009	67,482	5,060,150	1,530,016	1,978,287	12,399	73,799	35,555,188	44,277,321
2010	67,603	5,068,239	1,532,441	1,981,599	12,420	73,799	35,612,306	44,348,407
2011	67,937	5,091,166	1,539,376	1,990,794	12,481	73,799	35,773,755	44,549,308
2012	68,037	5,098,061	1,541,461	1,993,566	12,501	73,799	35,822,321	44,609,746
2013	68,235	5,098,645	1,539,980	1,999,013	12,536	73,799	35,837,154	44,629,362
2014	67,275	5,034,863	1,520,951	1,972,598	12,360	73,799	35,386,281	44,068,127
2015	68,075	5,087,988	1,536,797	1,994,611	12,507	73,799	35,761,839	44,535,616
2016	68,143	5,092,639	1,538,205	1,996,469	12,520	73,799	35,794,574	44,576,349
2017	68,595	5,125,597	1,548,414	2,008,939	12,603	73,799	36,025,132	44,863,079
2018	68,703	5,132,936	1,550,629	2,011,899	12,623	73,799	36,076,843	44,927,432
2019	68,649	5,127,481	1,548,759	2,010,398	12,612	73,799	36,039,840	44,881,538
2020	68,780	5,136,455	1,551,471	2,014,006	12,637	73,799	36,103,056	44,960,204
2021	69,883	5,209,858	1,573,376	2,044,388	12,839	73,799	36,621,901	45,606,044
2022	69,936	5,234,910	1,583,686	2,045,847	12,849	73,799	36,780,667	45,801,694
2023	58,009	4,439,565	1,346,070	1,717,492	10,657	73,799	31,160,527	38,806,119
2024	58,263	4,456,926	1,351,303	1,724,509	10,705	73,799	31,282,892	38,958,397
2025	47,143	3,716,600	1,130,277	1,418,388	8,661	73,799	26,050,544	32,445,412
2026	23,244	2,123,562	654,399	760,534	4,271	73,799	14,793,324	18,433,133
2027	18,158	1,758,026	541,721	620,536	3,337	73,799	12,232,771	15,248,348
2028	15,803	1,580,343	485,925	555,707	2,904	73,799	10,994,742	13,709,223
2029	15,875	1,585,432	487,477	557,708	2,917	73,799	11,030,483	13,753,691
2030	0	500,708	159,975	120,671	0	73,799	3,387,690	4,242,843
2031	0	500,708	159,975	120,671	0	73,799	3,387,690	4,242,843
2032	0	500,708	159,975	120,671	0	73,799	3,387,690	4,242,843
2033	0	500,708	159,975	120,671	0	73,799	3,387,690	4,242,843
2034	0	500,708	159,975	120,671	0	73,799	3,387,690	4,242,843
2035	0	500,708	159,975	120,671	0	73,799	3,387,690	4,242,843
Total	2,204,995	168,443,420	50,912,914	65,611,111	405,136	2,992,948	1,183,124,930	1,473,695,454