Bulletin 132-89
September 1989

State of California
The Resources Agency

Department of
Water Resources

Management of the California State Water Project

Gordon K. Van Vleck
Secretary for Resources
The Resources Agency

George Deukmejian
Governor
State of California

David N. Kennedy
Director
Department of Water Resources

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ON THE COVER: The Suisun Marsh Salinity Control Gates, located in the Sacramento-San Joaquin Delta, have been improving water quality in Suisun Marsh since the facility began operating in November 1988.

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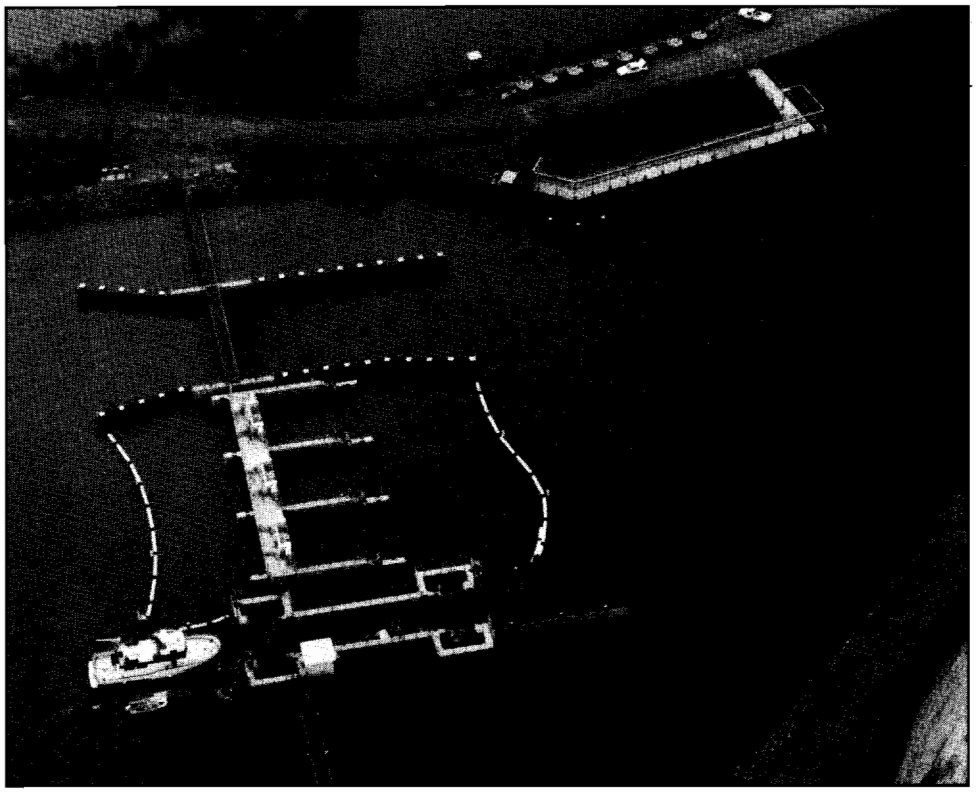

DWR's laboratory work boat, the San Carlos, passes through the boat lock of the Suisun Marsh Salinity Control Gates, which protect the environment in Suisun Marsh while still allowing navigation of Montezuma Slough.

Foreword

This edition of the Bulletin 132 series is the twenty-seventh annual summary of the State Water Project's operation and management. Bulletin 132-89 reviews Project operations during calendar year 1988 and describes other management activities, emphasizing the period between July 1, 1988 and June 30, 1989. Outlooks for present and future (1) water supplies, (2) power supplies, and (3) Project costs and financing are presented in the bulletin as well. As usual, Appendix B presents information supporting the water contractors' statements of charges for the coming year (1990).

David N. Kennedy
Department of Water Resources
The Resources Agency
State of California

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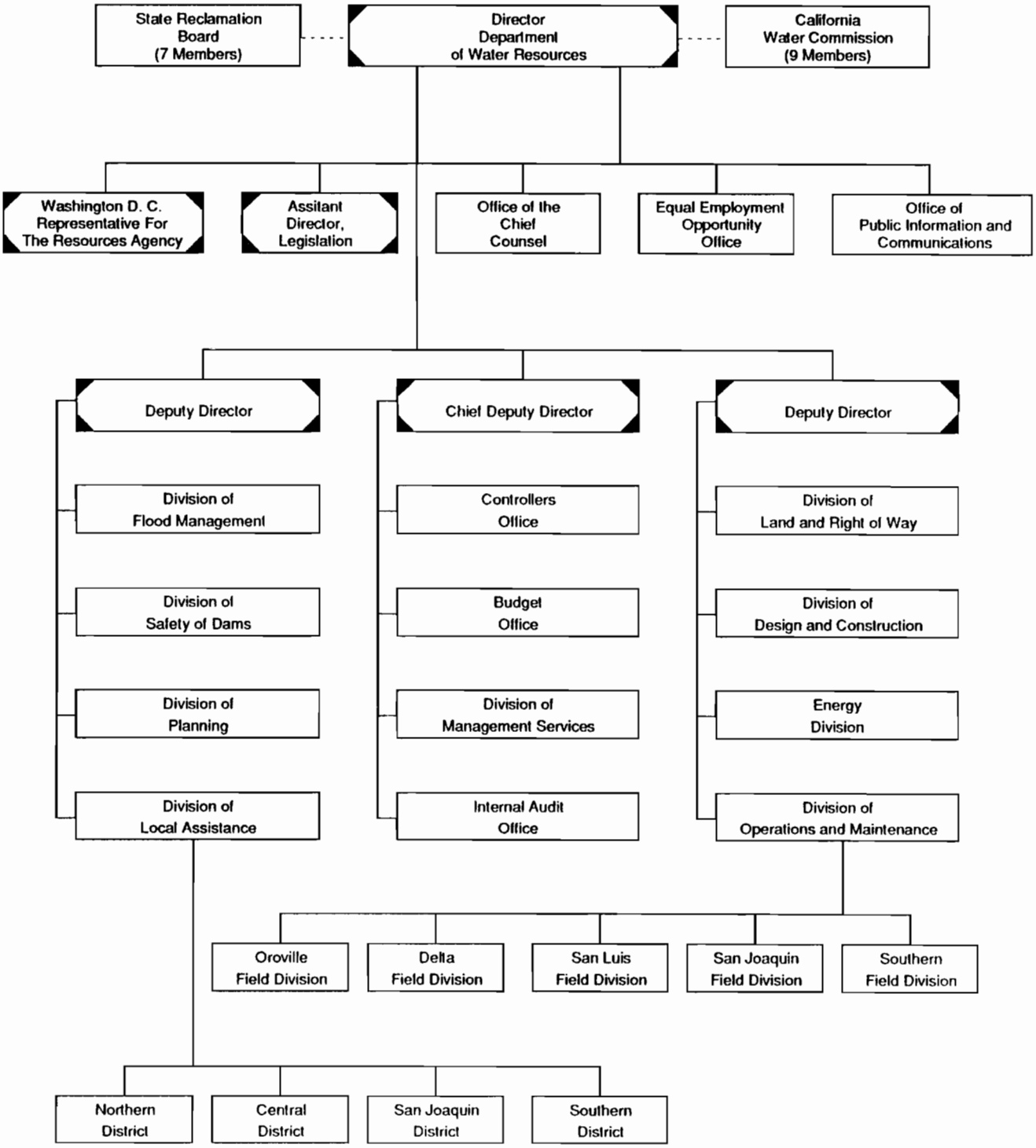
Organization of the Department of Water Resources



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

Naming of Project Facilities

Many of the facilities of the State Water Project are named to honor prominent people who exhibited outstanding leadership in planning, establishing the fiscal and political framework, and constructing and operating the Project. These facility names have been shortened for readability throughout this bulletin, but are listed here to acknowledge the prominent role of the people for whom the facilities are named.

Abbreviated Name of Facility	Complete Name of Facility	Name and Position of Honoree
Banks Pumping Plant	Harvey O. Banks Delta Pumping Plant	Harvey O. Banks, first Director of California Department of Water Resources, 1956-1960.
California Aqueduct	Governor Edmund G. Brown California Aqueduct	Edmund G. (Pat) Brown, Governor of California, 1959-1966, under whose leadership the Legislature authorized, and the voters approved, the State Water Project.
Chrisman Pumping Plant	Ira J. Chrisman Wind Gap Pumping Plant	Ira J. Chrisman, Member of the California Water Commission 1960-1976 (Chairman 1967-1976).
Edmonston Pumping Plant	A. D. Edmonston Pumping Plant	A. D. Edmonston, State Engineer, Division of Water Resources, Department of Public Works, 1950-1955.
Gianelli Pumping-Generating Plant	William R. Gianelli Pumping-Generating Plant*	William R. Gianelli, Director of California Department of Water Resources, 1967-1973, and Assistant Secretary of the Army for Civil Works, 1981-1984.
Hyatt Powerplant	Edward Hyatt Powerplant	Edward Hyatt, State Engineer, Division of Water Resources, Department of Public Works, 1927-1950.
Lake Davis	Lake Davis	Assemblyman Lester Thomas Davis, California Legislature, 1947-1952, and Assemblywoman Pauline L. Davis, California Legislature, 1953-1972. Husband and wife were active in legislative water matters. Mrs. Davis co-authored the Davis-Grunsky and Davis-Dolwig Acts.
O'Neill Forebay	O'Neill Forebay*	Jack Edward O'Neill, a pioneer farmer in the San Joaquin Valley who worked for the authorization of the San Luis Division of the federal Central Valley Project.
Porter Tunnel	Carley V. Porter Tunnel	Assemblyman Carley V. Porter, California Legislature, 1949-1972, co-author of 1959 Water Resources Development Bond Act to help finance the State Water Project.
Silverwood Lake	Silverwood Lake	W. E. "Ted" Silverwood, a resident of Riverside County who worked unceasingly to promote the State Water Project.
Sisk Dam	B. F. Sisk San Luis Dam*	Congressman B. F. Sisk, U. S. Congress, 1955-1979, introduced legislation authorizing the San Luis Unit of the federal Central Valley Project.
Skinner Fish Facility	John E. Skinner Delta Fish Protective Facility	John E. Skinner, California Department of Fish and Game, 1954-1978, supervised the evaluation and improvements of the Fish Protective Facility.
Warne Powerplant	William E. Warne Powerplant	William E. Warne, Director of California Department of Water Resources, 1961-1966.

*A joint use facility of the California State Water Project and the federal Central Valley Project.

Agencies and Abbreviations

AB	Assembly Bill
ACFO&WCD	Alameda County Flood Control & Water Conservation District
ACWD	Alameda County Water District
AVEKWA	Antelope Valley East Kern Water Agency
BPA	Bonneville Power Administration
CCWD	Contra Costa Water District
cfs	Cubic feet per second
CK	County of Kings
CLAWA	Crestline-Lake Arrowhead Water Agency
CLWA	Castaic Lake Water Agency
COA	Coordinated Operation Agreement
CVP	Central Valley Project
CVWD	Coachella Valley Water District
DDWD	Devil's Den Water District
DFG	Department of Fish and Game
DOI	Delta Outflow Index
DRWD	Dudley Ridge Water District
DWA	Desert Water Agency
DWR	Department of Water Resources
EC	Electrical conductivity
EIR	Environmental Impact Report (State)
EIS	Environmental Impact Statement (federal)
EHV	Extra-high voltage
EWSID	Empire West Side Irrigation District
FC&WCD	Flood Control & Water Conservation District
FERC	Federal Energy Regulatory Commission
KCWA	Kern County Water Agency
KRCD	Kings River Conservation District
kW	Kilowatt
kWh	Kilowatt-hour
kV	Kilovolt

Agencies and Abbreviations (Continued)

LADWP	Los Angeles Department of Water and Power
LCID	Littlerock Creek Irrigation District
MW	Megawatt
MWA	Mojave Water Agency
MWDSC	The Metropolitan Water District of Southern California
NCFC&WCD	Napa County Flood Control & Water Conservation District
NDWA	North Delta Water Agency
NPC	Nevada Power Company
OFWD	Oak Flat Water District
OMP&R	Operation, maintenance, power, and replacement
PCFC&WCD	Plumas County Flood Control & Water Conservation District
PG&E	Pacific Gas & Electric Company
PWD	Palmdale Water District
SB	Senate Bill
SBCFC&WCD	Santa Barbara County Flood Control & Water Conservation District
SBVMWD	San Bernardino Valley Municipal Water District
SCE	Southern California Edison Company
SCFC&WCD	Solano County Flood Control & Water Conservation District
SCVWD	Santa Clara Valley Water District
SDG&E	San Diego Gas & Electric Company
SDWA	South Delta Water Agency
SGPWA	San Gorgonio Pass Water Agency
SGVMWD	San Gabriel Valley Municipal Water District
SLOCFC&WCD	San Luis Obispo County Flood Control & Water Conservation District
SWP	State Water Project
SWRCB	State Water Resources Control Board
TLBWSD	Tulare Lake Basin Water Storage District
USBR	United States Bureau of Reclamation
VCFCD	Ventura County Flood Control District
WAPA	Western Area Power Administration
YCWA	Yuba County Water Agency

Chapter I
Overview of the California State Water Project

Bulletin 132-89 is the 27th edition of *Management of the California State Water Project.* This report has provided a continuing history of State Water Project water contract administration activities, water and power operations, financing, and management plans. Appendix B, which is bound within each bulletin, documents Project costs together with other water charge information to support the annual statements of charges to long-term water supply contractors.

As in past bulletins, each chapter of Bulletin 132-89 updates a different aspect of SWP activities. Chapter I opens the report with a brief review of California's water history and discusses water rights decisions leading up to the current Bay-Delta Hearings. Chapter II covers SWP operations--water and power operations, water service, recreation and visitor facilities, and fish and wildlife activities. Administrative activities affecting the management of the SWP, including water contracts, water rights, the Davis-Grunsky Act Program, legislation, and litigation, are addressed in Chapter III. Chapter IV highlights SWP design, construction, right of way, and safety activities. Present and future SWP water supply and power management plans are described in Chapters V and VI, respectively, while Chapter VII details the costs and financing of the SWP. Appendix B, which is bound at the end of this report, provides detailed information supporting the water contractors' statements of charges for 1990.

California Water History

People have been diverting water from California's streams and putting it to beneficial use since the 1770s, when Spanish missionaries built California's first irrigation systems. As the State's population grew, and as municipal, industrial, and agricultural water needs increased, cities and irrigation districts developed supplemental water supplies. In 1913, Los Angeles began receiving water from the Owens Valley via the Los Angeles Aqueduct. By 1934, Oakland and San Francisco were receiving water from the Sierra Nevada through the Mokelumne River and Hetch Hetchy aqueducts. By the time the Colorado River Aqueduct began delivering additional water supplies to Southern California in 1941, many storage reservoirs had also been constructed throughout California to regulate surface runoff for agricultural needs and to generate hydroelectric power. Municipal projects and irrigation systems were scattered throughout California, but no centralized State water plan coordinated their operations.

The State Water Plan

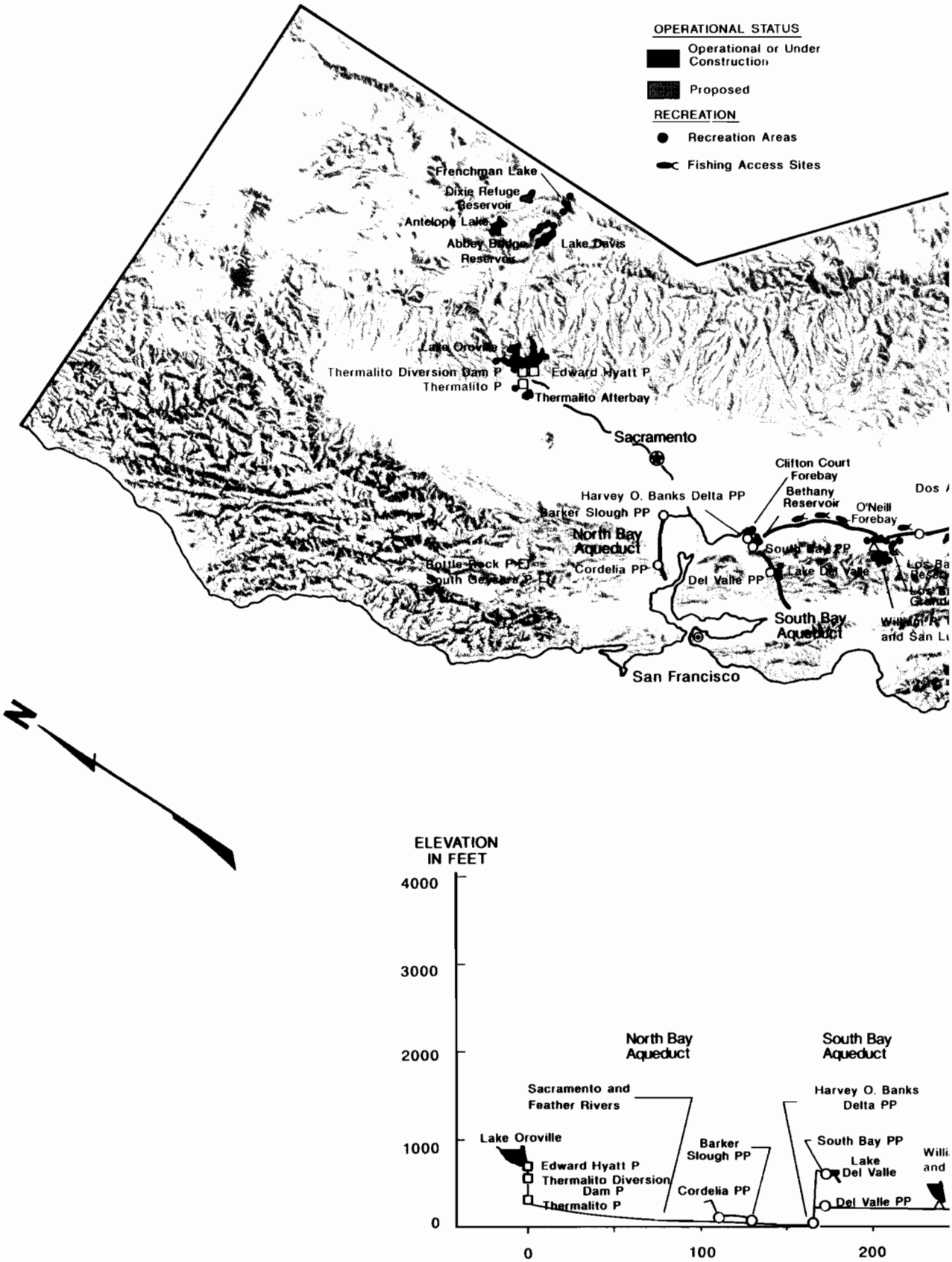
Although the systematic development of California's water resources was initially proposed in 1873, it wasn't until 1921 that the California Legislature authorized the first comprehensive statewide water resources investigation. In 1931, State Engineer Edward Hyatt developed the State Water Plan, which identified and offered solutions to the State's most crucial water problems.

Two years later the California Legislature passed the Central Valley Project Act to implement the initial features of the State Water Plan in the Central Valley. Financed by the U.S. Bureau of Reclamation, construction began in 1937, when ground was broken for the Contra Costa Canal, which transports water from the Sacramento-San Joaquin Delta for municipal, industrial, and agricultural users in Contra Costa County, east of San Francisco. Several additional facilities for water storage and transportation have subsequently been constructed by the USBR, including Shasta Dam, Friant Dam, the Friant-Kern Canal, San Luis Dam (a joint-use facility with the SWP), and the Delta Mendota Canal.

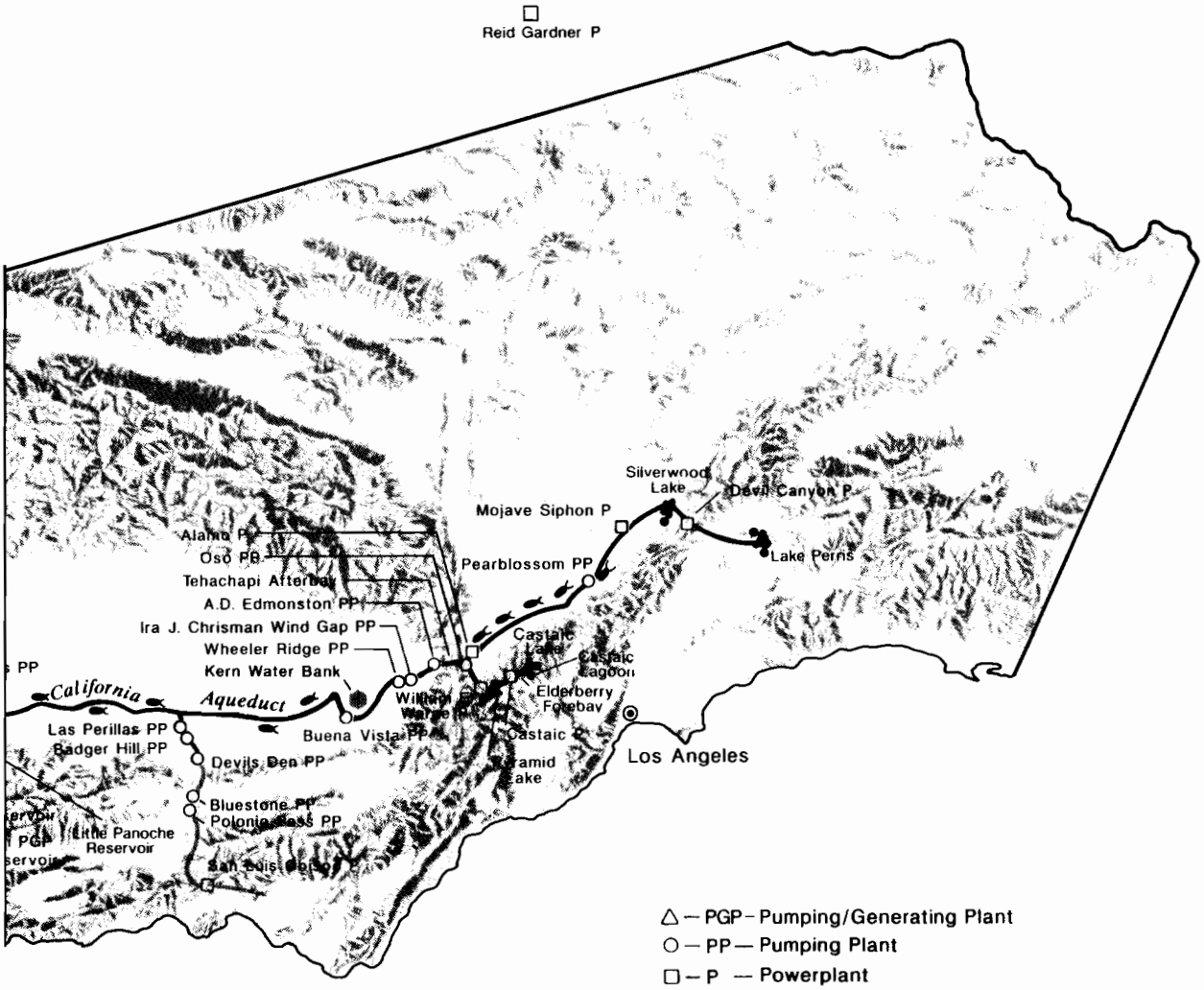
State Water Project

In 1947, the State Legislature funded the water resources investigation that led to the development of the State Water Project. The results of this investigation were published in three reports: Bulletin 1, *Water Resources of California,* reported data on precipitation, unimpaired stream runoff, floodflows and frequency, and quality of water throughout the State; Bulletin 2, *Water*

Figure 1. State Water



Project Facilities



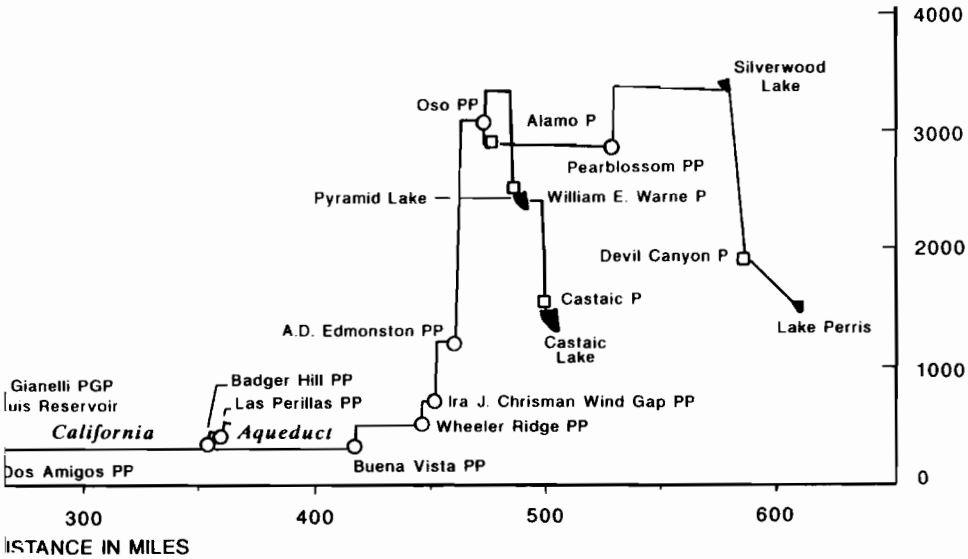


Figure 1A. Project Statistics

Pumping Plants

Name	Number of Units	Normal Static Head *ft*	Total Design Flow *cfs*	Total Motor Rating *hp*	Avg. Annual Energy Output(a *kWh*
Hyatt (pumped storage)	3	500-660	5,610	519,000	(b
Thermalito (pumped storage)	3	85-102	8,120	120,000	(b
NORHT BAY AQUEDUCT					
Barker Slough	9	95-120	228	4,800	15,000,000
Cordelia	11	104-439	146	4,940	23,000,000
SOUTH BAY AQUEDUCT					
South Bay	9	566	330	27,750	151,000,000
Del Valle	4	0-38	120	1,000	2,000,000
CALIFORNIA AQUEDUCT					
Banks	11	236-252	10,300	333,000	1,230,000,000
Gianelli (pumped storage)					
Total (c	8	99-327	11,000	504,000	470,000,000
State	n/a	n/a	n/a	n/a	255,000,000
Dos Amigos					
Total	6	107-125	13,200	240,000	715,000,000
State	n/a	n/a	n/a	n/a	545,000,000
Buena Vista (d	10	205	5,049	144,500	653,000,000
Wheeler Ridge (d	9	233	4,598	150,000	756,000,000
Chrisman (d	9	518	4,410	330,000	1,609,000,000
Edmonston (d	14	1,926	4,095	1,120,000	5,580,000,000
Pearblossom (d	9	542	2,130	180,000	1,247,000,000
WEST BRANCH					
Oso	8	231	3,129	93,800	170,000,000
COASTAL BRANCH					
Las Perillas	6	55	450	4,050	16,000,000
Badger Hill	6	151	450	11,750	42,000,000
Devils Den (d(e	4	378	80	4,760	47,000,000
Bluestone (d(e	4	534	80	6,680	47,000,000
Polonio Pass (d(e	4	543	80	6,680	47,000,000
Total SWP Share					**12,435,000,000**

a) Under full development.
b) Pumped storage capability used only under economically favorable conditions.
c) Design flow varies with reservoir fluctuation.
d) Includes spare unit.
e) Tentative data for future facility.

Powerplants

Name	Number of Units	Normal Static Head *ft*	Total Design Flow *cfs*	Total Generator Rating *kw*	Avg. Annual Energy Output(a *kWh*
Hyatt	6	410-676	16,950	643,140	1,938,000,000
Thermalito	4	85-102	16,900	110,160	240,000,000
Thermalito Diversion Dam	1	63-77	615	2,970	18,000,000
Gianelli					
Total	8	99-327	17,600	424,000	330,000,000
SWP Share	n/a	n/a	n/a	n/a	195,000,000
Alamo (a	1	115-141	1,740	17,000	110,000,000
Mojave Siphon (b	3	100	2,880	32,400	133,000,000
Devil Canyon (a	4	1,411	2,800	272,000	1,723,000,000
Warne	2	719-739	1564	78,500	358,000,000
Castaic					
Total	7	830-1098	17,600	1,250,000	n/a
SWP Share	n/a	n/a	n/a	n/a	569,000,000
San Luis Obispo (b	1	806	59	3,200	40,000,000
Reid Gardner-Unit #4					
Total	1			250,000	n/a
SWP Share				n/a	1,280,000,000
Bottle Rock	1			55,000	360,000,000
South Geysers (c	1			55,000	360,000,000
Total SWP Share					**7,654,000,000**

a) Under full development.
b) Tentative data for future facility.
c) Postponed indefinitely.

Aqueducts

Name	Total *miles*	Canal *miles*	Pipeline *miles*	Tunnel *miles*	Channel and Reservoir *miles*
NORTH BAY AQUEDUCT	27.4	0.0	27.4	0.0	0.0
SOUTH BAY AQUEDUCT	42.9	8.4	32.9	1.6	0.0
Subtotal	70.3	8.4	60.3	1.6	0.0
CALIFORNIA AQUEDUCT (main line)					
Delta to O'Neill Forebay	68.4	67.0	0.0	0.0	1.4
O'Neill Forebay to Kettleman City	105.7	103.5	0.0	0.0	2.2
Kettleman City to Edmonston Pumping Plant	120.9	120.9	0.0	0.0	0.0
Edmonston Pumping Plant to Tehachapi Afterbay	10.6	0.2	2.5	7.9	0.0
Tehachapi Afterbay to Lake Perris	138.4	93.4	38.3	3.8	2.9
Subtotal (main line)	444.0	385.0	40.8	11.7	6.5
CALIFORNIA AQUEDUCT (branches)					
West Branch	31.9	9.1	6.4	7.2	9.2
Coastal Branch (under review)	101.8	14.8 (a	86.0	0.0	0.0
Subtotal (branches)	133.7	23.9	92.4	7.2	9.2
Total	**648.0**	**417.3**	**193.5**	**20.5**	**15.7**

a) Constructed

Reservoirs and Dams

Name of Reservoir	Reservoirs(a Capacity *acre-feet*	Surface Area *acres*	Shoreline *miles*	Dams Crest Elevation *feet*	Structural Height *feet*	Crest Length *feet*	Embankment Volume *cubic yards*
Frenchman Lake	55,500	1,580	21	5,607	139	720	537,000
Antelope Lake	22,600	930	15	5,025	120	1,320	380,000
Lake Davis	84,400	4,030	32	5,785	132	800	253,000
Lake Oroville	3,540,000	15,800	167	922	770	6,920	80,000,000
Thermalito Diversion Pool	13,300	320	10	233	143	1,300	154,000
Fish Barrier Pool	600	50	1	181	91	600	10,000
Thermalito Forebay	11,700	630	10	231	91	15,900	1,840,000
Thermalito Afterbay	57,000	4,300	26	142	39	42,000	5,020,000
Clifton Court Forebay	28,700	2,110	8	14	30	36,500	2,440,000
Bethany	4,800	160	6	250	121	3,940	1,400,000
Lake Del Valle	77,100	1,060	16	773	235	880	4,150,000
San Luis (b	2,028,000	12,700	65	554	385	18,600	77,645,000
O'Neill Forebay (c	56,400	2,700	12	233	88	14,350	3,000,000
Los Banos	34,600	620	12	384	167	1,370	2,100,000
Little Panoche	5,600	190	6	676	152	1,440	1,210,000
Silverwood Lake	75,000	980	13	3,378	249	2,230	7,600,000
Lake Perris	131,000	2,320	10	1,600	128	11,600	20,000,000
Quail Lake	8,800	360	3	3,320	45	6,600	
Pyramid Lake	171,000	1,300	21	2,606	400	1,090	6,860,000
Elderberry Forebay	28,200	460	7	1,550	200	1,990	6,000,000
Castaic Lake	324,000	2,240	29	1,535	425	4,900	46,000,000
Castaic Lagoon	5,700	200	3	1,150	25		

a) Reservoir data represent design elevation, generally spillway crest level. In most cases, normal maximum operational levels are set 1 or 2 feet lower.
b) SWP share of total storage is 1,062,000 acre-feet.
c) SWP share of total storage is 29,600 acre-feet.

Utilization and Requirements of California, described the present and projected water needs; and Bulletin 3, titled *The California Water Plan*, presented preliminary plans to meet the State's ultimate water needs, including those works required for transferring surplus water from the north to the water-deficient south. Bulletin 3 was then followed by Bulletin 160, published five times between 1966 and 1987 to update various elements of California's water planning.

The California Water Resources Development Act (known as the Burns-Porter Act), which authorized financing for construction of the State Water Project facilities, was enacted by the State Legislature in 1959. Initial works included Oroville Dam and Lake Oroville, San Luis Dam (now called B. F. Sisk San Luis Dam) and San Luis Reservoir, the South Bay Aqueduct, the North Bay Aqueduct, and the California Aqueduct. The first SWP water deliveries were made in 1962, just two years after construction began. Figure 1 shows existing and proposed SWP facilities. Project statistics are presented in Figure 1A.

DWR and The Metropolitan Water District of Southern California signed the first water supply contract in 1960, and today 30 agencies have long-term water supply contracts with DWR. The service areas of these long-term water supply contractors vary widely in size, location, climate, and population (Figure 2). The contractors' uses for SWP water also differ. In the San Joaquin Valley, SWP water is used primarily for agriculture; in the Feather River area, in the San Francisco South Bay and North Bay areas, and in Southern California, water is used primarily for urban and industrial needs.

SWP long-term contractors' requests for water in 1989 total about 3.0 million acre-feet. Existing contracts call for SWP water deliveries to eventually total 4.2 million acre-feet per year. To meet this contractual obligation, DWR continues to plan and construct new facilities for the SWP. The most recently completed project is the North Bay Aqueduct, Phase II, which began delivering water to Napa and Solano counties in May 1988.

Facilities now under construction include the East Branch Enlargement and the installation of the four remaining pumps at Harvey O. Banks Delta Pumping Plant. The East Branch Enlargement, which will accommodate an additional 1,500 to 1,683 cfs in the various reaches, will supplement services to 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, and The Metropolitan Water District of Southern California. The installation of the additional pumps at Banks Pumping Plant will increase the total capacity of the plant to 10,300 cfs (from the current 6,400 cfs) and will increase the reliability of SWP water supply deliveries.

Facilities in the planning stage include the Kern Water Bank, which will store about one million acre-feet of water in the Kern Fan Element ground water basin, allowing the water to be pumped out when needed. As more elements are developed, increased storage and pumping capabilities will provide an additional dependable supply of competitively priced water to SWP contractors. Also under study are Los Banos Grandes Reservoir, which would increase SWP storage capacity south of the Sacramento-San Joaquin Delta, and the Coastal Branch, Phase II, which would transport up to 70,486 acre-feet of water a year to Santa Barbara and San Luis Obispo counties.

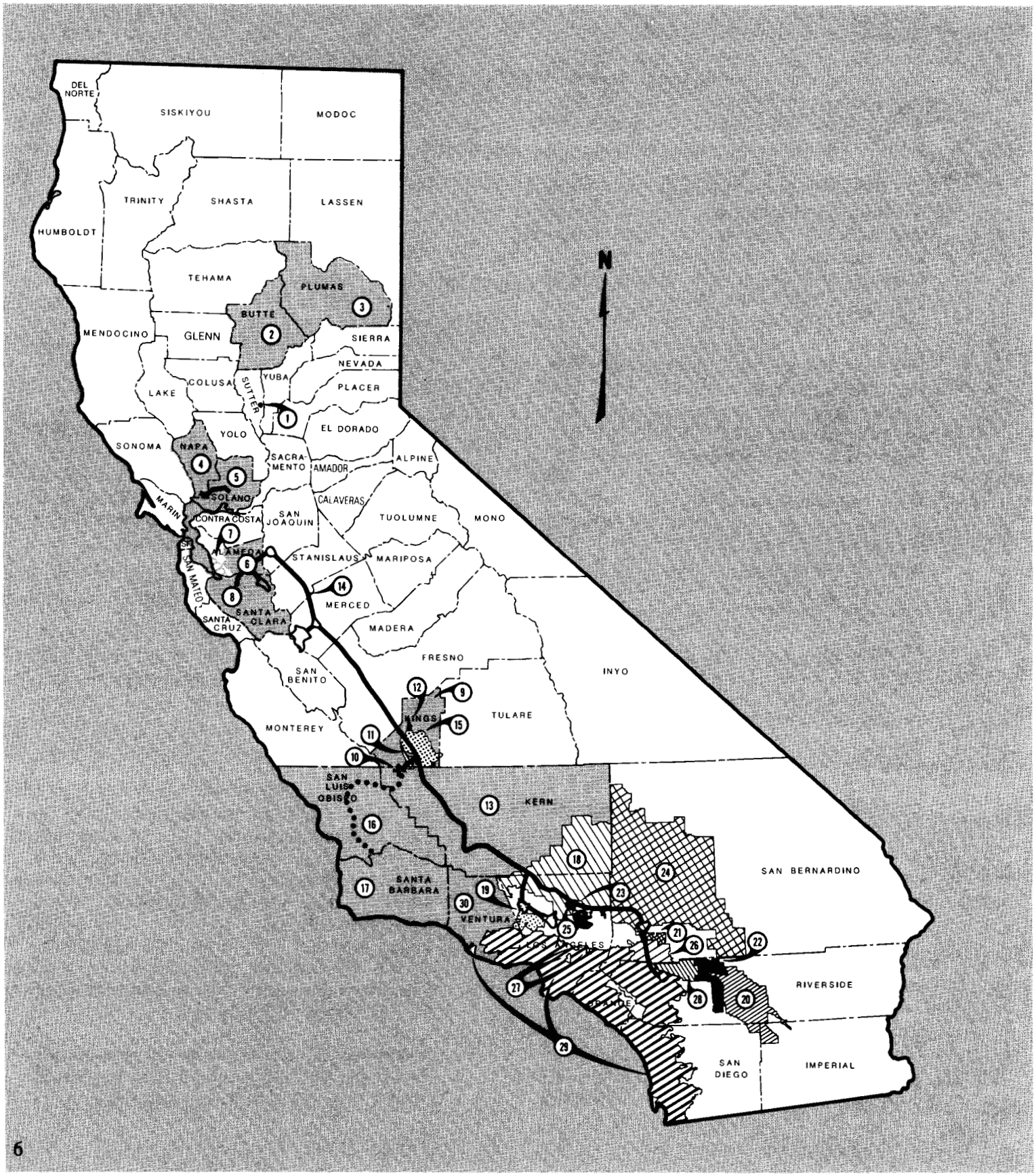
Water Rights and the SWP

The challenges of developing the existing SWP facilities have been matched by the complexities of operating those facilities and developing new ones. Managing California's water resources for the greatest benefit of the State has required coordination, cooperation, and compromise among many diverse interests.

One of the most complex and critical issues the SWP continues to address is that of water rights. To implement plans for development of California's water resources, the State initially needed to acquire rights to store and divert water. Those rights were obtained in accordance with the Water Commission Act of 1913, which established the modern permit process now administered by the State Water Resources Control Board (formerly the State Water Rights Board).

Acquisition of water rights for future water projects began in 1927, when the State Legislature enacted a law authorizing the Department of Fi-

Figure 2. Long-Term Water



Supply Contracting Agencies

Location No.	Contracting Agency	First Year of Service	Total Cumulative Deliveries through 12/31/88(a acre-feet	Maximum Annual Entitlement acre-feet	Total Payments through 12/31/88 dollars	Gross Area as of 7/1/88 acres	Assessed Valuation 1988-89(b dollars	Estimated Population on 7/1/88
	UPPER FEATHER AREA							
1.	City of Yuba City	1968	889	9,600	190,800	4,230	669,177,000	23,100
2.	County of Butte	1968	5,714	27,500	403,000	1,069,000	6,239,500,000 (c	172,600
3.	Plumas County Flood Control and Water Conservation District	1968	6,698	2,700	539,200	1,644,000 (d	1,510,592,000 (d	20,000
	Subtotal		13,301	39,800	1,133,000	2,717,230	8,419,269,000	215,700
	NORTH BAY AREA							
4.	Napa County Flood Control and Water Conservation District	1968	101,552	25,000	10,697,800	508,000	5,098,623,000	107,600
5.	Solano County Flood Control and Water Conservation District	1988	12,676	42,000	11,533,000	575,000	9,800,221,000	321,100
	Subtotal		114,228	67,000	22,230,800	1,083,000	14,898,844,000	428,700
	SOUTH BAY AREA							
6.	Alameda County Flood Control and Water Conservation District, Zone 7	1962	328,581	46,000	25,023,200	272,000	7,009,487,000	161,600
7.	Alameda County Water District	1962	424,656	42,000	29,174,900	63,000	12,104,371,000	255,000
8.	Santa Clara Valley Water District	1965	2,021,932	100,000	102,627,600	833,000	71,966,029,000	1,422,500
	Subtotal		2,775,169	188,000	156,825,700	1,168,000	91,079,887,000	1,839,100
	SAN JOAQUIN VALLEY AREA							
9.	County of Kings	1968	45,900	4,000	1,256,300	893,300 (e	2,441,000,000 (e	94,100 (e
10.	Devil's Den Water District	1968	318,146	12,700	9,633,300	8,700	(f	50
11.	Dudley Ridge Water District	1968	1,128,792	57,700	22,476,000	29,970	(f	50
12.	Empire West Side Irrigation District	1968	71,972	3,000	1,350,400	7,400	(f	50
13.	Kern County Water Agency	1968	15,514,754	1,153,400	474,961,800	5,161,000 (g	28,944,337,000 (g	518,300 (g
14.	Oak Flat Water District	1968	119,171	5,700	1,793,600	4,000	(f	50
15.	Tulare Lake Basin Water Storage District	1968	2,337,185	118,500	41,098,300	189,200	(f	50
	Subtotal		19,535,920	1,355,000	552,569,700	6,293,570	31,385,337,000	612,650
	CENTRAL COASTAL AREA							
16.	San Luis Obispo County Flood Control and Water Conservation District	N/A	0	25,000	6,659,200	2,131,300	13,073,762,000	207,300
17.	Santa Barbara County Flood Control and Water Conservation District	N/A	0	45,486	12,453,800	1,756,900	17,210,549,000	343,100
	Subtotal		0	70,486	19,113,000	3,888,200	30,284,311,000	550,400
	SOUTHERN CALIFORNIA AREA							
18.	Antelope Valley-East Kern Water Agency	1972	580,443	138,400	101,311,600	1,524,000	6,634,690,000	149,900
19.	Castaic Lake Water Agency	1979	98,847	41,500	38,810,100	125,000	5,528,898,000	137,100
20.	Coachella Valley Water District	1973	188,859	23,100	35,736,600	637,600	10,244,486,000	129,700
21.	Crestline-Lake Arrowhead Water Agency	1972	19,669	5,800	6,907,800	55,100	1,030,166,000	14,000
22.	Desert Water Agency	1973	298,800	38,100	55,544,600	208,800	4,353,337,000	57,500
23.	Littlerock Creek Irrigation District	1972	6,506	2,300	1,676,500	43,300	71,248,000	2,100
24.	Mojave Water Agency	1972	57,615	50,800	40,850,400	3,160,400	7,321,652,000	155,200
25.	Palmdale Water District	1985	11,803	17,300	11,825,600	73,900	1,566,375,000	71,900
26.	San Bernardino Valley Municipal Water District	1972	195,278	102,600	123,704,400	210,200	9,642,028,000	468,000
27.	San Gabriel Valley Municipal Water District	1974	88,943	28,800	34,984,400	16,300	5,372,589,000	187,300
28.	San Gorgonio Pass Water Agency	N/A	0	17,300	17,484,900	140,600	1,077,317,000	44,300
29.	The Metropolitan Water District of Southern California	1972	8,789,466	2,011,500	2,210,564,800	3,287,300 (h	596,900,359,000 (h	14,388,500 (h
30.	Ventura County Flood Control District	N/A	0	20,000	13,331,700	1,179,500 (i	29,619,475,000 (i	646,700 (i
	Subtotal		10,336,229	2,497,500	2,692,733,400	10,662,000	679,362,620,000	16,452,200
	TOTAL STATE WATER PROJECT		32,774,847	4,217,786	3,444,605,600	25,812,000 (j	855,430,268,000 (j	20,098,750 (j
	NET TOTAL, STATE WATER PROJECT SERVICE AREA					24,772,300 (k	801,075,458,000 (k	19,732,900 (k
	TOTAL, STATE OF CALIFORNIA					100,314,000	1,275,516,000,000	28,314,500
	PERCENT, NET SWP VS. TOTAL CALIFORNIA					24.7	62.8	69.7

a) All water delivered to long-term SWP contractors, including current and deferred entitlement, surplus, unscheduled, emergency relief, exchange, and non-SWP water delivered through SWP facilities.
b) Statutes 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.
c) Estimated Assesed Valuation.
d) Total for all Plumas County Flood Control and Water Conservation District, including Last Chance Creek Water District.
e) Total for all Kings County, including the following contracting agencies: County of Kings, Dudly Ridge Water District, Empire West Side Irrigation District, nearly all Tulare Lake Basin Water Storage District, and about 40 percent of Devil's Den Water District.
f) Assessed valuation not available on an agency area breakdown.
g) Total for all Kern County, including the following contracting agencies: Kern County Water Agency, about 60 percent of Devil's Den Water District, and about 50 percent of Antelope Valley-East Kern Water Agency.
h) Total for MWDSC including Calleguas Municipal Water District, which is common to MWDSC and Ventura County Flood Control District.
i) Total for all Ventura County, including the following contracting agencies: Ventura County Flood Control District and portion of Antelope Valley-East Kern Water Agency, Castaic Lake Water Agency, and MWDSC
j) Includes duplicate values. Some areas that are within two or more agencies are included in each agency's total.
k) Excludes duplicate values where agencies have overlapping boundaries.

nance to file applications to appropriate unappropriated water for the State's water development plan. The first such application was filed on June 30, 1927, initiating the process to establish water rights under the prevailing plans for statewide water resources development. Under these applications, which were transferred from the Department of Finance to DWR and the USBR, water right permits have been issued by the State Water Resources Control Board (and its predecessor) for the SWP and the CVP.

The SWRCB periodically reviews these permits and modifies terms and conditions that affect the operations of both the SWP and the CVP. (The Board has maintained "reserved jurisdiction," for example, to consider public interest terms and conditions in the Bay-Delta estuary.) Under the jurisdiction of the SWRCB, water rights for the SWP and the CVP have been the subject of a series of proceedings to protect other beneficial uses of the State's water resources and to establish water quality standards for the Delta.

In 1967, the SWRCB (the State Water Rights Board at that time) held a water rights hearing and issued Decision 1275 (amended shortly thereafter by Decision 1291), which granted water rights permits to DWR for the SWP, subject to certain terms and conditions. One of these conditions, the so-called "Blind Point" condition, prohibited DWR from diverting water from the Sacramento-San Joaquin Delta or collecting water to store in Lake Oroville any time between April 1 and June 30 when the maximum chloride content of the San Joaquin River at Blind Point in the Delta exceeded 250 parts per million. The Board also continued to reserve jurisdiction for formulating or revising, as needed, the permits' terms and conditions regarding salinity control, fisheries, and wildlife.

In accordance with the SWRCB's policy to periodically reevaluate water rights permits, another hearing was convened, and on July 28, 1971, Decision 1379 was issued. This decision established new water quality standards for the Delta and included the first standards specifically for fish and wildlife protection. Decision 1379 ordered both DWR and the USBR to maintain these standards by (1) releasing water stored in upstream reservoirs, (2) reducing the pumping of water from the Delta to produce an additional flow of water through the Delta, or (3) using a combination of these methods. Additionally, DWR and USBR were required to conduct studies in the Delta concerning water temperature, velocity, algal growth, dissolved oxygen, scour, turbidity, and productivity. Decision 1379 also provided that hearings be reopened not later than July 1, 1978 to receive further evidence concerning salinity control, fish and wildlife protection, and other Delta considerations.

Implementation of Decision 1379 was prevented by a Sacramento County Superior Court preliminary injunction. The injunction, which was issued on petition of several public agencies receiving or expecting to receive water from federal and State projects, left in effect the requirements of Decision 1275, as amended by Decision 1291. However, the federal district court ruled that the evidentiary record of the Decision 1379 proceeding could be used by the Board in exercising jurisdiction reserved in other decisions.

On April 29, 1976, the Board initiated new proceedings leading to the adoption of Decision 1485 in 1978. Decision 1485 set forth new conditions--including water quality standards, export limitations, and minimum flow rates--for SWP and CVP operations in the Delta. Among the beneficial uses to be protected by the decision were (1) municipal and industrial water supply, (2) agriculture, and (3) fish and wildlife. Decision 1485 established flow and water quality standards for each of these categories.

In formulating Decision 1485, the SWRCB held that Delta water quality should be at least as good as it would have been if the SWP and CVP had not been constructed. In other words, both the SWP and the CVP were to be operated to meet "without project" conditions. Decision 1485 standards included different levels of protection to reflect variations in hydrologic conditions during different water year types.

To implement these water quality standards, Decision 1485 mandated a monitoring program. It also called for special studies to provide critical data about major concerns in the Delta and Suisun Marsh for which information was insufficient. Decision 1485 included water quality standards for Suisun Marsh as well as for the Delta, requiring DWR and the USBR to develop

a plan for the marsh that would ensure meeting long-term standards for full protection by October 1984, later extended to October 1988.

Recognizing that the complexities of project operations and water quality conditions would change over time, the SWRCB also specified that the water right permit hearings would be reopened within eight years of the date of adoption of Decision 1485, depending upon changing conditions in the Bay-Delta region and the availability of new evidence on beneficial uses of water.

As with Decision 1379, lawsuits by various interests challenged Decision 1485, and the decision was overturned by the trial court in 1984. However, its standards remained in effect pending a ruling by the Court of Appeal. In 1986, the appellate court broadly interpreted the SWRCB's authority to establish and enforce water quality objectives that assure reasonable protection of beneficial uses of Delta water and protection of San Francisco Bay. The ruling also ordered the Board to consider the effects of all Delta and upstream water uses, not just those of the SWP and the CVP.

Subsequently, on November 26, 1986, DWR and the USBR signed the Coordinated Operation Agreement. This landmark agreement, which culminated 25 years of negotiations, provided for the CVP and the SWP to coordinate their operations to meet Decision 1485 standards. Under the COA, the USBR also agreed to meet future water quality standards established by the SWRCB unless the Secretary of the Interior determines that the standards are inconsistent with Congressional intent.

Hearings began in July 1987 to develop a San Francisco Bay/Sacramento-San Joaquin Delta water quality control plan and to consider public interest issues related to Delta water rights, including implementation of water quality objectives. This hearing is being conducted in three phases. The first phase, which concluded in December 1987, gathered evidence on beneficial uses of Bay-Delta water. In November 1988, the SWRCB released a draft water quality control plan and pollutant policy document based on the Phase I hearing. After many of the hearing participants objected to this plan, which proposed sweeping changes to Decision 1485, the Board decided in January 1989 to revise the work plan for the hearing process and indicated that a new draft of the water quality control plan would probably be required. (See Chapter III, "Bay-Delta Hearings.")

According to the revised work plan proposed on April 20, 1989, the next phase of the hearing is scheduled to begin in late 1989, when the Board will receive public comment on the draft water quality control plan. After the water quality control plan has been adopted, special scoping hearings will be held to gather evidence on nonregulatory measures for protecting beneficial uses. These measures may include physical facilities, negotiated agreements, legislation, and other solutions. After the scoping hearings, the Board will prepare an EIR and hold a water rights hearing to replace Decision 1485.

SWP Accomplishments

The primary purpose of the SWP is to develop and transport water from areas of abundance to areas of need. Other SWP purposes include flood control, recreation, and fish and wildlife enhancement. Table 1 summarizes SWP water deliveries, recreational use, and power generation from 1962 through 1988.

SWP Highlights

- The SWP delivered 2,906,492 acre-feet of water in 1988, including 2,385,122 acre-feet of entitlement water and 521,370 acre-feet of other water (Chapter I, Table 1).

- The 1988 water year was classified as critical under the State Water Resources Control Board's Decision 1485 criteria, becoming the second critical water year in a row. This is only the third time during this century that back-to-back critical water years have occurred (Chapter II).

- The Suisun Marsh Salinity Control Gates became operational on October 28, 1988. The facility will operate as needed from October to May each year to reduce salinity in Montezuma Slough (Chapter II).

Table 1. SWP Accomplishments through 1988

Year	Water Delivered *acre-feet*							Recreation Supported(b *recreation days*	Energy Generated(c *million kWh*
	Entitlement Water			Other Deliveries					
				Surplus and Unscheduled					
	Municipal and Industrial	Agri-cultural	Total	Municipal and Industrial	Agri-cultural	Other Water(a	Total Deliveries		
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]
1962						18,289	18,289	30,000	
1963						22,456	22,456	105,000	
1964						32,507	32,507	331,600	
1965						44,105	44,105	449,800	
1966						67,928	67,928	482,700	
1967	5,747	5,791	11,538	0	0	53,605	65,143	455,200	
1968	46,472	125,237	171,709	10,000	111,534	14,777	308,020	931,300	628
1969	34,434	158,586	193,020	0	72,397	18,829	284,246	1,554,800	2,614
1970	47,996	185,997	233,993	0	133,024	38,080	405,097	1,804,800	2,679
1971	85,286	272,054	357,340	2,400	293,619	44,127	697,486	2,085,900	3,302
1972	181,066	430,735	611,801	22,205	401,759	73,127	1,108,892	1,971,200	1,922
1973	293,824	400,564	694,388	3,161	293,255	43,666	1,034,470	2,502,000	3,298
1974	418,521	455,556	874,077	4,753	412,923	48,342	1,340,095	4,073,600	4,672
1975	641,621	582,369	1,223,990	21,043	601,859	67,170	1,914,062	4,189,300	3,159
1976	818,588	554,414	1,373,002	32,488	547,622	116,962	2,070,074	4,239,600	2,131
1977	280,919	293,236	574,155	0	0	390,176	964,331	3,951,900	958
1978	742,385	710,314	1,452,699	3,566	13,348	122,916	1,592,529	5,773,700	2,882
1979	690,659	969,237	1,659,896	66,081	582,308	189,396	2,497,681	5,298,700	2,485
1980	730,545	799,204	1,529,749	19,722	384,835	48,590	1,982,896	5,701,900	2,988
1981	1,057,273	852,289	1,909,562	12,000	896,428	283,849	3,101,839	6,017,800	3,358
1982	928,721	821,303	1,750,024	0	215,873	159,528 (e	2,125,425	6,187,700	5,097
1983	483,499	701,370	1,184,869	0	13,019	189,302 (e	1,387,190	5,838,200	5,843
1984	725,925	862,694	1,588,619	3,663	259,254	388,064 (f	2,239,600	6,273,100	4,667
1985	992,538	1,002,915	1,995,453	9,638	298,034	408,904	2,712,029	6,639,800	5,237
1986	998,611	997,025	1,995,636	2,595	34,025	197,471	2,229,727	6,966,039	4,683
1987	1,096,368	1,033,718	2,130,086	6,949	107,958	385,264	2,630,257	7,228,815	3,951
1988	1,316,820	1,068,302	2,385,122 (d	0	0	521,370	2,906,492	6,854,300	4,871
Total	**12,617,818**	**13,282,910**	**25,900,728**	**220,264**	**5,673,074**	**3,988,800**	**35,782,866**	**97,938,754**	**71,425**

a) Includes preconsolidation repayment water, emergency relief water, regulated delivery of local supply, non-SWP water delivered to Napa County FC&WCD through SWP facilities, conveyance of CVP water (including Decision 1485 and recreation and fish & wildlife water), recreation water, and exchange water.

b) A recreation day is the visit of one person to a recreation area for any part of one day.

c) Includes SWP share of generation from Hyatt-Thermalito, San Luis, Devil Canyon, Warne, Alamo, Castaic, Reid Gardner Unit No. 4 and Bottle Rock powerplants.

d) Includes 67,581 acre-feet of 1987 entitlement water carried over for delivery in 1988, and 8,749 acre-feet of entitlement water recaptured from ground water storage.

e) Revised and corrected from Bulletin 132-88.

f) Revised and corrected from Bulletin 132-88 to reflect 559 acre-feet of 1982 exchange water delivered to Devil's Den WD from Lake Oroville storage.

- The SWP generated a total of 4,871 million kWh of energy (3,099 million kWh from hydroelectric powerplants) in 1988 and used 6,051 million kWh to deliver water to contractors. The SWP also purchased 472 million kWh and sold 1,691 million kWh of energy (Chapter II, Table 6).

- In 1988, DWR purchased 122,000 acre-feet of water from Yuba County Water Agency's New Bullard's Bar Reservoir. This purchase, which was completed on September 25, 1988, allowed DWR to hold a corresponding amount of water in Lake Oroville, increasing the water supply for the 1988-89 water year. A water purchase has also been negotiated for 1989. Water from this purchase will be delivered to the Santa Clara Valley Water District and Tulare Lake Basin Water Storage District service areas. Continuing dry conditions in these service areas has required the contractors to augment their SWP supplies by an additional 200,000 acre-feet. (Chapter III).

- On November 3, 1988, the SWRCB issued a draft water quality control plan and a pollutant policy document based on evidence from Phase I of the Bay-Delta Hearings. After DWR and other hearing participants expressed concerns with this plan, on January 19, 1989, the SWRCB decided to revise the work plan for the hearing process and indicated that a new draft of the water quality control plan would probably be required (Chapter III).

- Design of the additions to Banks Pumping Plant, including a new service bay at the north end and four additional pump units, has been completed and construction on all contracts is scheduled to begin in the summer of 1989. All facilities are planned to be operational by late 1991 (Chapter IV).

- In November 1988, the Big Rock Siphon enlargement was completed approximately six months ahead of schedule. Construction is progressing on numerous facilities of the East Branch Enlargement. Stage I of the East Branch Enlargement, which will provide an additional capacity of 1,500 cfs, is planned to be operational by mid-1994. Stage II, which will add 183 cfs capacity, has not been scheduled (Chapter IV).

- On August 30, 1988, DWR acquired approximately 19,900 acres for the Kern Fan Element of the Kern Water Bank. The land was purchased from Tenneco West, Incorporated for $31.4 million (Chapter V).

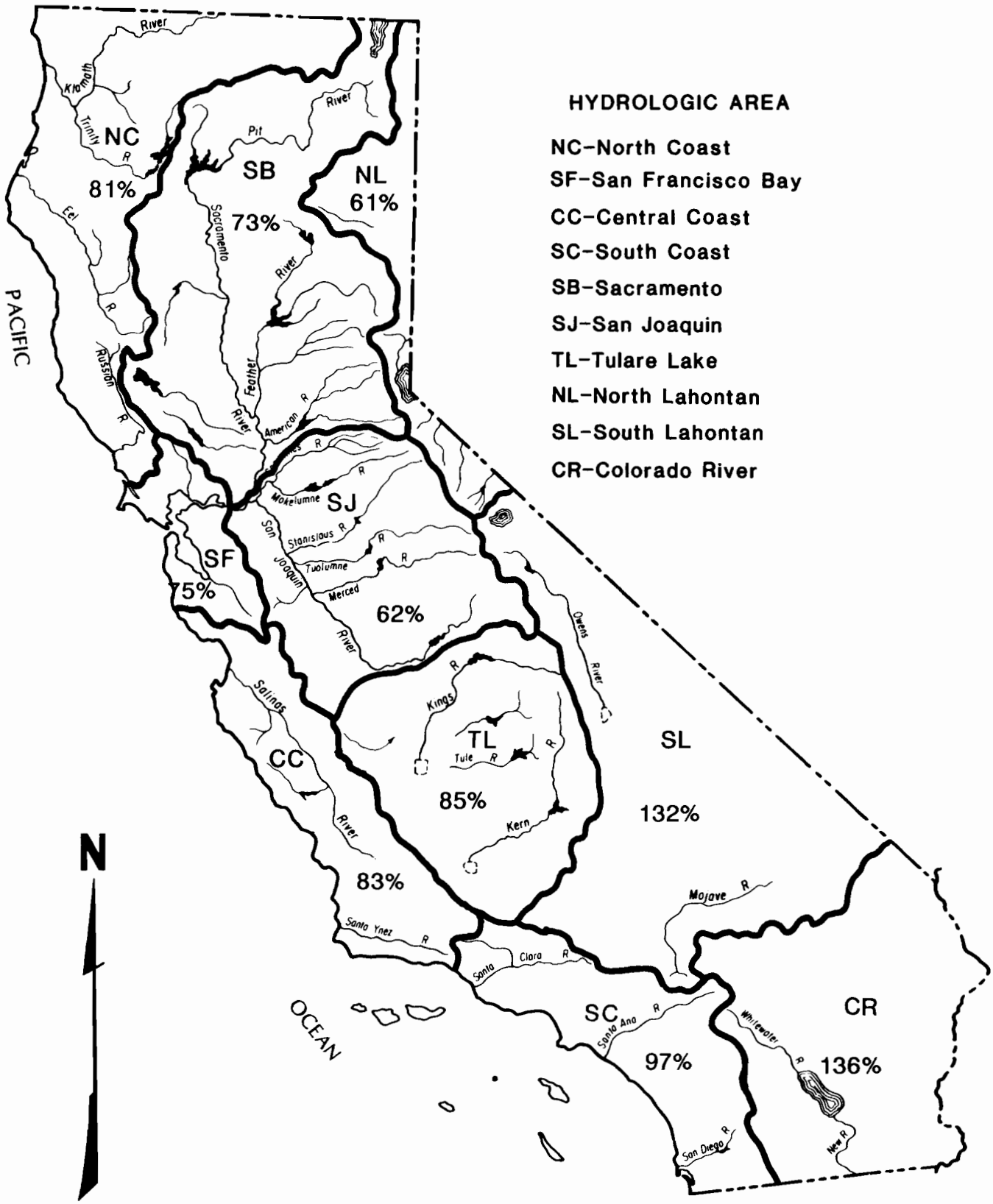
- On January 17, 1989, DWR purchased a portion of the Midway-Wheeler Ridge Transmission System from Pacific Gas and Electric Company, as provided under the 1982 EHV Settlement Agreement. This purchase will result in cost savings for the SWP (Chapter VI).

- On May 10, 1989, DWR signed the Co-tenancy Agreement among Pacific Gas and Electric Company, Northern California Power Agency, and the City of Santa Clara. This agreement will provide DWR with the rights and obligations associated with ownership of a 165-MW share in the Castle Rock Junction-Lakeville 230-kV transmission line (Chapter VI).

- On May 10, 1989, DWR executed a Transmission Service Agreement with the Northern California Power Agency and the City of Santa Clara. This agreement provides for DWR to sell transmission service out of the Geysers area to NCPA and Santa Clara. DWR will provide: (1) 55 MW of long-term transmission service for the life of the line; (2) 55 MW of short-term transmission service at least through December 31, 1995; and (3) up to 18 MW of additional transmission service on a year-to-year basis (Chapter VI).

- On March 15, 1989, DWR completed the sale of $160 million in water revenue bonds to refund $133 million of high-interest Series G Reid Gardner bonds. The new bonds, Series F, were sold at a true interest cost of 7.466 percent and will produce debt service savings of $27 million over the life of the bonds (Chapter VII).

Figure 3. Statewide Precipitation, 1987-1988 Water Year
(Precipitation in Percent of Average)



Chapter II
SWP Operations in 1988

This chapter summarizes SWP water and power operations, recreation and visitor use at SWP facilities, and SWP fish and wildlife activities during the 1988 calendar year and the 1987-88 water year.

Water Operations

Water conditions, SWP reservoir and aqueduct operations, and SWP water quality during 1988 are covered in this section.

Water Conditions

Total precipitation was below average for the 1987-88 water year (October 1, 1987 through September 30, 1988). During the first third of the water year, precipitation in the Sacramento and Feather River drainage basins was 95 percent of average. A dry trend began in mid-January and continued through February, when precipitation for the month was only nine percent of average in the northern half of the Central Valley. By the end of February 1988, total precipitation in the Sacramento River Basin was only about 75 percent of average. Although dry conditions persisted through March, April's above-average precipitation over much of the State improved California's water supply outlook. As of May 1, statewide precipitation during the 1987-88 water year was 80 percent of average. Precipitation, in terms of percent of average, was highest in the Colorado River desert area and lowest in the San Joaquin and North Lahontan areas (Figure 3).

The Sacramento River Index calculation of unimpaired runoff (May 1 forecast) in the 1987-88 water year was 8.8 million acre-feet, only 47 percent of average. The water year was therefore classified as critical by Decision 1485 standards (10.2 million acre-feet or less). This was the second consecutive critical year (the index in the 1986-87 water year was 9.2 million acre-feet), and only the third time in this century that back-to-back critical years have occurred. For comparison, the indices for the previous two-year drought period were 8.1 million acre-feet in 1976 and 5.1 million acre-feet in 1977.

Figure 4 shows runoff to Lake Oroville and Shasta Lake during the 1987-88 water year. Cumulative unimpaired runoff to Lake Oroville was 2.0 million acre-feet for the year (about 50 percent of average), but was 1.2 million acre-feet above the 1976-77 drought water year's cumulative unimpaired runoff, which was only 17 percent of average. For December and January, unimpaired runoff to Lake Oroville was greater than unimpaired runoff during December and January of the 1986-87 water year. Except for March 1988, when unimpaired runoff was less than that of 1987, unimpaired runoff for the remaining months of the 1987-88 water year was almost equal to that of the same months in the 1986-87 water year.

Cumulative unimpaired runoff to Shasta Lake was 3.9 million acre-feet for the year (about 65 percent of average), but was 2.1 million acre-feet above the 1976-77 drought water year's cumulative unimpaired runoff, which was only 30 percent of average. For December, January, May, and June, 1987-88 unimpaired runoff to Shasta Lake was above that of the same months of the 1986-87 water year. In March 1988, unimpaired runoff was lower than that of March 1987, but during the other months of the 1987-88 water year, unimpaired runoff to Shasta Lake was almost equal to that of the same months in the 1986-87 water year.

DWR and the USBR declared balanced Delta water conditions twice during 1988: from February 23 through November 26 and from December 3 through December 25. This was the fifth consecutive year, and the seventh of the nine years in this decade, in which balanced water conditions were declared. Balanced water conditions exist when upstream reservoir storage releases, plus other inflows, approximately equal the water supply needed to (1) satisfy Sacramento Valley and Sacramento-San Joaquin Delta in-basin needs, including Delta water quality requirements, and (2) meet export needs. During balanced water conditions, DWR and the USBR adjust their reservoir storage releases and Delta exports to enable

Figure 4. Runoff to Lake Oroville and Shasta Lake

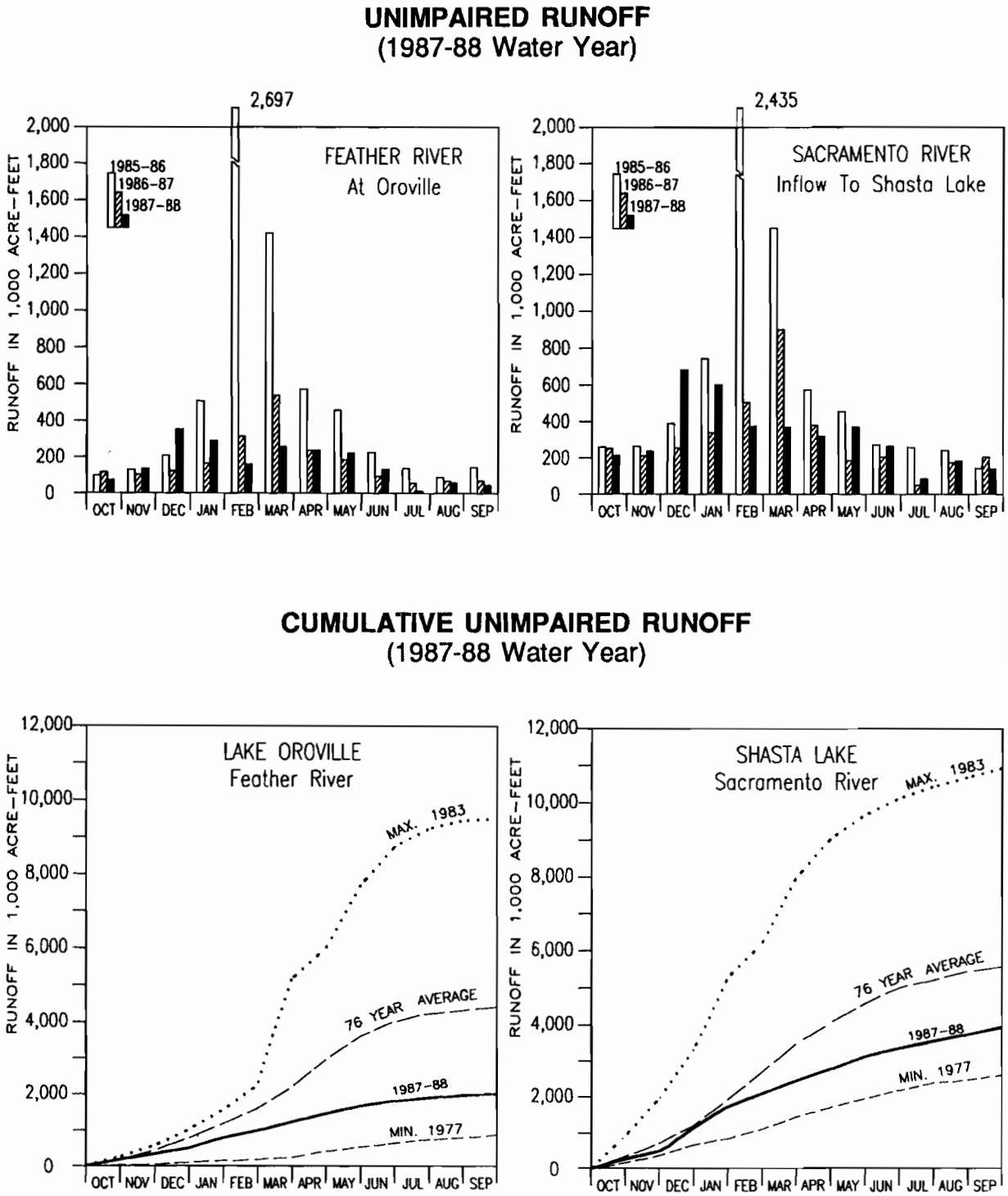
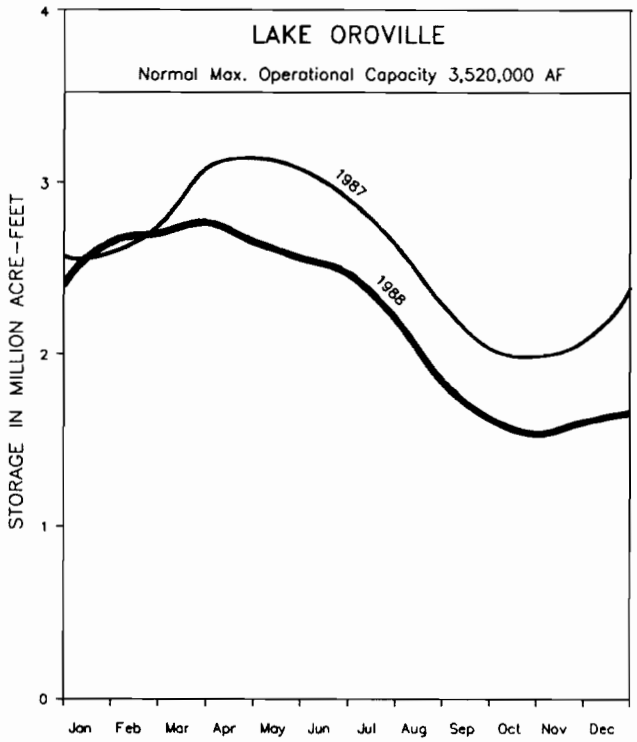
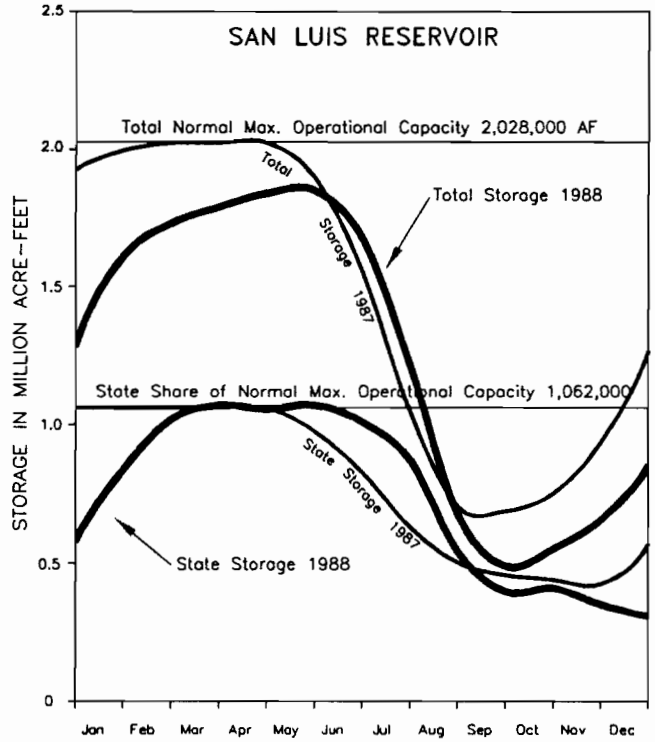


Figure 5. Lake Oroville and San Luis Reservoir Storage
(1988 Calendar Year)





each agency to meet its share of in-basin uses and Delta outflow.

Reservoir Operations

Lake Oroville and San Luis Reservoir are the major storage facilities for SWP water supplies. Figure 5 compares the 1988 operations of these reservoirs with the previous year's operations.

Lake Oroville held 169,847 acre-feet less water in storage at the beginning of 1988 than it held in storage at the beginning of 1987. Throughout the year, 1988 storage patterns roughly paralleled 1987 storage patterns, but with 1988 storage generally less than 1987 storage. Lake Oroville storage peaked at 2,765,523 acre-feet (78 percent of capacity) on March 13, then dropped to 1,484,341 acre-feet (42 percent of capacity), its lowest level for the year, on November 9. By December 31, storage had increased to 1,660,266 acre-feet (47 percent of capacity).

At the start of 1988, San Luis Reservoir held 63 percent of its maximum operating storage, although the SWP share of storage was only 55 percent of its maximum. Total storage at the end of 1988 was 854,053 acre-feet (42 percent of maximum).

In 1988, as in the past three years, the SWP received approval from the Corps of Engineers and the East Bay Regional Park District to hold an additional 2,000 acre-feet of storage in Lake Del Valle between Memorial Day and Labor Day. The additional storage was released into the South Bay Aqueduct beginning August 22 at the request of the South Bay Aqueduct water service contractors. These releases blended Del Valle water with Delta water to reduce chloride levels and improve the quality of water delivered through the South Bay Aqueduct.

Storage in Lake Del Valle topped out at 41,273 acre-feet on June 12. Drawdown began on

September 6 to provide storage space for conserving potential local runoff.

SWP southern reservoirs (Silverwood, Perris, Pyramid, and Castaic) started the year at 92 percent of their combined maximum operating storage. By December 31, these reservoirs held 88 percent of their combined maximum operating storage. The following tabulation compares maximum operating storage in the principal SWP reservoirs with year-end storage for 1987 and 1988:

Reservoir	Maximum Operational Capacity (thousand ac-ft)	End-of-Year Storage (thousand ac-ft)	
		1987	1988
Lake Oroville	3,520	2,388	1,660
Lake Del Valle	40	25	25
San Luis Reservoir*	1,062	570	248
Silverwood Lake	73	68	72
Lake Perris	127	113	116
Pyramid Lake	170	161	158
Castaic Lake	319	287	259
Total	5,311	3,612	2,538
Total Difference		-1,074	
*SWP Share			

Aqueduct Operations

Figure 6 summarizes overall SWP operations in 1988. As shown, 1,479,000 acre-feet of CVP water was conveyed through the joint-use facilities to the CVP service area. (DWR operates and maintains the San Luis joint-use facilities, including 103.5 miles of aqueduct between O'Neill Forebay and Kettleman City.)

The following were the most significant operational activities occurring during 1988.

- In preparation for plant expansion, Devil Canyon Powerplant was out of service from January 23 through 29 to permit installation of a temporary cofferdam in the afterbay. During the scheduled outage of the powerplant, bumped heads were placed on the intake towers in the San Bernardino Tunnel and valves were repaired while the tunnel was dewatered for a January 23 inspection. Also, four seals were installed in the expansion joints of the Santa Ana Pipeline during this outage. The powerplant was returned to full service in early March.

- On February 24, the water level in pools 65 and 66 (upstream of Devil Canyon Powerplant, mile 395.18 through mile 405.60 of the California Aqueduct) was lowered to facilitate lining repairs. Broken lining was revealed in pool 66, and the canal was out of service for repairs until March 7.

- On March 10, pool 10 was shut down to allow repair of cracks in the aqueduct lining. Divers hired by DWR sealed the cracks and filled voids behind the lining, and the pool was returned to service on March 30. On December 14, DWR employees discovered new cracks in the same area of pool 10. Pools 10, 11, and 12 (from mile 51.39 through mile 66.74, approximately 50 miles downstream of Banks Pumping Plant) were drawn down to the normal minimum operating level to facilitate the repair work. The cracks were repaired, and the pool was returned to normal operation on December 21.

- On June 10, Edmonston Pumping Plant tripped due to a moderate earthquake (5.1 on the Richter scale) located approximately three miles northeast of Porter Tunnel. Four of the six 230-kV switchyard electrical circuit breakers were damaged. Power to the plant was out until June 14, when the plant returned to service. Five pump units were made available when power was restored to the plant. More pumps and circuit breakers became available as repair work progressed. Repairs were completed on October 13, 1988.

- A leak of about 100 gallons per minute was discovered on June 16 at joint 4 on the West Barrel of the Pastoria Siphon between Tehachapi Tunnels 2 and 3. The June 10 earthquake was believed to have caused this leak. The line was taken out of service from June 23 through 30 for repairs. After regular operation began, another leak (about 30 gpm) was discovered at joint 9. This new leak was repaired in September during a scheduled inspection outage.

- The North Bay Aqueduct, which was essentially completed in May 1988, started water deliveries on June 16 to the cities of Benicia and Vallejo from Cordelia Pumping Plant.

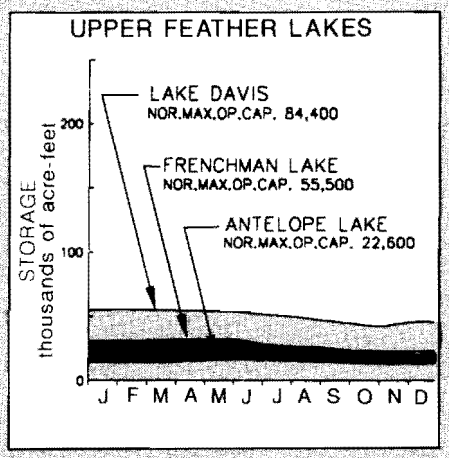
The Mojave Siphon Pipeline, which ruptured on November 9, 1988, was returned to service on November 25, 1988 after repairs had been completed.

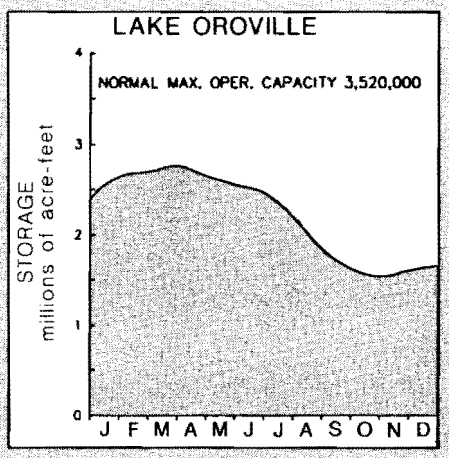
- On September 23, in preparation for the Tehachapi Tunnels' scheduled inspection, Oso Pumping Plant was unavailable for service. On September 25, Warne Powerplant was unavailable for service while Peace Valley Pipeline was drained to kill algae inside the pipeline. On September 26, the Lower Quail Canal water level was lowered to permit inspection of the canal liner. These outages took place during a scheduled inspection of Tehachapi Tunnels 1, 2, and 3, and Porter Tunnel. The inspection was completed on October 5.

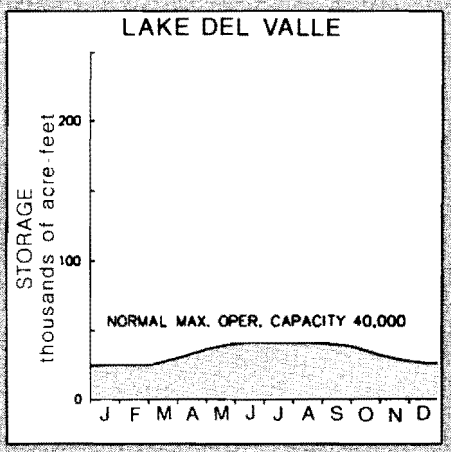
- The Lake Perris bypass line was removed from service from October 24 through 27 while The Metropolitan Water District of Southern California installed a second reverse flow bypass pump, increasing from 20 cfs to about 60 cfs the capacity to supply Mills Filtration Plant from Lake Perris.

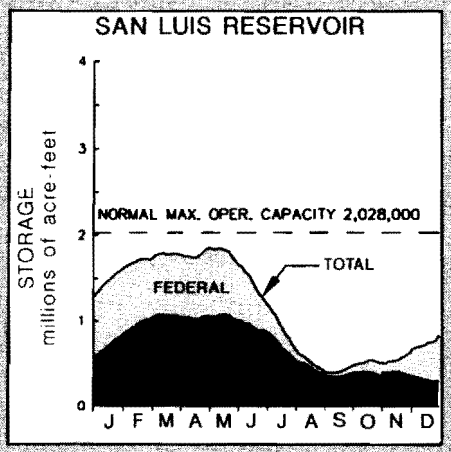
- On November 9, the Mojave Siphon Pipeline ruptured at milepost 405.38, washing out a 20-foot by 40-foot hole above the pipeline and scattering sections of the concrete pipe as far as 500 feet. Only about four acre-feet of water escaped before the siphon was isolated by closing check 66. Pumping was curtailed at Pearblossom Pumping Plant, and all water pumped at Edmonston Pumping Plant was diverted to the West Branch via Oso Pumping Plant. The siphon returned to service on November 25 after repairs were completed.

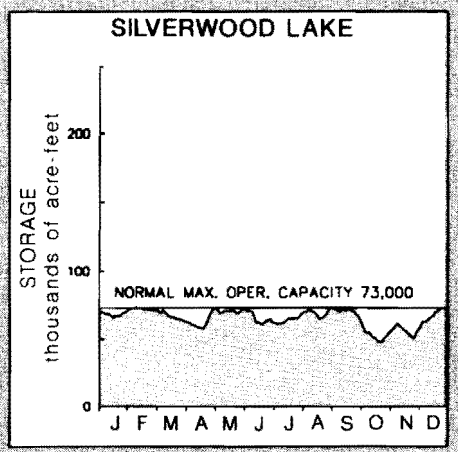
Figure 6. Summary of

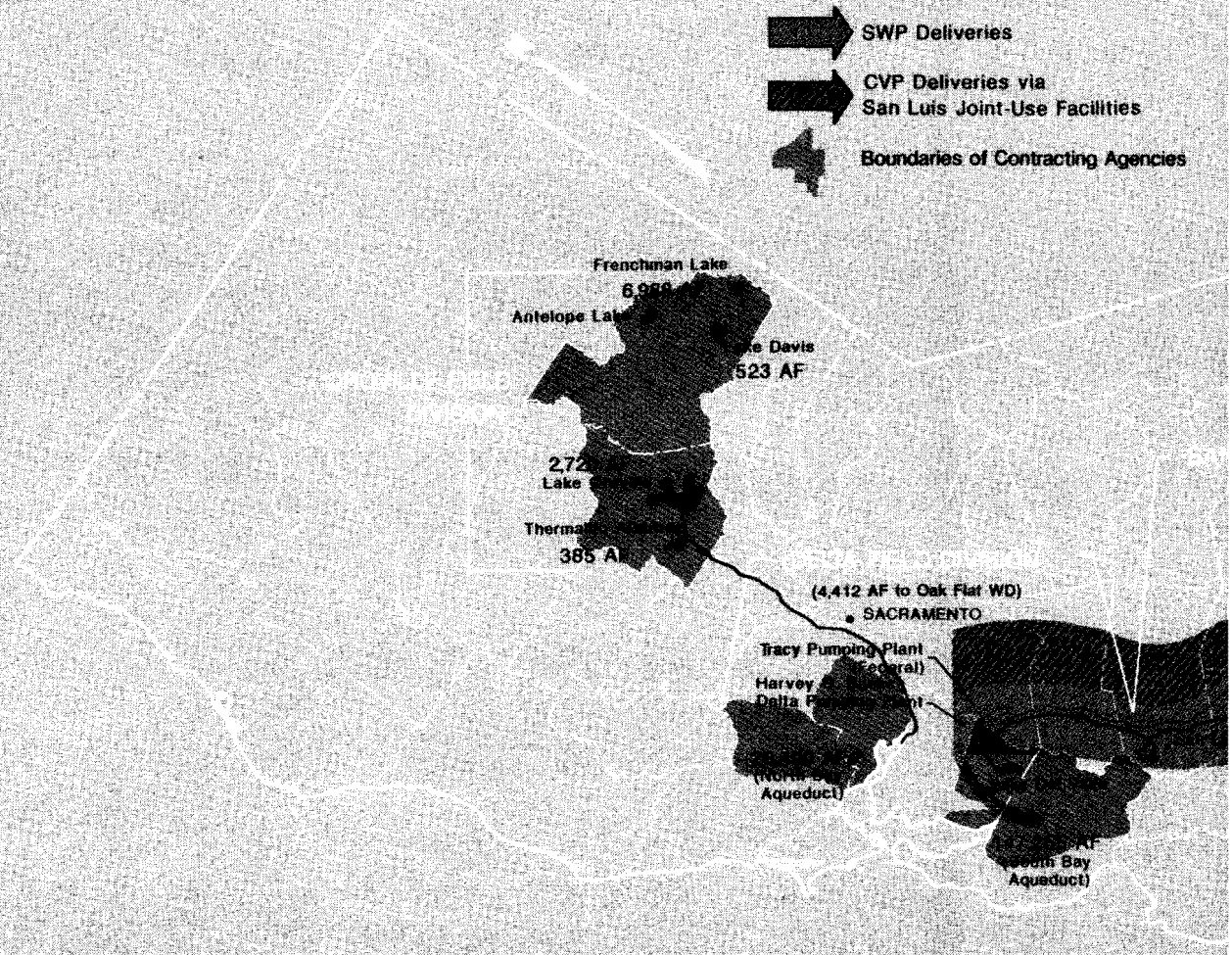




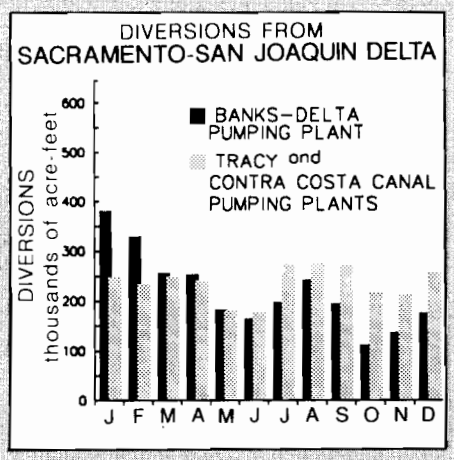


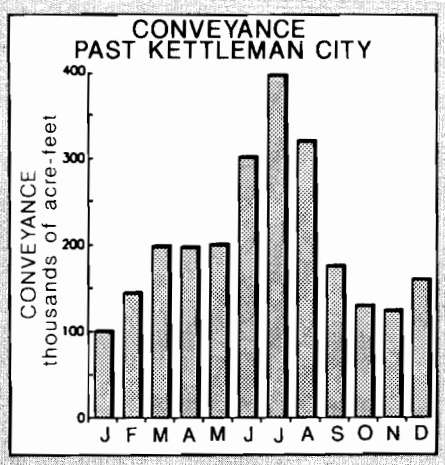


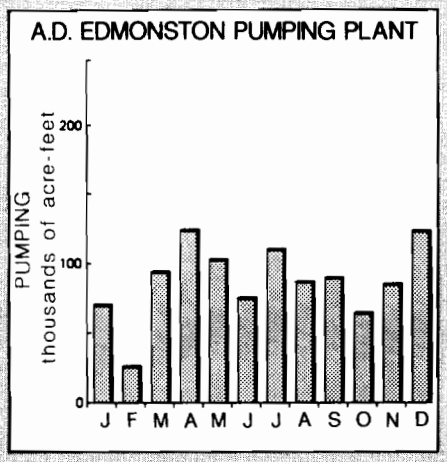


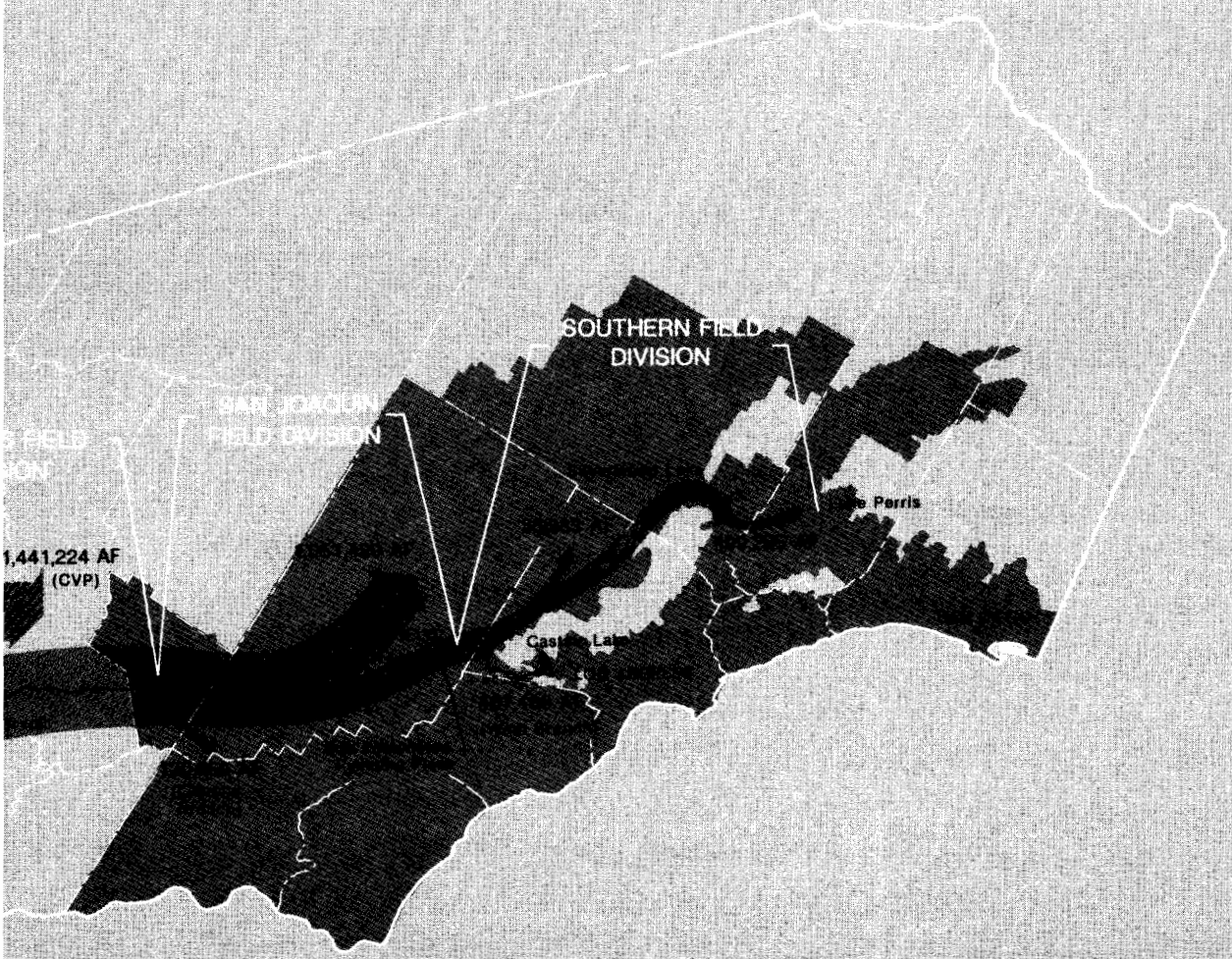


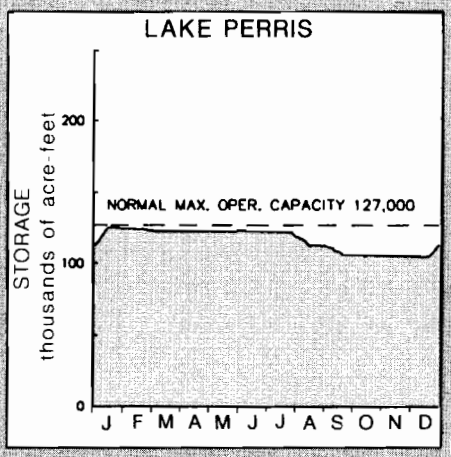
SWP Operations, 1988

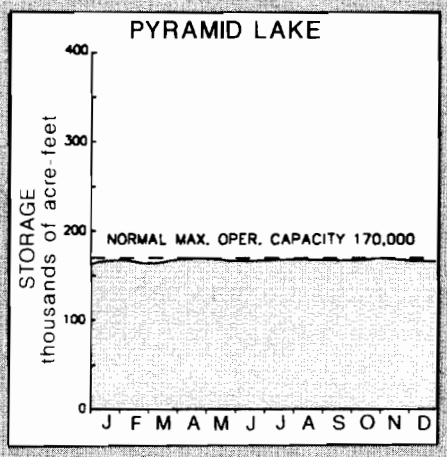


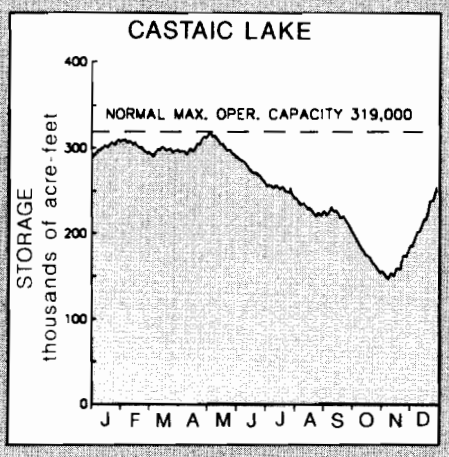












- From late November through December, water quality conditions and high tides in the Delta contributed to the reduction of SWP pumping at Banks Pumping Plant. During this period, activity at the plant consisted mostly of pumping for the USBR. This pumped water replaced diversion foregone by the USBR at Tracy Pumping Plant when Keswick Reservoir releases were reduced. The reductions were for regulating the water temperature in the upper Sacramento River, thereby enhancing conditions for the 1988 fall salmon run.

The following are major SWP pumping plant outages that affected Project operations in 1988.

At San Luis (now William R. Gianelli) Pumping-Generating Plant:

- Unit 8 was out of service from July 6, 1987 through January 27, 1988 for furbishing the amortisseur winding and repairing a leaking head gasket.

- Unit 6 was out of service from February 4 through March 29 for a complete overhaul.

- Units 1 and 2 and the no. 1 penstock were out of service from April 8 through May 20 for repairing the motor straps and replacing the anodes on the penstock head-gate.

- Unit 7 was out of service from August 26 through November 1 for repair of the amortisseur straps.

- Unit 6 was out of service again from November 8 through December 27 for installation of anodes on the no. 3 roller gate.

At Edmonston Pumping Plant:

- Unit 2 was out of service from March 9 through the remainder of the year for replacement of the motor stator winding.

- The plant was out of service daily between 0600 and 1800 hours from May 2 through 6 for repairs to Southern California Edison's electrical transmission line supplying the plant.

- Unit 5 was out of service from November 7, 1986, through May 20, 1988, for reconditioning the pump and cleaning the motor winding.

- The east discharge line was out of service from September 15 through November 14. All upstream and downstream seats of pump discharge valves (units 1, 3, 5, 7, 9, 11, and 13) were inspected. Also, upstream seats were repaired to correct seat leakage.

- The west discharge line was out of service from November 15 through 25 for inspection of the discharge valves and valve seats.

At Banks Pumping Plant:

- Unit 3 was out of service from June 27 through September 9 for repairs on the discharge valve and for annual maintenance.

- Unit 7 was out of service from October 23 through November 18 for repair of the amortisseur straps.

- Unit 6 was out of service from October 27 through December 5 for repair of a fractured high-pressure lube oil line and for cleanup of the unit.

Water Quality

SWP and Sacramento-San Joaquin Delta water quality conditions are summarized below. Detailed water quality reports appear in Appendix E to Bulletin 132, published separately as *Water Operations in the Sacramento-San Joaquin Delta*, and in DWR's monthly *State Water Project Operations Data*.

Water quality and SWP operations in the Delta are governed by the State Water Resources Control Board's Decision 1485. This decision protects beneficial uses of Delta water by establishing water quality standards, export limitations, and minimum outflows to the Delta. These standards are based on the water year type. The 1987-88 water year was classified as critical under the Sacramento River Index (formerly the Four Basin Index) of Decision 1485, permitting less restrictive water quality standards for the Delta.

Delta Water Quality

The Delta Outflow Index is a calculated approximation of the Delta freshwater outflow past Chipps Island near Pittsburg. The month of January had the highest average DOI (about 17,630 cfs) and daily DOI (about 29,163 cfs). The lowest average monthly DOI occurred in September (about 2,190 cfs), and the lowest daily was in October (about 1,100 cfs). During 1988, all minimum flows in the Sacramento River at Rio Vista, all Delta salinity standards, and all export limitations imposed by Decision 1485 were met.

Sherman Island Water Quality. The January 1981 agreement between DWR and the North Delta Water Agency assures that the State will maintain a dependable water supply of adequate quality for agricultural uses within the boundaries of the North Delta Water Agency. The agreement is an SWP water quality obligation and serves as a measure of Delta water quality conditions. Under this agreement, water quality standards for electrical conductivity (EC) at the Emmaton station on the Sacramento River are at times more stringent than those required by Decision 1485. During 1988, the 14-day running mean Emmaton EC standard of 2.79 microsiemens/centimeter (uS/cm) was exceeded sporadically from October 19 through the year's end.

To assure NDWA a water supply of adequate quality, as required under the NDWA agreement, DWR provided an alternative source of irrigation water for Sherman Island. Water was diverted upstream from Emmaton at Threemile Slough, where salinity levels were lower. An agreement signed by DWR, NDWA, and Reclamation District 341 on November 17, 1988, established the following conditions for the Threemile Slough diversion: (1) water taken from Threemile

Water quality in Suisun Marsh has improved since the Suisun Marsh Salinity Control Gates began operating in November 1988.

Slough would not be of lower quality than the water at Emmaton; (2) for the duration of the agreement, the Emmaton EC standard would be applied to water diverted from Threemile Slough; and (3) for the duration of the agreement, DWR would be relieved of meeting the EC standard at Emmaton.

A temporary overland facility similar to the one installed during the drought of 1977 was then brought into service to transport the irrigation water from Threemile Slough to Sherman Island. The agreement was terminated and the overland facility removed from service in late January 1989.

Suisun Marsh Water Quality. The Suisun Marsh Salinity Control Gates at Montezuma Slough began operating in early November 1988. The control structure consists of three radial gates, a boat lock, and a maintenance channel with removable stop logs. The facility will be operated as needed from October through May each year to decrease salinity in Montezuma Slough (per Decision 1485 requirements) by allowing freshwater flow into Suisun Marsh and restricting saline tidal incursions.

The March 1987 Suisun Marsh Preservation Agreement (among DWR, USBR, the Department of Fish and Game, and the Suisun Resource Conservation District) established EC salinity standards at three locations. The westernmost site is in Montezuma Slough at Beldon's Landing, which is about 12 miles downstream (northwest) of the control structure. The November and December EC standards are 16.5 uS and 15.5 uS, respectively. The EC at Beldon's Landing was approximately 20.0 uS at the beginning of November. After the gates had been operating for twelve days, the EC had dropped to around 11.0 uS and remained at this level through December. The EC was also reduced in the western part of the marsh from about 22.0 uS to 18.0 uS.

While it is still too early to determine if additional facilities will be needed to achieve the Suisun Marsh goals set forth in the preservation agreement, the Montezuma Slough control structure substantially improved the water quality in the marsh in a relatively short time.

Health Aspects Monitoring Program. Under the Interagency Delta Health Aspects Monitoring Program, water samples were again collected from the Delta in 1988 and analyzed for minerals, pesticides, organic pollutants, and trihalomethane precursors. As an adjunct to this study, DWR also started a special 30-month study of agricultural drainage in the Delta to determine its effects on trihalomethane precursors in Delta water and to evaluate alternative remedies.

Considerable attention has been focused on trihalomethane precursors in the Delta because trihalomethanes are potential carcinogens, and more stringent federal drinking water standards for trihalomethanes are expected. Recent evidence shows elevated levels of precursors in agricultural drainage from the peat soil of Delta islands. However, chemical contaminants and minerals that affect human health now remain within acceptable levels in Delta water supplies.

South Delta Rock Barriers. By a February 1969 joint agreement among DWR, USBR, the U.S. Fish and Wildlife Service, and the Department of Fish and Game, DWR installs a temporary rock barrier on Old River during years when fall flows are forecast to be low. This barrier aids survival of migrating salmon and steelhead by increasing fall flows in the lower San Joaquin River near Stockton. In 1988, the barrier was installed on September 22 and removed on December 2.

A rock barrier on Middle River, constructed under the October 1986 South Delta Agreement, was installed on May 28, 1988 (see Chapter V, "South Delta Water Management Program"). This barrier, which stores Middle River flows during high tide for use during low tide, keeps the Middle River water elevation high enough to allow agricultural water diversion.

Striped Bass Index. The striped bass index, which indicates the number of young bass (averaging one and one-half inches in length) in the Sacramento-San Joaquin Delta, was the lowest in 29 years during the summer of 1988. The 1988 index was 4.6. Average indexes for the years 1958-76 and 1977-87 were 66.6 and 24.8, respectively. A low 1988 index was expected as a result of the drought conditions that prevailed in 1987 and 1988. Fishery experts continue to

investigate possible causes for the decrease in the striped bass population.

Phytoplankton Productivity. During the summer of 1988, the Delta was monitored for phytoplankton productivity. Early detection of phytoplankton blooms was achieved through increasing sampling stations and sampling frequency over Decision 1485 requirements.

The phytoplankton productivity pattern in the Delta for 1988 was somewhat atypical. Usually, a series of phytoplankton blooms in the Delta begins in the spring and ends in the fall. However, in 1988 there was only a single, intense, late spring bloom of the filamentous diatom *Melosira granulata* throughout much of the central Delta. The bloom lasted from May 20 through June 6 and produced 30-50 micrograms/liter (ug/l) of chlorophyll "a." *M. granulata* blooms clog the filters of municipal water treatment plants.

This late spring bloom was followed by a brief, mid-July bloom of the centric diatom *Skeltonema potamos* in the Mildred Island area. Chlorophyll "a" levels were over 30 ug/l, with a maximum concentration of 36 ug/l. Fluorometer readings confirmed that this bloom was localized but had spread into adjacent channels, producing moderate levels of chlorophyll "a" (10-15 ug/l) in nearby Latham Slough and Empire Cut.

Lesser amounts of chlorophyll "a" from the bloom, measurable above background, were recorded in Middle River as far south as Santa Fe Cut and as far north as Columbia Cut. Although this *S. potamos* bloom did not reach the intensity or expand to the area of the late spring *M. granulata* Delta bloom, it did appear to support the hypothesis that flooded islands in the central Delta may serve as "seeding" areas for further Delta phytoplankton blooms. Subsequent Decision 1485 monitoring did not discover any additional late summer or fall phytoplankton blooms in the Delta, Suisun Bay, or San Pablo Bay. Chlorophyll "a" levels did not exceed background levels (5 ug/l or less). Continuous monitoring at the Banks Pumping Plant revealed only the late spring phytoplankton bloom entering the SWP water supply.

The 1986-87 and 1987-88 water years were both classified as critical and were characterized by low Delta outflow and summer salinity intrusion. Phytoplankton productivity was lower for these years than for normal years, but was higher than the phytoplankton productivity measured during the 1976-77 drought.

Vegetation Survey. A vegetation survey of the central and south Delta was conducted on November 9 and 10, 1988. This survey augmented the annual survey conducted by the Department of Food and Agriculture to monitor for any introduction of *Hydrilla verticillata* into the region. Hydrilla is a serious aquatic pest weed that could disrupt operation of the SWP and other water supply systems if it were accidentally introduced into the Delta. No hydrilla was found.

SWP Water Quality

The occurrence of a second consecutive critical water year reduced runoff and increased salinity intrusion into the Delta. Generally, water entering the California Aqueduct has higher levels of salinity during a critical year.

Table 2 summarizes 1988 water quality conditions monitored by DWR at key locations throughout the SWP. The table also lists the monthly average water quality objectives set forth in Article 19 of the water supply contracts. These water quality objectives are based on the expected construction of an efficient cross-Delta water transfer system.

During 1988, the monthly water quality objectives for total dissolved solids, chlorides, and percent sodium were exceeded at many locations for all or part of the year. The objective for total dissolved solids was exceeded at Banks Pumping Plant during November and was also exceeded from Banks Pumping Plant to check 21 of the California Aqueduct (near Kettleman City) in December. During the last five months of the year, the chloride objective was exceeded at all stations south of the Delta except Castaic Lake and Lake Perris. Percent sodium objectives were exceeded at all stations south of the Delta during much of the year.

DWR continued monthly monitoring of asbestos in SWP waters south of the Delta. Results indi-

Table 2. Water Quality at Selected SWP Stations in 1988

Stations	Annual	Concentrations (a					
		Total Dissolved Solids	Total Hardness	Chlorides	Sulfates	Percent Sodium	Boron
Thermalito Afterbay, Outlet to Feather River	Minimum	57	36	1	1	15	<0.1
	Average	63	41	1	2	18	0.0
	Maximum	77	46	1	4	20	<0.1
Sacramento-San Joaquin Delta, Banks Pumping Plant	Minimum	197	84	42	33	46	0.1
	Average	340	130	105	66	53	0.2
	Maximum	477	174	166	97	57	0.3
South Bay Aqueduct, Santa Clara Terminal Facility	Minimum	198	87	57	34	44	0.1
	Average	330	130	95	75	51	0.2
	Maximum	460	172	152	116	56	0.2
California Aqueduct, Entrance to O'Neill Forebay	Minimum	210	90	46	38	47	0.1
	Average	330	133	102	73	52	0.2
	Maximum	455	177	159	109	56	0.2
California Aqueduct, Outlet from O'Neill Forebay	Minimum	273	110	69	53	50	0.2
	Average	360	140	106	76	53	0.2
	Maximum	448	171	143	100	55	0.3
California Aqueduct, Near Kettleman City	Minimum	268	108	65	52	50	0.2
	Average	373	142	103	75	52	0.2
	Maximum	473	175	138	98	53	0.3
Coastal Branch, Near Devil's Den (b	Minimum	252	119	78	61	52	0.2
	Average	334	131	92	70	52	0.2
	Maximum	410	157	121	91	54	0.2
California Aqueduct, Near Buena Vista Pumping Plant	Minimum	310	123	82	64	47	0.1
	Average	377	147	109	84	53	0.2
	Maximum	426	165	128	98	54	0.3
Tehachapi Afterbay	Minimum	405	115	74	60	51	0.1
	Average	335	132	94	75	53	0.2
	Maximum	284	157	122	97	55	0.3
Pearblossom Pumping Plant	Minimum	301	114	78	63	53	0.2
	Average	327	123	89	72	54	0.2
	Maximum	392	143	115	92	56	0.3
Silverwood Lake, Outlet to San Bernardino Tunnel	Minimum	310	115	86	39	53	0.2
	Average	360	124	111	44	56	0.2
	Maximum	390	142	145	47	59	0.4
Lake Perris, Inlet from Santa Ana Pipeline	Minimum	221	91	66	35	46	0.1
	Average	265	101	69	40	53	0.3
	Maximum	319	130	74	44	56	0.6
Pyramid Lake, Outlet to Angeles Tunnel	Minimum	297	124	82	46	62	0.2
	Average	346	132	103	53	71	0.2
	Maximum	400	148	123	59	81	0.3
Castaic Lake, Outlet Tower	Minimum	298	122	77	57	48	0.2
	Average	351	142	90	66	50	0.3
	Maximum	414	157	104	75	52	0.3
Monthly Average Quality Objectives		440	180	110	110	50	0.6

a) Concentrations in mg/l except sodium. Values obtained or correlated from either continuous recording electrical conductivity equipment or monthly grab sample.

b) No data for November 1988.

cate that asbestos remained essentially at background levels during 1988.

Water Service

The following sections summarize 1988 water conveyance and deliveries via SWP facilities.

Total Water Conveyed

A total of 2,906,492 acre-feet of water was conveyed through SWP facilities in 1988. Table 3 summarizes total water conveyance and disposition for the 27 years of SWP operation. The following paragraphs discuss Table 3 in detail.

Annual Entitlements. The SWP water supply contracts, executed in the early 1960s, established the annual entitlement water amounts each long-term water contractor may request. These initial entitlement schedules, shown in Table A of the contracts, reflect projections of each contractor's future water needs at the time the contracts were signed. Some schedules have subsequently been revised through contract amendments. Table B-4 in Appendix B presents up-to-date information on annual entitlements for each contractor, as set forth in Table A of each SWP water supply contract.

Columns (1) through (7) of Table 3 summarize annual contractual entitlements for the various SWP service areas for the 1962-88 period.

Entitlement Water. Actual entitlement deliveries by year are shown in column (8) of Table 3. Annually, in September, each contractor furnishes an updated estimate of future requirements for SWP water. In the fall of 1987, 26 contractors requested a total of 2,625,328 acre-feet of entitlement water and 18,565 acre-feet of deferred entitlement (wet-weather) water for 1988 delivery. In December 1987, based upon the 1988 Risk Analysis criteria and the prevailing water supply forecast, DWR approved 2,255,000 acre-feet of 1988 entitlement water deliveries. Additionally, 72,708 acre-feet of 1987 carryover entitlement water was approved. No wet-weather water was approved. The initial approved schedule reflected a 371,685 acre-foot reduction for all 1988 agricultural entitlement requests. Based on an improved February 1 water supply forecast, DWR reinstated full agricultural delivery requests and gave the agricultural contractors the option of revising their requests. Entitlement requests for 1988 totaled 2,595,120 acre-feet after the agricultural contractors' revised requests were approved.

Entitlement water delivered in 1988 to 26 contractors totaled 2,385,122 acre-feet. This amount includes 67,581 acre-feet of 1987 carryover entitlement water as listed under column (2) of Table 4. Also included is 8,749 acre-feet of water recaptured from storage by San Bernardino Valley Municipal Water District (see discussion under "Demonstration Ground Water Program").

Mojave Water Agency did not initially request any entitlement water but took nine acre-feet at a temporary turnout for construction use. Nineteen contractors took less entitlement water than they initially requested, two contractors took exactly the entitlement water they initially requested, and two contractors took all of their initially requested Table A entitlements.

In 1988, the following contractors received more water than they originally requested:

Contractor	Requested Increase (acre-feet)
Castaic Lake Water Agency	504
Crestline-Lake Arrowhead Water Agency	6
Mojave Water Agency	9

Surplus and Unscheduled Water. Surplus water (column 9) is water in excess of that required to meet all entitlement demands, reservoir storage goals, water quality requirements, and other SWP requirements (such as recreation water) that can be delivered to contractors when SWP capability is available. Surplus water may be released from storage and scheduled in advance for use by contractors. First priority for surplus water is given to SWP contractors for agricultural use or for ground water replenishment. Second priority is given to SWP contractors for other uses, and lowest priority is given to non-SWP contractors. For 1988, no surplus water was available.

Unscheduled water (column 9) is also water in excess of SWP needs, but unlike surplus water, unscheduled water is not scheduled in advance.

Table 3. Historical Summary of Entitlements,

acre-feet

Calendar Year	Annual Entitlements Under Long-Term Water Supply Contracts (a							
	Feather River Area	North Bay Area	South Bay Area	San Joaquin Valley Area	Central Coastal Area	Southern California Area	Total	Entitlement Water
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]
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	11,538	0	0	0	11,538	11,538
1968	550	0	109,900	81,050	0	0	191,500	171,709
1969	620	0	98,700	168,075	0	0	267,395	193,020
1970	700	0	114,200	207,700	0	0	322,600	233,993
1971	890	0	116,200	258,500	0	0	375,590	357,340
1972	970	0	118,300	420,766	0	201,723	741,759	611,801
1973	1,100	0	120,400	392,352	0	472,400	986,252	694,388
1974	1,230	0	122,400	470,350	0	588,220	1,182,200	874,077
1975	1,610	0	124,500	556,509	0	704,250	1,386,869	1,223,990
1976	1,990	0	126,500	555,117	0	824,780	1,508,387	1,373,002
1977	2,420	0	128,600	594,100	0	942,201	1,667,321	574,155
1978	1,850	0	130,700	647,262	0	1,038,222	1,818,034	1,452,699
1979	2,130	0	132,700	715,385	0	1,177,873	2,028,088	1,659,896
1980	1,810	500	134,800	770,800	1,946	1,304,914	2,214,770	1,529,749
1981	1,940	650	137,000	830,700	2,813	1,419,365	2,392,468	1,909,562
1982	1,970	800	139,200	889,200	5,626	1,537,749	2,574,545	1,750,024
1983	2,000	950	141,400	880,648	8,439	1,668,557	2,701,994	1,184,869
1984	3,630	1,100	143,600	991,911	12,698	1,731,398	2,884,337	1,588,619
1985	3,760	1,250	145,800	1,031,749	21,138	1,852,149	3,055,846	1,995,453
1986	4,190	1,400	148,100	1,139,200	28,210	1,971,190	3,292,290	1,995,636 (e
1987	4,620	1,550	150,300	1,201,200	35,204	2,091,241	3,484,115	2,130,086 (g
1988	5,060	15,441	152,500	1,258,800	43,722	2,212,782	3,688,305	2,385,122 (h
Total	**45,040**	**23,641**	**2,747,338**	**14,061,374**	**159,796**	**21,739,014**	**38,776,203**	**25,900,728**

a) From Table B-4.

b) Values include deliveries of SWP water to short-term contractors (Mustang Water District, 1970-1972; Tracy Golf and Country Club, 1974, 1979, and 1980; Green Valley Water District, 1974, 1975, 1978, 1979, 1980, and 1985; Granite Construction Company, 1980).

c) Includes preconsolidation repayment water, 1977 emergency relief water, regulated delivery of local supply, non-SWP water delivered to Napa County FC&WCD through SWP facilities, 1987 Advance Storage Program water, CVP water conveyed (including D-1485 and recreation and wildlife water), 1978 and 1982 exchange water. See column (14) for SWP recreation water.

d) Includes net effect of (1) operational losses from SWP transportation facilities, (2) changes in reservoir storage south of the Delta, (3) storable local inflows to SWP reservoirs, (4) side inflow to the San Luis Canal, and (5) inflow into the California Aqueduct from the Kern River Intertie.

Deliveries, and Water Conveyed

acre-feet

Water Conveyed							
Deliveries							
Surplus and Unscheduled Water (b	Other Water (c	Subtotal	Initial Fill Water	Operational Losses and Storage Changes (d	Recreation Water	Total	Calendar Year
[9]	[10]	[11]	[12]	[13]	[14]	[15]	
0	18,289	18,289	9	272	0	18,570	1962
0	22,456	22,456	71	185	0	22,712	1963
0	32,507	32,507	171	152	0	32,830	1964
0	44,105	44,105	93	729	0	44,927	1965
0	67,928	67,928	0	1,746	0	69,674	1966
0	53,605	65,143	8,328	4,212	0	77,683	1967
121,534	14,777	308,020	498,926	117,906	0	924,852	1968
72,397	18,829	284,246	510,614	72,196	0	867,056	1969
133,024	38,080	405,097	23,947	2,435	0	431,479	1970
296,019	44,119	697,478	7,853	5,812	8	711,151	1971
423,964	66,638	1,102,403	100,274	53,062	6,489	1,262,228	1972
296,416	42,511	1,033,315	204,638	53,798	1,155	1,292,906	1973
417,676	46,224	1,337,977	237,554	10,657	2,118	1,588,306	1974
622,902	63,793	1,910,685	103,352	- 94,606	3,377	1,922,808	1975
580,110	115,217	2,068,329	61,122	- 681,025	1,745	1,450,171	1976
0	389,065	963,220	0	- 131,151	1,111	833,180	1977
16,914	121,225	1,590,838	64,443	717,370	1,691	2,374,342	1978
648,389	187,630	2,495,915	12,302	- 83,430	1,766	2,426,553	1979
404,557	46,459	1,980,765	0	- 26,606	2,131	1,956,290	1980
908,428	279,161	3,097,151	0	- 802,263	4,688	2,299,576	1981
215,873	154,882 (i	2,120,779	0	480,752	4,646	2,606,177	1982
13,019	181,453	1,379,341	0	- 90,997	7,849	1,296,193	1983
262,917	381,024 (j	2,232,560	0	- 140,182	7,040	2,099,418	1984
307,672	404,842	2,707,967	0	92,885	4,062	2,804,914	1985
36,620 (f	193,606	2,225,862	0	284,380	3,865	2,514,107	1986
114,907	377,592	2,622,585	0	- 390,413	7,672	2,239,844	1987
0	516,481	2,901,603	0	- 92,850	4,889	2,813,642	1988
5,893,338	**3,922,498**	**35,716,564**	**1,833,697**	**- 634,974**	**66,302**	**36,981,589**	**Total**

e) Includes 37,170 acre-feet of entitlement water carried over from 1985.

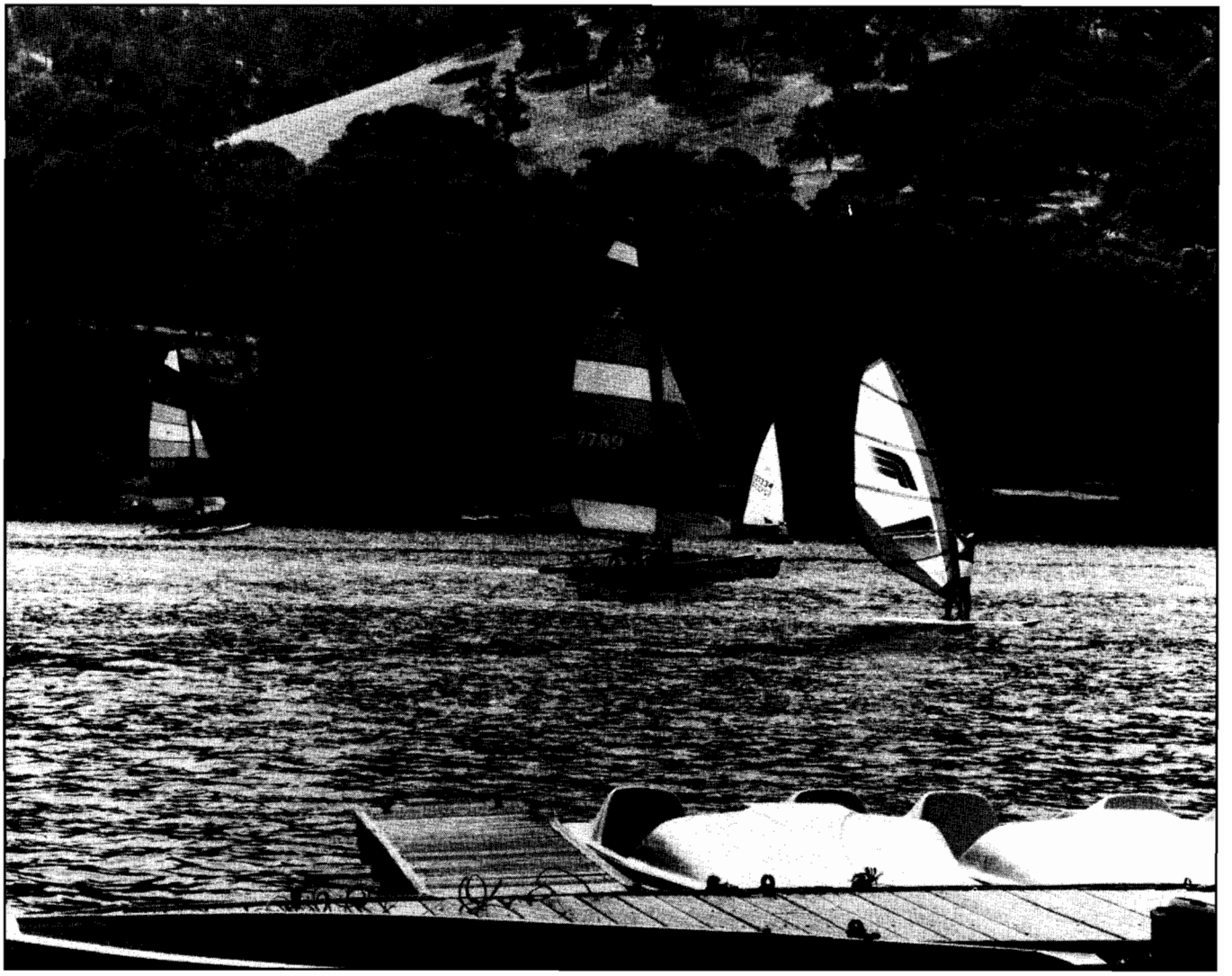
f) Includes 12,270 acre-feet of surplus water carried over from 1985.

g) Includes 639 acre-feet of 1988 entitlement water delivered during 1987, and 16,171 acre-feet of entitlement water recaptured from ground water storage.

h) Includes 67,581 acre-feet of 1987 entitlement water delivered in 1988, and 8,749 acre-feet recaptured from ground water storage.

i) Corrected from Bulletin 132-88.

j) Revised and corrected from Bulletin 132-88 to reflect 559 acre-feet of 1982 exchange water delivered to Devil's Den WD from Lake Oroville storage.



A total of 1,421 acre-feet of water was conveyed in 1988 for SWP public recreation facilities such as those at Lake Del Valle.

Unscheduled water is water that is sometimes available in the Delta, rather than water released from SWP storage. Its availability can be as brief as one day or as long as two weeks. The unscheduled water program was initiated in January 1980 as "extra surplus water." First priority for unscheduled water is given to ground water replenishment or to agricultural use in lieu of ground water pumping. Second priority is given to pre-irrigation. For 1988, no unscheduled water was available.

Other Water. Column (10) of Table 3 summarizes deliveries of several other types of water, as defined in the accompanying footnote. These deliveries are shown in more detail (for 1988) in Table 5 and are described in this chapter under the heading "Total 1988 Water Deliveries."

Initial Fill Water. The quantities shown in column (12) of Table 3 are the amounts used for initially filling aqueducts and reservoirs south of the Delta to maximum operational 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 operational capacity.

Operational Losses and Storage Changes. Column (13) of Table 3 shows the annual quan-

tities of water conveyed to replenish losses through evaporation and seepage from SWP aqueducts and reservoirs south of the Delta, combined with corrections for changes in reservoir storage and for inflow from local drainage areas (including inflows from the Kern River Intertie and the First Los Angeles Aqueduct). Years with negative values are those in which storage withdrawals from reservoirs south of the Delta exceed storage additions.

Recreation Water. Column (14) of Table 3 summarizes historical deliveries of recreation water. Recreation water is used both at SWP recreation facilities and for fish and wildlife mitigation and enhancement. In 1988, a total of 4,889 acre-feet was conveyed under this category, as follows:

- 1,421 acre-feet for public recreation facilities at Lake Del Valle, San Luis Reservoir, O'Neill Forebay, Silverwood Lake, Pyramid Lake, Castaic Lake, and Lake Perris;
- 2,028 acre-feet released for maintaining a trout fishery in Piru Creek, in accordance with a condition of the Federal Energy Regulatory Commission license for power development at Pyramid Lake;
- 1,060 acre-feet for replacing water losses at Castaic Lagoon, an impoundment downstream from Castaic Lake devoted entirely to recreation;
- 380 acre-feet for about 770 acres of wildlife mitigation lands near O'Neill Forebay and for the Pilibos Wildlife Area (40 miles south of Los Banos).

Water Deliveries and Credits to Long Term Contractors

Table 4 summarizes 1988 water deliveries to each SWP long-term contractor that received water during the year. The table also shows future entitlement delivery and reduction credits, as explained in the following sections.

Water Deliveries. Columns (1) through (3) display actual entitlement water deliveries for the various SWP long-term contractors and service areas. Column (4) lists non-SWP water deliveries to North Bay and South Bay service areas.

Future Entitlement Credits--Delivery Credits

- **Make-Up Water.** When the SWP is unable to deliver the requested entitlement water in any year, long-term contractors are afforded relief under Articles 12(d) and 14(b) of the water supply contract. Contractors may elect to receive the undelivered entitlement water at other times during the year, or in succeeding years, to the extent that the water and delivery capability are available. Credits for undelivered entitlement under this category are shown in column (6) of Table 4. No make-up water was delivered in 1988.

- **Wet-Weather Water.** Under water supply contract Article 7 (South Bay contractors) or Article 45 (San Joaquin Valley contractors), SWP contractors can acquire credits for future deliveries when above-normal local water supplies reduce the need for SWP water. Delivery of surplus water or unscheduled water in a subsequent year reduces the balance of credit. At the time of delivery, the sum of current annual entitlement plus wet-weather water cannot exceed a contractor's maximum annual entitlement. The amounts shown in column (7) of Table 4 are credits acquired in prior years. No additional credits were acquired under Article 7 or Article 45 during 1988.

- **1988 Carryover Water.** During the spring of 1988, insufficient rainfall induced fears of a continuing drought. Precipitation remained below normal during the fall of 1988, prompting DWR to impose deficiencies on the 1989 agricultural entitlement requests.

  With Water Service Contractors Council Memorandum Nos. 1910 and 1920, dated June 30 and November 28, 1988, respectively, DWR informed the contractors of its willingness to consider requests to carry over 1988 entitlement water for two purposes: (1) for agricultural contractors to use for pre-irrigation during January, February, and March 1989, and (2) for all contractors to replace water that could not be delivered during the fall of 1988 because of outages within the

Table 4. Summary of 1988 Deliveries

acre-feet

Long-Term Water Supply Contractor	Water Deliveries in 1988				
	Entitlement Water Deliveries			Other Water Deliveries (a	Total Deliveries
	1988 Entitlement	1987 Entitlement Delivered During 1988	Total Entitlement		
	[1]	[2]	[3]	[4]	[5]
UPPER FEATHER RIVER AREA					
City of Yuba City	303		303		303
County of Butte	385		385		385
Plumas County FC&WCD	523		523		523
NORTH BAY AREA					
Solano County FC&WCD	9,726		9,726	3,726 (e	13,452
Napa County FC&WCD	5,392		5,392	1,646 (f	7,038
SOUTH BAY AREA					
Alameda County FC&WCD, Zone 7	25,830		25,830	1,422 (g	27,252
Alameda County WD	33,464		33,464		33,464
Santa Clara Valley WD	87,961		87,961		87,961
SAN JOAQUIN VALLEY AREA					
County of Kings	4,000		4,000		4,000
Devil's Den WD	10,655	879	11,534		11,534
Dudley Ridge WD	43,678	4,316	47,994		47,994
Empire West Side ID	3,000	475	3,475		3,475
Kern County WA	955,925	53,595	1,009,520		1,009,520
Oak Flat WD	4,412		4,412		4,412
Tulare Lake Basin WSD	87,550 (c	8,316	95,866		95,866
SOUTHERN CALIFORNIA AREA					
Antelope Valley-East Kern WA	34,079		34,079		34,079
Castaic Lake WA	18,904		18,904		18,904
Coachella Valley WD	20,652		20,652		20,652
Crestline-Lake Arrowhead WA	2,006		2,006		2,006
Desert WA	34,000		34,000		34,000
Littlerock Creek ID	419		419		419
Mojave WA	9		9		9
Palmdale WD	1,770		1,770		1,770
San Bernardino Valley MWD	21,386 (d		21,386		21,386
San Gabriel Valley WD	8,948		8,948		8,948
The Metropolitan Water District of Southern California	902,564		902,564		902,564
TOTAL	**2,317,541**	**67,581**	**2,385,122**	**6,794**	**2,391,916**

a) Delivery of water rights water through SWP facilities, not shown in previous issues of Bulletin 132.
b) Credits for all contractors are under Article 12(d) of their water supply contract unless otherwise stated.
c) Includes 300 acre-feet transferred to Empire West Side ID and 1,550 acre-feet transferred to Westlands WD.
d) Includes 8,749 acre-feet of entitlement water recaptured from ground water storage.

and Credits to Long-Term Contractors

acre-feet

Future Entitlement Credits as of January 1, 1989				Future Entitlement Reduction Credit Per Articles 7 or 45	Long-Term Water Supply Contractor
Make-Up Water (b Per Articles 12(d) or 14(b)	Wet-Weather Water Per Articles 7 or 45	1988 Carryover for Potential Delivery in 1989	Total Delivery Credit		
[6]	[7]	[8]	[9]	[10]	
					UPPER FEATHER RIVER AREA
					City of Yuba City
					County of Butte
					Plumas County FC&WCD
					NORTH BAY AREA
					Solano County FC&WCD
					Napa County FC&WCD
					SOUTH BAY AREA
2,438	111,580		114,018		Alameda County FC&WCD, Zone 7
2,220	172,088	725	175,033		Alameda County WD
					Santa Clara Valley WD
					SAN JOAQUIN VALLEY AREA
					County of Kings
		2,045	2,045		Devil's Den WD
		9,822	9,822		Dudley Ridge WD
					Empire West Side ID
		118,675	118,675		Kern County WA
		563	563	2,466	Oak Flat WD
		18,050	18,050		Tulare Lake Basin WSD
					SOUTHERN CALIFORNIA AREA
14,841 (h			14,841		Antelope Valley-East Kern WA
500			500		Castaic Lake WA
					Coachella Valley WD
151			151		Crestline-Lake Arrowhead WA
					Desert WA
438			438		Littlerock Creek ID
20			20		Mojave WA
					Palmdale WD
4,269			4,269		San Bernardino Valley MWD
1,000			1,000		San Gabriel Valley WD
					The Metropolitan Water District
102,239			102,239		of Southern California
128,116	**283,668**	**149,880**	**561,664**	**2,466**	**TOTAL**

e) Vallejo permit water right water delivered through SWP facilities.

f) Non-SWP water delivered through interim SWP facilities prior to completion of the North Bay Aqueduct.

g) Local water right water delivered through SWP facilities.

h) Antelope Valley-East Kern Water Agency future entitlement delivery credits total 4,787 acre-feet under water supply contract Article 14(b), and 10,054 acre-feet under Article 12(d).

contractors'distribution systems. The memoranda also informed contractors that the requests for carryover water must not disadvantage other SWP contractors.

To ensure that delivery of carryover water would not affect allocations of 1989 entitlement water, DWR considered the amount of 1988 water remaining to be delivered at any time in its evaluation of deliveries under the 1989 Risk Analysis. Any 1988 entitlement water not delivered by March 31, 1989, would be foregone by the individual contractor and become part of the total SWP supply. The carryover contractor would have to agree to pay for any identified cost increase in either 1988 or 1989 that, if not paid by the carryover contractor, would otherwise result in increased charges to other contractors.

Total 1988 entitlement water carried over for delivery in 1989 was 149,880 acre-feet, as shown in column (8) of Table 4.

Future Entitlement Credits--Reduction Credits

- **Wet-Weather Water.** The wet-weather contract provisions also allow a contractor to increase entitlement water deliveries in years of below-average local water supply and to decrease entitlement deliveries by an equal amount in later years. Reduction credits for wet-weather water are shown in column (10) of Table 4.

Total 1988 Water Deliveries

During 1988, the SWP provided water service to 43 agencies. These included 26 long-term water contractors and 17 other agencies. Only five contractors took their full contract entitlement. Monthly deliveries to each of the 43 agencies, shown in Table 5, are summarized as follows:

- 2,385,122 acre-feet of 1988 entitlement water delivered to 26 long-term contractors, including 8,749 acre-feet of 1988 entitlement water recaptured from ground water basins under San Bernardino Valley Municipal Water District's 1978 Ground Water Demonstration Program;
- 3,726 acre-feet of non-SWP water conveyed to the City of Vallejo's delivery structure under the city's water right claim.
- 10,827 acre-feet of regulated local supply conveyed to one long-term contractor and two other agencies;
- 1,646 acre-feet of non-SWP water delivered to Napa County Flood Control and Water Conservation District;
- 4,889 and 669 acre-feet of SWP and CVP water, respectively, conveyed for recreation and fish and wildlife enhancement;
- 21,813 acre-feet of CVP water transported to six annual USBR contractors in the San Joaquin Valley;
- 126,818 acre-feet of CVP water transported to eight USBR contractors via Kern County Water Agency's Cross Valley Canal, including 3,000 acre-feet reassigned to the Westlands Water District;
- 136,265 acre-feet of CVP water conveyed for the U.S. Fish and Wildlife Service as follows: 128,065 acre-feet to improve environmental conditions for salmon in the Sacramento and Stanislaus rivers, and 8,200 acre-feet for Kern National Wildlife Refuge;
- 21,127 acre-feet of CVP water conveyed to benefit water users in the South Delta Water Agency.
- 193,590 acre-feet of CVP water conveyed to O'Neill Forebay to replace CVP pumping curtailed during May and June in accordance with SWRCB Decision 1485.

Table 5 shows 1988 monthly deliveries of each type of water along with summaries of Table A entitlements and cumulative entitlements not delivered. The types of water service not described in preceding sections are covered in the following paragraphs.

Regulated Delivery of Local Supply. SWP facilities are also used to transport non-SWP water for long-term SWP contractors and other agencies under various agreements for local water

rights. Some of this water simply passes through SWP transportation facilities and some is stored in SWP reservoirs for later release. In 1988, a total of 14,553 acre-feet in this category was delivered to two long-term contractors and two other agencies.

Non-SWP Water to Napa County Flood Control and Water Conservation District. Before completion of Phase II of the North Bay Aqueduct, NCFC&WCD received interim water from the USBR's Solano Project at Reach 3B of the North Bay Aqueduct. From there the water was pumped through interim pumping facilities near Cordelia and transported through SWP facilities to the terminus. In May 1988, NCFC&WCD began receiving its SWP entitlement water through the completed North Bay Aqueduct. From January through May 1988, NCFC&WCD received 1,646 acre-feet of Solano Project water.

Preconsolidation Repayment Water. Because of limited SWP water supply, no preconsolidation repayment water was delivered in 1988.

Demonstration Ground Water Program. In 1978, San Bernardino Valley Municipal Water District and DWR established a demonstration program for storing SWP water in ground water basins within the district. The basic agreement, dated May 12, 1978, was augmented by the operating agreement dated June 2, 1978, and amended by the letter agreement dated September 14, 1982. In 1988, DWR requested the district to recapture the remaining 8,749 acre-feet of the stored water, completing the Demonstration Ground Water Program.

Conveyance and Transportation of CVP Water. During 1988, DWR had several arrangements for conveying CVP water through SWP facilities. In each arrangement, the USBR provided the electrical energy required for moving the water through the Banks Pumping Plant and, if needed, the Dos Amigos and Las Perillas pumping plants.

Under contracts executed in 1975 and 1976, DWR conveys CVP water through SWP facilities to the turnout for Kern County Water Agency's Cross Valley Canal, west of Bakersfield. The Cross Valley Canal contracts, which extend to 1995, provide that conveyance of CVP water shall not interfere with, adversely affect the quality of, or add to the delivery cost of SWP water to SWP contractors.

- Hills Valley Irrigation District and Tri-Valley Water District executed amendments to their three-party Cross Valley Canal contracts in 1987. These amendments provided for the use of SWP facilities from the Delta to Reach 12E, where the turnout for the Cross Valley Canal is located, and the use of USBR storage in San Luis Reservoir during May, June, and July. The original contracts required the use of SWP facilities from the Delta to O'Neill Forebay and from Reach 8C to Reach 12E. The original contract provided wheeling through the USBR share of the joint-use facilities but did not provide for the use of any San Luis Reservoir storage during May, June, and July. During 1988, 3,034 acre-feet of water was wheeled to these two contractors, of which 2,062 acre-feet was accounted for as deliveries from the USBR's share of San Luis Reservoir.

  Under separate agreements, 46,131 acre-feet of water was delivered during May, June, and July from DWR's share of storage in San Luis Reservoir to the remaining participants in the three-party Cross Valley Canal contracts. The contractors were charged for use of San Luis Reservoir and for the cost of electrical energy to replace an equal amount of water, furnished by the USBR, into DWR's share of storage.

  Water conveyed during 1988 under allocations to the participants of the three-party Cross Valley Canal contracts were 3,000 acre-feet to Reach 8D (Westlands Water District) and 123,818 acre-feet to the Cross Valley Canal in Reach 12E, for a total of 126,818 acre-feet.

- Under an agreement executed December 7, 1988, 3,000 acre-feet of CVP water originally assigned to Kern-Tulare Water District was reassigned to the Westlands Water District. This water was delivered to Reach 5 of the California Aqueduct.

- Under the annual conveyance agreement with the USBR, DWR agreed to wheel up to 49,840 acre-feet of CVP water to nine USBR

Table 5. Monthly Water

acre-feet

Line No.	Contracting Agency and Type of Service	Month						
		JAN	FEB	MAR	APR	MAY	JUN	JUL
	FEATHER RIVER AREA							
	City of Yuba City:							
1.	Entitlement Water	0	0	0	0	0	0	186
	County of Butte:							
2.	Entitlement Water	41	0	161	52	16	61	16
	Last Chance Creek Water District:							
3.	Regulated Delivery of Local Supply	0	0	12	75	3,044	1,819	1,029
	Plumas County Flood Control and Water Conservation District:							
4.	Entitlement Water	13	13	23	39	53	65	103
	Thermalito Irrigation District:							
5.	Regulated Delivery of Local Supply	100	92	152	165	204	208	458
6.	AREA TOTAL	154	105	348	331	3,317	2,153	1,792
	NORTH BAY AREA							
	Napa County Flood Control and Water Conservation District:							
7.	Entitlement Water	0	0	0	0	166	654	819
8.	Non-SWP Water via SWP Facilities	723	676	120	120	7	0	0
9.	Agency Total	723	676	120	120	173	654	819
	Solano County Flood Control and Water Conservation District:							
10.	Entitlement Water	0	0	0	0	0	942	1,459
11.	Vallejo Permit Water	0	0	0	0	0	0	1,376
12.	Agency Total	0	0	0	0	0	942	2,835
13.	AREA TOTAL	723	676	120	120	173	1,596	3,654
	SOUTH BAY AREA							
	Alameda County Flood Control and Water Conservation District, Zone 7:							
14.	Entitlement Water	695	1,255	1,642	1,840	2,299	2,776	3,336
15.	Regulated Delivery of Local Supply	774	228	175	40	0	0	0
16.	Agency Total	1,469	1,483	1,817	1,880	2,299	2,776	3,336
	Alameda County Water District:							
17.	Entitlement Water	1,543	1,779	3,224	1,630	3,467	3,745	3,993
	Santa Clara Valley Water District:							
18.	Entitlement Water	5,119	3,803	5,907	6,387	7,377	8,292	8,869
19.	Recreation/Fish and Wildlife Water	8	3	5	8	14	17	22
20.	AREA TOTAL	8,139	7,068	10,953	9,905	13,157	14,830	16,220
	SAN JOAQUIN VALLEY AREA							
	SWP Water							
	County of Kings:							
21.	Entitlement Water	400	400	400	400	0	400	400
	Devil's Den Water District:							
22.	Entitlement Water	0	542	1,468	605	521	1,813	2,129
23.	Carryover Entitlement Water	0	879	0	0	0	0	0
24.	Agency Total	0	1,421	1,468	605	521	1,813	2,129
	Dudley Ridge Water District:							
25.	Entitlement Water	0	0	2,674	2,335	4,525	8,317	11,278
26.	Carryover Entitlement Water	1,099	3,217	0	0	0	0	0
27.	Agency Total	1,099	3,217	2,674	2,335	4,525	8,317	11,278
	Empire West Side Irrigation District:							
28.	Entitlement Water	0	1,782	171	647	64	189	0
29.	Carryover Entitlement Water	375	100	0	0	0	0	0
30.	Ent. Water Transferred From TLBSD	0	0	0	0	0	0	0
31.	Agency Total (excludes transferred water)	375	1,882	171	647	64	189	0

Deliveries in 1988

acre-feet

Month					1988 Total	1988 Contract	1988 Entitlement Not	Net Cumulative Entitlement Not Delivered Through (a		Line
AUG	SEP	OCT	NOV	DEC	Deliveries	Entitlement	Delivered	1987	1988	No.
117	0	0	0	0	303	2,900	2,597	7,314	9,911	1.
0	0	0	17	21	385	1,200	815	14,371	15,186	2.
769	194	46	0	0	6,988					3.
95	66	32	10	11	523	960	437	6,205	6,642	4.
320	293	230	104	91	2,417					5.
1,301	553	308	131	123	10,616	5,060	3,849	27,890	31,739	6.
784	726	761	686	796	5,392	5,745	353	0	353	7.
0	0	0	0	0	1,646					8.
784	726	761	686	796	7,038					9.
1,389	1,993	1,788	1,327	828	9,726	9,726	0	2,350	2,350	10.
1,041	776	477	34	22	3,726					11.
2,430	2,769	2,265	1,361	850	13,452					12.
3,214	3,495	3,026	2,047	1,646	20,490	15,471	353	2,350	2,703	13.
3,446	3,144	2,598	1,520	1,279	25,830	30,000	4,170	156,446	160,616	14.
0	0	0	0	205	1,422					15.
3,446	3,144	2,598	1,520	1,484	27,252					16.
2,628	3,757	2,432	2,613	2,653	33,464	34,500	1,036	260,774	261,810	17.
8,814	9,379	8,691	7,350	7,973	87,961	88,000	39	40,782	40,821	18.
22	21	14	6	2	142					19.
14,910	16,301	13,735	11,489	12,112	148,819	152,500	5,245	458,002	463,247	20.
400	400	400	0	400	4,000	4,000	0	0	0	21.
2,537	469	0	359	212	10,655	12,700	2,045	1,007	2,173	22.
0	0	0	0	0	879					23.
2,537	469	0	359	212	11,534					24.
9,300	2,620	2,118	142	369	43,678	53,500	9,822	5,112	10,618	25.
0	0	0	0	0	4,316					26.
9,300	2,620	2,118	142	369	47,994					27.
143	4	0	0	0	3,000	3,000	0	12,498	12,023	28.
0	0	0	0	0	475					29.
0	68	232	0	0	300					30.
143	4	0	0	0	3,475					31.

a) This Column includes entitlement not delivered, deferred or otherwise, whether or not the water contractor has received any remuneration.

Table 5. Monthly Water

acre-feet

Line No.	Contracting Agency and Type of Service	Month						
		JAN	FEB	MAR	APR	MAY	JUN	JUL
	SAN JOAQUIN VALLEY AREA (con't.)							
	Kern County Water Agency:							
32.	Entitlement Water	2,536	43,194	78,544	51,180	72,227	172,028	216,729
33.	Carryover Entitlement Water	9,446	44,149	0	0	0	0	0
34.	Agency Total	11,982	87,343	78,544	51,180	72,227	172,028	216,729
	Oak Flat Water District:							
35.	Entitlement Water	1	301	773	290	436	837	1,066
	Tulare Lake Basin Water Storage District:							
36.	Entitlement Water	0	5,211	2,536	2,892	1,786	18,116	21,114
37.	Ent. Water Transferred to Empire and Westlands	0	0	0	0	0	0	0
38.	Carryover Entitlement Water	6,040	2,276	0	0	0	0	0
39.	Agency Total	6,040	7,487	2,536	2,892	1,786	18,116	21,114
40.	Recreation/Fish and Wildlife Water	10	51	32	17	46	18	57
41.	AREA SUBTOTAL (SWP Water)	19,907	102,102	86,598	58,366	79,605	201,718	252,773
	SAN JOAQUIN VALLEY AREA							
	Conveying CVP Water							
	Annual Contract:							
42.	Green Valley Water District	0	59	0	0	0	86	226
43.	Kings County Water District	7,711	7,830	0	0	0	0	0
44.	Lakeside Irrigation Water District	0	0	0	0	0	0	0
45.	Musco Olive Products, Inc.	3	0	2	2	1	2	5
46.	Tracy Golf and Country Club	4	29	32	33	76	94	101
47.	Cawelo Water District	0	0	0	0	0	0	0
48.	SUBTOTAL	7,718	7,918	34	35	77	182	332
	Cross Valley Canal Contracts:							
49.	Ducor Irrigation District	0	0	0	0	0	0	0
50.	Fresno County	0	0	282	367	0	860	518
51.	Lower Tule River	0	0	2,931	3,805	3,676	5,240	5,368
52.	Pixley Irrigation District	0	0	2,931	3,805	3,676	5,240	5,368
53.	Rag Gulch Water District	0	596	1,254	0	0	0	1,057
54.	Tulare County	0	0	500	649	599	922	917
55.	Kern-Tulare Water District	0	1,962	4,320	3,389	3,276	5,317	4,097
	Kern-Tulare Water District:							
56.	Transferred to Westlands Water District	0	0	0	0	0	0	0
57.	Hills Valley Irrigation District	0	0	315	409	377	582	578
58.	Tri-Valley Water District	0	0	108	140	129	198	198
59.	SUBTOTAL	0	2,558	12,641	12,564	11,733	18,359	18,101
60.	Westlands Water District	0	0	0	0	0	0	0
61.	Decision 1485	0	0	8,553	15,516	0	0	95,606
62.	U. S. Fish and Wildlife Service	0	0	0	0	0	0	0
63.	South Delta Water Agency	0	0	0	0	0	0	0
64.	Recreation/Fish and Wildlife Water	325	41	26	16	37	14	51
65.	AREA SUBTOTAL (CVP Water)*	8,043	10,517	21,254	28,131	11,847	18,555	114,090
66.	AREA TOTAL*	27,950	112,619	107,852	86,497	91,452	220,273	366,863
	* Excludes Westlands Transferred Water							
	CENTRAL COASTAL AREA							
	San Luis Obispo County Flood Control and Water Conservation District:							
67.	Entitlement Water	0	0	0	0	0	0	0
	Santa Barbara County Flood Control and Water Conservation District:							
68.	Entitlement Water	0	0	0	0	0	0	0
69.	AREA TOTAL	0	0	0	0	0	0	0

Deliveries in 1988 (contd.)

acre-feet

Month					1988 Total	1988 Contract	1988 Entitlement Not	Net Cumulative Entitlement Not Delivered Through (a		Line
AUG	SEP	OCT	NOV	DEC	Deliveries	Entitlement	Delivered	1987	1988	No.
175,677	58,738	43,784	16,148	25,140	955,925	1,074,600	118,675	380,851	445,931	32.
0	0	0	0	0	53,595					33.
175,677	58,738	43,784	16,148	25,140	1,009,520					34.
459	191	54	1	3	4,412	5,400	988 (b	215	1,203	35.
14,979	4,482	465	11,704	2,415	85,700	105,600	18,050	88,978	98,712	36.
0	68	232	0	1,550	1,850					37.
0	0	0	0	0	8,316					38.
14,979	4,550	697	11,704	3,965	95,866					39.
28	95	7	2	24	387					40.
203,523	67,067	47,060	28,356	30,113	1,177,188	1,258,800	149,580	488,661	570,660	41.
154	14	0	0	0	539					42.
0	0	0	394	1,915	17,850					43.
0	0	0	395	1,915	2,310					44.
0	2	7	4	2	30					45.
95	68	41	13	4	590					46.
0	0	300	194	0	494					47.
249	84	348	1,000	3,836	21,813					48.
0	0	0	0	0	0					49.
444	281	182	66	0	3,000					50.
4,606	2,909	1,862	705	0	31,102					51.
4,606	2,909	1,862	705	0	31,102					52.
1,970	5,928	2,495	0	0	13,300					53.
786	496	290	121	0	5,280					54.
10,548	2,061	2,030	0	0	37,000					55.
0	0	0	3,000	0	3,000					56.
0	0	0	0	0	2,261					57.
0	0	0	0	0	773					58.
22,960	14,584	8,721	4,597	0	126,818					59.
0	0	0	3,000	1,550	4,550					60.
73,915	0	0	0	0	193,590					61.
0	0	14,903	67,516	53,846	136,265					62.
17,251	0	3,876	0	0	21,127					63.
25	107	5	2	20	669					64.
97,149	14,775	23,977	73,115	57,702	500,282					65.
300,672	81,842	71,037	101,471	87,815	1,677,470	1,258,800	149,580	488,661	570,660	66.
0	0	0	0	0	0	15,500	15,500	41,500	57,000	67.
0	0	0	0	0	0	28,222	28,222	74,574	102,796	68.
0	0	0	0	0	0	43,722	43,722	116,074	159,796	69.

b) 425 acre-feet of 1988 entitlement was delivered in 1987.

Table 5. Monthly Water

acre-feet

Line No.	Contracting Agency and Type of Service	Month						
		JAN	FEB	MAR	APR	MAY	JUN	JUL
	SOUTHERN CALIFORNIA AREA							
	Antelope Valley-East Kern Water Agency:							
70.	Entitlement Water	596	440	1,407	2,127	2,812	3,664	5,688
	Castaic Lake Water Agency:							
71.	Entitlement Water	1,128	1,375	1,700	1,693	1,797	1,804	2,070
	Coachella Valley Water District:							
72.	Entitlement Water	1,721	1,721	1,721	1,721	1,721	1,721	1,721
	Crestline-Lake Arrowhead Water Agency:							
73.	Entitlement Water	208	122	122	125	141	167	229
	Desert Water Agency:							
74.	Entitlement Water	2,833	2,833	2,833	2,833	2,833	2,833	2,833
	Littlerock Creek Irrigation District:							
75.	Entitlement Water	0	0	0	0	0	0	135
	Mojave Water Agency:							
76.	Entitlement Water	9	0	0	0	0	0	0
	Palmdale Water District:							
77.	Entitlement Water	27	12	23	30	48	40	338
	San Bernardino Valley Municipal Water District:							
78.	Entitlement Water	366	4	654	949	216	566	1,485
79.	1978 Ground Water Demonstration	1,000	1,400	1,000	1,000	1,000	1,000	1,000
80.	Agency Total	1,366	1,404	1,654	1,949	1,216	1,566	2,485
	San Gabriel Valley Municipal Water District:							
81.	Entitlement Water	0	0	0	1,560	1,050	1,396	961
	San Gorgonio Pass Water Agency:							
82.	Entitlement Water	0	0	0	0	0	0	0
	The Metropolitan Water District of Southern California:							
83.	Entitlement Water	27,424	32,223	87,854	88,086	103,162	98,326	103,708
	Ventura County Flood Control District:							
84.	Entitlement Water	0	0	0	0	0	0	0
85.	Recreation/Fish and Wildlife Water	16	72	124	120	191	199	526
86.	AREA TOTAL	35,328	40,202	97,438	100,244	114,971	111,716	120,694
	ALL AGENCIES							
87.	Entitlement Water	44,660	97,010	193,837	167,421	206,717	328,752	390,665
88.	Other Entitlement Water:							
89.	1978 Ground Water Demonstration	1,000	1,400	1,000	1,000	1,000	1,000	1,000
90.	Total 1988 Entitlement Water	45,660	98,410	194,837	168,421	207,717	329,752	391,665
91.	Total 1987 Carryover Entitlement Water	16,960	50,621	0	0	0	0	0
92.	SUBTOTAL (Entitlement Water Delivered)	62,620	149,031	194,837	168,421	207,717	329,752	391,665
93.	Recreation/Fish and Wildlife Water	34	126	161	145	251	234	605
94.	SUBTOTAL (SWP WATER)	62,654	149,157	194,998	168,566	207,968	329,986	392,270
95.	Vallejo Permit Water	0	0	0	0	0	0	1,376
96.	Regulated Delivery of Local Supply	874	320	339	280	3,248	2,027	1,487
97.	Non-SWP Water to Napa County FC&WCD	723	676	120	120	7	0	0
98.	Conveying CVP Water--Annual Contract	7,718	7,918	34	35	77	182	332
99.	Conveying CVP Water--U.S. Fish and Wildlife	0	0	0	0	0	0	0
100.	Conveying CVP Water--Cross Valley Canal	0	2,558	12,641	12,564	11,733	18,359	18,101
101.	Conveying CVP Water--Decision 1485	0	0	8,553	15,516	0	0	95,606
102.	Conveying CVP Water--South Delta Water Agency	0	0	0	0	0	0	0
103.	Conveying CVP Water--Recreation/Fish and Wildlife Water	325	41	26	16	37	14	51
104.	SUBTOTAL (OTHER WATER)	9,640	11,513	21,713	28,531	15,102	20,582	116,953
105.	**TOTAL WATER**	**72,294**	**160,670**	**216,711**	**197,097**	**223,070**	**350,568**	**509,223**

Deliveries in 1988 (contd.)

acre-feet

Month					1988 Total	1988 Contract	1988 Entitlement Not	Net Cumulative Entitlement Not Delivered Through (a		Line
AUG	SEP	OCT	NOV	DEC	Deliveries	Entitlement	Delivered	1987	1988	No.
5,602	4,833	3,025	2,471	1,414	34,079	46,000	11,921 (c	273,888	285,809	70.
1,795	1,587	1,233	1,164	1,558	18,904	35,300	16,396	192,093	208,489	71.
1,721	1,721	1,721	1,721	1,721	20,652	20,652	0	5,200	5,200	72.
226	187	190	133	156	2,006	5,220	3,214	26,363	29,577	73.
2,833	2,833	2,833	2,833	2,837	34,000	34,000	0	8,000	8,000	74.
0	86	142	56	0	419	2,070	1,651	11,981	13,632	75.
0	0	0	0	0	9	46,000	45,991	356,077	402,068	76.
656	225	65	137	169	1,770	16,040	14,270	145,187	159,457	77.
1,919	2,141	2,028	1,313	996	12,637	93,000	71,614	810,785	882,399	78.
700	649	0	0	0	8,749					79.
2,619	2,790	2,028	1,313	996	21,386					80.
953	538	1,086	1,404	0	8,948	26,000	17,052	183,127	200,179	81.
0	0	0	0	0	0	15,100	15,100	82,700	97,800	82.
91,033	104,786	104,917	50,063	10,982	902,564	1,860,400	957,836	7,829,692	8,787,528	83.
0	0	0	0	0	0	13,000	13,000	39,000	52,000	84.
1,053	1,159	669	155	76	4,360					85.
108,491	120,745	117,909	61,450	19,909	1,049,097	2,212,782	1,168,045	9,964,093	11,132,138	86.
327,506	204,974	180,595	103,172	63,483	2,308,792					87.
										88.
700	649	0	0	0	8,749					89.
328,206	205,623	180,595	103,172	63,483	2,317,541	3,688,335	1,370,794	11,057,070	12,360,283	90.
0	0	0	0	0	67,581					91.
328,206	205,623	180,595	103,172	63,483	2,385,122					92.
1,103	1,275	690	163	102	4,889					93.
329,309	206,898	181,285	103,335	63,585	2,390,011					94.
1,041	776	477	34	22	3,726					95.
1,089	487	276	104	296	10,827					96.
0	0	0	0	0	1,646					97.
249	84	348	1,000	3,836	21,813					98.
0	0	14,903	67,516	53,846	136,265					99.
22,960	14,584	8,721	4,597	0	126,818					100.
73,915	0	0	0	0	193,590					101.
17,251	0	3,876	0	0	21,127					102.
25	107	5	2	20	669					103.
116,530	16,038	28,606	73,253	58,020	516,481					104.
445,839	**222,936**	**209,891**	**176,588**	**121,605**	**2,906,492**	**3,688,335**	**1,370,794**	**11,057,070**	**12,360,283**	105.

c) 214 acre-feet of 1988 entitlement was delivered in 1987.

Under the COA, DWR pumped 193,590 acre-feet of CVP water at Banks Pumping Plant (left) during 1988 to replace USBR capacity foregone at Tracy Pumping Plant (right).

contractors. The term of the agreement is from March 1 to the end of February of the following year. This conforms to USBR contractors' irrigation season, covering the current irrigation and the next pre-irrigation periods. During the 1988 calendar year, 21,813 acre-feet was conveyed, of which 15,636 acre-feet was delivered during January and February 1988 under the 1987 agreement. An additional 7,664 acre-feet of CVP water was delivered during January and February 1989, for a total delivery of 13,841 acre-feet under the 1988 agreement.

- An agreement between the USBR and DWR, executed August 26, 1988, provided for DWR to convey up to 48,000 acre-feet of CVP water from the Delta to O'Neill Forebay. This water replaced pumping capacity lost to the CVP when pumping was curtailed at the Tracy Pumping Plant in order to maintain minimum water levels in Old River for water users in the South Delta Water Agency. A total of 21,127 acre-feet was wheeled under this agreement.

- Under another agreement, executed September 19, 1988, DWR conveyed 8,200 acre-feet of CVP water to the Buena Vista Water Storage District turnout (Reach 10A). Buena Vista in turn wheeled the water to the Kern National Wildlife Refuge.

- An agreement among DWR, the USBR, and the Department of Fish and Game, executed October 20, 1988, provided for DWR to con-

vey up to 125,000 acre-feet of CVP water from the Delta to O'Neill Forebay. This water compensated for reduced flows from Keswick Dam and Shasta Lake. (The flows were reduced in an attempt to lower water temperatures in the Sacramento River by increasing the percentage of cooler Trinity River water flowing into the Sacramento River.) This action was taken to minimize the potential damage to salmon during the fall run and avoid dewatering spawning beds in November. DWR conveyed 83,065 acre-feet of water under this agreement.

- Another agreement among DWR, the USBR, and the Department of Fish and Game, executed October 24, 1988, provided for DWR to convey up to 45,000 acre-feet of CVP water released from New Melones Reservoir to increase flows in the Stanislaus River below Goodwin Dam for salmon spawning, wetlands habitat, and fish outmigration. DWR conveyed 45,000 acre-feet of water under this agreement.

- Under the Coordinated Operation Agreement, DWR pumped 193,590 acre-feet of CVP water at Banks Pumping Plant between March 20 and August 22, 1988. DWR conveyed the water from the Delta to O'Neill Forebay to replace USBR capacity foregone during May and June 1988 in compliance with Decision 1485.

- In accordance with the 1970 agreement among DWR, the USBR, and the Department of Parks and Recreation, and the 1974 agreement among DWR, the USBR, and the Department of Fish and Game, the recreation and fish and wildlife water delivered from the San Luis joint-use facilities is delivered as 45 percent CVP water and 55 percent SWP water. The deliveries shown on lines 62 and 103 of Table 5 are the CVP portion (45 percent) of the total recreation and fish and wildlife deliveries along the joint-use facilities.

Power Operations

DWR has operated as a bulk power agency since April 1983. As such, DWR uses a combination of owned, contracted, and purchased power resources to meet SWP needs via contracted transmission capacity. DWR also sells and exchanges temporary resource excesses to other bulk power agencies and utilities.

Energy Use

Table 6 summarizes monthly SWP energy use at SWP plants during 1988. Transmission losses from the major transmission network to the SWP plants are included as part of the monthly SWP energy use at the SWP plants. Total energy use and losses for the year were 6.05 billion kWh, approximately 25 percent more than the corresponding amount for 1987. Increased water deliveries to The Metropolitan Water District of Southern California (26 percent increase), a large pumpback water operation at the Hyatt-Thermalito facilities, and a greater pumping requirement at Gianelli Pumping-Generating Plant in 1988 were the major reasons for higher SWP energy use in 1988 than in 1987.

Under various water conveyance contracts and exchange agreements, some CVP water is pumped through SWP facilities at Banks, Dos Amigos, Gianelli, and Las Perillas pumping plants. The USBR furnishes the energy for this use of SWP pumping facilities. Table 6A summarizes the total amount of energy used for pumping at each plant, the energy furnished by the USBR, and the derivation of the net SWP energy use presented in Table 6. (The quantities shown as "excess daily energy scheduled by USBR" represent the accumulations of small differences between hourly amounts of energy scheduled for pumping SWP water and those actually used.) Similarly, Table 6A shows the derivation of the SWP share of energy generated at Gianelli Pumping-Generating Plant.

Energy Sources

Table 6 also shows the monthly sources of SWP energy during 1988. Energy generation at Hyatt-Thermalito power complex in 1988 was 1.55 billion kWh, about 12 percent more than 1987's output (but substantially less than the estimated average annual output of 2.2 billion kWh) and is a result of lower-than-normal rainfall.

Table 6. Monthly Power

in millions of killowatt-hours

Item	Month						
	JAN	FEB	MAR	APR	MAY	JUN	JUL
ENERGY USED BY SWP PUMPING AND POWER PLANTS							
Hyatt-Thermalito Pumpback and Station Service	41.59	30.95	10.30	0.54	3.48	7.49	0.90
North Bay Interim Pumping Plant	0.33	0.33	0.06	0.06	0.01	0.00	0.00
Cordelia Pumping Plant	0.03	0.01	0.01	0.01	0.09	0.63	1.18
Barker Slough Pumping Plant	0.03	0.01	0.01	0.02	0.04	0.29	0.65
South Bay Pumping Plant	6.80	5.74	14.03	14.19	15.60	14.02	14.32
Del Valle Pumping Plant	0.01	0.01	0.31	0.46	0.31	0.07	0.00
Banks Pumping Plant	111.70	96.64	71.90	60.18	55.76	50.07	31.17
Gianelli Pumping-Generating Plant (SWP Share)	91.32	47.75	19.74	14.90	7.31	0.06	0.06
Dos Amigos Pumping Plant (SWP Share)	12.48	17.28	25.20	24.01	26.46	37.58	52.32
Buena Vista Pumping Plant	18.07	10.59	29.66	33.38	29.22	26.57	37.47
Wheeler Ridge Pumping Plant	20.43	8.62	28.55	36.48	31.11	23.55	33.93
Chrisman Pumping Plant	45.87	17.94	62.25	81.52	67.98	49.97	73.39
Edmonston Pumping Plant	163.07	62.67	218.92	287.97	237.74	173.43	254.95
Alamo Powerplant (Station Service)	0.03	0.05	0.01	0.00	0.01	0.01	0.01
Pearblossom Pumping Plant	17.10	2.72	34.87	43.83	43.18	31.07	42.38
Devil Canyon Powerplant (Station Service)	0.01	0.02	0.01	0.00	0.00	0.00	0.00
Oso Pumping Plant	12.95	6.52	11.78	16.03	9.88	7.02	11.51
Warne Powerplant (Station Service)	0.03	0.08	0.06	0.02	0.00	0.01	0.01
Las Perillas Pumping Plant	0.17	0.52	0.67	0.83	1.11	1.55	1.96
Badger Hill Pumping Plant	0.39	1.38	1.78	2.24	3.06	4.17	5.21
Subtotal	542.41	309.83	530.12	616.67	532.35	427.56	561.42
System Losses and Unaccounted for Energy	1.71	13.79	6.37	12.19	14.02	18.45	14.26
Total	**544.12**	**323.62**	**536.49**	**628.86**	**546.37**	**446.01**	**575.68**
SWP ENERGY SOURCES							
Hyatt and Thermalito Powerplants	55.79	60.74	135.00	162.76	132.29	189.83	241.44
Gianelli Pumping-Generating Plant (SWP Share)	0.00	0.27	3.67	9.59	17.14	29.94	63.88
Alamo Powerplant	1.48	0.35	2.40	2.91	2.62	2.15	2.65
Devil Canyon Powerplant	26.23	4.49	65.55	62.13	73.17	64.11	64.12
Warne Powerplant	27.81	13.84	25.03	33.83	20.63	14.83	24.49
Castaic Powerplant	42.50	22.30	39.15	54.95	32.71	26.24	38.08
Bottle Rock Powerplant	16.39	14.85	14.63	15.27	15.40	13.78	12.91
Reid Gardner Unit No. 4	166.67	152.99	167.18	52.07	148.55	120.45	146.80
Pine Flat Powerplant	-0.03	2.00	17.79	10.03	11.96	51.03	35.38
TERA Power Corporation	0.01	0.03	0.24	0.33	0.67	0.58	0.67
MWDSC Hydroelectric Plants	8.62	6.53	20.21	18.59	22.78	19.01	18.57
Power Exchange Delivered to SCE	-94.16	-66.52	-165.26	-160.09	-186.26	-206.31	-222.19
Power Exchange Received from SCE	467.89	216.77	289.40	367.37	256.93	185.50	345.32
Power Exchange Bonneville Power Administration	0.00	0.00	0.00	-26.40	-55.10	0.00	77.59
Power Exchange Salt River Project	0.00	0.00	0.00	0.00	0.00	1.57	0.00
SCE-SBVMWD Exchange	-0.06	-0.09	-0.14	-0.13	-0.13	-0.26	-0.26
USBR Scheduled Excess	0.00	0.03	0.10	0.06	0.13	0.12	0.00
Purchases							
British Columbia Hydro Power Authority	0.00	0.00	0.00	3.36	0.00	0.00	0.76
Bonneville Power Administration	0.00	0.00	0.00	0.00	1.80	0.00	0.00
Pacific Power and Light Company	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Portland General Electric Company	0.00	0.58	1.03	0.00	0.00	0.00	0.00
Arizona Power Company	0.00	0.00	0.00	0.83	0.00	0.00	0.00
Montana Power Company	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Salt River Agricultural Improvement and Power District	0.00	0.08	5.52	45.60	23.24	24.04	1.09
Washington Water and Power Company	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Southern California Edison Company	0.00	0.00	5.54	2.50	0.00	0.00	0.00
Pacific Gas and Electric Company	0.00	0.87	0.00	0.00	0.00	0.00	0.00
San Diego Gas and Electric Company	0.00	1.33	0.00	0.00	0.00	0.00	0.00
Subtotal	719.14	431.44	627.04	708.36	628.73	536.61	696.12
Less Sales	175.02	107.82	90.55	79.50	82.36	90.60	120.44
Total	**544.12**	**323.62**	**536.49**	**628.86**	**546.37**	**446.01**	**575.68**

Operation in 1988

in millions of killowatt-hours

Month						Item
AUG	SEPT	OCT	NOV	DEC	TOTAL	
						ENERGY USED BY SWP PUMPING AND POWER PLANTS
15.28	37.52	50.01	68.45	54.48	320.99	Hyatt-Thermalito Pumpback and
0.00	0.00	0.00	0.00	0.00	0.79	North Bay Interim Pumping Plant
1.10	1.13	1.02	0.74	0.70	6.65	Cordelia Pumping Plant
0.58	0.63	0.55	0.37	0.30	3.48	Barker Slough Pumping Plant
12.12	9.02	8.08	8.59	9.72	132.23	South Bay Pumping Plant
0.01	0.01	0.01	0.01	0.01	1.22	Del Valle Pumping Plant
41.44	49.53	21.83	21.66	37.45	649.33	Banks Pumping Plant
0.16	9.92	3.29	3.08	11.66	209.25	Gianelli Pumping-Generating Plant
41.14	21.74	15.38	15.07	20.46	309.12	Dos Amigos Pumping Plant (SWP Share)
29.75	24.80	17.74	21.92	31.91	311.08	Buena Vista Pumping Plant
26.60	26.82	19.43	24.71	36.43	316.66	Wheeler Ridge Pumping Plant
58.10	59.66	42.50	55.75	82.16	697.09	Chrisman Pumping Plant
201.08	208.35	148.58	196.72	288.14	2441.62	Edmonston Pumping Plant
0.02	0.01	0.01	0.03	0.01	0.20	Alamo Powerplant (Station Service)
33.06	26.72	29.89	18.19	28.20	351.21	Pearblossom Pumping Plant
0.00	0.00	0.00	0.00	0.00	0.04	Devil Canyon Powerplant (Station Service)
8.85	12.96	4.58	15.87	23.09	141.04	Oso Pumping Plant
0.02	0.02	0.09	0.02	0.00	0.36	Warne Powerplant (Station Service)
1.36	0.70	0.64	0.16	0.12	9.78	Las Perillas Pumping Plant
3.59	1.86	1.81	0.40	0.28	26.17	Badger Hill Pumping Plant
474.26	491.40	365.44	451.74	625.12	5928.31	Subtotal
12.60	8.49	7.91	5.54	7.75	123.09	System Losses and Unaccounted for Energy
486.86	**499.89**	**373.35**	**457.28**	**632.87**	**6051.40**	**Total**
						SWP ENERGY SOURCES
160.82	129.88	102.97	101.29	78.99	1551.80	Hyatt and Thermalito Powerplants
27.96	3.21	4.66	1.17	0.00	161.49	Gianelli Pumping-Generating Plant (SWP Share)
2.25	1.97	2.28	1.27	2.25	24.58	Alamo Powerplant
52.31	56.83	59.99	28.76	33.14	590.83	Devil Canyon Powerplant
19.26	26.63	9.07	34.06	48.47	297.95	Warne Powerplant
30.50	42.71	10.59	55.91	77.04	472.68	Castaic Powerplant
12.72	3.33	8.41	6.17	6.55	140.41	Bottle Rock Powerplant
153.22	131.09	137.02	121.89	133.75	1631.68	Reid Gardner Unit No. 4
-0.21	-0.20	-0.20	-0.09	0.00	127.46	Pine Flat Powerplant
0.70	0.47	0.40	0.11	0.10	4.31	TERA Power Corporation
17.23	15.65	17.13	17.30	10.65	192.27	MWDSC Hydroelectric Plants
-178.73	-174.40	-160.83	-109.62	-117.22	-1841.59	Power Exchange Delivered to SCE
310.03	350.88	346.73	589.82	513.42	4240.06	Power Exchange Received from SCE
3.91	0.00	0.00	0.00	0.00	0.00	Power Exchange Bonneville Power Administration
0.00	0.00	0.00	0.00	0.00	1.57	Power Exchange Salt River Project
-0.30	-0.27	-0.25	-0.20	-0.20	-2.29	SCE-SBVMWD Exchange
0.11	0.07	0.08	0.00	0.12	0.82	USBR Scheduled Excess
						Purchases
3.60	0.00	0.00	0.00	1.40	9.12	British Columbia Hydro Power Authority
0.00	4.40	0.00	0.00	0.00	6.20	Bonneville Power Administration
0.00	0.00	0.00	0.00	0.80	0.80	Pacific Power and Light Company
8.90	0.00	0.00	0.00	3.20	13.71	Portland General Electric Company
0.00	0.00	0.00	0.00	0.00	0.83	Arizona Power Company
0.00	0.00	0.00	0.00	1.60	1.60	Montana Power Company
1.39	1.09	0.02	0.00	0.00	102.07	Salt River Agricultural Improvement and Power District
0.00	0.00	0.00	0.00	2.07	2.07	Washington Water and Power Company
0.00	0.00	0.00	0.00	0.00	8.04	Southern California Edison Company
0.00	1.60	0.00	0.00	0.00	2.47	Pacific Gas and Electric Company
0.00	0.00	0.00	0.00	0.00	1.33	San Diego Gas and Electric Company
617.85	594.94	538.07	847.84	796.13	7742.27	Subtotal
130.99	95.05	164.72	390.56	163.26	1690.87	Less Sales
486.86	**499.89**	**373.35**	**457.28**	**632.87**	**6051.40**	**Total**

Table 6A. Reconciliation of Energy Use in 1988 for SWP

in millions of kilowatt-hours

Item	Month						
	JAN	FEB	MAR	APR	MAY	JUN	JUL
Banks Pumping Plant							
Energy Metered at Pumping Plant	114.35	99.57	76.38	75.99	55.76	50.07	59.57
Less Energy Scheduled by USBR for CVP Pumping	-2.65	-2.93	-4.49	-15.81	0.00	0.00	-28.40
Plus Excess Daily Energy Scheduled by USBR	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Energy Used for SWP Pumping	111.70	96.64	71.90	60.18	55.76	50.07	31.17
Dos Amigos Pumping Plant							
Energy Metered at Pumping Plant	31.64	44.41	37.25	36.22	41.35	71.90	92.47
Less Energy Scheduled by USBR for CVP Pumping	-19.17	-27.13	-12.04	-12.21	-14.89	-34.32	-40.15
Less Energy Scheduled by USBR for Station Service	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Plus Excess Daily Energy Scheduled by USBR	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Energy Used for SWP Pumping	12.48	17.28	25.20	24.01	26.46	37.58	52.32
Gianelli Pumping-Generating Plant (Pumping)							
Energy Metered at Plant	118.99	47.75	36.51	41.05	12.42	0.13	0.10
Less Energy Scheduled by USBR for CVP Pumping	-27.67	0.00	-16.70	-26.07	-5.02	0.00	0.00
Less Energy Scheduled by USBR for Station Service	0.00	0.00	-0.17	-0.14	-0.09	-0.08	-0.05
Plus Excess Daily Energy Scheduled by USBR	0.00	0.00	0.10	0.06	0.00	0.00	0.00
Energy Used for SWP Pumping	91.32	47.75	19.74	14.90	7.31	0.06	0.06
Las Perillas Pumping Plant							
Energy Metered at Pumping Plant	0.17	0.52	0.67	0.83	1.11	1.55	1.96
Less Energy Scheduled by USBR for CVP Pumping	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Energy Used for SWP Pumping	0.17	0.52	0.67	0.83	1.11	1.55	1.96
Gianelli Pumping-Generating Plant (Generation)							
Energy Metered at Plant	0.00	2.98	4.34	9.59	45.65	104.91	103.93
Less Energy Scheduled by USBR for CVP Pumping	0.00	-2.74	-0.68	0.00	-28.65	-75.08	-40.05
Plus Excess Daily Energy Scheduled by USBR	0.00	0.03	0.00	0.00	0.13	0.12	0.00
SWP Share of Energy Generated	0.00	0.27	3.67	9.59	17.14	29.94	63.88

Energy generation at the SWP aqueduct recovery plants (Gianelli, Alamo, Devil Canyon, Warne, and Castaic) totaled about 1.55 billion kWh, about 17 percent higher than last year's amount. The combined output of the recovery plants and the Hyatt-Thermalito facilities was sufficient to meet about 51 percent of SWP energy requirements in 1988.

Other SWP hydroelectric power resources are obtained under contract with the Kings River Conservation District and The Metropolitan Water District of Southern California. The KRCD contract provides DWR with all of the output of the 165-MW Pine Flat Powerplant. The plant furnished 0.13 billion kWh to the SWP in 1988. Under the MWDSC contract, DWR receives energy from five small hydroelectric plants on the MWDSC system (30 MW total capacity). As explained in Chapter VI, DWR has exchange agreements with Southern California Edison Company and the Los Angeles Department of Water and Power to facilitate transmission of energy from the MWDSC plants to the SWP.

and CVP Pumping at SWP Plants and Joint-Use Facilities

in millions of kilowatt-hours

Month						
AUG	SEP	OCT	NOV	DEC	TOTAL	Item
						Banks Pumping Plant
73.09	59.10	34.51	42.11	53.67	794.17	Energy Metered at Pumping Plant
-31.76	-9.57	-12.68	-20.45	-16.22	-144.94	Less Energy Scheduled by USBR for CVP Pumping
0.10	0.00	0.00	0.00	0.00	0.10	Plus Excess Daily Energy Scheduled by USBR
41.44	49.53	21.83	21.66	37.45	649.33	Energy Used for SWP Pumping
						Dos Amigos Pumping Plant
69.01	28.13	21.09	19.60	24.77	517.84	Energy Metered at Pumping Plant
-27.86	-6.39	-5.71	-4.53	-4.31	-208.71	Less Energy Scheduled by USBR for CVP Pumping
0.00	0.00	0.00	0.00	0.00	0.00	Less Energy Scheduled by USBR for Station Service
0.00	0.00	0.00	0.00	0.00	0.00	Plus Excess Daily Energy Scheduled by USBR
41.14	21.74	15.38	15.07	20.46	309.12	Energy Used for SWP Pumping
						Gianelli Pumping-Generating Plant (Pumping)
0.29	22.17	15.56	38.01	55.55	388.54	Energy Metered at Plant
0.00	-12.09	-12.19	-34.75	-43.78	-178.28	Less Energy Scheduled by USBR for CVP Pumping
-0.14	-0.23	-0.16	-0.18	-0.23	-1.45	Less Energy Scheduled by USBR for Station Service
0.00	0.07	0.08	0.00	0.12	0.43	Plus Excess Daily Energy Scheduled by USBR
0.16	9.92	3.29	3.08	11.66	209.23	Energy Used for SWP Pumping
						Las Perillas Pumping Plant
1.36	0.70	0.68	0.16	0.12	9.83	Energy Metered at Pumping Plant
0.00	0.00	-0.05	0.00	0.00	-0.05	Less Energy Scheduled by USBR for CVP Pumping
1.36	0.70	0.64	0.16	0.12	9.78	Energy Used for SWP Pumping
						Gianelli Pumping-Generating Plant (Generation)
40.49	3.70	4.66	1.17	0.00	321.42	Energy Metered at Plant
-12.54	-0.49	0.00	0.00	0.00	-160.22	Less Energy Scheduled by USBR for CVP Pumping
0.01	0.00	0.00	0.00	0.00	0.29	Plus Excess Daily Energy Scheduled by USBR
27.96	3.21	4.66	1.17	0.00	161.49	SWP Share of Energy Generated

Under the 1979 power contract between DWR and Southern California Edison (in effect since April 1983) and the 1981 Capacity Exchange Agreement (in effect since April 1987), part of the Hyatt-Thermalito Complex generation and all of the output of Devil Canyon and Alamo powerplants is delivered to SCE. The energy is generally delivered to SCE during on-peak periods, and a greater amount of energy is returned to DWR during off-peak periods. The additional energy is primarily in payment for the power capacity available to SCE. Table 6 shows the monthly quantities of energy delivered and returned under these contracts. The net gain to the SWP during 1988 was 2.40 billion kWh.

Bottle Rock Powerplant provided 0.14 billion kWh, and Reid Gardner Unit No. 4 supplied 1.63 billion kWh in 1988. DWR also has a contract with TERA Power Corporation for the purchase of energy produced at Bethany Wind Park, near the South Bay Pumping Plant. About 45 50-kW wind turbines were operational at the end of 1988; over 4.3 million kWh of wind-generated energy was delivered to DWR during the year.

Table 7. SWP Power and Transmission Service Purchases in 1988

Supplier	Type of Service Purchased	Energy *kWh*	Energy Cost *dollars*	Transmission Cost *dollars*	Total Cost *dollars*
SWP Transmission and Energy Purchases					
British Columbia Hydro Power Authority	Nonfirm energy	9,116,000	205,338		205,338
Montana Power Company	Nonfirm energy	1,600,000	36,480		36,480
Washington Water Power Company	Nonfirm energy	2,065,000	48,116		48,116
Pacific Power and Light Company	Nonfirm energy	800,000	16,800		16,800
Portland General Electric Company	Nonfirm energy	13,710,000	315,490		315,490
Bonneville Power Administration	Nonfirm energy	6,200,000	142,220		142,220
Pacific Gas and Electric Company, Southern California Edison Company, and San Diego Gas and Electric Company	EHV transmission			1,500,000	1,500,000
TERA Power Corporation	Wind energy	4,310,296	367,722		367,722
Kings River Conservation District	Hydroelectric energy	130,311,551	993,960		993,960
Pacific Gas & Electric Company	Nonfirm energy and transmission	2,465,000	60,283	6,378,605	6,438,888
Southern California Edison Company	Nonfirm energy, transmission and dispatching	8,042,000	195,717	493,612	689,329
Los Angeles Department of Water and Power	Transmission and dispatching			64,763	64,763
MWD of Southern California	Hydroelectric energy	179,422,200	9,645,737		9,645,737
San Diego Gas and Electric Company	Nonfirm energy	1,330,000	28,690		28,690
Nevada Power Company	Transmission			1,026,372	1,026,372
Salt River Agricultural Improvement and Power District	Nonfirm energy	102,062,000	1,756,464		1,756,464
Arizona Power Company	Nonfirm energy	831,000	19,113		19,113
Subtotal		**462,265,047**	**13,832,130**	**9,463,352**	**23,295,482**
Other SWP Power Service Purchases					
Bonneville Power Administration	Energy storage cost				190,400
Western States Power Pool	Start-up and operation & maintenance				5,875
MCR Geothermal Corporation	Bottle Rock geothermal steam				1,353,328
Coleman Partnership & Fluid Energy Corporation	Bottle Rock steam field royalty payments				81,167
Calpine Corporation	Bottle Rock steam field operation and maintenance				396,985
Kings River Conservation District	Pine Flat operation & maintenance				2,668,747
	Pine Flat debt service				5,327,809
Pacific Gas & Electric Company	Transmission ownership charges				6,973
Nevada Power Company	Reid Gardner No.4 fuel cost				29,785,404
	Reid Gardner No.4 operation & maintenance and insurance				15,781,299
	Reid Gardner No.4 property taxes				1,750,932
Subtotal					**57,348,919**
Total					**80,644,401**

From time to time the SWP has energy resources in excess of its requirements and has the option to sell this excess energy. If power requirements exceed SWP resources, short-term power purchases can be made to meet the load requirements.

Power Purchases and Power Service Costs

Power purchases and transmission service costs during 1988 are summarized in Table 7. DWR purchased 0.46 billion kWh of energy for $13.83 million. Associated transmission, energy losses, and dispatching services totaled $9.46 million. Prior to its purchase of the Francisco steam field from MCR Corporation on July 1, 1988, DWR paid $1.35 million for geothermal steam for Bottle Rock Powerplant. On July 1, 1988, DWR contracted with Calpine Corporation to operate and maintain the Bottle Rock Powerplant steam field. For the remainder of the 1988 calendar year, $396,985 was paid to Calpine Corporation, and $81,167 was paid to V.V. & J. Coleman Partnership and to Fluid Energy Corporation as royalty payments for the Francisco steam field. Other SWP purchases, including the Bottle Rock Powerplant steam field costs mentioned above, totaled $57.35 million.

Power Sales

Existing SWP resources, short-term power purchase and sales contracts, and long-term power and transmission contracts ensure that the SWP has enough energy and capacity to meet future needs. DWR has also entered into contracts to sell any excess capacity and energy, within the limit of SWP's contractual transmission capabilities, at Malin, Tesla, Vincent, Sylmar, and Eldorado substations.

DWR sells this excess capacity and energy on a daily basis at current market rates. In determining the most advantageous time to sell the power, DWR considers projected SWP operations and changes in the power market as well as energy losses, transmission costs, and dispatching costs. DWR's computerized accounting system monitors power purchases and sales.

Table 8 summarizes DWR's power-related sales in 1988. Total energy sold to 15 utilities was 1.69 billion kWh, for a revenue of $36.72 million. DWR also received a total of $6.62 million in revenues for peaking capacity payments from Nevada Power Company, peaking-capacity-foregone payments from Los Angeles Department of Water and Power, annual transmission and interruptible transmission payments from Southern California Edison and the City of Vernon, and capacity payments from Turlock Irrigation District and the cities of Azusa, Modesto, and Vernon.

Transmission Service Agreements

The transmission service agreements described in Bulletin 132-84 (page 38) are still in effect. Some contractual options on new interruptible transmission paths between Vincent-San Onofre, Vincent-Sylmar, Vincent-Midway, Vincent-Palo Verde, and Eldorado-Mead were used in order to make energy sales, purchases, and exchanges with utilities in Arizona, Nevada, and Southern California.

The Table Mountain reinforcement project, which increased the 500-kV transmission capacity on Pacific Gas and Electric Company's transmission line from Table Mountain to Tesla substations, was completed in April 1987, thus removing transmission limitations on DWR's generation from Hyatt and Thermalito powerplants and giving the SWP improved transmission service from PG&E.

Recreation and Visitor Facilities

Camping, boating, fishing, swimming, and bicycling are some of the recreational opportunities available at SWP facilities. As summarized in Table 9, nearly 7 million recreation days of use were recorded at SWP facilities in 1988, a 5 percent decrease from similar use in 1987. Table 9 includes use of the 17 fishing access sites and other recreational developments along the California Aqueduct. Figure 7 shows the location of these facilities. Use of the aqueduct recreational facilities, including the California Aqueduct Bikeway in Southern California, totaled more than 75,000 recreation days in 1988, an increase of more than 27 percent over similar use in 1987.

Most SWP recreational and visitor use was concentrated at the major reservoirs, where well-

Table 8. SWP Power Sales in 1988

Purchaser	Power *kilowatt-hours*	Amount of Sale *dollars*
Northern California Power Agency	35,295,000	771,165
Turlock Irrigation District	241,031,000	9,202,763 (a
Modesto Irrigation District	65,875,000	1,342,480 (b
Pacific Gas and Electric Company	445,753,000	7,935,908
Southern California Edison Company	167,190,000	2,728,212 (c,(d
Los Angeles Department of Water and Power	1,265,000	893,490 (e
The Metropolitan Water District of Southern California	105,340,000	1,870,300
City of Glendale	180,000	4,770
City of Anaheim	6,610,000	180,671
City of Riverside	350,000	9,586
City of Vernon	473,803,000	13,440,840 (f
City of Azusa	7,590,000	598,365 (g
San Diego Gas and Electric Company	100,000	3,400
Nevada Power Company	137,325,000	4,271,387 (h
Salt River Agricultural Improvement and Power District	3,160,000	87,040
Total	**1,690,867,000**	**43,340,377**

a) Includes $3,004,850 for capacity.
b) Includes $105,350 for capacity.
c) Includes $55,530 for interruptible transmission.
d) In addition to this amount, 2,282,000 kWh of energy delivered to SCE under the DWR-SCE Generation Replacement Agreement has been valued at $56,936. Pursuant to the 1982 DWR-San Bernardino Valley Municipal Water District Energy Purchase Agreement, DWR delivered this energy to SCE to replace generation lost because of water SBVMWD diverted from the Santa Ana River and Mill Creek.
e) Includes $860,600 for peaking capacity foregone.
f) Includes $1,620,000 for capacity and $57,584 for interruptible transmission, dispatching, and administration.
g) Includes $300,000 for capacity and $120,000 for 40,000,000 kWh of discretionary energy never scheduled. The discretionary energy is not included.
h) Includes $614,608 for peaking capacity.

developed facilities accommodate the public. Fifty-eight percent of the total recreational use of SWP facilities in 1988 occurred at the four major reservoirs in Southern California--Silverwood, Perris, Pyramid, and Castaic. In addition to regular recreational use, nearly four-hundred thousand visitor days of use occurred at SWP visitors centers during 1988. These figures (shown in the following tabulation) include people entering visitors centers, stopping at overlooks, and participating in guided tours of SWP facilities.

Location	Visitor Days
Project Operations Control Center, Sacramento	200
Oroville Field Division	151,000
Delta Field Division	800
San Luis Field Division	144,100
San Joaquin Field Division	4,500
Southern Field Division	87,500
SWP Total	388,100

For the second consecutive year, a "Juniors Only" Pheasant Hunt sponsored by the Department of Fish and Game was held at the White Slough Wildlife Area, a DWR-maintained recreation area near Stockton. As in 1987, this year's hunt was held on the second weekend of the regular pheasant season (November 19 and 20) and was organized to accommodate 200 hunters under age 16.

During 1988, several SWP recreational facilities were improved:

- The Bidwell Canyon boat-launch ramp extension was completed at Lake Oroville. Three lanes were extended 150 feet in length, adding approximately 30 feet of depth to the ramp and making it usable down to the 800 foot elevation.

- The new marina complex at Lake Del Valle was completed. The 1989 season will mark the first time since facilities were opened to the public in 1970 that two marinas will be fully functional. Also, camping at Lake Del Valle increased 17 percent in 1988 as a result of the 40 new campsites added in 1987.

- Erosion barrier walls were completed at Yellowbar and Spanish Point at Pyramid Lake. An additional 200 trees were planted at Los Alamos Campground, which is now concessionaire operated.

- Construction of a two-lane ramp for hand-launch, car-top boats was completed at Cleghorn Canyon, Silverwood Lake.

- Equestrian trail ingress and egress from the Moreno Valley area to the existing trail at Lake Perris was completed. Construction of a parking area at Sail Cove was also completed.

Fish and Wildlife Activities

The Department of Fish and Game continued planting fish at SWP facilities during 1988. Table 10 summarizes fish plantings at each location. Total plantings of catchable trout and fingerlings were virtually the same as the 1987 plantings.

The Feather River and Thermalito Hatcheries produced a total of 6,991,300 fish. Of the chinook salmon produced, 1,586,900 were fingerlings; 3,555,900 were planted as advanced fingerlings; and 218,600 were planted as yearlings. A total of 1,331,000 fingerling steelhead were planted, as well as 298,900 yearling steelhead.

Table 9. Recreation Use at SWP Facilities in 1988

Facility	1988 Use In Recreation Days
Oroville Field Division	
Frenchman Lake	230,000
Antelope Lake	125,000
Lake Davis	240,000
Lake Oroville and Thermalito Forebay	585,000
Thermalito Afterbay and Oroville Wildlife Area	152,000
Total	**1,332,000**
Delta Field Division	
Lake Del Valle	505,000
Bethany Reservoir	57,800
Fishing Access Sites	
Niels Hansen	600
California Aqueduct	
Walk-In Fishing	30,300
Bikeway	900
White Slough Wildlife Area	9,900
Total	**606,100**
San Luis Field Division	
San Luis Reservoir	341,000
O'Neill Forebay	392,000
Los Banos Reservoir	121,000
Fishing Access Sites	
Orestimba	1,600
Cottonwood Road	600
Canyon Road	1,100
Mervel Avenue	1,400
Fairfax	700
Three Rocks	100
Huron	2,000
Avenal Cutoff	2,300
California Aqueduct	
Walk-In Fishing	7,500
Wildlife Areas	16,000
Total	**885,100**
San Joaquin Field Division	
Fishing Access Sites	
Kettleman City	4,800
Lost Hills	4,700
Buttonwillow	4,300
California Aqueduct	
Walk-In Fishing	5,600
Total	**19,400**
Southern Field Division	
Silverwood Lake	726,600
Lake Perris	1,559,600
Pyramid Lake	361,100
Castaic Lake	1,356,200
Fishing Access Sites	
77th Street East	400
Longview Road	200
California Aqueduct	
Walk-In Fishing	7,000
Bikeway	600
Total	**4,011,700**
Grand Total	**6,854,300**

Table 10. Fish Planted at SWP Facilities in 1988

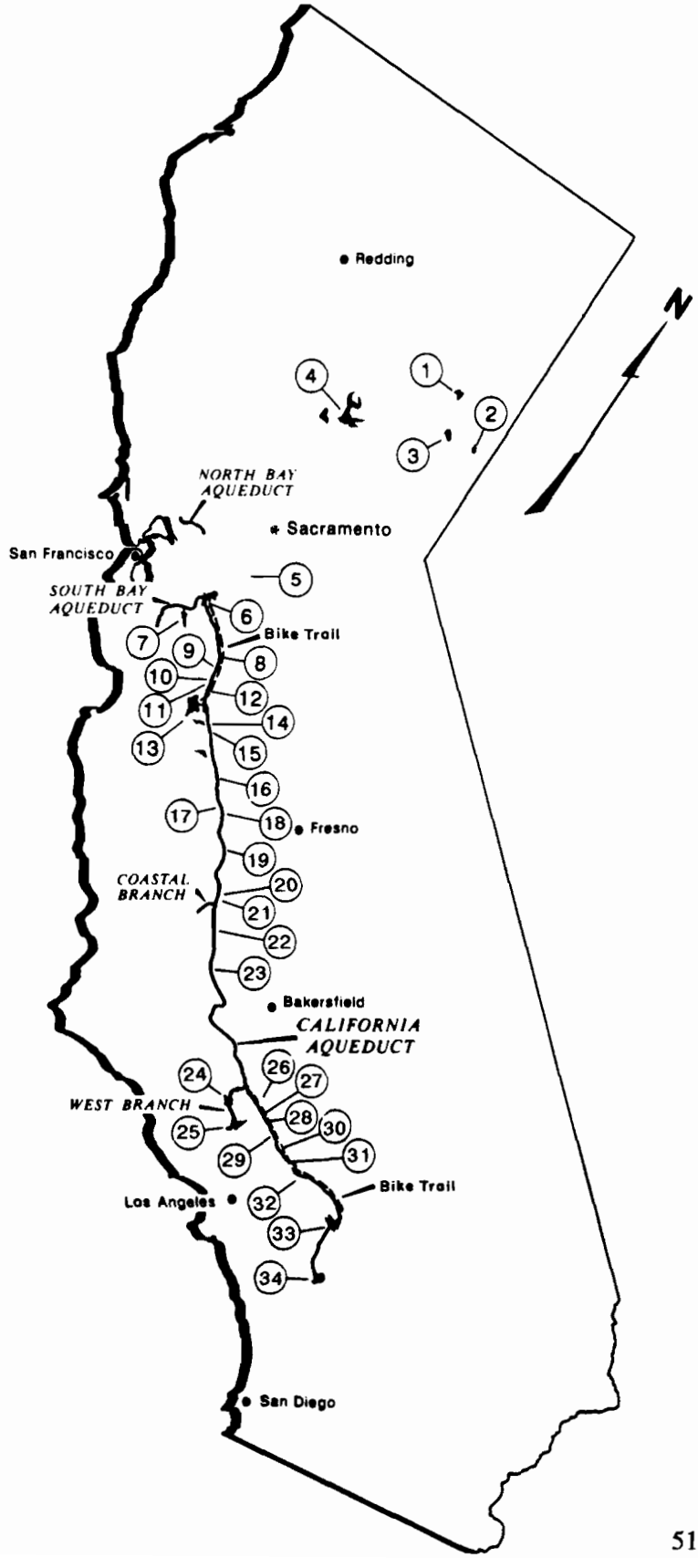
in thousands

Location	Size*	Rainbow Trout	Eagle Lake Trout	Brown Trout	Chinook Salmon	Coho Salmon	Total
Antelope Reservoir	C	35.4					35.4
Lake Davis	C	29.6	50.0				79.6
	F		300.6				300.6
Frenchman Lake	F	150.0	70.0				220.0
Lake Oroville	C		0.2	44.2			44.4
	F				31.4	38.5	69.9
	S				23.7		23.7
Thermalito Forebay	C	76.4					76.4
Lake Del Valle	C	62.8					62.8
Los Banos Reservoir	C	14.4					14.4
Pyramid Lake	C	63.0					63.0
Castaic Lake	C	200.0					200.0
Castaic Lagoon	C	60.0					60.0
Silverwood Lake	C	173.2					173.2
Lake Perris	C	163.4					163.4
Lake Skinner**	C	95.8					95.8
Total		**1,124.0**	**420.8**	**44.2**	**55.1**	**38.5**	**1,682.6**

* C - Catchable; F - Fingerling; S - Subcatchable
** Included in SWP fish-planting program, but not an SWP facility

Figure 7. SWP Recreation Developments

1. Antelope Lake Recreation Area
2. Frenchman Lake Recreation Area
3. Lake Davis Recreation Area
4. Lake Oroville State Recreation Area
5. White Slough Wildlife Area
6. Bethany Reservoir
7. Lake Del Valle State Recreation Area
8. Bikeway (67 miles)
9. Niels Hansen Fishing Access Site
10. Orestimba Fishing Access Site
11. Walk-In Fishing (63 miles)
12. Cottonwood Road Fishing Access Site
13. San Luis Reservoir State Recreation Area
14. Canyon Road Fishing Access Site
15. Mervel Avenue Fishing Access Site
16. Fairfax Fishing Access Site
17. Walk-In Fishing (208 miles)
18. Three Rocks Fishing Access Site
19. Huron Fishing Access Site
20. Avenal Cutoff Fishing Access Site
21. Kettleman City Fishing Access Site
22. Lost Hills Fishing Access Site
23. Buttonwillow Fishing Access Site
24. Pyramid Lake Recreation Area
25. Castaic Lake State Recreation Area
26. Munz Ranch Road Fishing Access Site
27. Bikeway (107 miles)
28. 70th Street West Fishing Access Site
29. Walk-In Fishing (83 miles)
30. Avenue S Fishing Access Site
31. 77th Street East Fishing Access Site
32. Longview Road Fishing Access Site
33. Silverwood Lake State Recreation Area
34. Lake Perris State Recreation Area



Chapter III
SWP Administration Activities

This chapter summarizes the principal administrative activities affecting the SWP, emphasizing the period from July 1, 1988 through June 30, 1989.

Water Contracts Management

Contract Amendments

The 30 long-term SWP water supply contracts have been amended a number of times since they were signed in the 1960s. Table 11 shows contract amendments and lists the general content of each amendment. However, Table 11 does not include revisions to the entitlement schedules shown in Table A of the contracts.

Only one contract amendment was executed during the report period.

- On August 24, 1988, Alameda County Water District and DWR executed Amendment No. 16 to ACWD's water supply contract. This amendment increased the district's delivery capability from 16 cfs to 71 cfs and from 8,775 acre-feet to 38,940 acre-feet for Reach 8 of the South Bay Aqueduct, thereby allocating all previously unallocated capacity in Reach 8 to Alameda. For this additional delivery capability, Alameda County Water District agreed to repay the past capital cost components of the transportation charges. The repayment included a lump sum of $1,273,225 that the district had to pay shortly after execution of the agreement. The unpaid balance of the charges will be repaid at the Project Interest Rate.

  In early 1989, ACWD presented its proposal for constructing a turnout in the newly reallocated reach, near the existing Alameda Bayside Turnout. The district plans to construct the turnout during 1990 to serve a new water treatment plant that will be on-line and ready to receive water from the South Bay Aqueduct in mid-1991.

New Contract Issues

1988 Interim Semitropic In-Lieu Ground Water Exchange Program. To increase the yield of the SWP, DWR has been working with Kern County Water Agency to establish elements of the Kern Water Bank within the Kern ground water basin (see Chapter V, "Kern Water Bank"). Local elements of the Kern Water Bank that will rely on DWR's ground water extraction facilities will be implemented when feasibility studies are complete and facilities are in place. However, Semitropic Water Storage District (a member of KCWA) has proposed an interim program using existing facilities, which would allow SWP water to be delivered directly to the district in advance of the local element and in lieu of the district's pumping ground water. The program would benefit both DWR and the district by providing additional storage facilities for SWP water and reducing the district's immediate need to pump ground water.

The initial proposal included provisions for the delivery of "in-lieu" water to the district and the subsequent extraction of ground water. This ground water would either be returned to the SWP, or the agency's future entitlement would be reduced. After extensive negotiation between the parties to resolve issues related to the return of the water, the exchange program was divided into two parts. The first part would provide for the delivery of SWP water to the district when it became available, and the second part would provide for the district to extract or return the water.

On August 16, 1988, an agreement was executed to initiate the first part of the exchange. Under the terms of the agreement, in-lieu water will be delivered only when unscheduled water is available south of the Delta. The deliveries of in-lieu water under this agreement will not exceed 50 percent of the declared supply of unscheduled water. Since no unscheduled water was available in 1988, no in-lieu water was delivered to Semitropic.

Table 11. Water Supply Contract

Contracting Agency	Minimum Project Yield Increased	Supplemental Conservation Facilities Costs Delayed			Project Interest Rate Modified	Surcharge and Surcharge Credit Provisions						Wet Weather Provisions Added
		1970	1971	1972 Until Construction		Added	Revised	Through 1969	1970	1971	Deleted	
FEATHER RIVER AREA												
City of Yuba City	1	2	2	2	2		1					
County of Butte	1	3	3	3	3		1	2		4	5	
Plumas County Flood Control and Water Conservation District	1	3	5	6	3		1	2	4	7	8	
NORTH BAY AREA												
Napa County Flood Control and Water Conservation District	1	3	4	5	3		1				6	
Solano County Flood Control and Water Conservation District	1	2		11	2		1					
SOUTH BAY AREA												
Alameda County Flood Control and Water Conservation District-Zone 7	2	6	8	9	6	2		5	7	10	11	1
Alameda County Water District	1	4	5	7	4	1		3		8	9	S
Santa Clara Valley Water District	2	6	8	10	6	2		5	7	11	12	1
SAN JOAQUIN VALLEY AREA												
County of Kings		2	3	4	2			1		5	6	S
Devil's Den Water District	1	5	7	8	5			4	6	9	10	
Dudley Ridge Water District	1	6	8	9	6			5	7	10	11	
Empire West Side Irrigation District	1	4	6	7	4			3	5	8	9	S
Kern County Water Agency	1	4	6	8	4			3	5	9	10	
Oak Flat Water District		3	5	6	3			2	4	7	9	S
Tulare Lake Basin Water Storage District	2	5	6	7	5			4		8	10	S
CENTRAL COASTAL AREA												
San Luis Obispo County Flood Control and Water Conservation District	2	3	4	5	3	1	2				6	
Santa Barbara County Flood Control and Water Conservation District	2	3	4	5	3	1	2				6	
SOUTHERN CALIFORNIA AREA												
Antelope Valley East-Kern Water Agency	1	5	6	7	5	1					8	
Castaic Lake Water Agency	2	4	5	6	4	1	2				7	
Coachella Valley Water District	2	3	4	5	3	1	2				6	
Crestline-Lake Arrowhead Water Agency	2	5	6	7	5	1	2				8	
Desert Water Agency	2	3	4	5	3	1	2				6	
Littlerock Creek Irrigation District	2	3	4	5	3	1	2				6	
Mojave Water Agency	2	4	5	6	4	1	2				7	
Palmdale Water District	2	3	4	5	3	1	2				6	
San Bernardino Valley Municipal Water District	2	4	5	6	4	1	2				7	
San Gabriel Valley Municipal Water District	2	4	5	6	4	1	2				7	
San Gorgonio Pass Water Agency	2	4	5	6	4	1	2				7	
The Metropolitan Water District of Southern California	1	9	10	11	9	1					13	
Ventura County Flood Control District	1	2	3	4	2		1				5	

a) Contract issues covered by these amendments are (1) repayment of off-aqueduct power facility costs, (2) delinquency penalties, and (3) authority to include other types of projects as additional conservation facilities.
b) MWD special conditions are covered by amendments 2, 3, 4, 5, 7, 8V (voided), and 12.

Amendments as of June 30, 1989

Surplus Water Provisions			Peaking Service									
Added	Revised	Turnout Construction by Agency	Increased	Decreased	Annual Entitlements Revised	Excess Capacity Purchased	Article 28 Revised	Repayment Period and Contract Term Revised	Special Conditions	Contract Issues Resolved (a	Enlargement of the East Branch Aqueduct	Water Revenue Bonds
	1				1,4			3		5		
	1				6,8		10	7		9		10
	10						9	11		12		13
	1				8,9, 10,12		13	7	1,2,12	11		13
	1,5		1		6,7,11	10		6	6,10	9		12
	2,12	3			1,4			13	1	14		15
1	11,12	2					10	13	1,6,16	14		15
1	2,14, 15,17	3			1,4		13	16	1,9	18		19
S	8						7	9		10		11
	1,12, 13,15				1,3		11	14	2	16		17
	1,13, 14,16				1,2, 3,4		12	15		17		18
	1,11, 12,14				2		10	13		15		16
	1,12, 14,16				1,2,18		11	15	7,13,19	17		20
S	11,12,14	1			8		10	13		15		16
	12,13, 14,17				1,3,9, 12,19, 20,21		11	15	16	18		22
1	2,8						7	9		10		11
1	2,7				2,9			8		10		11
1	10		3	2	1,14	4	9	12	2,3,4	13	15	16
1	2,10		2		2,3,9		8	11		12		13
1	2,8,13				2		7	9		10	11	12
1	2,11	4	3		2,10		9	12		13		14
1	2,8,13				2		7	9		10	11	12
1	2,7				2			8		9		10
1	2			3	2,10,12		8	9	3	11	13	14
1	2,8				2		7	9		10	11	12
1	2				1,2,3,9		8	10		11	12	13
1	2,10		2		2,9	3	8	11		12		13
1	2		2					8	2,3	9		10
1	16				1,3, 8V,15	2,6,7	14	17	(b	18	19,21	20
	1,7						6	8		9		10

S = Special provisions of basic contract. V = Amendment voided by subsequent action

The parties are continuing to negotiate an agreement for extraction of the water. However, if in-lieu water is delivered and an agreement has not been reached on the extraction part of the program by March 31, 1991, the water delivered will be reclassified as unscheduled water.

Crestline-Lake Arrowhead Local Use of Silverwood Lake. In 1977, the Crestline-Lake Arrowhead Water Agency filed applications with the State Water Resources Control Board to appropriate 1,302 acre-feet each year from Houston Creek in the San Bernardino Mountains. If the applications are granted, the agency proposes to take its appropriated water at its Silverwood Lake diversion works. An agreement executed on May 9, 1989 between DWR and the agency allows this locally appropriated water to be stored in Silverwood Lake, within operational constraints.

Cawelo Water District Wheeling. For the past several years, DWR and the USBR have entered into temporary agreements for wheeling Central Valley Project water through the SWP to CVP contractors. Cawelo Water District is one of the CVP contractors that could receive water wheeled through the SWP. Since Cawelo is also a member unit of the Kern County Water Agency and, as a result, is contributing to the repayment of the capital and operating costs of the California

The Governor Edmund G. Brown California Aqueduct

Aqueduct, DWR has agreed to allow a limited amount of the CVP water for Cawelo to be conveyed at a lower price than non-SWP contractors are charged. The 1988 and 1989 agreements have limited the less expensive wheeling to water that can be conveyed within the capacity factor on which the agency's transportation capital charges are based. When Cawelo is able to convey its CVP water within the agency's capacity factor, Cawelo will pay charges that reflect only the incremental costs of the wheeling (variable, replacement, fish loss costs at Banks Pumping Plant, and an administrative fee).

Relinquished Aqueduct Capacity and Entitlement

On March 10, 1987, DWR, Santa Barbara County Flood Control and Water Conservation District, Kern County Water Agency, and Berrenda Mesa Water District reached a settlement and compromise agreement affecting Santa Barbara's 1981 relinquishment of aqueduct capacity and associated entitlement water (Bulletin 132-87, page 43). As part of the agreement, DWR granted SBCFC&WCD a one-year option to reacquire the capacity and entitlement water relinquished in 1981. This option was extended for an additional year in early 1988.

In February 1989, SBCFC&WCD requested DWR to grant an additional time extension, indicating that EIRs for the proposed Coastal Aqueduct, Phase II and the Cachuma Reservoir enlargement would aid the district in deciding whether to obtain a portion of its SWP water supply from the proposed enlarged Cachuma Reservoir. Since the EIRs will be completed in late 1990, DWR has extended the district's option through December 31, 1990.

Temporary Water Purchase Contract

In June 1988, DWR agreed to purchase 122,000 acre-feet in water releases from Yuba County Water Agency's New Bullards Bar Reservoir during summer 1988. This purchase enabled DWR to hold back a corresponding amount of water in Lake Oroville, thereby increasing the capability for SWP water deliveries in late 1988 and 1989 if dry conditions continued in SWP service areas. Under the terms of the agreement, DWR paid the agency $11.50 per acre-foot for water released from New Bullards Bar Reservoir.

In July, August, and September 1988, YCWA released 119,031 acre-feet of water from New Bullards Bar Reservoir for DWR's use in meeting Delta outflow requirements under Decision 1485. (Due to a measurement error, the entire 122,000 acre-feet was not transferred. The remaining 2,969 acre-feet will either be transferred in 1989 or the purchase payment for the 2,969 acre-feet will be credited to DWR.) In June 1989, DWR determined that the USBR was entitled to part of the release (2,609 acre-feet) under the terms of the Coordinated Operation Agreement, as specified in the July 18, 1988 letter of understanding between DWR and the USBR. Therefore, the equivalent increase in SWP conservation carryover storage resulting from this release was 116,422 acre-feet. The total payment for the purchase was $1.37 million, for a unit rate of $11.77 per acre-foot.

Because of continuing dry weather conditions in areas of California, DWR has been negotiating with YCWA for a water purchase in 1989. Yuba County has agreed to make 200,000 acre-feet of water available for a total purchase price of $5,260,000. Santa Clara Valley Water District has agreed to purchase 90,000 acre-feet, and Tulare Lake Basin Water Storage District will purchase the remaining 110,000 acre-feet. The City of San Francisco, which had indicated a possible desire to purchase 35,000 acre-feet of water, now has a sufficient water supply and has declined to participate in the purchase.

It is expected that, after the SWRCB approves the water transfer, YCWA will begin releases from New Bullards Bar Reservoir in July.

Devil's Den-Castaic Lake Negotiations

On April 6, 1988, an organizational meeting was held for the Devil's Den-Castaic Lake Authority. The authority was created to implement the potential transfer of Devil's Den SWP contractual entitlement water to Castaic Lake Water Agency. This organization is responsible for preparing the required environmental documentation and negotiating the necessary water contract amendments with DWR for the transfer.

Castaic Lake Water Agency has purchased approximately 90 percent of the property within the Devil's Den Water District. The agency felt that this purchase would facilitate a future transfer of DDWD entitlement water to CLWA. In the interim, several alternative uses for the property are being considered. While CLWA would like to transfer all or part of DDWD's 12,700 acre-feet of entitlement water into its own service area, CLWA recognizes the water needs of other landowners and has considered them in the environmental review. All Devil's Den water transferred for use within Castaic Lake's service area will retain its agricultural priority.

Coastal Branch, Phase II

The Phase I Coastal Branch facilities were constructed in the late 1960s to serve agricultural water contractors in northwestern Kern County. These facilities include a 14.8 mile "Coastal Stub" aqueduct extending from Avenal Gap to the vicinity of Devil's Den.

The Phase II Coastal Branch facilities will transport up to 70,486 acre-feet of water annually to Santa Barbara and San Luis Obispo counties. In the fall of 1986, as part of the environmental impact report preparation process, DWR and the counties developed several routes for this aqueduct branch. Each of these alternative routes identified a one-mile-wide corridor within which the aqueduct could be located.

In early 1987, the San Luis Obispo-Santa Barbara County Technical Committee requested DWR to conduct additional reconnaissance-level studies for the Polonio Pass and Barrel Valley routes. The study showed that the Polonio Pass route is the better choice with respect to design, geology, energy, economics, botany, and general environmental planning. A preliminary alignment has been determined, and environmental teams began detailed on-site surveys in January 1989.

An EIR and an advance planning study are scheduled for completion in September 1990. At that time San Luis Obispo County FC&WCD and Santa Barbara County FC&WCD will decide whether to have the facilities constructed.

Planning for Drought

As a result of the continuation of the 1987 drought into 1988, DWR opened its Drought Center on April 21, 1988. According to hydrologic records dating back to 1872, only twice before has Northern California experienced two consecutive critically dry years.

The Drought Center coordinated the implementation of drought assistance actions and served as a clearing house for drought-related information for water agencies, the public, and the news media. Some of the drought information was computerized to make it more readily available. DWR also established an Interagency Drought Task Force of eleven State and nine federal agencies to coordinate drought actions and develop drought contingency planning guidelines for 1989.

In the spring of 1988, the Drought Center initiated a series of periodic surveys of water supply agencies throughout California to identify communities experiencing water shortages and actions taken to resolve water supply problems. Later, as the year progressed, the surveys also focused on information and actions planned if the drought were to continue into 1989. Over 300 water purveyors, including all major water agencies in the State, were contacted.

According to the surveys, 45 of California's 58 counties experienced water shortages in 1988. Fourteen counties declared drought emergencies. About one-third of California's people and over 40 percent of the State's irrigated agriculture were directly affected by the drought. The drought also adversely affected hydroelectric power generation, water-oriented recreation, fish, wildlife, forests, and wetlands.

In September 1988, the State Legislature passed and the Governor signed Senate Bill 32. This bill directed DWR to identify the areas where a continuation of the drought could impose severe health, economic, and environmental hardship and to develop options for addressing water supply shortages and protecting fish and wildlife.

As a result of this legislation, DWR issued a report in January 1989 entitled *Drought Contingency Planning Guidelines for 1989*. The guidelines were prepared to assist California water

purveyors in determining actions they could take if the drought were to continue in 1989. The report assessed 1988 drought impacts and identified potential problems if a third year of drought were to occur. Furthermore, the report described options developed with local agencies for addressing possible water supply shortages, protecting fish and wildlife, and coping with drought-related recreation impacts. It also discussed available federal and State technical and financial assistance and regulatory actions specifically applicable during droughts.

In January 1989, DWR issued a companion report, *Drought Assistance: A Report to the Legislature in Response to Senate Bill 32*. This report described regulatory and legislative actions that could be taken if 1989 were to continue to be dry.

Marin Municipal Water District

In early 1988, Marin Municipal Water District requested DWR's assistance in locating and transporting 10,000 acre-feet of supplemental water supply annually. Although the SWP has no water available for Marin, DWR did agree to provide assistance, including the preparation of a preliminary study of interim use of the North Bay Aqueduct to deliver a supplemental supply from an undetermined source.

DWR has since participated in several meetings with Marin and representatives of Napa and Solano County Flood Control and Water Conservation Districts. DWR has also provided information to Marin's consulting firm, which is preparing a comprehensive water plan for the district based on an assessment of current supply, demand, and distribution systems.

Interim use of the North Bay Aqueduct to deliver water purchased from an undetermined source in the Central Valley is still under consideration. Before such use occurs, mutually beneficial agreements among DWR, the existing NBA contractors, and Marin would be negotiated.

Coordinated Operation Agreement

The signing of the Coordinated Operation Agreement in November 1986 initiated a new series of negotiations between DWR and the USBR. As mandated in Article 10(h) of the agreement, the two parties must negotiate a contract for SWP conveyance and purchase of CVP water to permit the agencies to use facilities and water supplies more efficiently.

The first negotiating session for this contract was held in June 1987, and public sessions have been held regularly since. Issues being discussed include Central Valley hydrology, available California Aqueduct wheeling capacity, methodologies for establishing CVP water purchase rates and SWP wheeling rates, and environmental documentation. The negotiators are working toward completion of a draft contract in 1989 and environmental documentation in 1991.

San Joaquin Valley Drainage Monitoring Program

Agricultural production and the environment in the western San Joaquin Valley are threatened by high salt concentrations and other elements connected with irrigated agriculture. Attention to these problems has focused on Kesterson Reservoir in the federal service area.

Dewatering of Kesterson Reservoir began in January 1988 in accordance with the onsite disposal plan approved by the State Water Resources Control Board in 1987. However, investigations revealed that aspects of the onsite disposal plan could potentially aggravate environmental problems and delay the Kesterson cleanup. The State Board subsequently reviewed this information and adopted a new order, which required the USBR to eliminate all ephemeral pool areas within Kesterson Reservoir to prevent ponding of water. The USBR then placed approximately 740,000 cubic yards of fill material over a 590-acre area. The Bureau is continuing its extensive monitoring of soil, water, vegetation, and wildlife in the Kesterson Reservoir area.

DWR closely monitors the U.S. Department of the Interior's agricultural drainage water management and has studied the San Luis Drain. DWR representatives serve on several committees and advisory groups of the interagency San Joaquin Valley Drainage Program. These committees are actively pursuing solutions to the drainage and selenium problems in both the federal and State service areas.

DWR is collecting data and preparing studies on reuse and disposal of agricultural drainage water in the State service area. Analyses emphasize trace elements such as selenium and arsenic because of their potential adverse effects on water supplies and the environment. Other water quality parameters, such as nutrients, do not appear to be a problem and are analyzed less frequently.

To determine selenium concentrations in the State service area, DWR has increased its selenium data collection and is working with the U.S. Geological Survey to investigate shallow ground water within the Tulare Lake Basin. Together with information on applied irrigation rates, cropping patterns, soil types, and precipitation, these data are being evaluated to identify possible selenium leaching rate trends.

Los Banos Demonstration Desalting Facility

The Los Banos Demonstration Desalting Facility began operation in late 1983 to investigate the technology and economics of reclaiming drainage water by desalting. In late 1986, following the San Luis Drain shutdown by the federal government, the plant lost its agricultural drainage feedwater. The facility, except for the solar pond system, is now closed.

The solar pond system at Los Banos is still operating. The Rankine-cycle power generator has operated for two summers, producing about 10 kW of continuous power to reduce electric power costs at the facility. A 5,000-gallon-per-day vertical-tube foamy evaporator desalter has been integrated into the system to demonstrate steady-state operation of a power-generating salt-gradient-pond desalting system.

DWR is cooperating with other agencies to establish a multiagency treatment center for investigating selenium-specific removal technologies and evaporation ponds. This treatment center would be located at Westlands Water District's Tranquillity site. Additional desalting pretreatment studies by DWR could be conducted at this site.

Project Purpose Cost Allocation

SWP capital costs allocated to recreation and fish and wildlife enhancement through 1987 are updated in Appendix D to Bulletin 132-88, which was submitted to the Legislature in June 1989. The appendix reported an additional $11,379,238 in capital costs allocated for recreation and fish and wildlife enhancement over the amount reported in Appendix D to Bulletin 132-87. This increase is due mostly to (1) the accruing of interest on recreation costs not yet reimbursed by the continuing annual appropriation of State Tideland Oil Revenues (appropriations required under the Davis-Dolwig Act, which was enacted in 1965) and (2) additional SWP expenditures for recreation lands and for joint capital costs allocated to recreation and fish and wildlife enhancement. For the first time, interest accruals in Appendix D to Bulletin 132-88 reflect interest costs of Water System Revenue Bonds. No new or revised project purpose cost allocation percentages are included in this report.

Two-Agency Fish Agreement

In December 1986, DWR and the Department of Fish and Game signed an agreement to mitigate direct fish losses at the Banks Pumping Plant. The agreement calls for DWR to fund projects that will increase the survival of chinook salmon, steelhead, and striped bass. The agreement requires two types of payment by DWR: (1) $15 million for a program to quickly replenish target fish populations, and (2) annual payments based on the calculated numbers of fish lost at the intake to the California Aqueduct.

DFG has estimated losses for striped bass and steelhead in yearling equivalent and chinook salmon in smolt equivalent. DWR has mitigation responsibility for approximately 544,000 striped bass, 1,973,000 chinook salmon, and 22,000 steelhead in 1986; 684,000 striped bass, 1,537,000 chinook salmon, and 12,000 steelhead in 1987; and 850,000 striped bass, 1,610,000 chinook salmon, and 16,000 steelhead in 1988. All figures are preliminary and may be adjusted as the two departments learn more about predation and survival of the Delta fishery.

DWR's goal is to produce enough fish to replace those lost at the Banks Pumping Plant intake.

Replacing the lost fish with hatchery fish would cost DWR approximately $1.4 million per year for 1986, 1987, and 1988. Other ways of replacing the fish--through development of spawning grounds or other environmental improvements--might cost less, depending on the number of fish produced.

Payments for 1986 losses are being used in part to purchase yearling striped bass from private aquaculture firms. However, obtaining enough fish has proved difficult. Although aquaculture firms contracted in 1987 to supply about 550,000 yearlings for planting in 1988, the actual supply was only about 345,000. At this time eight aquaculture firms are licensed to rear striped bass, and they have experienced problems during the sensitive spawning and early life stages of the fish.

To provide another source of yearling striped bass, DWR and DFG are operating a newly constructed fish rearing facility on the grounds of the Skinner Fish Facility. Fish salvaged at the facility screen were reared in tanks for release in the spring of 1989. About 117,000 fish from this project were planted in San Pablo Bay at Rodeo and in the Sacramento River at Rio Vista.

As of January 1989, it appears that striped bass from the salvage operation can be grown successfully at the Skinner Fish Facility, but some modifications in plumbing and water supply are needed to ensure fish survival during hot weather. Plans to make these changes have been approved, with the goal of completing the modifications in time for the 1989 striped bass crop. After the fish rearing facility has operated for two years, DWR will determine if the State should continue to operate growout ponds in the Delta or in other locations, or if private growers should take over this task.

DWR and DFG are continuing to propose and evaluate striped bass, chinook salmon, and steelhead projects as they are developed. An advisory committee representing fishery, environmental, and water interests has been established to assist in project selection and evaluation. Approved projects include:

- restoration of gravel spawning beds for salmon in Mill Creek, Tehama County;
- installation of a fish screen at a small Suisun Marsh diversion;
- improvement of the Merced River Fish Hatchery and Merced River;
- purchase of striped bass; and
- rearing of yearling steelhead at the Mokelumne River Hatchery and Mill Creek Experimental Well Field, where ground water will be pumped to supply irrigation water, allowing water to remain in the stream to aid salmon passage.

Winter Run Chinook Salmon

On May 16, 1989, the California Fish and Game Commission reversed its previous position not to list the winter run chinook salmon as endangered. The commission based its decision in part on estimates by the Department of Fish and Game that the population of the run was under 600, down from what had appeared to be a stable 2,000. Under State law, after the commission finds what facts exist to list a species, it must adopt a regulation to that effect. It is anticipated that a final vote on regulation will take place at the commission's meeting on August 4, following a public comment period. The impact of this decision upon SWP operations is uncertain at this time.

Water Rights Management

DWR operates SWP storage and diversion facilities to meet criteria established in the State Water Resources Control Board's Decision 1485. Currently the SWRCB is conducting a multi-phase process to determine new water quality standards for the Delta.

Bay-Delta Hearings

Decision 1485 established conditions for Delta water rights and operations of the two largest water projects, the SWP and the CVP. The USBR and DWR are required to maintain Delta water quality according to standards based on "without project" conditions, as if the projects had not been built.

Lawsuits by various water users and the federal government challenged Decision 1485, which was overturned by the trial court in 1984. However, the standards remained in force pending a decision by the Court of Appeal. In 1986, the appellate court broadly interpreted the Board's authority to establish and enforce water quality objectives that assure reasonable protection of beneficial uses of the Bay-Delta estuary. The ruling also ordered the Board to consider the effects of all Delta and upstream water uses, not just those of the SWP and CVP.

In July 1987, the SWRCB opened Phase I of a planned three-phase Bay-Delta hearing to gather evidence on the beneficial uses of Bay-Delta water. After 54 days of testimony, cross-examination, and rebuttal on 14 subjects, Phase I concluded in late December 1987. DWR presented over 500 exhibits through 30 expert witnesses. Altogether, there were over 40,000 pages of exhibits and more than 600 speakers.

Based on evidence from Phase I and other information and analyses, the SWRCB staff prepared a draft water quality control plan and a draft pollutant policy document, which were released for public review on November 3, 1988. The draft water quality control plan proposed sweeping changes to the current plan, which was adopted in 1978 and is the basis of Decision 1485. DWR, and many of the other hearing participants, had many factual, legal, and policy concerns with the draft plan.

DWR's concerns with the draft included the following:

- The draft plan went beyond water quality objectives to water rights issues that properly belong in a later phase of the hearing (particularly flow objectives and diversion limits).
- Implementation of the water quality objectives relied almost exclusively on water rights regulation.
- Existing agreements and ongoing negotiations were generally ignored or, in effect, changed.
- The draft plan did not adequately consider the planning activities of DWR and others.
- The bases for establishing reasonable needs for the various beneficial uses appeared inconsistent.
- The impacts on upstream and service area water operations were not adequately analyzed.
- The service area demand estimates, particularly water conservation potential, differed greatly from DWR projections in Bulletin 160-87, which was in evidence.
- The uncertainty of the estimates of the needs of Delta fisheries was not adequately considered.

Because of the strong opposition to the draft plan, the SWRCB postponed opening the planned Phase II of the hearing and instead held a special workshop on January 9, 1989, to receive comments on how and when to proceed. DWR was one of several participants who recommended a rescoping of the plan and process. After considering the comments, the Board, on January 19, 1989, directed its staff to revise the work plan for the hearing process. The Board members indicated that a new draft of the water quality control plan would probably be required and that the revised plan should defer consideration of flow requirements and export limits to a later phase of the hearing.

In its comments on the work plan, DWR also offered to sponsor a series of technical workshops on two subjects for all hearing participants: supply/demand analyses, including consideration of reasonable levels of urban and agricultural water conservation, and operation studies to determine the impacts of water quality and flow objectives presented in the draft plan. The Board accepted the offer and the workshops began in February 1989. Subsequently, DWR also agreed to sponsor similar workshops related to Delta agriculture, water year classifications, and hydrodynamics and salinity. These workshops will continue through the scoping phase of the hearing, providing important information for the water quality and scoping phases described below.

As of July 1989, the Board staff was completing the revised work plan, and initial indications were that most of DWR's suggestions about scope

were being incorporated. This rescoping will lengthen the hearing process, with the water quality phase (formally Phase II) hearing beginning in late 1989 instead of November 1988 as originally scheduled. The Board will adopt the final water quality control plan about July 1990. Completion of the pollutant policy will proceed independently, probably somewhat ahead of the water quality control plan.

Following adoption of the water quality control plan, the Board will add a scoping phase to receive evidence on other planning activities, facilities development, negotiated settlements, and legislative action. The Board will then develop alternatives for beneficial use of Bay-Delta waters and incorporate these in a draft environmental impact report. The process will then enter the water rights phase (formally Phase III), when evidence will be taken on the draft EIR and water rights issues. As the last step, the Board will adopt a final EIR and a water rights decision to replace Decision 1485. Specific schedules have not been set for the scoping and water rights phases.

Delta Water Quality Monitoring and Reporting

DWR continues its extensive water quality monitoring in the Sacramento-San Joaquin Delta and Suisun Marsh. A variety of physical, chemical, and biological constituents are monitored by six shoreline installations and biweekly sampling at 27 discrete sites. Water quality profiles of the main channels are also recorded biweekly, using instrumentation aboard DWR's laboratory work boat, the San Carlos. DWR maintains 34 tide and 13 electrical conductivity recorders in the Delta, as well as a network of continuous electrical conductivity and stage recorders throughout Suisun Marsh. Additionally, DWR determines soil chemistries at 51 representative sites, as provided in the Suisun Marsh Plan of Protection.

Compliance with Decision 1485 also requires supplemental studies of the San Francisco Bay ecosystem's freshwater outflow needs. The objective is to separate the effects of Delta outflow from other major influences on the bay, such as waste discharges and shoreline development. Water quality information generated from these programs is electronically processed and stored on the Environmental Protection Agency's "Storet" and in DWR's Water Data Information System. Tabulations of basic data and an evaluation report are submitted for annual SWRCB review. Copies of reports from 1975 through 1987 are still available.

Suisun Marsh

Suisun Marsh, in southern Solano County, is one of the largest contiguous brackish water marshes in the United States. The marsh supports numerous species of fish and wildlife and provides habitat for wintering wildfowl. This habitat is affected by water quality in the marsh's meandering channels.

SWRCB Decision 1485 required DWR and USBR to develop and implement a plan to meet specified water quality standards within the marsh. Initial facilities were completed in 1983, and a coordinated protection plan for Suisun Marsh water quality was developed. The protection plan, published with an EIR in 1984, includes:

- a program for phased installation of physical facilities to improve water quality in the interior marsh;
- a monitoring system to assure compliance with water quality standards and measure the performance of the facilities constructed; and
- a plan to regulate and improve wetland management practices throughout the marsh.

In March 1987, DWR, the USBR, the Department of Fish and Game, and the Suisun Resource Conservation District signed the Suisun Marsh Preservation Agreement. The agreement includes definitions of marsh water quality standards and construction staging, as well as details for implementing the protection plan.

The Suisun Marsh Salinity Control Gates, which became operational in October 1988, are a key feature of the protection plan. This facility will be tested for its effectiveness in reducing salinity levels in the interior channels to meet specified water quality standards. The testing procedures have been approved by the State Water Resources Control Board, and all parties to the preservation agreement have agreed that, during the testing

period, the facility will be operated to meet the interim water quality standards contained in the agreement. Test results will be evaluated to determine the need for additional features.

Western Delta Municipal Water Users

Two contracts are in effect to address the cost of substitute municipal water supplies in the Antioch-Pittsburgh area (Bulletin 132-67, page 20). The first, signed April 21, 1967, is with the Contra Costa Water District for its municipal water diversions at Mallard Slough near Pittsburg; the second, signed April 11, 1968, covers the City of Antioch.

Both contracts provide for DWR to compensate each entity for the additional costs of purchasing a substitute water supply from the Contra Costa Canal to replace offshore supplies lost because of SWP operation. Credits for above-average offshore water supplies accrue to offset below-average days in future years.

During the 1987-88 water year, both agencies had below-average water supplies as defined in the contracts. No water of usable quality was available to CCWD, compared with the contract standard of 142 days of usable water. For Antioch, usable water was available for 25 days, compared with the standard of 208 days. The deficiencies (142 days for CCWD and 183 days for Antioch) were offset by credit days accumulated during prior years of above-average supplies (108 days for CCWD and 167 days for Antioch). These subtractions reduced the credit balances to zero days for both CCWD and Antioch, resulting in payment of $23,297 to CCWD for 4,568 acre-feet in 34 days and $12,756 to Antioch for 121.45 acre-feet in 16 days.

Western Delta Industrial Water Users

Industries near Antioch and Pittsburg use offshore water for processing. When offshore water quality is below the industries' requirements, the Contra Costa Canal provides a substitute supply.

A water entitlement contract was executed on November 16, 1987, with Fibreboard Corporation, now owned by Gaylord Container Corporation (see Bulletin 132-88, page 54). Under this agreement, DWR will make payments to Gaylord Container for water years 1986-87 and 1987-88 to compensate the company for added costs it incurred for the substitute water supply and treatment required because of the operation of the SWP. DWR will coordinate with Gaylord Corporation to compute the payments.

Negotiations are also continuing with Gaylord Corporation for a second agreement regarding another mill it owns downstream from the Fibreboard mill.

Delta Agricultural Water Users

DWR has sought contracts with Delta agricultural agencies for more than a decade to help the SWP meet necessary water level, water circulation, and water quality needs for beneficial uses throughout each agency's respective area. Among the six Delta agricultural water agencies that replaced the Delta Water Agency in 1974, two--the North Delta Water Agency and the East Contra Costa Irrigation District--signed contracts with DWR in 1981. DWR is now negotiating a long-term agreement with the South Delta Water Agency and the USBR to address SDWA's needs. DWR is also conducting intermittent negotiations with the Central Delta Water Agency and holding periodic informational meetings regarding CDWA's water needs.

South Delta Activities

The last four years of negotiations and cooperation among DWR, the USBR, and the South Delta Water Agency have produced interim resolutions to some of the water level, circulation, and quality problems in the southern Delta. Negotiations are proceeding toward a long-term agreement to resolve these problems, which began when water quality standards for the southern Delta were not included in the State Water Resources Control Board's Decision 1485. Subsequently, SDWA filed a lawsuit against the Board for failing to set southern Delta standards in Decision 1485.

The Board had excluded the southern Delta because (1) negotiations among DWR, the USBR, and the South Delta Water Agency were under way when Decision 1485 was being prepared, and (2) the Board did not have enough information about water conditions in the area to set stan-

dards. After the Board informed SDWA that it must petition the SWRCB for any motion to adopt standards, SDWA restated its position that the Board must act to adopt standards for the southern Delta and indicated also that the agency's negotiations with DWR and the USBR had come to an impasse.

In 1982, SDWA filed a lawsuit against DWR and the USBR over the effects of SWP and CVP operations on water quantity and quality in the southern Delta. The parties have been actively negotiating since then. In 1985, DWR and SDWA signed an interim letter of intent for DWR to construct facilities, dredge certain channels, and to eliminate water level and water circulation problems resulting from the construction and operation of the SWP.

The letter of intent included a plan for: (1) dredging the upper five miles of Tom Paine Slough; (2) installing siphons in Tom Paine Slough if the dredging was not sufficiently effective; (3) developing Clifton Court Forebay operational criteria; and (4) constructing a weir in Middle River.

The dredging of Tom Paine Slough was completed in October 1986, and siphons were installed in June 1989. The Middle River weir was constructed in May 1987, and the center portion was removed at the end of September 1987. The removable center portion of the weir was then reinstalled for the 1988 and 1989 irrigation seasons. These activities have improved water levels, circulation, and quality in the southern Delta.

In October 1986, a framework agreement for settling litigation was signed by the USBR, DWR, and SDWA. The agreement includes provisions for: (1) negotiating a long-term plan of physical or operational solutions; (2) determining cost-sharing and responsibilities for the implementation of the long-range plan; (3) using interim New Melones releases to improve the south Delta water supply; and (4) cancelling the April 1987 trial date. The trial date has since been vacated and legal action stayed.

Also, SDWA agreed to release claims against DWR for alleged water level damage caused by SWP operations in the southern Delta. This release will be in effect for the duration of the agreement. The agreement is an interim solution; both agencies, with the USBR as third party, expect a permanent solution within the next four years.

Davis-Grunsky Act Program

The Davis-Grunsky Act provides funding for loans and grants to public agencies for construction of local water projects. As companion legislation to the Burns-Porter Act, the Davis-Grunsky Act was passed by the Legislature in 1959. Of the original $1.75 billion provided by the Burns-Porter Act to start construction of the State Water Resources Development System, $130 million was reserved specifically for distribution under the Davis-Grunsky Act. Funding is drawn from the California Water Resources Development Fund and the California Water Fund. Loans are repaid to the California Water Resources Development Fund.

The broad objective of the Davis-Grunsky Act is to further the development, control, and conservation of water resources in California. To meet this objective, the Davis-Grunsky Act program (1) provides State loans to public agencies for preparation of feasibility reports and construction of local water projects when such agencies are unable to obtain financing on reasonable terms from other sources; (2) encourages development of the recreation and fish and wildlife potentials of local water projects by authorizing State grants for such a purpose; and (3) enables the State to participate as a partner in the development, construction, or operation of certain water projects, when participation is necessary for optimum development of the resource.

Any city, county, district, or other political subdivision of the State is considered an eligible local agency. Mutual water companies or other private organizations and individuals are not eligible. Eligibility is also based upon conformance with the California Water Plan, statewide benefit of a proposed project, and the agency's inability to obtain financing from other sources.

The seven specific types of assistance available to local agencies are:

- loans for construction of local water projects;

- loans for acquisition of reservoir sites for proposed water projects;

- loans for feasibility reports on proposed projects for which construction loans are requested;

- grants for part of the construction cost of any dam and reservoir properly allocated to recreation;

- grants for construction of initial water supply and sanitary facilities needed for public recreational use of the reservoir;

- grants for part of the construction cost of a project properly allocated to the enhancement of fish and wildlife; and/or

- State participation as a partner in a project larger than one the local agency proposes to construct on its own.

When the program began, loans were made at the current market interest rate, which caused the rate to vary from loan to loan. To be more equitable to the low-income agencies the program was meant to assist, in 1967 the interest rate was fixed at a rate of 2.5 percent. The maximum repayment period is 50 years. However, at DWR's discretion, some agencies were given an initial 10-year deferment on loan payments, and the accumulated interest was then amortized over the repayment period.

The Davis-Grunsky Act is administered jointly by DWR and the California Water Commission, under policies and procedures set forth in the California Administrative Code, a Joint Statement of Policies, and the Davis-Grunsky Act itself. Through 1988, approximately $118 million of the allocated $130 million was disbursed for loans, grants, and administrative costs.

Principal actions under the Davis Grunsky Act program during the report period were:

- Home Gardens County Water District, San Bernardino County, submitted a formal application for a water supply and distribution system. The application was approved, and the district received three disbursements totaling $2,306,000. Estimated cost of the project is $2.5 million.

- Strathmore Public Utility District, Tulare County, applied for a $2.2 million construction loan. The formal application and feasibility report, along with DWR's report of findings, were approved in 1986 by the California Water Commission. The loan would partially finance construction of a $3 million project to provide drinking water to the community of Strathmore and adjacent lands. A combination of funds from the Davis-Grunsky Act program and the Safe Drinking Water Bond Act of 1984 is proposed for the project. Election difficulties in the district have delayed the loan.

- Littlerock Creek Irrigation District, Los Angeles County, submitted a formal application for a $2 million construction loan. The proposed loan is for the upgrading and expansion of the water distribution system to serve the community. DWR prepared findings on the application, which was approved by the California Water Commission on June 17, 1988. A contract has been executed but has not yet been court-validated as required, and no funds have been disbursed.

- Big Bear Municipal Water District, San Bernardino County, submitted a formal application for a $5 million construction grant. The proposed grant is for the repair of Bear Valley Dam, which does not meet earthquake safety standards. DWR prepared a finding, and the California Water Commission approved the application on June 17, 1988. A contract for a grant of $4,583,206 has been executed and validated by the Superior Court. Construction is nearly complete. Big Bear MWD has requested approximately $2.9 million in grant funds to date, and payments are being processed.

Legislation

This section summarizes federal and State legislation of concern to DWR.

Federal Legislation

The Disaster Assistance Act of 1988, which was signed into law on August 11, 1988, provides assistance for people and businesses affected by drought throughout the United States. One part of the act, the "Reclamation States Drought Assistance Act," provides emergency drought assistance for California and other states with USBR projects. The act authorizes the Secretary of the Interior to:

- perform water conservation and augmentation studies; undertake construction, conservation, and management activities consistent with contracts and State law to mitigate the drought's effects; and assist willing buyers and sellers of water in accordance with priorities to be determined by the Secretary (Section 412);

- make water or canal capacity of existing federal reclamation projects available to water users and others, under specified contract conditions (Section 413); and

- make loans to water users for management, conservation, or acquisition and transportation of water consistent with State law upon terms and conditions deemed appropriate by the Secretary (Section 414).

The programs and authorities authorized by the act can become operative in a Reclamation State only after its governor has declared a drought emergency.

The act authorizes $25 million for the Section 412(b) construction, management, and conservation activities, and for the Section 414 emergency loans ($4 million for each USBR region except the Denver, Colorado region, which receives $5 million). It also authorizes a specific program for the Oakdale and South San Joaquin irrigation districts, as well as construction of a temperature control curtain at Shasta Dam for anadromous fishery protection and enhancement.

Other federal laws enacted this session include:

H.R. 799, PL 100-50: Designates a segment of the Kings River as a component of the National Wild and Scenic River system.

H.R. 4267, PL 100-490: Renames certain federal and State water facilities: Whiskeytown Dam becomes Clair A. Hill Whiskeytown Dam; San Luis Dam becomes B. F. Sisk San Luis Dam; and San Luis Pumping-Generating Plant becomes William R. Gianelli Pumping-Generating Plant.

S. 795, PL 100-675: Settles a lawsuit by bands of Mission Indians in San Diego County over water rights to the San Luis Rey River. The settlement provides for a $30 million tribal development fund, plus up to 16,000 acre-feet of supplemental water per year. The water will be furnished from water reclaimed from lining the All-American Canal, from contracting with The Metropolitan Water District of Southern California, or from public lands within the State of California outside the service area of the CVP. The Indians will receive only the amount of water they can put to beneficial use; the rest will be distributed to various agencies who need the water. The act also authorizes lining the All-American Canal.

S. 1889, PL 100-443: Amends the 1970 Geothermal Steam Act to provide for geothermal steam field lease extensions.

State Legislation

SB 32, Chap. 957 of 1988: Provides legislative direction to DWR, but no new authority, for drought related activities. Directs DWR to identify the areas of California in which a third year of drought could impose severe health, economic, and environmental hardship; to develop options for addressing water supply shortages and for protecting fish and wildlife; and to assist local representatives in the identified areas in implementing the emergency water supply options. (DWR completed the required report of its findings and presented it to the Legislature in January 1989.)

AB 982, Chap. 1145 of 1988: Permits temporary changes involving the amount of water consumptively used or stored by the appropriative water right holder and defines "consumptively used" for this purpose. Requires the State Water Resources Control Board to evaluate a proposed temporary change and to set a hearing if it cannot make a finding. Also deletes the special provisions for approval of a trial transfer of water rights, and

In 1988, Congress authorized the renaming of the federal and State joint-use facilities at the San Luis Complex for B.F. Sisk (left) and William R. Gianelli (right).

permits approval by the SWRCB of a petition for a long-term transfer of water or water rights, in accordance with prescribed requirements, if the SWRCB has previously approved a temporary change.

AB 1933, Chap. 61 of 1988: Requires a statewide participation goal of 15 percent minority-owned businesses and 5 percent women-owned businesses for all contracts awarded by a State agency for construction services (including professional bond services), materials, supplies, and equipment.

SB 2261, Chap. 1545 of 1988: Enacts the Salmon, Steelhead Trout and Anadromous Fisheries Program Act, which requires the Department of Fish and Game to prepare and maintain a detailed conservation and restoration program for protection and increase of salmon, steelhead trout, and anadromous fisheries. Also requires DFG to determine and report the initial elements of the program to the Legislature and the advisory committee within six months of the bill's enactment. Appropriates $125,000 from the Environmental License Plate Fund and $166,000 from the Fish and Game Preservation Fund to start the program.

AB 3654, Chap. 1488 of 1988: Requires The Reclamation Board to offer to lease to the Department of Fish and Game, or to a public entity approved by DFG and The Reclamation Board, any lands it acquires as replacement habitat to mitigate adverse environmental impacts of its projects. Under provisions of this law the board is also required to prepare, in consultation with DFG, a mitigation plan to be implemented prior to construction of a flood control, channel clearing, or bank stabilization project. This legislation also revises from $5 million to $8 million the total amount specified for flood control works on the San Joaquin River to be maintained and operated by the Department of Water Resources.

AJR 67, Chap. R-151 of 1988: Advises Congress that the Legislature continues to support construction of a multipurpose Auburn Dam at the Auburn site and encourages Congress to give serious consideration to the offer of the American River Authority to share the costs of a multipurpose dam. This joint resolution also declares that the State, while participating in any study of the American River watershed, should consider the needs of, and potential benefits to, El Dorado, Placer, and Sacramento counties, the City of Sacramento, and other local entities.

SB 502, Chap. 1251 of 1988: Specifies the nonfederal cost-sharing formula for authorized federal flood control projects for all projects authorized by the Legislature after January 1, 1987. The State share is 70 percent, and the local share is 30 percent.

SJR 30, Chap. R-123 of 1988: Memorializes Congress to transfer control and operation of the federal Central Valley Project to the State of California or other public entity. It also specifies that the State or other public entity would comply with the legal and contractual obligations of the United States.

In addition to the laws enacted by the Legislature, California voters passed the following two bond initiatives. Proceeds from these bonds will support various DWR local assistance programs.

Prop. 81: The California Safe Drinking Water Bond Law of 1988 is a $75 million bond act to provide funds for improvement of domestic water systems to meet minimum drinking water standards. This act was placed on the ballot by AB 1439, Chap. 45 of 1988.

Prop. 82: The Water Conservation Bond Law of 1988 is a $60 million bond act to provide funds for a local water projects assistance program, water conservation programs, and ground water recharge facilities. This act was placed on the ballot by AB 1715, Chap. 46 of 1988.

Litigation

The following summaries describe significant litigation involving DWR during the report period, July 1, 1988 through June 30, 1989.

Control Over SWP Operations

South Delta Water Agency v. *United States, et al.*, filed July 9, 1982, in Federal District Court for the Eastern District of California by SDWA against the United States, the Department of the Interior, the USBR, and DWR. The case involves the effects of the CVP and SWP on the southern Delta and the Department of the Interior's designation of the New Melones Reservoir service area.

SDWA alleges that CVP operations in the San Joaquin River unlawfully reduce the quantity and diminish the quality of water flowing in the San Joaquin River to the southern Delta; that operation of the SWP and the CVP pumps violates southern Delta rights by lowering water levels, reversing flows, and diminishing the influence of the tides; and that the Secretary of the Interior's designation of the "Stanislaus River Basin" for purposes of allocating water from New Melones Reservoir violates southern Delta rights by not including the southern Delta in the basin. SDWA asked for declaratory and injunctive relief.

The United States and the plaintiff settled plaintiff's Motion for Preliminary Injunction (to enjoin the United States from signing contracts for New Melones water) by stipulating that any contracts entered into by the United States are subject to any superior rights in the southern Delta that are determined in this litigation. Further activity on the suit has been postponed indefinitely while the parties negotiate a settlement. An interim agree-

ment has been signed, and a permanent agreement is expected within five years.

Flood Cases

February 1986 Flood Cases. Claims for over $3 billion have been filed in Superior Courts in Sonoma, Sacramento, Yuba, and other counties against State agencies, including DWR, for damages arising out of levee failures and flooding in various areas throughout Northern California during February 1986.

The Sonoma County claims are mostly in the pleading stage, with a few cases in discovery. Of the 44 Yuba County claims, 31 were coordinated and assigned to a Coordination Trial Judge. They are tentatively scheduled for trial in January 1990. The Sacramento, Butte, El Dorado, and Sonoma County cases were not coordinated and are proceeding to trial individually. One class action suit, involving over 100 plaintiffs and alleging several million dollars of damage from flooding at Cal Expo, went to trial on February 4, 1988. The jury returned a verdict in favor of the public agency defendants and found no liability on the part of the State or the County of Sacramento.

Public Entity Liability in Flood Cases. On December 22, 1988, the California Supreme Court issued a decision concerning public entity liability in flood cases. *Belair* v. *Riverside County Flood Control District, et al.*, arose out of a 1980 San Jacinto River levee break. The Corps had designed and built the levee, and the Riverside County Flood Control District maintained it. The State was named a defendant because of its involvement through the flood subvention program. Plaintiffs sought $30 million in damages.

Although the levee break was found to be a substantial cause of the plaintiffs' damages, the Court required that plaintiffs also show unreasonable conduct on the part of the public entities in designing, constructing, or maintaining the levee. Since no unreasonable conduct was proven, the public entities were held not liable. This decision reverses a trend of holding public entities strictly liable (without regard to fault) in inverse condemnation suits when a flood control improvement fails.

The decision is likely to make it more difficult for plaintiffs to recover from the State and other public agencies for damages arising out of the February 1986 floods.

Kern River Intertie

Kern Property Corporation v. *State of California*, filed December 29, 1982, in Kern County Superior Court. This suit involves water rights, Kern River Intertie operation, and the operation of the California Aqueduct. Plaintiff's concern is that water other than flood water is being intercepted into the Intertie contrary to the Intertie's flood control purposes. A related case, *River West, Inc.* v. *State of California*, was dismissed in 1988. Several of the defendant districts have agreed to indemnify the State against judgment in favor of the plaintiff.

Energy Cases

Southern California Edison Company v. *Los Angeles Department of Water and Power, et al.*, filed October 18, 1979, in Los Angeles Superior Court. This suit was filed by SCE to compel LADWP to continue to meet its obligation to supply DWR with electrical power under the Suppliers Contract. LADWP has claimed that, under the doctrine of commercial impracticability, it is entitled to be excused from its obligations under this contract.

LADWP had earlier given notice to DWR that, unless DWR paid a higher price for the power than that set forth in the contract, it would no longer provide DWR with service. After DWR refused to deviate from the terms of the Suppliers Contract, LADWP informed DWR and the other parties to the contract that it would terminate service as of October 21, 1979. The Pacific Gas and Electric Company and the San Diego Gas and Electric Company, suppliers under the contract along with SCE and LADWP, are defendants in the lawsuit. DWR intervened in the case. On November 7, 1979, a preliminary injunction was issued requiring LADWP to continue to supply power under the Suppliers Contract. LADWP continued supplying power to DWR until termination of the Suppliers Contract in 1983. SCE and LADWP have reached a settlement agreement. After obtaining Federal Energy Regulatory Commission approval of the Settle-

ment Agreement, SCE dismissed the case "with prejudice," which means that it cannot be refiled. *Arbitration between Nevada Power Company and DWR*, filed October 30, 1986. The arbitration involved a dispute between the parties relating to their joint operation of Reid Gardner Unit No. 4. Specifically, the issue was the allocation of the minimum coal purchase obligations under four contracts for the coal supply to Unit No. 4, owned jointly by DWR and the Nevada Power Company, and the Units 1, 2, and 3, owned solely by the Nevada Power Company.

The dispute was scheduled for arbitration pursuant to provisions in the Participation Agreement for Reid Gardner Unit No. 4. In late 1988, the parties reached a settlement based on establishment of a common coal stockpile to supply and account for all coal delivered to the four units at Reid Gardner station. The arbitration proceeding was dismissed.

Arbitration between Nevada Power Company and Cyprus Western Coal Company. Nevada Power Company acts as DWR's agent in administering the coal supply contracts for Reid Gardner Unit No. 4. In this capacity Nevada Power Company was involved in an arbitration with Cyprus Western Coal Company in April of 1989. See "Coal" in the Power Resources section of Chapter VI for additional information on the issues and results of the arbitration.

DWR v. *Lake County*, filed October 1987, Lake County Superior Court. DWR is challenging the validity of Lake County's Electricity Generation Tax ordinance as it applies to DWR's Bottle Rock Powerplant and is claiming a refund of the $1.7 million paid the county. DWR asserts that the tax is, in effect, an ad valorem tax on State property, and is prohibited by the State Constitution. Payment of the tax was a prerequisite to challenging the ordinance in court. The answer was filed in January 1988. Discovery has commenced.

DWR is also following *Sacramento Municipal Utility District* v. *Sonoma County*, where SMUD is challenging a similar ordinance. DWR has filed a brief as a friend of the court.

Water Supply Contracts

Antelope Valley-East Kern Water Agency v. *Local Agency Formation Commission of Los Angeles County*, filed April 9, 1987, in Los Angeles Superior Court. Residents of the Aqua Dulce area sought to detach the area from AVEK, a water service contractor with the SWP. LAFCO approved the detachment and terminated the obligation of the residents to pay taxes for the pre-existing bonded indebtedness of AVEK. AVEK challenged the detachment insofar as it did not require the area residents to remain subject to taxes for the pre-existing bonded indebtedness. DWR intervened on the side of AVEK. Castaic Lake Water Agency, Crestline-Lake Arrowhead Water Agency, and Desert Water Agency joined as friends of the court.

On May 22, 1987, the trial judge ruled that the LAFCO detachment order was invalid and that the property owners must remain subject to taxes for prior indebtedness. On June 18, 1987, the trial judge issued a peremptory writ of mandate requiring LAFCO to set aside its action and to reconsider the detachment proposal in light of the court opinion. The property owners appealed.

The Court of Appeal ruled in favor of AVEK, invalidating the LAFCO decision. The opinion focused mostly on statutory interpretation. The Court ruled that the specific provisions in the AVEK enabling statute governing detachments prevailed over the provisions in the general Cortese-Knox Local Government Reorganization Act. The AVEK statute requires areas being detached to remain subject to taxes to pay the prior in debtedness of AVEK, while the Cortese-Knox Act allows LAFCO to decide the issue.

Beyond merely looking to rules of statutory construction, the court discussed the statewide in terest involved. It noted that AVEK was created by the Legislature to be a contracting agency in the State Water Project. It further stated that the section in the AVEK statute requiring detached areas to remain subject to taxes for indebtedness is one of several provisions of state law intended to protect the financial interests of the State and its bond holders. The opinion has been published at 204 Cal. App. 3d 990.

Environmental Cases

U.S. v. *Nevada Power Company*, filed December 1, 1987, United States District Court, District of Nevada. The Environmental Protection Agency sued NPC over its operation of the Reid Gardner generating station Units 3 and 4. DWR was not named as a defendant, but jointly owns Unit No. 4 with NPC. EPA has alleged several violations of the Clean Air Act, including failure to meet particulate matter standards, failure to maintain appropriate files, and failure to report required emissions information.

NPC filed an answer asserting general denials on December 28, 1987. The answer also raises several affirmative defenses and requests a jury trial. The parties are undertaking discovery and have exchanged settlement proposals. Settlement discussions are continuing.

Friends of Plumas Wilderness, et al. v. *California Department of Water Resources*, filed in Plumas County Superior Court on December 7, 1988. Plaintiffs wanted to stop a ground-based cloud seeding project planned by DWR to test new equipment using propane as a cloud seeding agent. The plaintiffs also challenged DWR's use of a negative declaration for the project. The case is now inactive.

Construction Cases

Nevada Power Company and DWR v. *Fluor Power Services, Inc., et al.*, filed fall 1986, Clark County District Court, Nevada. DWR and NPC contracted in 1979 for the construction of a coal-fired steam turbine generating plant, known as Reid Gardner Unit No. 4. The superstructure of the plant's concrete cooling tower deteriorated and would have eventually collapsed, due in part to reactive aggregate in the concrete mix, which produces high internal pressures as silica gel forms, causing the concrete to fail. The deteriorated tower has been removed and a new redwood tower is in operation.

DWR and NPC have sued the general contractor for the powerplant (Fluor Power Services), the cooling tower contractor (Boecon), and the materials supplier (Las Vegas Building Materials) alleging that they failed to ensure an adequate specification for the concrete mix, failed properly to supervise the placement of concrete, and misrepresented the quality of the aggregate. All defendants have been served and have answered. Discovery is under way. The case is expected to go to trial in 1990.

Other Contracts

Morrow Island Land Co. v. *State of California*, filed November 4, 1982, Solano County Superior Court. Under a contract with Morrow Island Land Company, a private duck club, and pursuant to SWRCB Decision 1485, DWR agreed to build water control facilities in Suisun Marsh. The claimant agreed to provide without charge the necessary easements for right of way and to maintain the facilities (four 48-inch corrugated steel pipes and some levees) after construction. DWR substituted pipes equal to those specified in the preliminary draft specifications. However, the company brought suit against DWR claiming that the State had not constructed the facilities in the manner it had agreed to in the contract. The claimant contended that it had been damaged to the extent of $300,000 by the substitution because of the installed pipes' increased maintenance requirements and shorter life. DWR contended that the pipes would provide service equal to that available from the pipes originally contemplated.

A non-jury trial resulted in a proposed judgment against DWR in the amount of $249,715, which was affirmed on appeal in an opinion filed on June 28, 1988. DWR paid the judgment on August 31, 1988, in the amount of $310,107.75 including interest and costs. The case is now terminated.

Chapter IV
Design, Construction, and Land and Right of Way Activities
July 1, 1988 through June 30, 1989

This chapter discusses SWP design, construction, and land and right of way work within the construction divisions shown in Figure 8. A summary of SWP safety activities is included at the end of the chapter.

Design Activity

Table 12 summarizes SWP design activities during the report period. The following projects were most significant.

North San Joaquin Division

Additions to Banks Pumping Plant include a service bay at the north end of the existing plant; pump units 8, 9, 10, and 11; and appurtenances. Design for the transformers, switchboard and switchgear, and completion contracts has been finished, with construction for all contracts scheduled to begin during the summer of 1989. All facilities are planned to be operational by December 1991.

Design work for Skinner Fish Facility, Phase III, is on schedule and is targeted for DWR staff review in August 1989.

North Bay Aqueduct, Phase II

Features of the North Bay Aqueduct, Phase II facilities include the pumping plants at Barker Slough and Cordelia Forebay and 23 miles of pipeline. Construction of Phase II was completed and the facilities became operational in 1988. Design started in March 1989 for the contract to provide for slope protection at Barker Slough Pumping Plant. Design for the North Bay Aqueduct communication and control system was completed. The system will provide total integration with the Project Operation Center and Delta Area Control Center.

Figure 8. SWP Construction Divisions

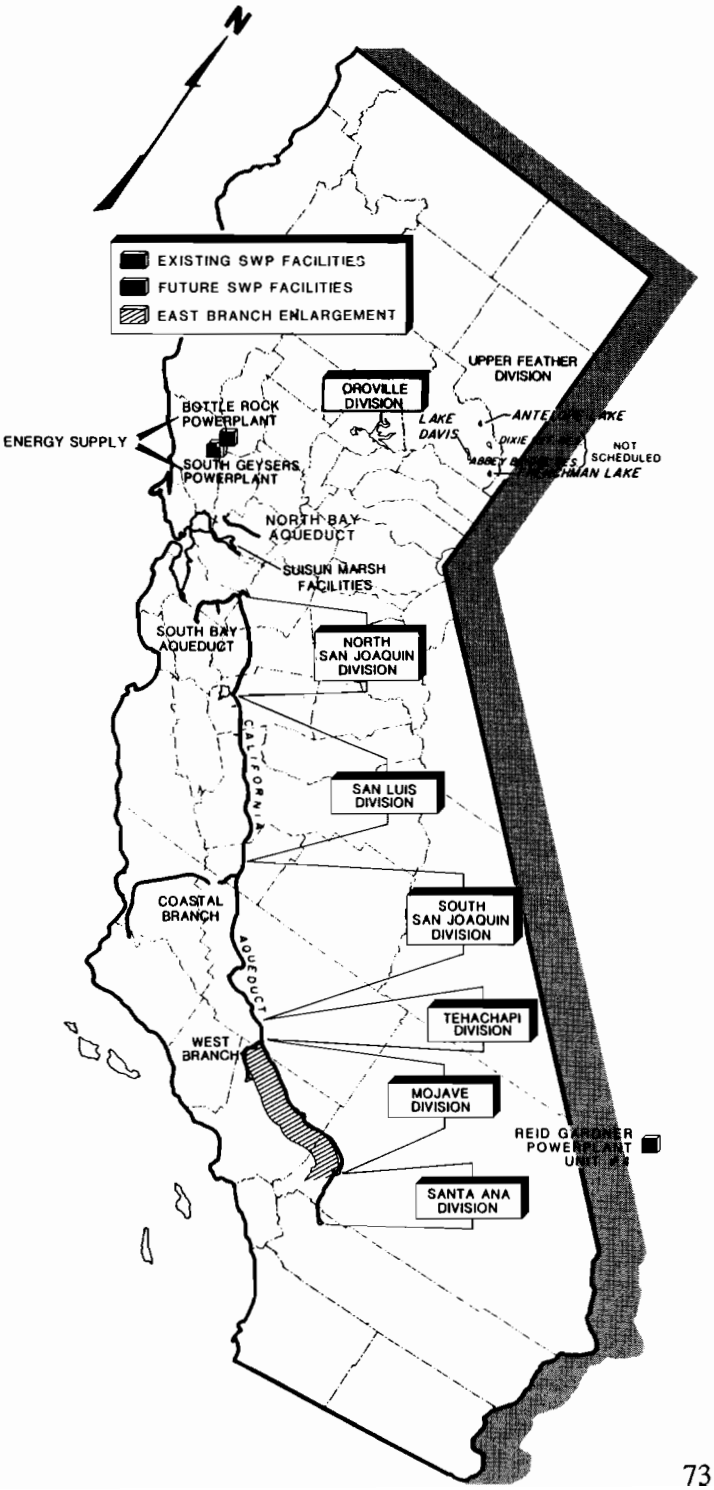


Table 12. SWP Design Activity in Progress, July 1988 - June 1988

Construction Division and Facility	Construction Contract	Begin Design	Complete Design
ENERGY SUPPLY			
Bottle Rock Powerplant	Sulphur Hydroxide Disposal System	June 1988	August 1988
	Well Pad at Binkley Leasehold	July 1988	(a
OROVILLE DIVISION	Fiber Optic System	December 1988	March 1989
Thermalito Powerplant	Unit 1 Stator Winding	June 1988	July 1988
NORTH BAY AQUEDUCT	Barker Slough Slope Protection	March 1989	May 1989
NORTH SAN JOAQUIN DIVISION			
Banks Pumping Plant	Completion Contract	October 1987	December 1988
	Furnish & Install Motors 8, 9, 10, & 11	January 1987	July 1988
	Furnish Switchboards & Switchgear	November 1987	February 1989
	Furnish Seat Rings for 84" Pump Discharge Valve	August 1988	November 1988
	Furnish Transformers	February 1988	November 1988
Skinner Fish Facility	Phase III - Additional Fish Tanks	January 1988	October 1989
Flood Control Project	Middle River Barrier	October 1988	January 1989
SAN LUIS DIVISION			
Gianelli Pumping-Generating Plant	Furnish Spare Wearing Rings & Cap Screws	September 1988	December 1988
	Underground Tanks for San Luis, San Joaquin, and Southern Field Divisions	March 1988	January 1990
SOUTH SAN JOAQUIN DIVISION	Addition to Plant Maintenance Building, San Joaquin O & M Center (for training)	November 1988	July 1989
	Civil Maintenance Service Shop & Warehouse at San Joaquin O & M Center	February 1989	September 1989
	Increase Aqueduct Lined Depth	October 1987	April 1989
	Overhaul Circuit Breaker for Chrisman Pumping Plant	January 1989	June 1989
	Modify Drainage Facility at MP 199.78	August 1988	February 1989
TEHACHAPI DIVISION			
Edmonston Pumping Plant	Discharge Line Adit Repair	September 1988	April 1989
	Spare Parts - Discharge Valve Seats & Pump Shaft Sleeves	January 1989	April 1989
	Rewind Stator - Unit 7	January 1989	April 1989
MOJAVE DIVISION	Addition to Plant Maintenance Building - Pearblossom Pumping Plant Subcenter	July 1988	March 1989
East Branch Enlargement	Mojave Siphon - Second Barrel	January 1989	October 1990
	Antelope Siphon - Third Barrel	July 1988	April 1989
	Canal Structure Modifications - Alamo Powerplant to Pearblossom Pumping Plant	July 1987	September 1988
	Canal Structure Modifications - Pearblossom Pumping Plant to Mojave Siphon	September 1988	June 1989
Pearblossom Pumping Plant	Third Discharge Line	January 1989	April 1989
	Completion Contract	January 1988	June 1989
	Furnish & Install Unitized Control System	July 1988	(b
	Furnish 230-kV Equipment	February 1988	October 1988
	Furnish Transformer	December 1987	May 1989
Mojave Powerplant	Initial Contract	July 1987	February 1990
	Furnish & Install Turbines, Generators, & Governors	July 1987	March 1989
SANTA ANA DIVISION			
Devil Canyon Powerplant	Completion Contract	November 1987	September 1989
	Second Afterbay	October 1988	July 1990
	Furnish & Install Penstock	May 1987	November 1988
	Furnish & Install Penstock Shutoff Valve	May 1987	June 1989
	Furnish & Install Generators	March 1987	August 1988
	Furnish Switchgear	February 1987	December 1988
	Furnish Switchboard	March 1987	December 1988
	Furnish 115-kV Breakers	February 1988	March 1989
	Furnish Transformers	June 1988	May 1989
	Bulkheads	August 1988	October 1988
West Branch	Vista del Lago Visitor Facilities - Pyramid Lake	March 1987	September 1989
	Furnish One Bulkhead, Warne Powerplant	January 1989	March 1989
SWP GENERAL	Roof Preservation of 28 Buildings in Five Field Divisions	November 1988	January 1989
	Furnish & Install Acoustic Flowmeters	October 1988	May 1989
	Air Conditioner Installation for Check Structure Control Buildings (1-12) in Delta Field Division	February 1989	July 1989

a) Job was postponed.
b) Postponed pending evaluation of O&M Control System schedule.

East Branch Enlargement (Mojave and Santa Ana Divisions)

Enlargement of the East Branch of the California Aqueduct, to be completed in two stages, will accommodate an additional flow of 1,500 to 1,683 cfs in the affected reaches. Most of the enlargement work will be completed during first-stage construction. The second stage of the East Branch Enlargement has not yet been scheduled.

Final design for the Antelope Siphon Third Barrel is essentially complete. The target date for DWR staff review has been rescheduled for February 1990. Design work for the Mojave Siphon Second Barrel is under way and scheduled for completion by October 1990.

Two construction contracts are required for modification of check structures, including radial gates and wingwall inlet-outlet transitions. The first contract will cover reaches from Alamo Powerplant to Pearblossom Pumping Plant, and the second contract will cover reaches from Pearblossom Pumping Plant to Mojave Siphon Powerplant.

Design continues on the enlargement of Pearblossom Pumping Plant to house five additional pumping units. During the first stage of the enlargement, three units will be installed, each with 375 cfs design capacity. Two of the new units will raise the total plant capacity to 2,200 cfs, and the third will serve as a spare unit to enhance the plant's reliability for delivering scheduled flows. Design has been completed for the pumps, motors, valves, cranes, initial construction work, and switchboard and switchgear. A contract to furnish 230-kV equipment has been awarded, and the contract for the third discharge line has been advertised. Design work continues on contracts for the transformers, control system, third discharge line completion, and the pumping plant completion.

Mojave Siphon Powerplant, a new power generating facility on the East Branch of the California Aqueduct, will contain three 10.8-MW generation units, each capable of passing 960 cfs. The plant is scheduled to be operational by mid-1994. Final design work on contracts for turbines, generators, and governors has been completed. Design work continues on the initial contract. In late 1989, design will begin for switchgear and switchboards, valves, and crane contracts.

The Devil Canyon Powerplant enlargement will accommodate two additional generating units. Two 800 cfs impulse turbines, together with the two existing 600 cfs impulse turbines, will increase the plant's capacity to 2,800 cfs. A second penstock will be built to deliver water to the new units. Also, a second afterbay will be built to provide additional regulation for increased flows and to enhance on-peak power generation.

Contracts for the warehouse, cofferdam, and office trailer shelter were completed and accepted early in 1988. The initial contract and contracts for the bypass valve, turbine, valves, and governors have also been completed and are currently under construction. Contracts for the second penstock generators, switchgear, and switchboards have been awarded.

Miscellaneous Design Activity

Design for repairs and modifications of existing facilities throughout the SWP are also included in Table 12 under the category entitled "SWP General." These activities include roof preservation of buildings, furnishing and installation of acoustic flowmeters, and installation of air conditioners in control buildings of check structures 1-12 in the Delta Field Division.

Construction Activity

Table 13 lists the major SWP construction in progress between July 1, 1988 and June 30, 1989. The following sections describe the most significant construction activities during this reporting period.

Energy Supply

Because of an insufficient firm steam supply, the 55-MW turbine-generator at Bottle Rock Powerplant continues to produce electrical energy at a reduced rate. Consequently, operational testing of the cooling tower could not be performed. The cooling tower contractor proposed to conduct the required testing in late summer using available steam. If required, remedial work will then be performed. (See Chapter VI, "Power Resources--Geothermal.")

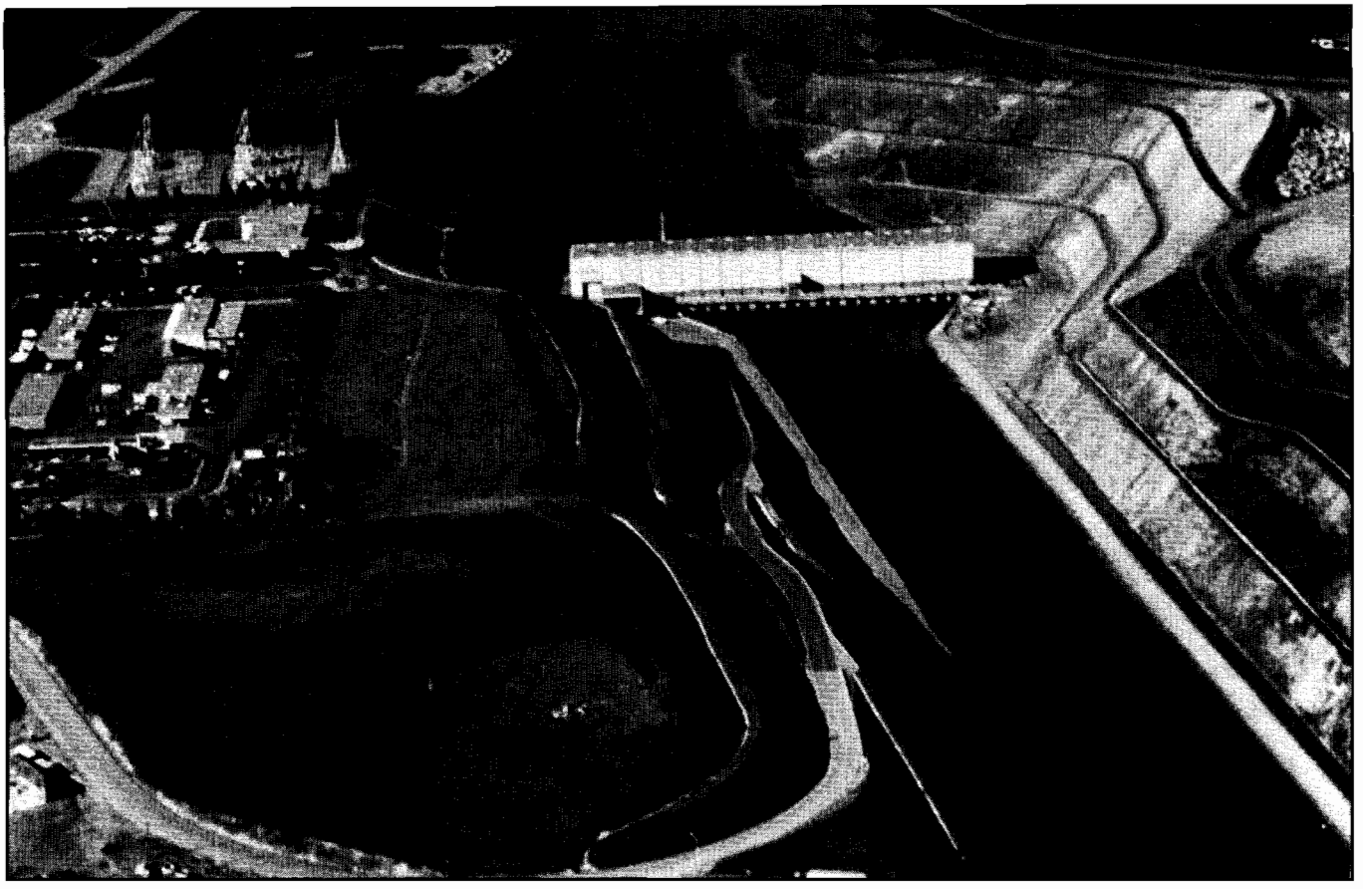
Table 13. Construction Activity in

Construction Division & Facility	Construction Contract (Specification Number)	Start of Construction (a	End of Construction (b	Contract Costs (c $1,000
ENERGY SUPPLY				
Bottle Rock Powerplant	Furnishing and Installing Cooling Tower (82-33)	November 1982	December 1988	3,215
	Turbine Rotor Repair (87-34)	October 1987	May 1989	304
	Service Bay Sound Barrier (88-05)	March 1988	August 1988	171
	Sour Gas Line Modification (88-34)	September 1988	January 1989	102
	Sulphur Melter Process System (88-46)	October 1988	June 1989	715
South Geysers Powerplant	Turbine Generator (82-48)	January 1983	December 1988	6,100
OROVILLE DIVISION				
Thermalito Powerplant and O&M Center	Computer Room Modification (87-46)	December 1987	November 1988	47
	Repair Generator Unit No. 1 (88-45)	September 1988	April 1989	550
	Repair Generator Units 2, 3, and 4 (89-11)	February 1989	December 1989	1,576
SUISUN MARSH FACILITIES				
Suisun Marsh Salinity Control Gates	Control Gates, Boat Lock, and Flashboard Structures (86-10)	May 1986	May 1989	14,980
	Recreation Area (88-32)	August 1988	February 1989	280
NORTH BAY AQUEDUCT, PHASE II				
Pumping Plants	Barker Slough Pumping Plant (86-27)	September 1986	December 1988	4,300
	Multipath Acoustical Velocity Flowmeters (86-32)	September 1986	August 1988	285
	Cordelia Pumping Plant and Barker Slough Pumping Plant Furnish Switchgear (86-47)	December 1986	February 1989	350
	Access Road and Landscaping at Cordelia Pumping Plant (88-02)	March 1988	August 1988	57
Communication System	Microwave Towers (88-04)	March 1988	August 1988	108
NORTH SAN JOAQUIN DIVISION				
Skinner Fish Facility	Demonstration Striped Bass Grow-Out Project (88-11)	March 1988	July 1988	350
Banks Pumping Plant	Furnish and Install Four Centrifugal Pumps (87-18)	September 1987	December 1991	7,733
	100-Ton Bridge Crane (87-50)	February 1988	September 1989	632
	North Service Bay Excavation (88-10)	April 1988	September 1988	738
	Pump Discharge Valves (88-25)	July 1988	December 1991	4,719
	North Service Bay (88-28)	October 1988	September 1989	1,554
	Motors, Units 8, 9, 10, & 11 (88-40)	November 1988	August 1991	12,400
	Transformers (89-02)	March 1989	December 1990	1,300
	Switchboards & Switchgear (89-10)	April 1989	December 1990	1,300
Miscellaneous	Del Valle Dam, Flood Control Intake Bulkhead Gate (88-19)	May 1988	December 1988	55
	Reconstruct Tidal Barrier at Middle River (88-22)	June 1988	October 1988	42
	Temporary Closure - Old River (88-39)	August 1988	December 1988	40
	Miscellaneous Road Work, Delta Field Division (88-41)	September 1988	September 1988	65
	Carrier Rings & Cap Screws for 84" Pump Discharge Valve, Banks Pumping Plant (89-01)	March 1989	September 1989	148
	Middle River Barrier - Delta Field Division (89-07)	April 1989	September 1989	43
SAN LUIS DIVISION				
Gianelli Pumping-Generating Plant	Spare Wearing Rings & Cap Screws (89-05)	March 1989	October 1989	350
Dos Amigos Pumping Plant	Furnish and Install Stator Windings for Units 1 & 2 (87-02)	March 1987	November 1988	1,014
	Recoating Dos Amigos Pumping Plant, Siphon Breaker House, and Water Tank and Tower (87-21)	July 1987	December 1988	87
SOUTH SAN JOAQUIN DIVISION	Replacement Pump Impellers, Buena Vista and Wheeler Ridge Pumping Plants (88-13)	July 1988	January 1991	6,575
	Replacement Pump Impellers, Chrisman and Oso Pumping Plants (88-14)	July 1988	October 1990	3,700
	Modification of Drainage Facility, Mile 199.7 (89-08)	June 1989	September 1989	206

Progress, July 1988-June 1989

Construction Division & Facility	Construction Contract (Specification Number)	Start of Construction (a	End of Construction (b	Contract Costs (c $1,000
TEHACHAPI DIVISION				
Edmonston Pumping Plant	Repair 4.16-kV Transmission Line (88-09)	April 1988	August 1988	43
MOJAVE DIVISION				
Alamo Powerplant	Turbine (80-16)	July 1983	(d	2,200
	Generator (83-14)	August 1983	(d	2,100
	Acoustic Flowmeter (84-07)	April 1984	(d	108
East Branch Enlargement				
Canals and Siphons	Big Rock Siphon (87-27)	August 1987	November 1988	9,650
	Nine Circular Siphons (87-44)	March 1988	April 1990	11,220
	Canal Structure Modification (88-49)	March 1989	October 1990	3,100
Pearblossom Pumping Plant				
Enlargement	Vertical Centrifugal Pumps 7, 8, and 9 (87-04)	May 1987	March 1992	3,591
	Initial Contract (88-17)	August 1988	November 1990	22,925
	Pump Discharge Valve Units 7, 8, & 9 (88-18)	July 1988	March 1992	9,600
	Switchboards (88-24)	July 1988	July 1990	624
	Switchgear (88-30)	September 1988	July 1990	946
	Motors (87-48)	June 1988	December 1991	5,300
	Bridge Cranes (88-37)	September 1989	June 1990	574
	230-kV Equipment (88-50)	March 1989	July 1990	845
SANTA ANA DIVISION				
Devil Canyon Powerplant				
Enlargement	Bypass Equipment, Sleeve Valve (87-05)	July 1987	March 1989	457
	Turbines, Governors, and Valves (87-15)	July 1987	January 1992	12,717
	Initial Contract (88-07)	April 1988	April 1990	23,357
	Generators (88-47)	May 1989	May 1992	10,179
	Second Penstock (88-48)	March 1989	November 1990	30,000
	Switchboards & Switchgear and 115-kV Equipment (89-10)	July 1989	December 1990	1,988
SWP GENERAL	Master Repair Contract, San Joaquin and Southern Field Divisions (86-50)	February 1987	June 1989	3,020
	Master Repair Contract, Oroville, Delta & San Luis Field Divisions (86-53)	March 1987	June 1989	3,080
	Master Repair Contract, Geysers Area (86-54)	February 1987	June 1989	172
	Furnish Stator Coils and Core Punchings for Pearblossom Pumping Plant (87-17)	July 1987	March 1989	217
	Warehouse HVAC and Awning Addition, Pearblossom O&M Center (88-12)	May 1988	October 1988	141
	Disposition of Gorman Creek Interim Facility (88-20)	July 1988	March 1989	629
	Roof Preservation - Oroville, North San Joaquin, and Tehachapi Divisions (88-23)	July 1988	October 1988	213
	SBVMWD Turnout Modification, Devil Canyon Powerplant (88-29)	August 1988	February 1989	127
	Recoating of Transformers and Appurtenances - Oso, Pearblossom, and Devil Canyon (88-42)	September 1988	December 1988	89
	Emergency Repair Work, Mojave Siphon (88-52)	November 1988	December 1988	300
	Roof Preservation, 28 Buildings at the Five Field Divisions (89-06)	June 1989	September 1989	180
	Box Spring Turnout Emergency Repair (89-14)	March 1989	June 1989	462

a) Notice to begin work given to contractor. Contract administration activities occurring prior to this date are advertising of contract, opening of bids, and awarding of contract.
b) The contract work is operationally complete and has been recommended for acceptance by the Project Engineer. Contract administration activities occurring after this date are settlement of claims, final pay estimates, final notice of acceptance, and contract documentation.
c) Costs represent actual costs of completed work or estimated final costs of construction in progress.
d) Final completion dates cannot be determined until turbine/generator shaft bearing and vibration problems are resolved.



Construction continues for the enlargement of Harvey O. Banks Delta Pumping Plant.

Completed work at Bottle Rock Powerplant includes the repair of a generator rotor assembly, construction of a service bay sound barrier, modification of the sour gas line, and installation of a sulphur melting system.

Oroville Division

The repair of the unit 1 generator at Thermalito Powerplant is complete, and an emergency contract to repair generators 2, 3, and 4 was let in February 1989. Completion is scheduled for December 1989. Modification of the computer room was completed in November 1988.

Suisun Marsh

Major construction work for the Suisun Marsh Salinity Control Gates was completed in October 1988. The facility became operational on October 28, 1988, when DWR took advance possession.

A contract for construction of a recreation area at this facility was let in August 1988 and work will be completed in August 1989. The recreation area, which is adjacent to the control structure, includes a boat dock, picnic tables, a levee-top pathway, and a parking lot.

North Bay Aqueduct, Phase II

All major construction work on the North Bay Aqueduct, Phase II, was completed in 1988. During this report period, a fiber optic cable was installed and microwave towers were erected to complete the North Bay Aqueduct Communication and Control System. The communication and control system performs two main functions: (1) It provides a means to remotely monitor and control Cordelia and Barker Slough pumping plants; and (2) It maintains water levels at Travis Surge Tank and Napa Turnout Reservoir. This computerized system began operation on June 7, 1989.

North San Joaquin Division

The following activities are currently in progress for the enlargement of Banks Pumping Plant: furnishing and installing four vertical centrifugal pumps, pump motors, pump discharge valves, transformers, switchboards and switchgear, and bridge cranes. Construction of a service bay is also under way. Service bay excavation was completed in September 1988.

Other construction completed in this division includes a flood control intake bulkhead gate at Del Valle Dam, miscellaneous road work, reconstruction of the Middle River tidal barrier, temporary closure on Old River, and furnishing of carrier rings and cap screws for an 84-inch pump discharge valve.

San Luis Division

Construction contracts in this division involved repairs and maintenance of existing facilities. The furnishing of wearing rings and cap screws for Gianelli Pumping-Generating Plant is now in progress.

Completed construction includes stator windings for units 1 and 2 and recoating of a siphon breaker house, water tank, and tower at Dos Amigos Pumping Plant.

South San Joaquin Division

Work under two contracts for furnishing replacement pump impellers for Buena Vista, Wheeler Ridge, Chrisman and Oso pumping plants is currently in progress, with completion dates set for January 1991 and October 1990, respectively.

Tehachapi Division

Repair of the motor for unit 2 at Edmonston Pumping Plant is currently in progress, with a scheduled completion date in September 1989.

Completed construction includes repair of a 4.16-kV transmission line and recoating of the switchyard transmission towers and bus yard at Edmonston Pumping Plant.

Mojave Division

On November 9, 1988, a break occurred in the Mojave Siphon. DWR forces took immediate action, and an emergency construction contract for repair was let on November 11, 1988. Flows through the aqueduct were resumed on November 24, 1988.

DWR has hired a consultant to assist in resolving the turbine/generator shaft vibration and bearing problem at Alamo Powerplant. Numerous static and dynamic instrument tests were performed on the unit during the months of June, July, August, and September of 1988 to gather data. The test data were analyzed by DWR personnel, DWR's consultant, and the turbine and generator manufacturers. The analysis revealed excessive deflection in the shaft and a lower critical speed than the design required. DWR's consultant recommended that an intermediate shaft bearing be provided. Both the turbine contractor and the generator contractor were requested to submit their proposals for correcting the problem. DWR is currently evaluating these proposals.

East Branch Enlargement

By June 1988, the raising of the lining on the East Branch canal reaches upstream of Mojave Siphon was completed. Modification of existing check structures from Alamo Powerplant to Pearblossom Pumping Plant is now in progress. The scheduled completion date is October 1990.

Construction under two contracts for the enlargement of existing siphons was in progress during this reporting period. The Big Rock Siphon enlargement was completed in November 1988, approximately six months ahead of schedule. Construction of nine circular siphons began in March 1988, with a completion date set for April 1990. This work is well ahead of schedule.

Numerous construction contracts have been let for the enlargement of Pearblossom Pumping Plant, including: initial plant construction; vertical centrifugal pump units 7, 8, and 9; motors for the pumps; discharge valves, switchgear and switchboards; bridge cranes; and 230-kV equipment. The earthwork performed under the initial contract was completed in March 1989, and the con-

crete construction work was started in June 1989. A completion contract and a contract for construction of a third discharge line will be let in July 1989.

Work under the following construction contracts is currently in progress for the enlargement of Devil Canyon Powerplant: initial plant construction; construction of a second penstock; furnishing and installing turbines, governors, and valves; by-pass equipment; generators; switchgear and switchboards; and 115-kV equipment.

The earthwork performed under the initial contract was completed in February 1989, and the concrete construction work was started in March 1989. A contract for the second penstock was let in April 1989.

Manufacturing and fabrication of major plant equipment and appurtenances for Pearblossom Pumping Plant and Devil Canyon Powerplant are also under way.

Santa Ana Division

A potentially dangerous leak was discovered at the Box Spring Turnout adjacent to the Santa Ana Pipeline. An emergency repair contract was let on March 15, 1989. Repairs were made immediately and the facility returned to service by April 5, 1989.

Miscellaneous Construction Contracts

Numerous repairs and modifications of existing facilities throughout the SWP were in progress during this reporting period. This work is also shown in Table 13.

Land and Right of Way Activity

In fiscal year 1988-89, DWR spent $36 million for land acquisition in excess of credits for sales of surplus property and return of condemnation deposits. The total net expenditure for SWP right of way through June 30, 1989 was $163 million. Thirty-four parcels (approximately 20,000 acres) were acquired during this fiscal year. The cumulative total of excess lands sold was 870 parcels (13,524 acres).

Sixty-four leases were monitored during the reporting period; annual revenues for the fiscal year totaled $1,025,000.

DWR's land and right of way program for the 1988-89 fiscal year included the following actions:

Energy Supply

- Two parcels were acquired along Bottle Rock Road at Bottle Rock Powerplant, completing all acquisition on Bottle Rock Road.

North Bay Aqueduct

- Nine parcels were acquired and three acquisitions remain to be completed. Negotiations are in progress to acquire the remaining necessary rights of way. Partial payment for the restoration of the City of Fairfield's Linear Park was made, with the remaining balance to be paid in fiscal year 1989-90.

South Bay Aqueduct

- One parcel was acquired to provide access to a slide-prone area.

South San Joaquin Division

- Three parcels were acquired for the California Aqueduct silt removal program. Six parcels remain to be acquired.
- One parcel was acquired for drainage on State Highway 166.
- Eleven parcels containing over 19,900 acres were acquired for the Kern Water Bank program.

West Branch

- Two parcels were acquired for flood control improvement at Gorman Creek, completing that project.

East Branch

- Eight parcels have been acquired for the East Branch Enlargement. Fourteen parcels remain

to be acquired, and negotiations are in progress.

Safety of SWP Facilities

A review program of SWP dam safety is required by Water Code Section 6056. Boards of consultants conduct independent safety reviews of each dam every five years; DWR provides engineering support. DWR is implementing recommendations made under previous evaluations. Between July 1, 1988 and June 30, 1989, the following activities were included under this program.

- The Safety Review Board convened from March 27-31, 1989, to review Oroville-Thermalito facilities.

- The Safety Review Board for Castaic and Pyramid dams was rescheduled from the spring to the fall of 1989. DWR will continue the Safety Review Board's recommended monitoring of the concrete slab movement in the Castaic Dam Spillway for two more years. At the conclusion of the monitoring period, DWR will decide whether the slab requires repair.

- The permanent pressure relief system for Thermalito Afterbay Dam has been successfully tested and is awaiting a certificate of approval.

To meet the Federal Energy Regulatory Commission's five-year safety review requirements, an independent consultant will be retained in late 1989 to inspect the Oroville-Thermalito facilities and submit a report to the commission.

An independent consultant's report was transmitted on May 2, 1987, for the review of FERC's five-year requirements for Warne Powerplant and appurtenances (Quail Lake and Lower Quail Canal). The consultant's supplemental report has been rescheduled for submittal to FERC by July 28, 1989. DWR's Design Office will provide additional analyses and information needed by the consultant.

A federal Safety Evaluation of Existing Dams investigation of O'Neill Dam raised the possibility of dam foundation liquefaction during an earthquake. DWR subsequently hired a two-member consultant board to review the findings of the investigation and suggest corrective actions. DWR and USBR personnel have met with the consultants to determine the maximum credible earthquake for the dam site and other parameters related to potential dam foundation liquefaction. Another meeting will be held in 1989 to establish design criteria and proceed with plans and specifications for dam modification.

Crack monitoring at Sisk Dam (formerly San Luis Dam) is continuing. No new cracks have been observed since 1986.

The USBR is continuing the appraisal studies of remedial alternatives for Little Panoche Detention Dam to safely pass the revised probable maximum flood. Completion of this report has been delayed until additional information can be obtained.

The USBR agreed to delay safety studies for Los Banos Detention Dam until final plans for Los Banos Grandes Dam have been determined, provided that the detention dam's early warning system has been approved by the USBR. DWR has sent a letter to the USBR stating that the present early warning system is adequate for all contingencies.

The Safety Review Board for Del Valle, Patterson, Bethany, and Clifton Court Forebay dams is scheduled to be convened in the spring of 1990, and the Safety Review Board for Frenchman, Antelope, and Grizzly Valley dams is scheduled to be convened in the fall of 1990.

Chapter V
SWP Water Supply, Present and Future

This chapter examines future SWP water delivery plans, compares presently developed water supplies to anticipated demands, and assesses potential means for augmenting water supply capabilities to meet future needs.

Future Water Delivery Plans

DWR annually requests each long-term SWP contractor to prepare an estimate of short- and long-term SWP water requirements. These projections form the basis for DWR's water planning and project operation studies in the upcoming year.

In August 1988, DWR requested each long-term contractor's projections of (1) monthly SWP water requirements for the years 1989 through 1993, and (2) annual requirements for 1995 and every fifth year beyond until the year in which maximum entitlements would be used regularly.

In September and October 1988, SWP contractors submitted their estimated water delivery requirements for 1989 through 2035. Their estimates included entitlement, agricultural, surplus, wet-weather (Article 45), and repayment water, as well as permit water for the City of Vallejo.

After reviewing SWP water management plans and the current plans for future facilities as presented in this bulletin, DWR based water delivery projections on the information submitted by the contractors, with one exception. The Metropolitan Water District of Southern California's long-range projections (1995-2035) were assumed to be the same as those presented in Bulletin 132-88. MWDSC has recently experienced large increases in demand for SWP water supply and has formally asked DWR to plan transportation facility improvements and enlargements in preparation for potential increased deliveries to MWD's service area by the year 2000. DWR is now studying the effects of MWD's request.

Entitlement Water

Table 14 shows the projected 1989 through 1993 entitlement water needs submitted in the fall of 1988. The table also shows projections submitted in the six previous years. The contractors' long-range projections for entitlement water are in Appendix B, Table B-5B.

Initial entitlement water requests for 1989 totaled 3,008,051 acre-feet, including 8,600 acre-feet of deferred entitlement under Article 45 provisions. Because of below-average precipitation in 1988, DWR initially imposed reductions on 1989 agricultural entitlement deliveries. Following the 1989 Risk Analysis procedure, as set forth in the report entitled "State Water Project Water Delivery Risk Analysis and Criteria for 1989," DWR approved entitlement water deliveries for 1989 totaling 2,514,115 acre-feet. Scheduled agricultural reductions totaled 485,336 acre-feet.

However, above-average precipitation and heavy runoff in the Feather River Basin during March 1989 improved SWP water delivery capability. Water delivery schedules for agricultural contractors were subsequently revised, and on April 20, 1989, DWR informed water service contractors that full 1989 entitlement delivery requests were being met.

Miscellaneous Water

Some other types of water besides entitlement water are scheduled for 1989 delivery. Miscellaneous 1989 scheduled water deliveries include 149,880 acre-feet of 1988 carryover entitlement delivered in January, February, and March and 5,918 acre-feet of permit water for the City of Vallejo as of June 30, 1989. Unscheduled water has not been available for delivery to contractors during this year.

Table 14. Water Contractors' Requests for Entitlement Water 1988 through 1993

Year Estimate Submitted	Annual Delivery Requests (a acre-feet					
	1988	1989	1990	1991	1992	1993
1988		3,008,051	3,141,560	3,157,424	3,313,605	3,362,707
1987	2,643,893	3,046,372	3,106,033	3,152,935	3,281,998	
1986	2,825,543	2,880,172	2,935,137	2,972,543		
1985	2,739,093	2,789,545	2,849,832			
1984	2,828,253	2,877,215	2,934,450			
1983	2,852,989	2,906,699				
1982	2,888,377					
Annual Entitlements (b	**3,689,981**	**3,958,190**	**4,108,321**	**4,157,156**	**4,165,116**	**4,173,266**

a) Includes deferred entitlement. For 1988, amounts include non-SWP water pumped through interim facilities to Napa County Flood Control and Water Conservation District.

b) Maximum amounts that could be requested under the water supply contracts (derived from Table B-4). Includes non-SWP water for Napa County Flood Control and Water Conservation District for 1988.

SWP Water Delivery Capability

The measure of the SWP's delivery capability is founded on the concept of "firm yield" operation. Defined in the water supply contracts as "minimum project yield," firm yield is the dependable annual water supply that can be made available without exceeding specified allowable reductions in agricultural deliveries during extended dry periods.

The firm yield of existing SWP facilities is approximately 2.4 million acre-feet per year. Since 1987, contractor requests for entitlement water have exceeded that amount (see Table 14). In addition to continued planning of structural features to improve firm yield, DWR and the SWP contractors have been examining alternative operational strategies to improve the existing facilities' average annual delivery capabilities. Particular attention has been focused on methods outside the conventional firm yield procedures, involving a calculated risk of reduced deliveries in some years.

Since 1978, operational decisions for the SWP have been based on an annual analysis of the risk of delivering water instead of storing it against future needs. Such a risk analysis provides a rational means of deciding how much water to deliver in a given year and how much to leave in storage to provide for subsequent dry periods.

The risk analysis procedure, developed in 1978, was originally designed to assure a high probability of meeting delivery schedules for the current and following year, assuming a water supply equivalent to that of the two driest years on record. The procedure, termed the "Rule Curve" beginning in 1979, has three parts. The first part uses known beginning storage (carryover from the previous year), defined target storage (end-of-year storage in SWP conservation facilities), and historical hydrology to chart annual SWP water delivery capability against an index, formerly called the "Four Basin Index," which represents unimpaired runoff of streams entering the Sacramento Valley. The second part uses the chart and periodic forecasts of the index to determine capability of the SWP to deliver water. The forecast ordinarily used is that which would probably be exceeded 99 percent of the time. The third part of the procedure is allocation of the calculated water delivery capability to contractors and confirmation of the result using a complete operations study. If the operations study shows that the delivery schedule cannot be met, the schedule is reduced to the amount which can be

delivered; otherwise, the total and the allocation are confirmed.

Implementation of this 1978 procedure required a high target storage and often delayed the approval of water delivery requests until late in the water-producing season. Furthermore, because of the two-year analysis period, the procedure failed to address how storage should be managed over an extended dry period.

In 1985, DWR reviewed the roles that target storage and dry period duration played in the risk analysis procedure. With water contractor approval, the 1986 "Rule Curve" incorporated a schedule of target storage which decreased each year by equal amounts, reaching a minimum after seven years. The target selected each year depended on the carryover storage and the previous year's target storage. Further study and information provided by the contractors led in 1987 to a lower schedule of target storage and in 1988 to a calculation by formula based only on the carryover storage.

In 1989, the "Rule Curve" became the Water Delivery Risk Analysis (WDRA), the "Four Basin Index" became the Sacramento River Index (SRI), and "conservation storage" was interpreted to include Lake Oroville, the State share of San Luis Reservoir, and the balance owed to DWR by the Bureau of Reclamation under the Coordinated Operations Agreement. The 1989 WDRA used the same criteria as in 1988 for development of the Risk Analysis Curve, but the procedure for determining delivery approvals was changed. Departing from the 99 percent used previously, the initial delivery approval was increased by basing it on a forecast of the SRI with a probability of exceedence of approximately 90 percent.

As in previous years, DWR reviewed the water supply forecast and the Risk Analysis monthly to determine if, because of changing water supply conditions, approved deliveries could be increased. The SWP contractors understood that the results of the final Risk Analysis study would be more conservative than the interim monthly reviews and that approved 1989 delivery amounts could potentially be lowered if dry water conditions continued. As in all previous years, monthly updates were based on 99 percent probability of exceedence. To smooth the transition from the 90 percent to the 99 percent forecast, the monthly updates for February and March were allowed only to increase approved deliveries. The same rule was applied to the May and June updates, unless conservation storage would thereby become less than the minimum 1.0 million acre-feet.

The 1989 Risk Analysis procedure is again being implemented on a one-year trial basis, as it has been since 1986.

Delta Water Management Planning

The future SWP water supply greatly depends on Sacramento-San Joaquin Delta water management. Other State agencies and several federal regulatory agencies are also concerned with water management issues and therefore have become involved in the Delta water supply planning process. The complexity of these water-related issues is reflected in the environmental documentation process, which started in 1987 with scoping meetings and will take three to four years to complete.

The environmental documentation process provides the information necessary for DWR to obtain the State agreements and federal regulatory permits required for implementation of SWP activities in the Delta. The process allows public participation and promotes flexibility in formulating project alternatives and related mitigation agreements. It also facilitates communication among the agencies concerned with water management issues, leading to better coordination of local, State, and federal planning. To manage the critical planning process for future SWP water supplies, DWR has developed the following Delta water management programs.

North Delta Water Management Program

The North Delta Water Management Program generally includes the Delta region north of the San Joaquin River from Threemile Slough eastward. Primary objectives of this program are to alleviate flooding along the Mokelumne River, reduce reverse flow in the lower San Joaquin River, improve water quality, reduce adverse fishery impacts, and enhance water supply reliability. Secondary objectives include improvements in navigation, recreation, and wildlife habitat.

The North Delta Water Management Program will be implemented in phases. Alternatives considered for the initial phase include increasing hydraulic capacity of the South Fork Mokelumne River by dredging, improving levees, and creating levee setbacks. Alternatives for future phases include partial tide gate structures in the Sacramento River, Steamboat Slough, and Threemile Slough, and possibly a new Sacramento River connecting channel.

In August and September 1987, DWR conducted public scoping meetings to discuss the North Delta Water Management Program and identify significant issues in the study area. A draft scoping report was prepared and distributed for review in April 1989.

Work is continuing on the EIR/EIS, which is being coordinated with the Walnut Grove-Thornton flood control planning mandated by the Delta Flood Protection Act of 1988. The U.S. Army Corps of Engineers is the lead federal agency for the project. DWR and the Corps are also preparing flood analyses for the north Delta area, including a flood frequency analysis for key streams and a simulation of flood stages in the north Delta channels. A cost-sharing agreement is being developed to facilitate coordination of DWR and Corps planning activities.

West Delta Water Management Program

Under the West Delta Water Management Program, DWR and the Department of Fish and Game are investigating water management needs in the western Delta. This investigation, which focuses on Sherman Island, was initiated by a 1981 contract between the North Delta Water Agency and DWR calling for water supply protection and an overland water supply facility for Sherman Island. (See Chapter II, "Water Quality.") The investigation was furthered by Sherman Island's importance in protecting Delta water quality and SWP water supply reliability. Because Sherman Island is situated where fresh river water and salty bay water meet and mix, the island's levees are crucial for preventing permanent flooding, which would increase saline intrusion and raise chloride levels in water flowing around the west end of the Delta to Banks Pumping Plant.

The four major issues being addressed by the West Delta Water Management Program are flood control, water quality, water supply reliability, and wildlife concerns. The program includes the following objectives:

- meeting the water supply and water quality needs of Sherman Island;
- minimizing oxidation and subsidence;
- providing habitat for waterfowl and wildlife;
- improving flood control;
- identifying potential wildlife habitat mitigation projects;
- protecting highways and utilities;
- increasing recreational opportunities; and
- enhancing the reliability of the SWP.

Preliminary investigations of the Sherman Island area have identified several concerns, including changes in the agricultural economy, increased levee maintenance costs, and continuing land subsidence. These concerns, along with growing recognition of environmental needs, have indicated that consideration of alternatives to an overland water supply facility might be warranted. Various alternatives were discussed with Sherman Island landowners, who agreed that feasibility studies should be conducted.

One alternative is to change land use practices on Sherman Island by implementing a wildlife management plan. The Department of Fish and Game is evaluating waterfowl easement acquisitions, habitat management requirements, likely costs and revenues, funding sources, and benefits to waterfowl populations. If it were coordinated with other Delta planning programs, the wildlife management plan could significantly benefit wildlife and flood control. A feasibility report prepared by DFG in October 1988 outlines the specifics of the wildlife management plan.

Altering land use practices on Sherman Island as proposed in the wildlife management plan could address the major issues and meet the objectives of the West Delta Water Management Program.

Up to 10,000 acres of wildlife and waterfowl habitat would be provided, while subsidence would be reduced, recreational opportunities would be increased, and the need for an overland facility could be eliminated. In conjunction with the rehabilitation of non-Project levees on Sherman Island, substantial flood control benefits and water supply reliability to both the SWP and the CVP would also be provided.

South Delta Water Management Program

In October 1987, DWR, the USBR, and the South Delta Water Agency entered into the South Delta Agreement to develop mutually acceptable, long-term solutions to the water supply problems of water users within the agency's service area. The particular objectives of the South Delta Agreement are to improve and maintain water levels, circulation patterns, and water quality in the south Delta area. Alternatives for meeting these objectives will also be evaluated with regard to the following issues of concern to DWR and the USBR in the Delta: reducing fishery impacts; increasing efficiency of SWP and CVP operations; enhancing water supply reliability through winter water banking; and improving flood control and navigation.

Interim actions taken by DWR and the USBR have improved SDWA water conditions. DWR dredged and constructed siphons in Tom Paine Slough and constructed a weir in Middle River to mitigate the water level problems, while the USBR reduced the impacts of the CVP on the south Delta by restricting pumping at the Tracy Pumping Plant. The USBR is also providing interim releases from New Melones Reservoir to improve water quality and quantity in the area.

In April 1987, DWR and the USBR conducted public meetings to discuss significant issues and alternatives for south Delta water management. In April 1988, DWR completed the South Delta Water Management Program planning report, which outlined the program objectives, planning process, and schedules. Alternatives considered in the report include dredging, channel and levee improvements, and flow control structures. Other options that meet the South Delta Agreement objectives and also benefit water supply, water quality, agriculture, and fish may also be considered. These include: new intake gate locations for Clifton Court Forebay; enlargement of Clifton Court Forebay; a CVP interconnection with Clifton Court Forebay; increased winter exports to fill storage south of the Delta for water banking; an exchange with local interests for New Melones water releases to the south Delta; and relocation of the Contra Costa Canal intake to Clifton Court Forebay. Work is progressing on the draft EIR/EIS for the South Delta Water Management Program.

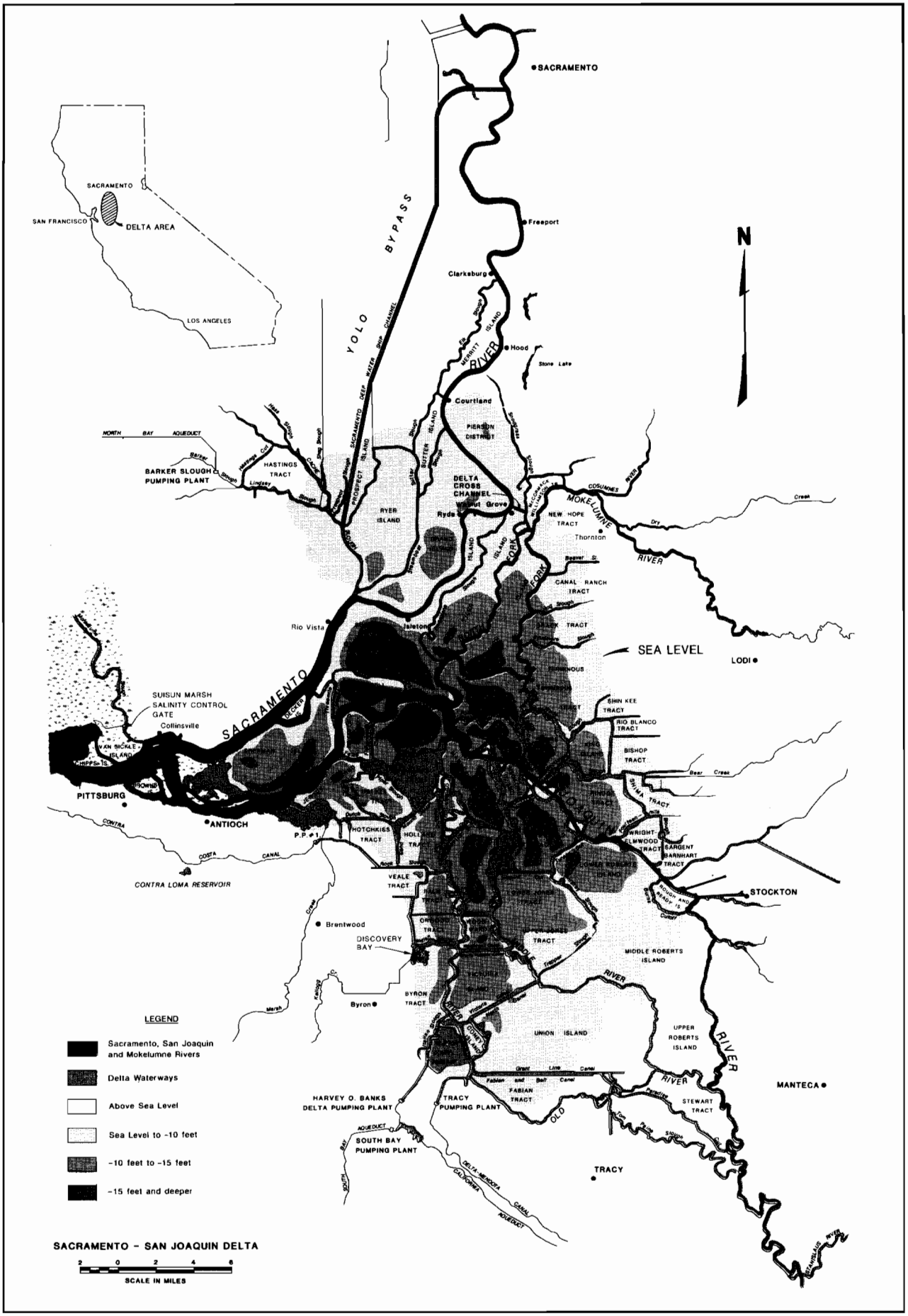
Special Flood Control Projects

In March 1988, the Delta Flood Protection Act of 1988 (Senate Bill 34) was signed into law. The act authorized $12 million a year until January 1999 to be spent for protection against flooding in the Delta. Each year, the $12 million is split evenly between the Delta levee subventions program and the special flood control projects for eight western Delta islands and the towns of Walnut Grove and Thornton. The eight islands--Bethel, Bradford, Holland, Hotchkiss, Jersey, Sherman, Twitchell, and Webb--are critical to the water quality of the Delta, since fresh and salt waters mix adjacent to the islands. Flooding any of these islands would allow saline water to intrude further into the Delta.

DWR is pursuing the following two-step program: (1) a "fast-track" plan to meet the islands' immediate flood control needs, and (2) a long-term priority list, based on detailed analyses of needs and benefits, for implementing flood control plans for the eight islands. The recommendations will require the California Water Commission's approval and will address topics such as:

- prompt, comprehensive levee inspections and data research to identify threatening conditions and levee sections that do not meet the Federal Emergency Management Agency's minimum flood hazard mitigation standards;
- assistance programs to document the feasibility of using dredged material for levee improvements and participation in pilot programs;
- assistance programs for Bethel Island Municipal Improvement District and Contra Costa County to help resolve levee encroachment

Figure 9. The Sacramento-San Joaquin Delta



problems on Bethel Island and Hotchkiss Tract;

- funding for advanced surveys and monitoring to document elevations and subsidence;
- initiation of discussions with the Department of Fish and Game and landowners to identify options for acquisition of easements and wildlife management areas that provide land use options, including recreational opportunities, to reduce subsidence; and
- specific recommendations for "fast-track" levee improvements (contingent on environmental requirements) based on a priority of actions that would apply to any of the eight islands.

The "fast-track" recommendations are scheduled to be presented to the California Water Commission in July 1989. DWR is also preparing a planning report to provide a more detailed list of recommendations of longer-term priorities based on benefits and needs. This second set of recommendations is scheduled to be submitted to the Water Commission for approval in December 1989. A program for Sherman Island, which is the largest and most critical island for the protection of water quality in the Delta, will be high on the list of recommendations. (See "West Delta Water Management Program.")

In January 1989, DWR completed the Walnut Grove-Thornton flood control plan and distributed an executive summary report describing the alternatives considered as part of the investigation. The complete report with the evaluation of alternatives was completed in late February 1989. Copies have been sent to the Legislature for approval. The report recommends some immediate levee improvements in the area, as well as several long-term improvements to levees, channels, and facilities. The recommendations have been developed in cooperation with Corps of Engineers staff, local reclamation districts, and Sacramento and San Joaquin counties, and are compatible with the objectives of the North Delta Water Management Program. DWR is negotiating with Reclamation District 348, New Hope Tract, to obtain an agreement on the proposed levee improvements and cost sharing.

Potential Means to Augment Water Supply

California's water plans are evolving from conventional surface water storage north of the Delta and ground water pumping to include water conservation, water salvage, cloud seeding, ground water conjunctive use projects, and offstream storage south of the Delta. This shift in emphasis has been brought about by such factors as increases in construction and financing costs, fluctuations in the farm economy, cuts in federal spending, and changes in public attitudes about acceptable water development.

While areas served by SWP contractors continue to need more water, overall supply availability is decreasing. Upstream consumptive uses will further reduce water supplies in the Delta; Colorado River water supplies now available to California will decrease as water diversions to Arizona are increased; and despite extensive conservation efforts, total urban water use in SWP service areas will increase.

Interim or short-term solutions such as water marketing agreements, SWP entitlement transfers, CVP purchases, and increased agricultural and urban water conservation programs may help to meet increasing water supply needs. Such interim actions can allow the SWP to meet short-term contractual obligations until new facilities have been built.

The short- and long-term solutions under consideration are discussed in more detail on the following pages.

Oroville Reservoir Inflow Enhancement

To increase the inflow to Lake Oroville from the Feather River Basin (the major source of SWP water), DWR is considering the use of cloud seeding in the Feather River watershed.

In 1985, a contract was awarded to North American Weather Consultants to conduct a feasibility study of cloud seeding in the Feather River watershed. The positive results of this study led to funding the design of an operational plan and preparation of environmental documentation for an inflow enhancement program.

This program emphasizes augmenting streamflow by increasing the snowpack. It is being developed from a three- to five-year prototype project carried out in a remote area of the Middle Fork Feather River near Johnsville. The final operational plan is being designed and implemented by a weather scientist. The prototype project is totally funded by DWR. Environmental documentation for this program and for possible future expansions of the program will also be provided by DWR.

The prototype project will furnish information to guide the future design of a larger cloud seeding program in the Feather River watershed. The final operational plan will specify the storms to be seeded, seeding agents to be used and their rates of application, locations for ground-based generators, suspension criteria, and a proposed method of evaluation.

Implementation of the program started in October 1988 with the issuance of a negative declaration for the prototype runoff enhancement program. In November 1988, three propane dispensers were installed to permit evaluation of the functional capabilities of the equipment control system and to provide information on the effectiveness of using propane to enhance precipitation.

Banks Pumping Plant, Additional Units

The most advanced program for water supply augmentation is the installation of additional pumping units at Banks Pumping Plant. The plant was built to accommodate 11 units, but only seven were initially installed. On December 30, 1987, DWR's Director signed a Notice of Determination, and the installation schedule for the four additional units shifted from the planning phase to the design and construction phase. The new units, each with a design capacity of 1,067 cfs, are scheduled to be operational in 1991.

Completion of Banks Pumping Plant will increase SWP delivery reliability and efficiency by increasing standby capacity for the existing units and by permitting a larger share of the pumping to be done with off-peak power. The new units will also allow a small amount of additional pumping to be shifted to the winter months.

The last four units will increase the total capacity of the pumping plant to 10,300 cfs, bringing the California Aqueduct up to its full design capacity between Banks Pumping Plant and Bethany Reservoir. To protect the navigable capacity of the Delta waterways in the vicinity of the pumps, the Corps of Engineers limited diversions into Clifton Court Forebay to historical levels (Public Notice 5802A, amended October 1981). As long as the SWP follows the operational criteria published in Public Notice 5802A, no Corps of Engineers' permit is needed. However, if diversions into Clifton Court Forebay are to be increased beyond historical rates, a Corps of Engineers' permit will be required (under Section 10 of the Rivers and Harbors Act of 1899).

Installation of the additional units will also increase the reliability of SWP water supply deliveries. Under the Corps of Engineers' constraints, the additional pumps could increase firm deliveries during critical water supply periods by about 60,000 acre-feet annually. This water, pumped during high-flow winter months, will partially offset the frequency and severity of projected shortages.

The additional pumping units will allow more pumping to be shifted to off-peak hours, when energy costs are lower. This will provide cost savings to SWP water contractors, as well as possibly delay the need to buy additional power or to construct additional power generating facilities.

Before the Notice of Determination could be signed, environmental concerns regarding the additional units at Banks Pumping Plant needed to be addressed. An agreement between DWR and the Department of Fish and Game, signed on December 30, 1987, allowed work to proceed on the final four units. The agreement spells out the steps needed to offset adverse fishery impacts by SWP operations. (See "Two-Agency Fish Agreement," Chapter III.)

Offstream Storage South of the Delta

Los Banos Grandes Reservoir. DWR has examined a number of potential offstream storage sites south of the Delta. Currently, the most promising potential surface water development is an offstream storage project on Los Banos Creek

in western Merced County. The proposed Los Banos Grandes Reservoir would store excess water pumped from the Delta and conveyed about 80 miles southward via the California Aqueduct.

DWR launched a feasibility investigation of the project in 1984. In 1986, the USBR initiated an investigation of San Joaquin Valley offstream storage sites that could be used to increase water supplies for the federal Central Valley Project. Among other alternatives, the USBR agreed to serve as the lead federal agency in preparation of a joint EIR/EIS on Los Banos Grandes Reservoir.

The current study plan calls for completion of a feasibility report and draft EIR/EIS in June 1990. The feasibility report will present a project formulated for the SWP only and describe alternatives incorporating CVP storage and/or pumped-storage power development in partnership with one or more electric utilities. DWR has performed most of the basic engineering and geologic studies. The USBR is participating in the development of plans to mitigate for local environmental impacts.

DWR has tentatively selected a Los Banos Grandes Reservoir capacity of 1.73 million acre-feet for the SWP-only formulation. The main dam, on Los Banos Creek, would be a zoned embankment with a height of 414 feet above the original streambed. Total embankment volume would be 13 million cubic yards. A major saddle dam would require approximately the same volume of embankment as the main dam. Water would be lifted about 130 feet from the California Aqueduct to the existing Los Banos Reservoir (a 34,600 acre-foot flood detention reservoir constructed to protect the aqueduct). A second pumping-generating plant at the base of Los Banos Grandes Dam would operate under a maximum static head of 435 feet.

Both plants would have a design capacity of 3,500 cfs in the pumping mode and 4,650 cfs in the generating mode. Under the most optimistic schedule for decisions and approvals, construction of the Los Banos Grandes Reservoir development could begin in 1995.

The first four years of the feasibility investigation focused on the usual engineering and environmental aspects. Geologic studies determined that foundation conditions are suitable for the major structures and that suitable embankment materials (primarily stream gravels and alluvial soils) are available within the reservoir area. Preliminary designs and cost estimates were prepared for a range of sizes of reservoirs and associated pumping-generating plants. The estimated first cost (not including mitigation/compensation measures or recreation facility costs) ranged from about $450 million for a 1.2 million acre-foot basic water supply project to over $1.1 billion for a staged project incorporating 420 MW of pumped-storage power capacity. Feasibility-level cost estimates are currently being prepared for the facility sizes that will be featured in the feasibility report and EIR/EIS.

While the geologic and engineering studies were under way, extensive field inventories were undertaken to help evaluate environmental impacts. Under contract with DWR, the Department of Fish and Game conducted a four-year assessment of the fish and wildlife resources of the project area. DWR botanists classified the habitat types that would be impacted and surveyed for plant species of special concern.

The reservoir site is relatively undeveloped. The area is predominantly privately owned grassland, used primarily for cattle grazing. Annual rainfall in the area is about nine inches, occurring generally between December and March; summers are hot and dry. The estimated annual runoff of Los Banos Creek ranges up to about 50,000 acre-feet (1983) and averages about 8,000 acre-feet. There is little flow from May through November of most years.

There are four or five farmsteads within the reservoir area, none of which is now permanently occupied. An unpaved county road crosses the upper end of the reservoir, but public access to most of the project area is minimal. There are no developed water supplies within the project area for irrigated agriculture, but about 900 acres have been cultivated for production of dry-farmed grain. Several shallow wells have been developed to provide stock water and domestic supplies to the farmsteads; the pumps are wind-powered, since there is no commercial electric service in the area.

To the casual observer (especially during the summer), the potential environmental impacts of the project appear relatively minor. However, the assessments conducted as a part of the feasibility investigation revealed significant environmental values that would be affected by the project. Mitigation and compensation measures are being developed to deal with environmental impacts that would result from construction of the reservoir and appurtenant facilities. At present, three issues have emerged as the most crucial to project viability. Each of these is the subject of a specific federal or state law or regulation:

- *Threatened or endangered species.* Five State or federal listed (threatened or endangered) species are known to occur in the project area: the San Joaquin kit fox; Swainson's hawk; bald eagle; peregrine falcon; and greater sandhill crane. Other species that are candidates for listing include the San Joaquin pocket mouse, golden eagle, California tiger salamander, red-legged frog, southwestern pond turtle, and Arburua Ranch jewel flower. The federal Endangered Species Act generally forbids federal agency actions (including the granting of licenses or permits) that would jeopardize the continued existence or adversely impact critical habitat of any listed species. Wildlife inventory studies have been completed and mitigation/compensation planning is under way.

- *Wetlands.* Although the project site is in an arid zone, areas within it are classified as wetlands under the Corps of Engineers' criteria for administering Section 404(b)(1) of the federal Clean Water Act. These include portions of Los Banos Creek near the dam site and numerous small areas of seasonal marsh associated with stock water ponds or small springs and seeps. Under federal regulations, the Corps may issue a permit for a project that would destroy a wetland site only if there is no practicable alternative with less adverse environmental consequences. A consultant has been retained to assist in defining project impacts on wetlands and to recommend mitigation/compensation measures. Meanwhile DWR is reexamining and expanding past studies of alternatives to determine if there are practicable alternatives that would not affect wetlands or have other significant adverse environmental consequences.

- *Sycamore alluvial woodlands.* Los Banos Grandes Reservoir would inundate about 10 miles of Los Banos Creek. The lower 6 miles of that reach is a broad alluvial floodplain that supports an extensive stand of California sycamores. The strip of sycamores averages about 800 feet in width and covers approximately 600 acres. The trees are typically quite large, with trunk diameters averaging 16 inches and ranging up to over 4 feet. Some areas are dense with trees, but much of the area is fairly open; average canopy cover is about 30 percent. This woodland, surrounded by relatively barren grasslands, has substantial value as wildlife habitat. Compensation through replacement or improvement of comparable habitat will be a challenge, as the Los Banos Valley sycamore grove is reportedly the largest in the area. The California sycamore is not considered a threatened or endangered species, but the wildlife habitat it provides is relatively scarce in the San Joaquin Valley area. Under the Clean Water Act, the Environmental Protection Agency may ban use of a site determined to have an unacceptable adverse effect on wildlife. Additional studies of the sycamores are under way preparatory to formulation of compensation proposals.

DWR's planning experience on Los Banos Grandes reinforces the lessons learned from numerous prior investigations of major water resources developments. Planning and implementation of major projects are becoming increasingly complex because of the myriad laws, regulations, and administrative procedures that must be satisfied. As the best sites have already been used, the engineering aspects have also tended to become more challenging, but the potential project-stopping issues are often environmental impact concerns.

Kellogg/Los Vaqueros Reservoirs. Contra Costa Water District is formulating a plan to alleviate water quality problems associated with its present water supply system. Key elements to the plan currently include relocation of its intake from Rock Slough to Clifton Court Forebay and construction of pumping facilities at Clifton Court, a canal to connect to the new intake to the existing

system, and a reservoir at the Los Vaqueros site. Although the district's needs for water quality control and emergency storage can be satisfied with a 100,000 acre-foot reservoir at the Los Vaqueros site, CCWD is actively seeking participants to join in the construction of a larger reservoir. DWR continues its evaluation of potential participation in a Los Vaqueros project by the South Bay contractors to enhance water quality and service reliability.

Contra Costa Water District began purchasing the Kellogg/Los Vaqueros watershed in early 1987. Environmental and land management plans are being addressed by the district's environmental consultant. An EIR for road and utility location is in the scoping phase, and an EIR for the reservoir will begin in the summer of 1989 after project participants have been identified.

In November 1988, the voters of CCWD passed a ballot measure authorizing the district's Board of Directors to issue $350,000,000 in bonds to finance the Los Vaqueros Project. The measure stipulated that the project shall not be operated in conjunction with a Peripheral Canal or to increase the export of Delta water from northern California without the consent of the voters.

In 1985, the USBR expanded its Kellogg Reformulation Study to include a preliminary analysis of the Los Vaqueros Reservoir site. The study previously concentrated on Kellogg Reservoir and relocation of the Contra Costa Canal intake. The USBR's proposed planning report and draft EIS, which were available for review in early 1988, recommend relocation of the Contra Costa Water District intake to Clifton Court and construction of the Highline Canal to connect the new intake to the existing system.

Sacramento Valley Projects

Thirty years ago, water development in California centered on construction of physical works to transfer surplus Northern California water to areas of deficiency in the San Joaquin Valley and Southern California (Bulletin 3, *The California Water Plan*). However, institutional changes over the years have altered the State's water resources planning and have affected the ability of agencies at all levels of government to develop physical works for the storage and distribution of water. Such changes include court decisions and legislation regarding environmental protection and water quality standards; the defeat of three comprehensive water development plans during the late 1970s and early 1980s; shifts in both State and federal government fiscal policies, which have reduced the governments' abilities to fund public works; economic fluctuations, most notably in the agricultural industry; and a growing recognition that means other than construction of physical works can reduce water demand or augment water supply.

SWP contractors have indicated that a through-Delta facility should be in place before Northern California's water supply sources are developed further. Completion of through-Delta water transfer facilities will increase the SWP supplies at costs that compare favorably with costs of offstream storage and water banking alternatives. Construction of a through-Delta facility would substantially enhance the value of future projects in the Sacramento Valley because the projects' net contributions to SWP deliveries would be approximately 20 to 25 percent greater than they would be without a through-Delta facility.

Until a through-Delta facility is in place, the water community is discussing alternatives such as (1) interim purchase of water by the SWP pursuant to the Coordinated Operation Agreement, (2) purchase of water from CVP contractors, (3) water marketing, and (4) offstream storage south of the Delta. Completion of a through-Delta facility would increase the SWP contractors' interest in financing the Sacramento Valley projects under study.

Red Bank Project Feasibility Study. Cottonwood Creek, in Shasta and Tehama counties, is the largest uncontrolled tributary of the Sacramento River and is a major contributor to flooding, particularly along the upper river. In the mid-1960s, the Corps of Engineers selected the Cottonwood Creek Project as the most suitable means of providing flood protection and developing additional water supply.

A 1984 engineering report estimated the total first cost of the Cottonwood Creek Project at $753 million, which would have led to prohibitively high annual payments by the SWP contractors. Consequently, in June 1984, DWR asked

the Corps to reanalyze the project and try to reduce the cost. The Corps' reanalysis lowered the total first cost to $571 million.

After discussions with the SWP contractors and a briefing before the California Water Commission in 1985, DWR decided not to participate in the project. Later that year, a letter explaining DWR's opposition to the Corps' proposal reiterated DWR's commitment to helping the local counties with their flood problems and stated that DWR would study other less costly upstream reservoir alternatives. The letter also expressed DWR's desire to work with the Corps on the flood control aspects of the alternative projects.

In June 1984, DWR initiated a reconnaissance investigation of tributary reservoirs in the Cottonwood Creek Basin. (Previous studies of these tributary reservoirs appeared in Bulletin 150, March 1965.)

In June 1985, DWR's Northern District published a memorandum report, "Cottonwood Creek Alternatives." The report recommended studying construction of a combination diversion and storage dam at the Dippingvat site on South Fork Cottonwood Creek, a storage dam at the Schoenfield site in the adjacent Red Bank Creek Basin, and a conveyance system connecting the two reservoirs.

Following the June 1985 report's recommendations, DWR made a two-year prefeasibility investigation of the Dippingvat-Schoenfield Project, now called the Red Bank Project. The study report, published in November 1987, estimated the first cost of this project at $90 million (July 1987 prices). The capitalized cost, including interest during construction and the present worth of operation, maintenance, and replacement, was estimated at $119 million. The project would provide a critical period water supply of 47,000 acre-feet per year to the SWP, assuming Delta transfer facilities are in place. The capitalized cost allocated to municipal and industrial water supply was estimated at approximately $78 million, which would result in costs that are competitive with those of alternative water sources.

The Red Bank Project would reduce the 100-year peak floodflow at Cottonwood from 106,000 cfs to 90,000 cfs and would accrue annual flood control benefits of $2.35 million. The project initially would provide up to 91,000 public recreation-days per year, increasing to an estimated 113,000 days per year by the end of the 50-year analysis period. This recreational use would provide an average annual benefit of about $560,000.

The analysis did not include fisheries enhancement as a project purpose. The potential for fisheries enhancement in South Fork Cottonwood Creek cannot be defined until a detailed feasibility study has been completed. Analysis of potential Sacramento River fishery enhancement through conjunctive operation with the Corning Canal and/or the Tehama-Colusa Canal will require USBR participation in the project feasibility study.

Following the November 1987 report's recommendation, DWR began a long-term feasibility study of the Red Bank Project. The study is being conducted in cooperation with the USBR, Department of Fish and Game, U.S. Fish and Wildlife Service, and the Corps of Engineers, and it will include fishery and flood control elements. Communication with Shasta and Tehama counties and cooperating agencies is maintained through an advisory group.

Auburn Dam and Reservoir. In 1987, DWR made a brief analysis of the potential for financing and repaying construction of a small (850,000 acre-foot) multipurpose Auburn Dam under State sponsorship. The DWR study assumed that past federal expenditures would be treated as sunk costs (i.e., not repaid) and that the new water supply would be integrated into the SWP. However, the State Water Contractors indicated that other potential projects south of the Delta appeared more attractive. DWR prepared a December 1987 report summarizing its analysis, "Auburn Dam, Reconnaissance Appraisal of Construction Under State Sponsorship."

Meanwhile, the Army Corps of Engineers continued reconnaissance studies of flood control options for the lower American River. Considerable support developed for the concept of an Auburn Reservoir with flood control as the primary objective, but with the possible addition of a modest amount of water supply capability to meet future local water needs.

The Corps worked with State and local interests to develop a scope of study and cost-sharing agreement for a Corps feasibility study that will include Auburn Dam. On June 17, 1988, The Reclamation Board, DWR, and the Corps executed a cost-sharing agreement for a 28-month investigation. The State agencies agreed to accept responsibility for the 50 percent nonfederal share of the cost of the investigation. Half of the nonfederal contribution is being furnished by local sponsors (Sacramento County, the City of Sacramento, Reclamation District 1000, Sutter County, Placer County, and the American River Flood Control District). DWR is assisting the Corps in evaluation of local water supply aspects, but no further consideration is planned of Auburn Reservoir as a potential source of additional water supply for the SWP, and no SWP funds are being expended for the Corps' investigation.

Three versions of an Auburn Dam are under consideration by the Corps: (1) a single-purpose flood control dam, (2) a single-purpose flood control dam with provisions to permit later enlargement for other purposes, and (3) a flood control dam with a small permanent pool to permit gravity diversion of water to western Placer County. As the Corps' feasibility investigation proceeds, proponents of the original plan for a large multipurpose Auburn Dam continue to seek support for their position. The flooding of February 1986 showed a clear need for additional flood control on the upper American River. Studies show that Auburn Dam is the only practical way to provide that control. The remaining questions are the level of flood control to be provided, and whether other purposes should be added. Also to be determined is how Auburn Dam's cost would be shared between federal, State, and local entities. DWR stands ready to assist in the early resolution of these issues, but local leadership and support for local funding are a key ingredient if an Auburn Dam is to be built.

Kern Water Bank

The Kern Water Bank is a ground water recharge and extraction facility being developed in Kern County on the alluvial fan of the Kern River. It will allow SWP water to be recharged into the ground water basin during wetter years and withdrawn by pumping during drier years. To consist of several proposed elements, including the Kern Fan Element and local elements being planned with Kern County water districts, the Kern Water Bank is potentially able to store a total of three to five million acre-feet of water. The Kern Fan Element alone will be able to store about one million acre-feet. As reported in Bulletin 132-87 (page 82), the Kern Fan Element could increase SWP yield up to 144,000 acre-feet per year at competitive water prices.

In addition to the Kern Fan Element, potential elements proposed by local water districts (most of which are members of Kern County Water Agency) have been the focus of DWR's planning efforts for the Kern Water Bank. These local district elements are mostly in-lieu recharge proposals. In other words, during wetter years participants would use surface water delivered by the SWP in lieu of pumping ground water, allowing the ground water basin to be recharged. The amount of ground water not pumped would be credited to the Kern Water Bank and extracted for the SWP during drier years.

Several significant events and activities have occurred on the Kern Water Bank program during the report period, most notably the purchase of property for the Kern Fan Element. DWR has undertaken various planning studies to provide the information required to design the recharge and extraction facilities for the Kern Fan Element. DWR and Kern County Water Agency are also initiating plans to incorporate potential local district elements into the Kern Water Bank, as mentioned above.

Land Acquisition. On August 30, 1988, DWR acquired approximately 19,900 acres from Tenneco West, Incorporated for $31.4 million. This property, which is advantageously situated for recharge of the Kern ground water basin, is also close to the California Aqueduct, the Kern River (a major local water source in Kern County), and the City of Bakersfield's successful ground water recharge facilities.

Although DWR's initial offer was made in September 1987 for approximately 24,000 acres, less land was purchased after the parties disagreed about the value of some of the land and after McFarland Energy Corporation, a local oil and gas company, exercised a first right of refusal to

purchase approximately 2,200 acres in and around the Ten Section Oil Field.

Land Management. With the purchase of the 19,900 acres, DWR became the lessor for 20 agricultural leases covering about 15,500 acres and 5 irrigation equipment leases. Under the terms of the purchase agreement, DWR will allow existing agricultural activities on its property to continue in those areas not needed for project facilities for up to 5 years. During this period, DWR will derive income from agricultural operations on its properties through lease agreements. As an option to maintaining the agricultural leases, DWR may instead keep these lands clear of vegetation.

Under an agreement with DWR, KCWA has contracted with an agricultural land management firm to assist in the management of the agricultural leases and other related duties. DWR retains direct administration of the leases and maintains close coordination of all its activities with KCWA and the land manager. The land management firm is responsible for the supervision of the agricultural leases and tenants.

Additional Proposed Land Acquisition. DWR has evaluated other available properties for incorporation into the Kern Fan Element and is considering the purchase of some of them. These properties are either inholdings enclosed by DWR's 19,900-acre property or properties in adjacent or nearby areas.

Kern Fan Element Activities. In the development of the Kern Fan Element, DWR must complete several tasks before facilities can be designed and the project operated. One of the major activities, exploration and ground water investigation, has begun.

The exploration and ground water investigations contemplated for the Kern Fan Element involve collecting and evaluating information on the area's hydrogeology and assessing any localized water quality concerns that may exist. Prior to purchasing the property, DWR limited its exploration and ground water monitoring investigations to the City of Bakersfield's 2,800-acre recharge site, contiguous to DWR's property. DWR has completed installation of a monitoring system in the City of Bakersfield's recharge site and is installing a monitoring well network on its Kern Water Bank property.

DWR is also conducting new operation studies to determine the water supply benefits from a possible first stage program for the Kern Fan Element. Emphasis is being given to development of a first-stage program that could be implemented by 1991 and would provide useful operational information for full development of the Kern Fan Element.

Local Element Activities. In June 1988, DWR and KCWA developed a conceptual plan to solicit and evaluate local district elements for inclusion in the Kern Water Bank. The objective was to implement local elements as early as possible, consistent with the overall development of the Kern Fan Element. Because DWR recognizes that it might be several years before the Kern Fan Element becomes fully operational, the conceptual plan outlined two phases in the development of local elements.

Phase One local elements are projects that would not rely on Kern Fan Element extraction and could be operated independently for the recharge and return of SWP water. Phase One allows potential independent local elements to come online before the Kern Fan Element becomes fully operational if they are able to do so. Phase Two elements are projects that would provide recharge and require extraction of water from the Kern Fan Element. These projects could not be implemented until the Kern Fan Element facilities and operational requirements are determined.

DWR is proceeding with this two-phase plan and is coordinating its efforts with the State Water Contractors' Ground Water Committee and KCWA's Ground Water Storage Advisory Committee and Engineering Subcommittee. DWR and KCWA are focusing primarily on developing Phase One elements. DWR is funding a feasibility study of a Semitropic Ground Water Storage District Element (see Chapter III, "New Contract Issues"), and prefeasibility studies are proceeding for other local elements.

Ground Water Model Development. DWR is currently modifying ground water models for Kern County and for the Kern Fan Element to assist in evaluating and developing the various

elements of the Kern Water Bank. These models will be used to assess project impacts and maintain storage accounts. Specifically for the Kern Fan Element, the model will be used to determine the amounts and rates of recharge.

Surface Water Model Development. DWR has developed a working computer model of the Kern County surface water conveyance system and has prepared an initial report describing the model. Known as the Kern County Conveyance Operations Model (KCOM), this model simulates the operation of the water distribution system in Kern County. It will optimize development of the Kern Water Bank by enabling DWR to evaluate potential local elements and determine the constraints, design alternatives, and operational guidelines within the conveyance system. DWR is currently calibrating the model by using recent historical information to improve input data. DWR will be working closely with KCWA and various water districts in the county to obtain this information and verify the model.

Environmental Activities. The Department of Parks and Recreation is working on various habitat and wildlife enhancement projects on its nearby Tule Elk State Reserve that could be coordinated with similar activities on DWR's property. DPR also indicated that the reserve could be used for ground water recharge. DWR will work with DPR staff and other environmental interests to discuss how environmental benefits can be maximized subject to meeting other project objectives. DWR has had some initial discussions with the Department of Fish and Game, the California Energy Commission, the Metropolitan Bakersfield Habitat Conservation Plan Committee, and the City of Bakersfield regarding these activities. In cooperation with the Energy Commission, DWR proposes to fund a monitoring study of the endangered San Joaquin kit fox on DWR lands.

Local Water Supply Projects

Local water supply projects can augment SWP water supply. Provided administrative guidelines are met, these local projects could be financed with available SWP funds and included in the SWP. Basic assumptions are that:

- appropriate SWP water supply contracts would be amended;
- yield developed by a local project as a unit of the SWP would become part of the yield of the SWP, whether for the life of the project or for an interim period; and
- the local project would not adversely affect the costs of water deliveries to nonparticipating SWP contractors.

DWR conducts a feasibility study of a local project when conceptual and reconnaissance reports support the project and the water contractors agree that the project is advantageous. Projects must be feasible with respect to engineering, economic, contractual, and financial issues, as well as be environmentally acceptable, before they can become units of the SWP. Feasibility procedures and contract amendment provisions for construction, operation, and repayment have been established by DWR.

Local projects eligible for addition to the SWP may be financed with available SWP funds. Should construction costs of the local project exceed available SWP funds, local participation in financing the construction will be required. SWP financing will not exceed the actual construction cost of the local project. The local project will not become a unit of the SWP until an agreement has been signed by all participants.

Santa Barbara County. The only local project currently under consideration is in Santa Barbara County. After five years of reviewing several different proposals, DWR initiated the feasibility study for the Cachuma Reservoir Enlargement Project in February 1987. Because the USBR (which owns the Cachuma Reservoir and Bradbury Dam) is considering safety modifications to the dam, the feasibility study is being conducted as a joint DWR-USBR effort. The study will combine the safety modifications with the raising of the dam to increase water supplies. The study's objectives are to (1) determine if the enlargement of Cachuma Reservoir is a feasible SWP alternative with respect to all engineering, geologic, economic, and environmental issues; (2) estimate the costs for this project; (3) formulate a plan for financing the enlargement as a feature of the SWP; and (4) analyze the financial

impacts on SWP contractors. Cloud seeding and water salvage through vegetation management are also being studied as means of augmenting the water supplies to be made available by the proposed enlargement. The study is scheduled for completion by early 1990.

Water Transfers

Statewide emphasis on several distinct types of water transfers has intensified during the 1980s. In the past decade, several new laws have been passed that strengthen California's water policies, grant additional authority to the SWRCB, and authorize new activities for DWR. These laws have encouraged water transfers, as reflected in the following:

- Voluntary transfer of water and water rights is advocated where consistent with the public welfare in export and import areas.

- DWR and SWRCB are directed to support voluntary transfers of water and water rights, offering technical assistance if necessary, to identify and implement water conservation measures that will make additional water available for transfer.

- Local and regional public agencies are authorized to sell, lease, exchange, or transfer surplus agency water for use outside the agency.

- DWR is required to:

  (1) establish an ongoing program to facilitate the voluntary exchange or transfer of water;

  (2) implement various State laws pertaining to water transfers;

  (3) create and maintain a list of entities seeking to enter into transfers and a list of the physical facilities that may be available to carry out water transfers; and

  (4) prepare a water transfer guide.

- State and local agencies are prohibited from denying a bona fide transferrer of water the use of unused capacity in a water conveyance facility under specified conditions.

In March 1986, DWR established an in-house Water Transfers Committee to respond to the interest in water marketing and water transfers. The committee has published two documents to facilitate the voluntary exchange or transfer of water within California: "A Catalogue of Water Transfer Proposals" and "Questions to be Asked in the Case by Case Review of Water Transfer Proposals."

DWR is working on the Water Transfer Guide, authorized by Section 482 of the Water Code, for completion in 1989.

CVP Purchases. DWR expressed interest in purchasing existing CVP water supplies that the CVP will not need for at least 10 to 20 years. DWR is interested in acquiring such interim supplies to meet near-term SWP needs.

The Coordinated Operation Agreement provides that the USBR and DWR will negotiate a contract for the sale of interim federal water to DWR and for the conveyance of federal water through SWP aqueduct facilities. The SWRCB, the Department of Fish and Game, and the U.S. Fish and Wildlife Service are also involved in the negotiations, which are open to the public. USBR public participation rules have been relaxed to allow public comment at essentially any time during the negotiations. The negotiations are closely coordinated with periodic meetings with the State Water Contractors.

Yuba County Water Agency. As described in Chapter III, DWR entered into an agreement with the Yuba County Water Agency to purchase water released from New Bullards Bar Reservoir during the summer of 1988. The release of this water by YCWA allowed DWR to hold a corresponding amount of water in Lake Oroville and had the effect of transferring the water from New Bullards Bar Reservoir to Lake Oroville.

DWR and YCWA have been negotiating a water transfer for 1989. Yuba County has agreed to make 200,000 acre-feet of water available. Santa Clara Valley Water District has agreed to pay the costs for transfer of 90,000 acre-feet, and Tulare Lake Basin Water Storage District will pay the costs for transfer of the remaining 110,000 acre-feet.

It is expected that, after the SWRCB has approved the water transfer, YCWA will begin releases from New Bullards Bar Reservoir in July.

Stanislaus and Calaveras River Basins Water Management Study

Two San Joaquin County agencies, Stockton East Water District and Central San Joaquin Water Conservation District, approached DWR with a plan to release as much as 145,000 acre-feet of the districts' New Melones contract water to the SWP in dry and critical years. In exchange, the SWP would finance facilities that would provide for conjunctive use of water in the study area.

In January 1988, DWR, the USBR, and local water agencies agreed to investigate the future demands for water in the study area and the most efficient means of meeting those demands. DWR and the USBR have prepared a work plan for this investigation. A Memorandum of Understanding has also been signed by the following agencies: DWR, USBR, Stockton East Water District, Central San Joaquin Water Conservation District, Calaveras County, Calaveras County Water District, Tuolumne County, Tuolumne Regional Water District, Stanislaus County, San Joaquin County, Lathrop County Water District, South Delta Water Agency, Department of Fish and Game, and the cities of Escalon, Ripon, Manteca, and Stockton. Two irrigation districts that have water rights to Stanislaus River water, Oakdale Irrigation District and South San Joaquin Irrigation District, have decided not to sign the MOU but will monitor and provide input to the study.

After the water demand study is completed (around September 1989), a study of alternatives to meet future water demands will be made. A draft EIR/EIS will be prepared concurrently with the second study and is scheduled to be completed in June 1991.

The selected alternative should:

- accommodate future water needs of all the involved counties and agencies;
- improve instream flows for the Stanislaus, Calaveras, and San Joaquin rivers;
- improve water quality in the channels of the southern Delta; and
- increase CVP and SWP water supplies in the Delta to assist in meeting Delta outflow requirements.

Table 15. Projected Water Deliveries and Energy Requirements

Item	Calendar Year			
	1990	1995	2000	2004
ENTITLEMENT REQUESTS *thousands of acre-feet*				
Feather River Area	4	31	33	35
North Bay Area	28	44	53	57
South Bay Area (a	166	184	188	188
San Joaquin Valley Area	1,355	1,355	1,355	1,355
Southern California Area	1,589	1,844	2,018	2,225
Central Coastal Area	--	70	70	70
Total Entitlement Requests	**3,142**	**3,528**	**3,717**	**3,930**
ENERGY REQUIREMENTS *millions of kilowatt-hours*				
North Bay Aqueduct Plants				
Barker Slough	5	8	10	10
Cordelia	8	11	13	15
South Bay Aqueduct Plants				
South Bay	140	156	159	159
Del Valle	2	1	2	2
California Aqueduct Plants				
Banks	927	1,064	1,115	1,174
Gianelli	241	229	238	264
Dos Amigos	408	456	486	514
Buena Vista	432	511	560	609
Wheeler Ridge	478	575	634	695
Chrisman	1,004	1,218	1,344	1,475
Edmonston	3,525	4,289	4,742	5,211
East Branch				
Pearblossom	593	783	886	980
West Branch				
Oso	181	190	200	215
Coastal Brach				
Las Perillas	11	14	16	16
Badger Hill	27	37	40	40
Devil's Den	--	28	38	38
Bluestone	--	40	53	53
Polonio Pass	--	40	53	53
Subtotal (b	7,982	9,650	10,589	11,523
Transmission Losses (c	523	268	447	614
SWP Pumping Energy Requirements	**8,505**	**9,918**	**11,036**	**12,137**
Energy Obligations to SCE	2,497	2,190	2,258	2,276
Firm Contract Sales	458	--	--	--
Total SWP Energy Requirements	**11,460**	**12,108**	**13,294**	**14,413**

a) The 1990 request includes 5,000 acre-feet of deferred entitlement water.

b) Energy requirements based upon energy to deliver SWP contractors' requested entitlement water, as well as recreation water, reservoir and aqueduct losses, and replacement of reservoir storage south of the Delta.

c) Transmission losses determined by contractual arrangements with the utilities.

Chapter VI
SWP Power Supply, Present and Future

This chapter assesses SWP power requirements, resources, and projected power costs.

Power Requirements

Each year DWR develops short- and long-term operational studies while preparing the water contractors' annual statements of charges. These studies are the basis for projections of the electrical capacity and energy requirements for SWP operations. The studies include pumping required to deliver the SWP contractors' requested entitlement water, but exclude pumping to deliver surplus water. (The delivery of surplus water should not affect the quantity or costs of entitlement water.)

Long-term SWP operational studies are based on median-year water supply conditions. SWP power requirements can vary significantly, however, depending upon water supply and water demand in a given year. Dry conditions in Northern California can reduce the deliverable amount of water. If the SWP cannot deliver full entitlement requests, power requirements decrease. SWP power requirements could also decrease during a wet year if local water conditions reduce the need for SWP water in the San Joaquin Valley and/or Southern California. SWP power requirements would exceed the projected amount only if actual water deliveries were greater than projected (deferred entitlements and/or increases by contractors not yet taking maximum entitlements), or if additional pumping were required to refill reservoirs south of the Delta after a dry year.

After reviewing SWP water management plans and the current plans for future facilities as presented in this bulletin, DWR based projected power requirements on the SWP contractors' projected water delivery requirements for 1989 through 2035, with one exception. The Metropolitan Water District of Southern California's long-range projections (1995-2035) were assumed to be the same as those presented in Bulletin 132-88. MWDSC has recently experienced large increases in demand for SWP water supply and has formally asked DWR to plan transportation facility improvements and enlargements in preparation for increased deliveries to MWD's service area by the year 2000. DWR is studying the effects of MWD's request on future power requirements.

Hydroelectric generation from the SWP Hyatt-Thermalito power facilities and aqueduct power generation facilities produces a large portion of the annual SWP power supply. Because of the importance of this source of energy, each year DWR analyzes long-term and short-term projections of hydroelectric generation from these facilities. For long-term projections DWR generally assumes statewide median water supply conditions. For short-term projections (the upcoming two years) DWR assumes hydrologic conditions which provide the minimum water supply required to (1) meet SWP water contractors' requested deliveries and (2) leave a combined storage of 1.5 million acre-feet in Lake Oroville and the SWP share of San Luis Reservoir at the end of the water year. Statistically, this assumed minimum water supply would be exceeded in about three out of four years.

Table 15 shows projected entitlement water requests, energy requirements for operating the SWP, and corresponding transmission energy losses for years 1990-1995, 2000, and 2004. Table 15 also includes projected energy deliveries to the Southern California Edison Company, pursuant to the 1979 DWR-SCE Power Contract and the 1981 DWR-SCE Capacity Exchange Agreement (see "Exchanges" in this chapter), and firm contract sales. In 1990, DWR has contracts to sell power to the following utilities: Turlock Irrigation District, Northern California Power Agency, and the cities of Azusa, Banning, Colton, Anaheim, Riverside, and Vernon.

In addition to energy requirements, DWR also considers electrical capacity requirements--the rate of delivery or demand for energy during a given time period. The SWP is operated to reduce pumping capacity requirements during on-peak periods, when capacity and energy costs are the highest. Thus, the SWP's highest capacity re-

quirements occur during off-peak periods (nights, Sundays, and holidays), when capacity and energy costs are the lowest.

Table 16 shows the projected highest on-peak and off-peak capacity requirements for the years 1990 and 2000 during the month of highest system use. The total capacity requirements in Table 16 consist of pumping and reserve requirements, transmission losses, DWR obligations to Southern California Edison, and firm contract sales.

Power Resources

Basic goals of DWR's long-range power supply program are:

- to obtain adequate, reliable, competitively-priced power supplies and transmission services for providing sufficient capacity and energy to operate the SWP as an independent, interconnected utility;
- to develop and manage power resources for flexibility in meeting water delivery requests at minimum cost, while maximizing benefits to the people of California; and
- to minimize the impact on the SWP when major contractual arrangements expire in 2004.

DWR's power supply program seeks to (1) use existing SWP resources for maximum benefit to the SWP, and (2) reduce dependence on power purchased from other utilities. To achieve these goals, DWR has acquired hydro, coal, and geothermal power resources, has constructed power facilities, and has contracted to purchase capacity and energy from others. Figure 10 shows the SWP power facilities now in operation, under construction, and planned for the future. The figure also shows facilities that provide power resources to the SWP under fixed contracts with others.

Hydro

Economical hydroelectric generation provides the largest share of the SWP power resources. The 900-MW Hyatt-Thermalito Powerplants generate about 2.1 billion kWh in a median water supply year. Generation at the existing SWP power recovery plants (Gianelli, Alamo, Devil Canyon, Warne, and Castaic) varies with water conveyance. The combined 650-MW capacity at these five plants recovers about one-fourth of the total energy used for SWP pumping.

- Alamo Powerplant, a 17-MW recovery facility on the East Branch of the California Aqueduct, began operation in July 1986.
- Thermalito Diversion Dam Powerplant, a 3-MW recovery facility near Oroville, began commercial operation in June 1987. This powerplant operates on water releases made for maintenance of fishery habitat on the Feather River below Oroville Dam.
- Hyatt-Thermalito, Devil Canyon, and Alamo facilities are treated separately for energy accounting purposes in this bulletin. (See the discussion under "Exchanges" in this chapter.)
- DWR receives power at Sylmar Substation from the Los Angeles Department of Water and Power's Castaic Powerplant under provisions in the DWR-LADWP West Branch Cooperative Development Contract.
- DWR purchases energy from hydro generation developed by others. The output of the 165-MW Pine Flat Powerplant, owned and operated by the Kings River Conservation District, provides the SWP an annual average of about 400 million kWh in a normal water year. DWR also contracts for the output from five hydroelectric facilities owned by The Metropolitan Water District of Southern California. (See the following discussion of "Exchanges.")
- DWR is planning to construct another hydroelectric powerplant on the East Branch of the California Aqueduct. The Mojave Siphon Powerplant (32.4 MW) will be located at the Mojave Siphon upstream from Silverwood Lake. The application to amend FERC License No. 2426 was filed in January 1989. The powerplant is scheduled to be operational in 1994.

Table 16. Projected Electrical Capacity Requirements

in megawatts

Pumping Plant	Peak Demand During Month of Highest System Use			
	1990		2000	
	On-Peak	Off-Peak	On-Peak	Off-Peak
North Bay Aqueduct				
Barker Slough	1	1	1	1
Cordelia	1	1	2	2
South Bay Aqueduct				
South Bay	21	17	21	19
Del Valle	1	1	(a	1
California Aqueduct				
Banks	141	157	56	250
Gianelli	1	161	(a	202
Dos Amigos	15	73	32	70
Buena Vista	26	96	63	82
Wheeler Ridge	27	106	79	105
Chrisman	67	221	172	223
Edmonston	246	736	644	760
East Branch				
Pearblossom	74	82	120	128
West Branch				
Oso	0	49	26	44
Coastal Branch				
Las Perillas	2	1	1	1
Badger Hill	4	2	3	4
Devils' Den	--	--	5	5
Bluestone	--	--	7	7
Polonio Pass	--	--	7	7
Total Capacity Needed to Pump Entitlement Water	**627**	**1,704**	**1,239**	**1,911**
Firm Contract Sales	74	34	--	--
Transmission Losses (5%)	35	87	62	95
Reserve Margin (10% of Pumping, Firm Sales, and Losses)(b	73	182	130	200
Capacity Obligation to SCE (c	621	386	651	485
Total SWP Capacity Requirement	**1,430**	**2,393**	**2,082**	**2,691**

a) Less than 0.5 MW.

b) During the on-peak period, 10 percent of the pumping load may be insufficient to meet contractual requirements for spinning reserve or Western Systems Coordinating Council standards for regulation and frequency bias. Additional spinning reserve may be required based on the largest single contingency.

c) Includes up to 350 MW of Hyatt-Thermalito power under contractual obligation to SCE, but it is anticipated that SCE will have little or no demand for this capacity during off-peak periods.

- Devil Canyon Powerplant is being enlarged to accommodate units 3 and 4, which will increase the nameplate rating by 160 MW. In addition, a second application to amend FERC License No. 2426 was filed in January 1989 for construction of a second afterbay at Devil Canyon Powerplant. All facilities are scheduled to be completed in 1992.

Exchanges

The 1979 Power Contract and the 1981 Capacity Exchange Agreement with Southern California Edison also provide for significant SWP power resources. Services became available under these documents in April 1983 and April 1987, respectively.

Under the Power Contract, DWR provides to SCE:

- up to 350 MW of capacity and approximately 40 percent of the energy from Hyatt and Thermalito powerplants;

- all of the energy generated by the Devil Canyon Powerplant up to a maximum delivery rate of 120 MW;

- all of the energy generated by Alamo Powerplant up to a maximum delivery rate of 15 MW.

- all of the capacity and energy from Lake Mathews, Foothill Feeder, San Dimas, and Yorba Linda hydro facilities operated by The Metropolitan Water District of Southern California.

In return, DWR receives off-peak energy from SCE equal to the total amount of energy SCE receives from Hyatt-Thermalito, Devil Canyon, and Alamo powerplants, plus an additional amount of energy. This amount of additional energy is determined annually based on the Capacity-Energy Exchange Formula defined in the 1979 Power Contract.

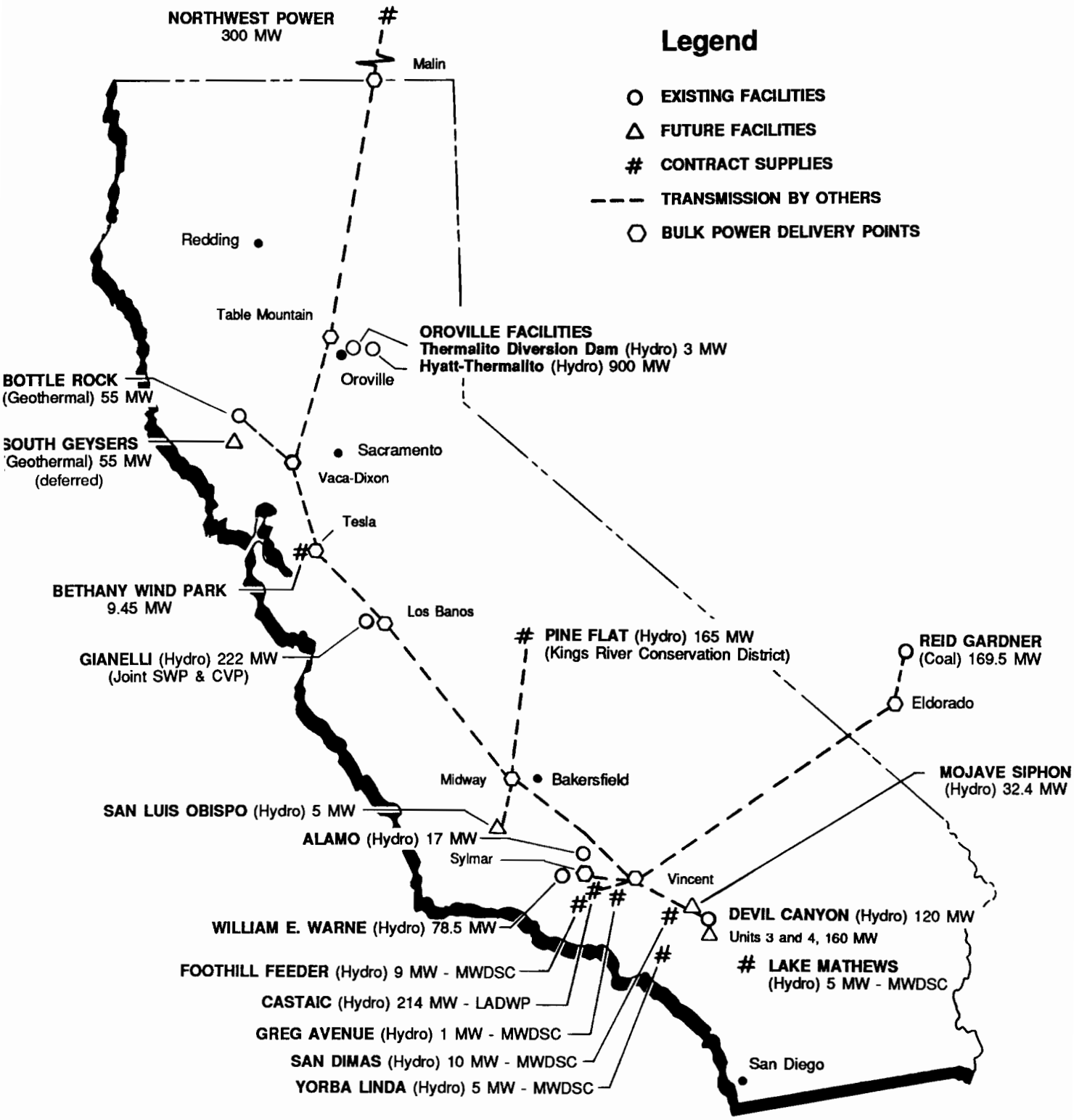
DWR contracts for the energy output of five hydro plants owned by MWDSC, which have a combined total capacity of 30 MW. Under the Power Contract, SCE receives energy from the four plants mentioned above (Lake Mathews, Foothill Feeder, San Dimas, and Yorba Linda). DWR receives an amount of energy from SCE equal to approximately 107 percent of the energy that is provided to SCE. Under a 1983 agreement with the Los Angeles Department of Water and Power, the energy from the fifth plant (Greg Avenue) is provided to LADWP. LADWP returns 98.8 percent of this energy to DWR during off-peak periods.

Under the Capacity Exchange Agreement, DWR delivers to SCE, during on-peak periods, 412.5 million kWh of energy each year at a maximum delivery rate of 225 MW. SCE returns, during the partial-peak and off-peak periods, approximately 110 percent of the energy provided by DWR. SCE also waives 75 percent of DWR's costs for firm transmission service, based on capacity amounts shown in Exhibit II (1979) of the Power Contract and the Firm Transmission Agreement, and makes an annual payment of $900,000 to DWR. DWR and SCE are negotiating to amend the Capacity Exchange Agreement to improve the SWP's operational flexibility.

On February 26, 1988, the Coordination Agreement between DWR and The Metropolitan Water District of Southern California was executed. This agreement calls for the preparation of a coordinated operation plan between the SWP and MWDSC's Colorado River Aqueduct system and also provides for (1) sales of surplus firm energy to MWDSC on a monthly basis, (2) sale of economy energy to MWDSC, (3) purchases of surplus energy from MWDSC's Colorado River Aqueduct system, and (4) exchanges of energy between DWR and MWDSC.

DWR exchanges its economy energy with several utilities in California, the Pacific Northwest, and the Southwest through additional interchange agreements. Under these agreements, DWR can sell and/or buy economy energy on an hourly or daily basis. These agreements permit more efficient use of DWR's generating resources and more efficient scheduling of energy deliveries. The terms of these agreements are generally between 20 and 30 years.

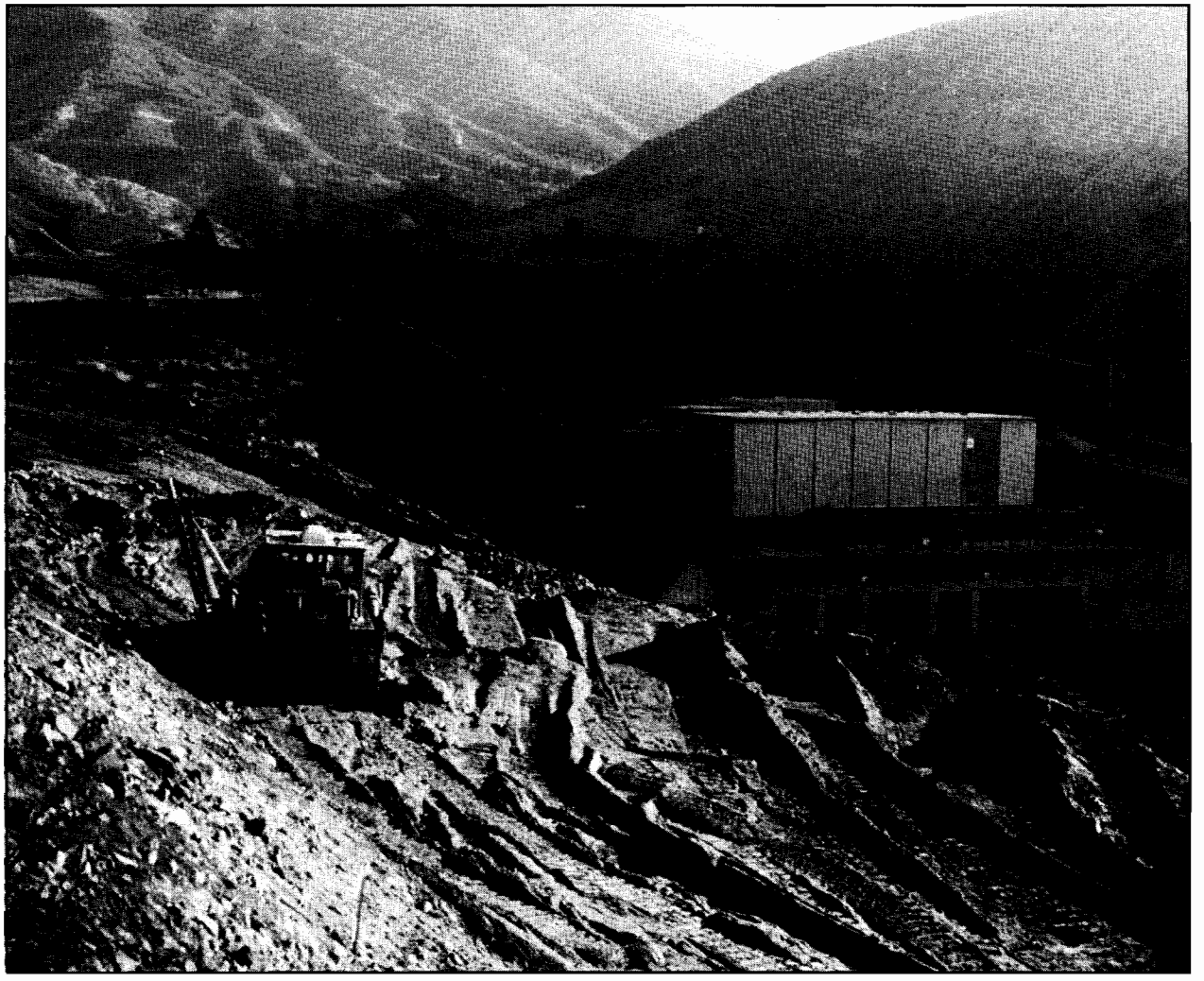
Figure 10. SWP Power Facilities



NOTES:

Power exchange and transmission services provided under contract with Pacific Gas and Electric Co., Southern California Edison Co., San Diego Gas and Electric Co., and Los Angeles Department of Water and Power.

SWP owns a 169.5-MW share of Reid Gardner Unit No. 4, but under agreement with Nevada Power Company, receives up to 226 MW on an interruptible basis.



The enlargement of Devil Canyon Powerplant is scheduled to be completed in 1992.

Coal

DWR and the Nevada Power Company jointly own Reid Gardner Unit No. 4, a coal-fired facility near Las Vegas. DWR owns 67.8 percent of the unit (169.5 MW); NPC owns 32.2 percent of the unit and all of Units 1, 2, and 3. DWR has received energy from Unit 4 since July 1983, under an agreement in which DWR receives up to 226 MW from Unit 4 in exchange for NPC's limited right to interrupt DWR energy deliveries. Whenever NPC interrupts DWR's portion of generation, DWR receives payment based on combustion turbine costs. Beginning in 1998, NPC has the annual option to buy back up to 6 percent of DWR's ownership share of Unit 4. A five-year notice to DWR is required.

Cyprus Western Coal Company is one of four contractors supplying coal for Reid Gardner Powerplant. The contract between Nevada Power Company and Cyprus provides for Cyprus to supply coal from Plateau and Skyline mines between 1983 and 2008 and establishes the price for coal delivered during this period. The contract provides for an adjustment to the base coal price under conditions stated in an "equity and hardship" clause, which defines hardship as an adjusted base coal price that differs from market price by more than ten to thirteen percent. An escalation clause in the contract has allowed the base price for coal from the Plateau and Skyline mines to increase from $21/ton to $32.57/ton and from $24.88/ton to $34.18/ton, respectively, between 1982 and late 1988. However, Nevada Power Company believed the current market price

to be in the range of $20-$25/ton and therefore requested a price reduction under the contract's equity and hardship provision.

Negotiations with Cyprus were unsuccessful. Nevada Power Company then requested that the issue be submitted to arbitration. Cyprus subsequently filed a lawsuit in Utah Federal District Court challenging the equity and hardship provision as unenforceable and claiming that the conditions for triggering the provision had not been met. The court eventually decided that the clause was arbitrable. On January 17, 1989, Nevada Power Company and Cyprus Western Coal Company signed an agreement specifying the ground rules for conducting the arbitration. The arbitration was to determine the current market price for coal (long-term contract) and what the adjusted base price should therefore be.

The arbitration began on April 10, 1989, in Salt Lake City. The type of arbitration used is known as "baseball" arbitration, whereby each party nominates a contract price after both cases have been presented. The three-member arbitration panel is bound to choose one of the nominated prices. Nevada Power Company nominated a contract coal price of $23/ton, and Cyprus Western Coal Company nominated $27/ton. On July 21, the arbitration panel decided in favor of Nevada Power Company.

The arbitration agreement between Nevada Power Company and Cyprus Western Coal Company provided that the new contract price would be retroactive to February 24, 1988. As a result, DWR will receive a payment of about $3.9 million for its share of the retroactive cost reduction. DWR will also benefit from coal price reductions of about $1.5-$1.7 million annually.

Geothermal

Bottle Rock Powerplant, in Lake County's Geysers area, has been owned, operated, and maintained by DWR since February 1985. Geothermal steam for the plant was provided under a contract with MCR Corporation and others until the end of June 1988. On July 1, 1988, DWR acquired the steam supply for Bottle Rock Powerplant through the purchase of the Francisco Leasehold and steam field. DWR also contracted with Calpine Corporation to operate and maintain the steam field.

Bottle Rock Powerplant is now operating at approximately 17-20 MW. An economic analysis of the power market and geothermal energy costs, to be completed in 1989, will determine the feasibility of reconditioning existing wells and drilling new wells to increase steam production and the output of the powerplant.

DWR is also studying the possibility of using steam from another mineral lease in conjunction with Bottle Rock Powerplant and has obtained necessary local, State, and federal permits to construct a well pad on the leasehold. The mineral lease is located north of Bottle Rock Powerplant on the Binkley Ranch Club property. DWR leases the mineral rights on this property from the federal government.

South Geysers Powerplant, in Sonoma County, is DWR's other geothermal facility. Three steam wells originally drilled on the property provided the basis for DWR's decision to construct the plant. Subsequent analyses indicated that the available steam resources were not capable of supporting a 55-MW powerplant. Efforts were then concentrated on assessing all steam supply alternatives and securing an assured steam supply.

Because of the reduced short-term need for additional SWP power resources and the unsettled circumstances in the geothermal steam business, DWR has deferred the completion of South Geysers Powerplant.

In the interim, DWR has subleased a portion of the Rorabaugh Leasehold to Thermogenics, Inc. However, in August of 1988 Thermogenics quitclaimed the sublease, as the company was unable to complete its project. To gain revenues and reduce costs for the SWP, DWR is currently analyzing options for others to use the geothermal steam field, partially completed powerplant, and equipment.

Wind

DWR purchases wind-generated energy from TERA Power Corporation; the energy is delivered from the Bethany Wind Park to the South Bay Pumping Plant near Tracy. At the end of 1988,

about 45 units (2.4 MW) were operational. If the park were fully developed, TERA would have an installed wind turbine capacity totaling 9.45 MW.

Power and Interruptible Energy Purchases

Power purchases are an integral part of DWR's power supply program. To obtain economical power when the need arises, DWR has long-term power purchasing contracts with Pacific Gas and Electric Company, Southern California Edison, and Bonneville Power Administration. Additionally, under the Coordination Agreement between DWR and The Metropolitan Water District of Southern California, DWR can purchase from MWDSC the surplus energy generated by MWDSC's operations on the Colorado River Aqueduct. DWR also has several agreements for purchasing interruptible economy energy to satisfy unexpected, short-term shortages of energy.

Table 17 summarizes economy energy sales, purchase agreements, and major long-term power contracts.

Other Projects

DWR continually studies and evaluates potential power projects for the SWP. A project may be included, excluded, or deferred in the program based on (1) ability to meet anticipated pumping power requirements, (2) cost of the resource, (3) financing considerations, (4) environmental impacts, (5) operating characteristics, and (6) availability of transmission facilities.

Projects under consideration include a second unit at Alamo Powerplant, additional capacity at Hyatt-Thermalito, and a new offstream pumped-storage powerplant associated with the proposed Los Banos Grandes Reservoir.

SWP power studies assume power recovery facilities will be constructed on the Coastal Branch, Phase II; however, as discussed in Chapter V, construction of the Coastal Branch is still under investigation.

Transmission Service

DWR must arrange for adequate transmission service (1) between SWP resources and loads, and (2) to interconnected utilities for purchases, sales, and exchanges of power. Most SWP transmission needs are currently met by contractual arrangements with California utilities (Table 17). DWR's long-term objectives include acquisition of its own transmission facilities between resources and loads where feasible, and additional interconnections to other potential power sources. In order to improve and expand DWR's transmission rights, DWR will participate in studies to develop:

- additional transmission capability from the Oregon-California border to Southern California (and extend existing transmission agreements);
- alternative transmission paths between DWR resources and loads to achieve a greater degree of operating flexibility; and
- additional transmission paths to the Southwest.

DWR requested that Pacific Gas and Electric Company add reinforcements between Los Banos and Midway substations to upgrade their transmission capability and provide nearly 1,100 MW of firm transmission capability for DWR in accordance with the Comprehensive Agreement. PG&E has indicated that reinforcement installation could be delayed and possibly avoided if DWR is willing to drop portions of its pump loads during emergencies. DWR and PG&E are exploring this concept further to ensure that the SWP would not be adversely affected under this arrangement.

DWR has contracted through 2004 for 300 MW of transmission capacity in the extra-high voltage (EHV) Pacific Northwest Intertie from the California-Oregon border to the Table Mountain, Tesla, Los Banos, and Midway substations. DWR is retaining the entire 300-MW share of this EHV transmission capacity for access to the Northwest, where low-cost power is currently available and is projected to be available in the future.

In December 1984, DWR signed a Memorandum of Understanding with major California public and private utilities for an option to purchase

97 MW of transmission capacity commencing in January 2005 on the proposed third 500-kV transmission line connecting California with the Pacific Northwest. The Memorandum of Understanding also provides DWR an option to extend its existing 300 MW of EHV transmission capacity entitlement for the life of the existing Pacific Intertie lines.

In May 1984, DWR entered into an interim agreement with PG&E for funding a 165-MW capacity share on the 230-kV Castle Rock Junction-Lakeville transmission line. DWR completed payment for its share of the transmission line in February 1985. DWR has executed the Agreement of Cotenancy in the Castle Rock Junction-Lakeville 230-kV transmission line. DWR also executed a related agreement with the Northern California Power Agency and the City of Santa Clara that would allow DWR to market unneeded transmission capacity purchased under the Cotenancy Agreement. Both agreements were signed on May 10, 1989.

On January 17, 1989, DWR purchased a portion of the Midway-Wheeler Ridge Transmission System from PG&E. In accordance with the "Contract for Sale of Interest In and Operation of the Midway-Wheeler Ridge Transmission System," DWR paid $10,686,788 for a 75 percent interest in the section of the 230-kV transmission line extending from Midway Substation to the point of interconnection with the Chrisman Pumping Plant. DWR also received 100 percent ownership of the tap lines connecting the Buena Vista, Wheeler Ridge, and Chrisman pumping plants. The purchase was provided under the 1982 EHV Settlement Agreement. PG&E will operate and maintain the line. DWR's ownership of the line will result in cost savings for the SWP.

Studies have demonstrated that a transmission line between the Banks and South Bay pumping plants is economically feasible. Based on the latest cost estimates, the transmission line would pay for itself in about 14 years. DWR is actively pursuing this project.

DWR entered into an agreement in September 1986 to participate in first-stage planning studies of the Desert Southwest Project, a proposed transmission line from an undetermined location in the Pacific Northwest to Mead Substation near Las Vegas, Nevada. The studies, which were to be completed in May 1989, were not finished; because of the lack of support by the various participants, no future planning studies are now contemplated.

Sales

DWR has entered into agreements with many utilities for short-term power and economy (nonfirm) transactions. These agreements provide DWR with markets for selling power in excess of SWP needs. Surpluses most often develop as a result of reduced water delivery demands or an abundance of SWP-generated hydro power available during wet years. The surpluses are generally marketed for periods ranging from a day to a year.

Payment to DWR for the sales can be in cash or, in some instances, return energy during periods when the SWP needs power. For example, in 1988 DWR sold or exchanged energy with:

- Bonneville Power Administration;
- Cities of Anaheim, Azusa, Glendale, Riverside, and Vernon;
- Los Angeles Department of Water and Power;
- The Metropolitan Water District of Southern California;
- Modesto Irrigation District;
- Nevada Power Company;
- Northern California Power Agency;
- Pacific Gas and Electric Company;
- Salt River Project;
- San Diego Gas and Electric Company;
- Southern California Edison Company and;
- Turlock Irrigation District.

DWR has several contracts to sell surplus power to utilities from 1989 through the next few years. DWR has contracts to sell power to the cities of

Table 17. Summary of

Contract Title (Short Form) and Date Signed	With	Providing	Through
1. West Branch Cooperative Development (9/2/66)	Los Angeles Department of Water and Power	Joint development of Castaic Power Project on the California Aqueduct, West Branch	12/31/41
2. Extra High Voltage (EHV) Intertie (8/1/67)	Pacific Gas and Electric Co., Southern California Edison Co., San Diego Gas and Electric Company	300 MW of EHV transmission from the Oregon border to specific points in California by SWP and purchase of off-peak energy to the extent of purchased transmission capacity	12/31/05
3. Bonneville Power Administration (9/5/87)	Bonneville Power Administration	Purchase of surplus BPA energy at Oregon-California border	12/4/07
4. Fourth Supplemental Resolution, Oroville (9/28/77)	DWR Resolution	Replacement of Power Sale Contract, effective 4/1/83	Repayment of last bonds or 11/29/17, whichever later
5. MWD Hydro (1/9/78)	The Metropolitan Water District of Southern California	Effective 4/1/83 provides for purchase of output from five small hydro developments totaling 29.5 MW of capacity	At least to 3/31/08
6. San Diego Gas and Electric EHV Settlement (5/25/78)	San Diego Gas and Electric Company	Establishes extent of SDG&E's obligation to supply off-peak energy during the remaining term of the EHV contract and resolves disputes concerning DWR's use if its EHV transmission entitlement	12/31/04
7. Reid Gardner Unit 4 Participation (7/11/79)	Nevada Power Company	Joint ownership of an additional unit at an existing coal-fired plant near Las Vegas	7/25/13
8. Power Contract (10/11/79)	Southern California Edison Company	Commencing 4/1/83, provides: a. transmission service in SCE's service area b. rights to purchase up to 300 MW firm capacity and/or spinning reserves c. rights to purchase off-peak energy d. exchanges of off-peak energy for 485 MW of DWR's on-peak capacity	12/31/04
9. Firm Transmission Service Agreement (10/11/79)	Southern California Edison Company	Transmission service between Eldorado and Vincent substations	7/25/13
10. Edison-DWR 1979 (10/11/79)	Southern California Edison Company	Establishes rate of SCE's off-peak energy under the EHV contract effective 1/1/83	12/31/04
11. Pine Flat (11/6/79)	Kings River Conservation District	Purchase of hydroelectric output from Pine Flat Powerplant	3/31/34
12. Emergency Service Agreement (7/21/80)	Southern California Edison Company	Emergency service between the parties	12/31/04
13. Capacity Exchange Agreement (9/17/81)	Southern Calfiornia Edison Company	Effective 4/2/87, exchanges 225 MW of on-peak capacity from Hyatt-Thermalito for: a. up to 600 MW of SCE's capacity during off-peak periods b. up to 225 MW of SCE's capacity during partial-peak periods c. a 75% reduction in transmission service charges for transmission under Power Contract and Firm Transmission Service Agreement d. an annual payment of $900,000 to DWR	12/31/04
14. Agreement for Sale of Interruptible Energy (3/8/82)	British Columbia Hydro and Power Authority	Sale of B.C. Hydro surplus interruptible energy to DWR	12/31/91 or upon one month notice by either party
15. Agreement for Sale of Nonfirm Thermal Energy (3/8/82)	Pacific Power and Light Company	Sale of nonfirm thermal energy to DWR	12/31/91 or upon one month notice by either party
16. Comprehensive Agreement (4/22/82)	Pacific Gas and Electric Company	Up to 1,465 MW of firm energy transmission service in PG&E's service areas effective 4/1/83	12/31/04 with option for 10-year extension
17. Generation Replacement Agreement (6/14/82)	Southern California Edison Company	Provides energy from DWR resources to replace lost generation of two SCE plants on San Bernardino Valley Municipal Water District system	5/31/12
18. Energy Purchase Agreement (6/14/82)	San Bernardino Valley Municipal Water District	District to pay DWR for energy supplied to SCE under the Generation Replacement Agreement, and give DWR option to develop four small hydro plants on SBVMWD's system	5/31/12
19. Power Sale Agreement (5/14/82)	TERA Power Corporation	Sale of energy to DWR from wind-powered generation facilities constructed by TERA	5/2/02
20. Southern California Edison EHV Settlement Agreement/Pacific Gas and Electric EHV Settlement Agreement (12/31/82)	Southern California Edison Company/Pacific Gas and Electric Company	Establishes the extent of DWR's ability to exercise its rights to 300 MW of EHV transmission from the Pacific Northwest. PG&E Agreement also defines the rate for EHV off-peak energy purchases	12/31/04 and 1/1/05, respectively
21. Interchange Agreement (6/29/83)	San Diego Gas and Electric Company	Energy exchanges between SDG&E and DWR	7/31/10
22. Greg Avenue Powerplant Energy Exchange Agreement (8/29/83)	Los Angeles Department of Water and Power	Exchange of DWR's entitlement to Greg Avenue Powerplant energy for credit and off-peak energy	Until terminated by either party upon two-year advance written notice
23. Economy Energy Agreement (9/22/83)	Los Angeles Department of Water and Power	Bilateral sale of economy energy	Until terminated by either party
24. Coordination Agreement between SCE and DWR (10/8/83)	Southern California Edison Company	Nonfirm energy sales to SCE, short-term exchanges, allows SCE to bank energy at San Luis Reservoir, and allows for seasonal capacity and energy exchange	12/31/05
25. Energy Interchange Agreement (6/6/84)	Tucson Electric Power Company	Bilateral sale of economy energy	12/31/08
26. Energy Interchange Agreement (7/27/84)	City of Pasadena	Bilateral sale of economy energy and interruptible transmission service	12/31/11

Major SWP Power Contracts

Contract Title (Short Form) and Date Signed	With	Providing	Through
27. Energy Interchange Agreement (7/27/84)	City of Riverside	Bilateral sale of economy energy	12/31/13
28. Energy Interchange Agreement (7/27/84)	City of Glendale	Bilateral sale of economy energy	12/31/12
29. Energy Interchange Agreement (7/31/84)	City of Burbank	Bilateral sale of economy energy	12/31/13
30. Interconnection Agreement (7/31/84)	Nevada Power Company	Bilateral sale of economy energy	12/31/06
31. Energy Interchange Agreement (9/17/84)	City of Anaheim	Bilateral sale of economy energy	12/31/13
32. Service Agreement (11/1/84)	Montana Power Company	Sale of nonfirm energy to DWR	Until terminated by either party
33. Economy Energy Agreement (11/6/84)	Salt River Project	Bilateral sale of economy energy	12/31/13
34. Energy Interchange Agreement (12/1/84)	Northern California Power Agency	Bilateral sale of economy energy	12/31/09
35. Edison-DWR Interruptible Transmission Service Agreement (12/19/84)	Southern California Edison Company	Interruptible transmission service between Palo Verde Generating Station and Vincent Substation, between Eldorado and Mead substations, etc.	12/31/04
36. Service Agreement (1/7/85)	Idaho Power Company	Sale of nonfirm energy to DWR	Until terminated by either party
37. Energy Interchange Agreement (4/18/85)	El Paso Electric Company	Bilateral sale of economy energy	12/31/10
38. Interconnection Agreement (4/18/85)	Portland General Electric Company	Bilateral sale of economy energy	12/31/10
39. Interconnection Agreement (4/30/85)	Pacific Power and Light Company	Bilateral sale of economy energy	12/31/09
40. Energy Interchange Agreement (4/30/85)	Seattle City Light	Bilateral sale of economy energy	12/31/15
41. Power and Energy Interchange Agreement (6/3/85)	Arizona Public Service Comapny	Bilateral sale of economy energy	12/31/10
42. Energy Interchange Agreement (8/20/85)	City of Santa Clara	Bilateral sale of economy energy	12/31/08
43. Service Agreement (8/13/85)	Washington Water Power Company	Sale of nonfirm energy to DWR	Until terminated by either party
44. Service Agreement (9/1/85)	Western Area Power Administration (Sacramento Area Office)	Sale of nonfirm energy to WAPA	12/31/04
45. Economy Energy Agreement (7/1/86)	City of Azusa	Sale of nonfirm energy by DWR	12/31/90
46. Economy Energy Agreement (7/1/86)	City of Banning	Sale of nonfirm energy by DWR	12/31/90
47. Economy Energy Agreement (1/2/87)	City of Colton	Sale of nonfirm energy by DWR	12/31/90
48. Power Sale Agreement (1/8/88)	Turlock Irrigation District	1988-1990 sale of firm capacity and associated energy; varying monthly amounts of capacity (2 MW to 45 MW)	12/31/90
49. DWR-MWD Coordination Agreement (2/26/88)	Metropolitan Water District of Southern California	Bilateral energy transactions and exchanges; SWP and MWDSC's CRA operations coordination	9/30/17
50. Energy Interchange Agreement (4/7/88)	City of Vernon	Bilateral sale of economy energy	12/31/13
51. Energy Interchange Agreement (4/12/88)	Eugene Water and Electric Board	Bilateral sale of economy energy	12/31/13
52. Power Sale Agreement (4/19/88)	Northern California Power Agency	Sale of firm capacity and associated energy (15 MW during the summer)	9/30/89
53. Power Sale Agreement (4/26/88)	City of Vernon	Sale of firm capacity and associated energy (62 MW during the winter and 98 MW during the summer)	12/31/90
54. Capacity/Energy Interchange (9/13/88)	Modesto Irrigation District	Sale of capacity and associated energy to MID as available; bilateral sale of economy energy	12/31/92
55. Power Sale Agreement (12/9/88)	City of Colton	Sale of firm capacity and associated energy (5 MW during the winter and 8 MW during the summer)	6/31/93
56. Power Sale Agreement (12/20/88)	City of Banning	Sale of firm capacity and associated energy (5 MW during the summer)	10/31/93
57. Power Sale Agreement (12/22/88)	City of Azusa	Sale of firm capacity and associated energy (5 MW during the winter and 7 MW during the summer)	10/31/93
58. Power Sale Agreement (1/17/89)	Turlock Irrigation District	1991-1992 sale of firm capacity and associated energy; varying monthly amounts of capacity (8 MW to 44 MW)	12/31/92
59. Agreement of Cotenancy in the Castle Rock Junction-Lakeville 230-kV Transmission Line (5/10/89)	PG&E, NCPA, and City of Santa Clara	Transmission ownership of the Castle Rock Junction-Lakeville 230-kV transmission line	12/31/14
60. Castle Rock Junction-Lakeville Transmission Service Agreement (5/10/89)	NCPA and City of Santa Clara	Providing transmission service to NCPA and City of Santa Clara	12/31/14

Azusa, Banning, Colton, Anaheim, and Riverside through 1993; to Turlock Irrigation District through 1992; to the City of Vernon through 1990; and to Northern California Power Agency through 1989. Under these contracts, DWR will provide the utilities with firm power. The amounts vary monthly and are lower during the winter months than during the summer months, with maximum power provided in July. These contracts can generate significant revenues for the SWP. For example, during the peak month of July in 1989, DWR will provide the utilities with 224 MW of capacity and up to 95 million kWh of energy, generating as much as $3.8 million. In July 1993, DWR will provide the utilities 70 MW of capacity and up to 26 million kWh of energy, generating as much as $1.1 million.

In November 1986, DWR entered into the Western Systems Power Pool Agreement with 24 other utilities in the western states. The agreement provided for a two-year experiment to test market-based pricing for the following services: economy energy, unit commitment, short-term capacity/energy sales or exchanges, and transmission services. DWR began receiving daily quotations for services in May 1987. The parties were permitted to enter into mutually beneficial transactions for any of these services during the term of the agreement. Recently, the parties agreed to extend the term of the experiment for two additional years; however, FERC approved an extension only to May 1990.

Negotiations continue with various Pacific Northwest utilities to develop long-term arrangements for purchases, sales, and exchanges to take full advantage of DWR's 300 MW of transmission capacity on the Pacific Northwest Intertie. To reduce SWP costs, DWR intends to use this transmission capability to the maximum extent possible. Negotiations also continue with California and Southwest utilities for purchases and sales of power to maximize benefits to the SWP.

Comparison of Power Requirements and Resources

Figure 11 compares projected SWP annual energy requirements with available resources for the remainder of the century. SWP annual requirements are based on energy needed to deliver entitlement and other related water, including associated transmission losses. The energy resources include allowances for scheduled maintenance and forced outages. Projected hydroelectric generation is based on studies made for determining short-term (1990 and 1991) and long-term (1992 and beyond) SWP power requirements (see "Power Requirements" in this chapter).

In the upper graph in Figure 11, the SWP energy requirements do not include contractual obligations to Southern California Edison and other firm contract sales (see "Sales" above). The energy resources include only the net energy gained by the SWP under the 1979 Power Contract and the 1981 Capacity Exchange Agreement with SCE. In the lower graph in Figure 11, the SWP energy requirements include contractual obligations to SCE (as shown in Table 15) and other firm contract sales, and the energy resources include all energy delivered by SCE to the SWP.

Figure 12 compares SWP monthly energy requirements and resources for 1990, 1995, 2000, and 2004. (In the year 2004, several major power contracts expire, including the SCE Power Contract and Capacity Exchange Agreement, the EHV Settlement Agreement, and contracts with Pacific Gas and Electric Company.) As in the lower graph in Figure 11, the Figure 12 energy requirements include those for SWP water service and contractual obligations. The resources include all energy received from the SCE exchange. Energy surpluses and deficits appear to occur in some months because on-peak and off-peak energy requirements and resources are balanced for an entire year, not for each month. Net energy deficits for each period will be met with short-term energy purchases, while net surplus energy will be sold. In addition, load management techniques or energy exchanges with utilities will be used to balance monthly requirements and resources within each period.

Figure 13 compares SWP on-peak and off-peak monthly capacity requirements and resources for 1990 and 2000. As in Table 17, both the on-peak and off-peak capacity requirements in Figure 13 include (1) transmission losses equal to five percent of the on-peak/off-peak pumping requirement; (2) a reserve margin allowance equal to 10 percent of pumping requirements plus losses; and (3) allowances for capacity commitments to SCE under the 1979 Power Contract and the

1981 Capacity Exchange Agreement. Thus, the presentation in Figure 13 is similar to that of the lower graph in Figure 11. The obligations to SCE are included in the total SWP load, and the full capacity furnished by SCE is part of the resources.

Because the participation agreement for Reid Gardner Unit No. 4 allows Nevada Power Company to interrupt DWR generation within certain limitations, the indicated on-peak capacity resources in Figure 13 do not include any on-peak capacity from Reid Gardner Unit No. 4. Although power from Reid Gardner Unit No. 4 is likely to be available for SWP use during on-peak periods, some interruptions will probably occur. The same contractual arrangement exists for interruption of off-peak generation from Reid Gardner Unit No. 4, but low service area loads and high contractual penalty costs make off-peak interruptions unlikely. Therefore, off-peak capacity for Reid Gardner Unit No. 4 is shown in Figure 13. The participation agreement with Nevada Power Company requires advance notice for use of capacity, which will give DWR adequate time to adjust loads and other resources.

Figure 13 shows capacity deficits for the on-peak period in 1990. Actual capacity deficits, however, will be lower than those shown in Figure 13 for the following reasons:

- Hyatt-Thermalito capacities are based on an assumed water supply that would be exceeded, on average, three out of four years (lower-quartile-type hydrology). These capacities would be higher if median hydrology were assumed for 1990;

- 226 MW of capacity from Reid Gardner is not included for the on-peak period, although power is likely to be available;

- Some of the capacity provided by SCE (up to 225 MW) pursuant to the 1981 Capacity Exchange Agreement is furnished during some on-peak hours, but this capacity is not included in Figure 13; and

- The SWP has the capability to meet a portion of its operating reserves by load-dropping at pumping plants.

Actual shortages of on-peak capacity will be covered by short-term purchases. Additionally, 300 MW of extra-high voltage transmission capacity is available for power purchased from the Pacific Northwest.

Power Costs

The current SWP power resources, in combination with the power contracts outlined in Table 17, are able to meet SWP power needs at a relatively economical cost.

Table 18 summarizes the most recent projections of SWP energy resources and their costs. The top section of the table shows the estimated future energy supply from each resource at intervals from 1990 through 2004. The study assumes that energy requirements in excess of available resources will be met through unspecified firm and nonfirm energy purchases. As in the upper graph of Figure 11, the SWP pumping energy requirements do not include contractual obligations to Southern California Edison, and the energy resources include the net energy gained by the SWP under the 1979 Power Contract and the 1981 Capacity Exchange Agreement with SCE. The energy requirements include energy and the associated transmission losses for delivery of entitlement water, recreation water, reservoir and aqueduct losses, and replenishment of reservoir storage south of the Delta. The projected excess of resources over requirements is shown as surplus energy available for sale.

The lower section of Table 18 shows current projections of the average unit cost of energy from the various sources. These projections include allowances for future escalation of operation and maintenance costs (generally 5 percent per year) and appropriate allowances for escalation of fuel costs.

Most of the differences between the Bulletin 132-89 and Bulletin 132-88 resource costs reflect updated estimates for SWP construction, financing, fuel, and operation and maintenance costs.

The composite resource costs shown in Table 18 represent the weighted average unit cost of all SWP energy from the listed sources. The unit values of potential sales of surplus SWP energy were estimated by escalating the projected 1990

Figure 11. Annual SWP Energy

LEGEND

- Hyatt-Thermalito
- Recovery Plants
- Bottle Rock
- Pine Flat
- MWDSC
- Firm Resources
- Reid Gardner
- DWR-SCE Exchange
- CRA Energy to SWP
- Purchases
- Load and Firm Power Sales

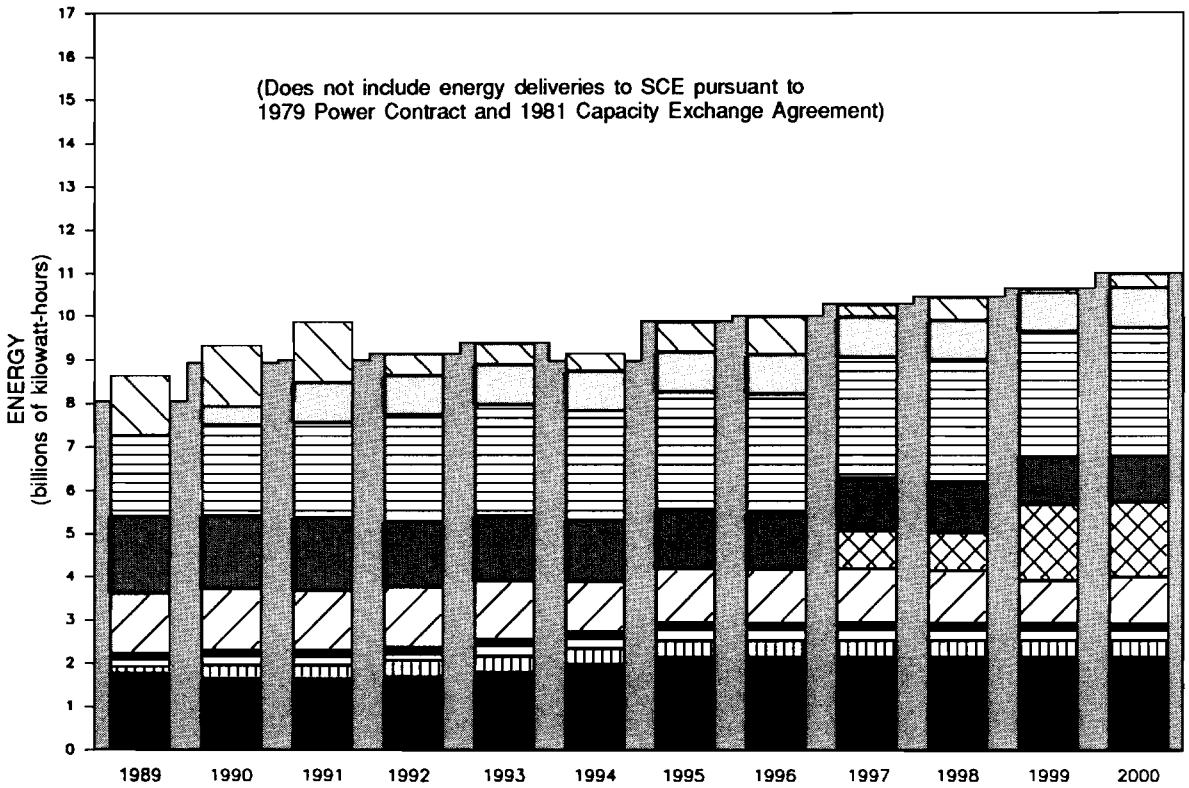
ENERGY RESOURCES IN YEAR 2000
(billions of kWh)

1.	Hyatt-Thermalito	2.14
2.	Thermalito Diversion Dam	.02
3.	Recovery Plants (seven energy recovery plants along the aqueduct - Gianelli, Alamo, Mojave Siphon, Devil Canyon, Warne, Castaic, and San Luis Obispo)	2.95
4.	Bottle Rock (SWP Geothermal plant)	.14
5.	Reid Gardner Unit No. 4 (SWP share under 1979 agreement with Nevada Power Company)	1.08
6.	DWR-SCE Exchange (net energy gained from Southern California Edison Co. under 1979 DWR-SCE Power Contract and 1981 Capacity Exchange Agreement)	1.05
7.	CRA Energy to SWP (purchases of surplus energy from MWDSC's Colorado River Aqueduct operation beginning in 1990)	.91
8.	Pine Flat (purchase under contract with Kings River Conservation District)	.39
9.	MWDSC Hydro (output of five small hydro plants on the MWDSC distribution system, purchase under contract)	.25
10.	Wind (purchase under contract with TERA Power Corporation)	.01
11.	Additional Firm Resources (beginning 1997)	1.75
12.	Energy Purchases	.35
TOTAL RESOURCES TO MEET SWP ENERGY REQUIREMENTS (as shown in Figure 11, upper graph)		11.04
"Return Energy" from Southern California Edison Co. under 1979 DWR-SCE Power Contract and 1981 Capacity Exchange Agreement		2.26
TOTAL RESOURCES TO MEET SWP ENERGY REQUIREMENTS AND DWR-SCE CONTRACTUAL OBLIGATIONS (as shown in Figure 11, lower graph)		13.30

SWP energy requirements are based on delivery of requested entitlement water, recreation water, water to replace reservoir storage south of the Delta (all assuming median statewide water supply conditions). All associated transmission losses are included. Placement of resources in figure does not indicate a priority of use or need.

*Thermalito Diversion Dam and TERA wind amounts are too small to show graphically.

Requirements and Resources



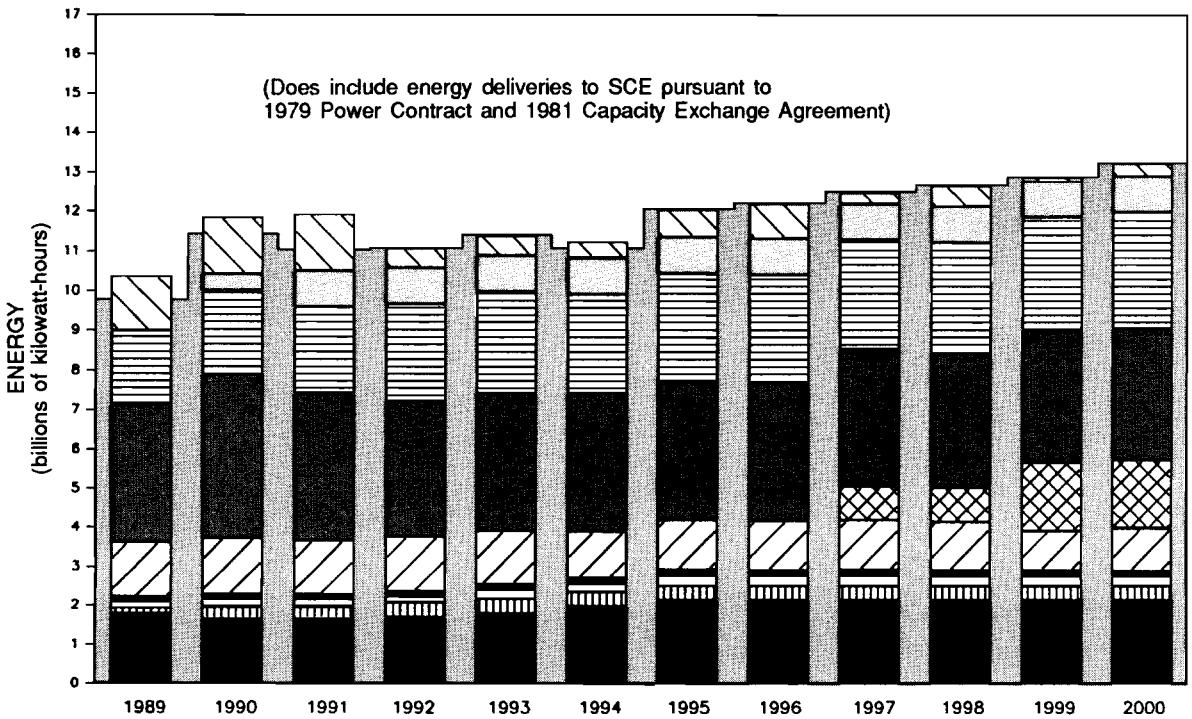
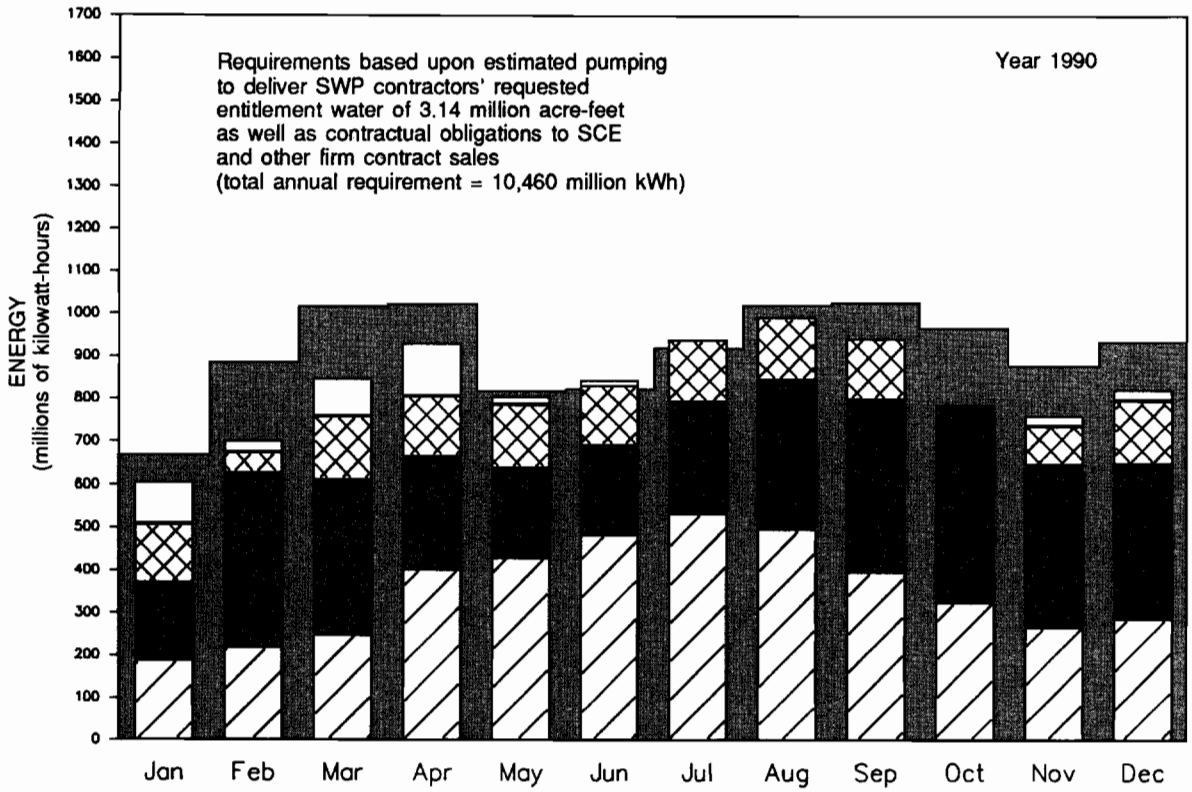
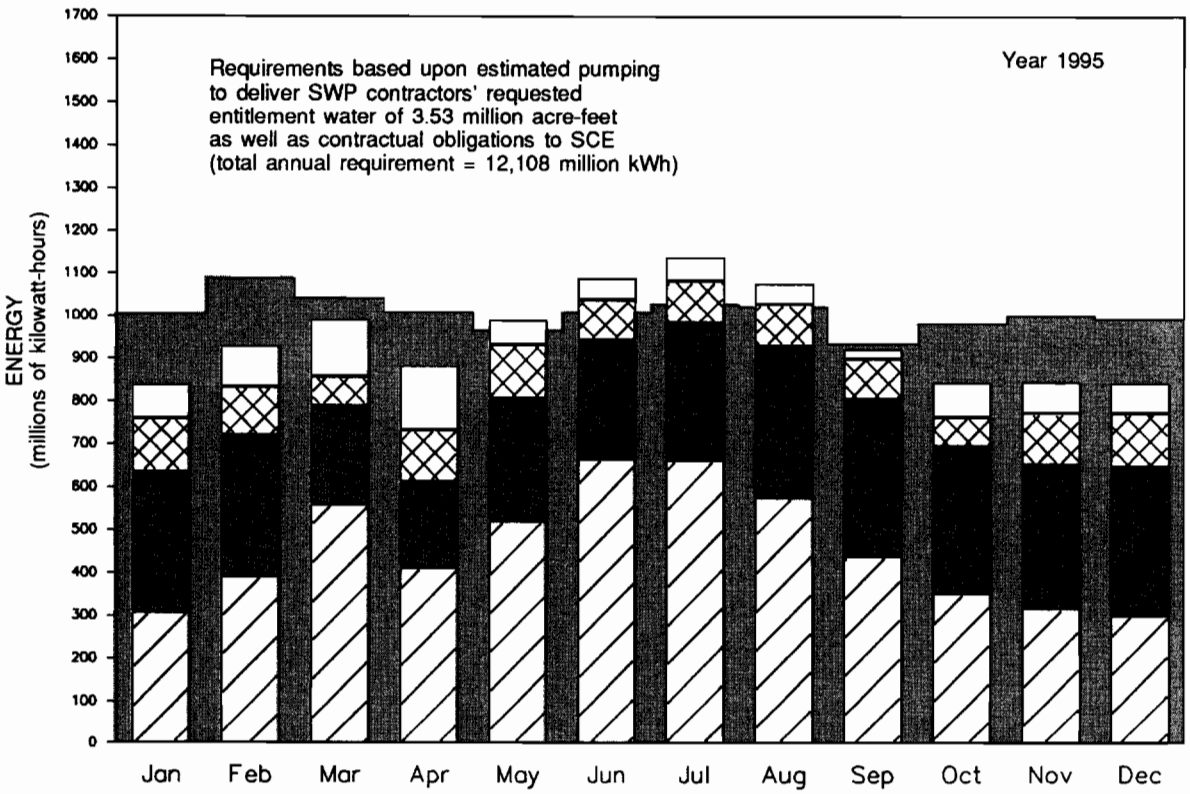


Figure 12. Monthly SWP Energy

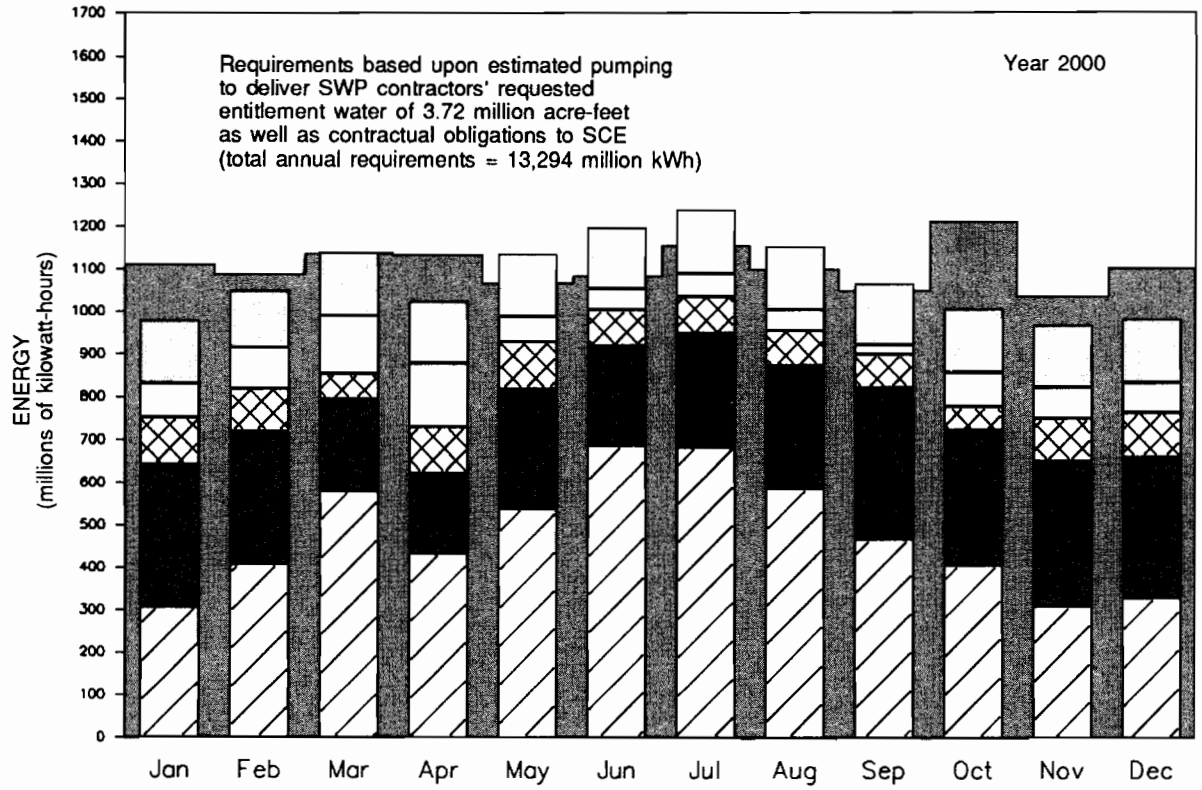


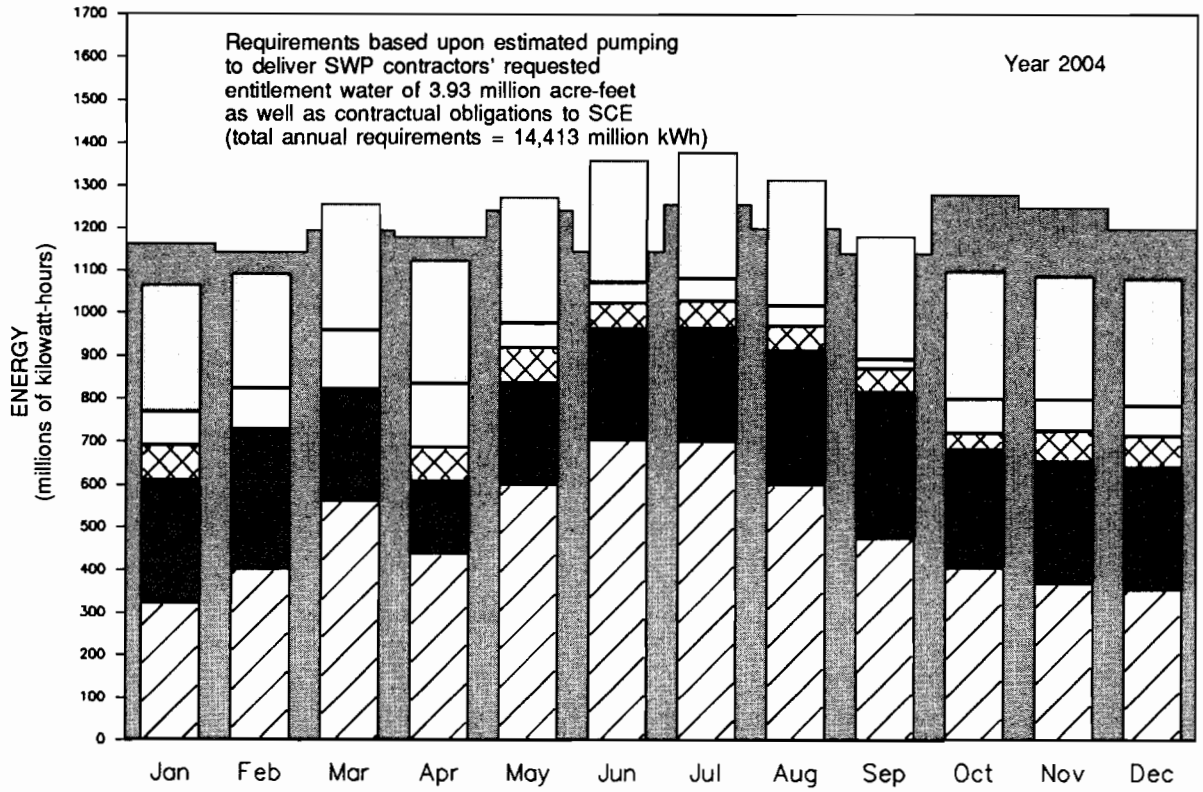


	Firm Resources	Firm Power Purchases (beginning 1997)
	Purchases	TERA Power Corporation (Wind) and energy from MWDSC Colorado River Aqueduct Operation
	Coal	Reid Gardner Unit No. 4
	Geothermal	Bottle Rock Powerplant

★ For 1990, July - October purchases are too small to show graphically.

Requirements and Resources





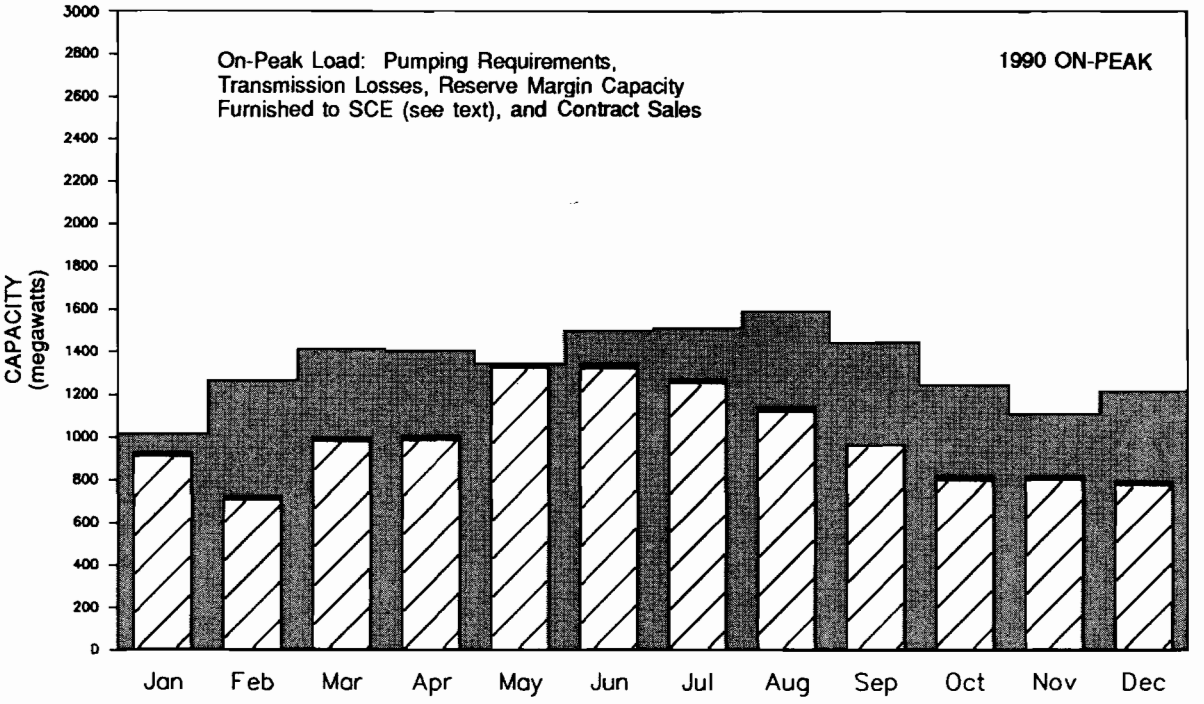
SCE Exchange — Energy from Southern California Edison Co. pursuant to 1979 Power Contract and 1981 Capacity Exchange Agreement

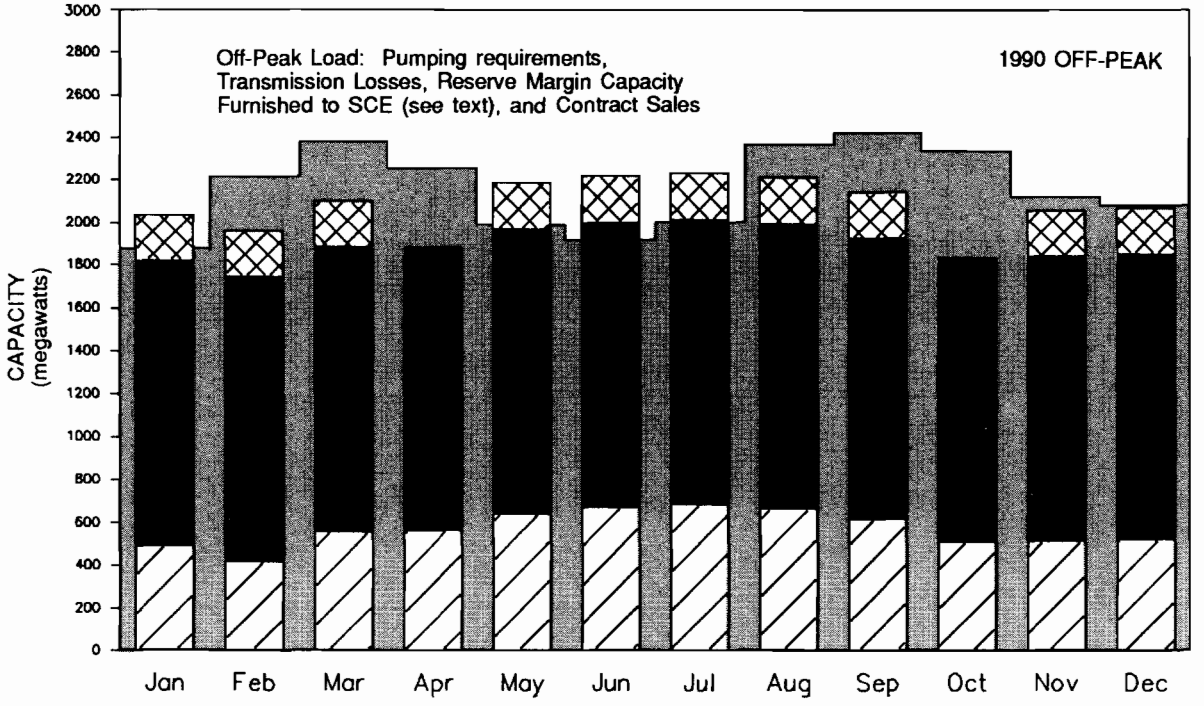
Hydro — Hyatt-Thermalito, Recovery Plants, Pine Flat, MWDSC Hydro, and Thermalito Diversion Dam

Load and Firm Power Sales

NOTE: Projected loads and resources were balanced on an on-peak and off-peak basis. Apparent monthly energy deficits will be met by load management, energy exchanges, with utilities, and/or additional energy purchases. Placement of resources on figure does not indicate a priority of use or need.

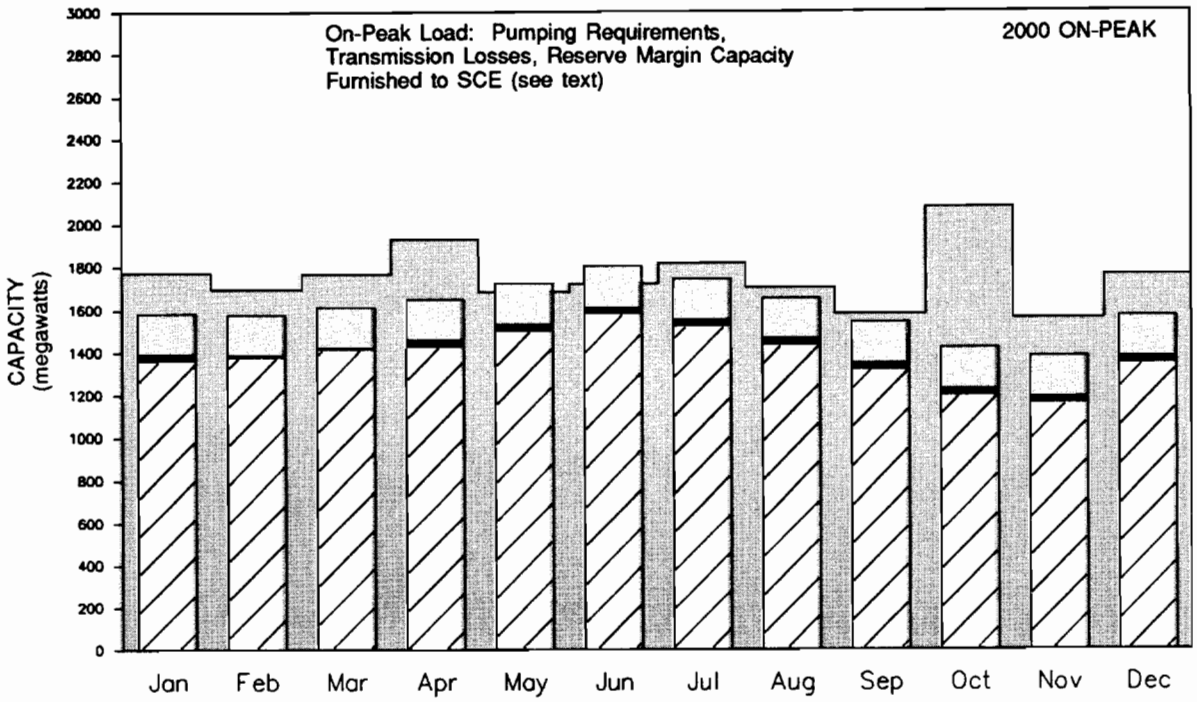
Figure 13. Monthly On-Peak and Off-Peak

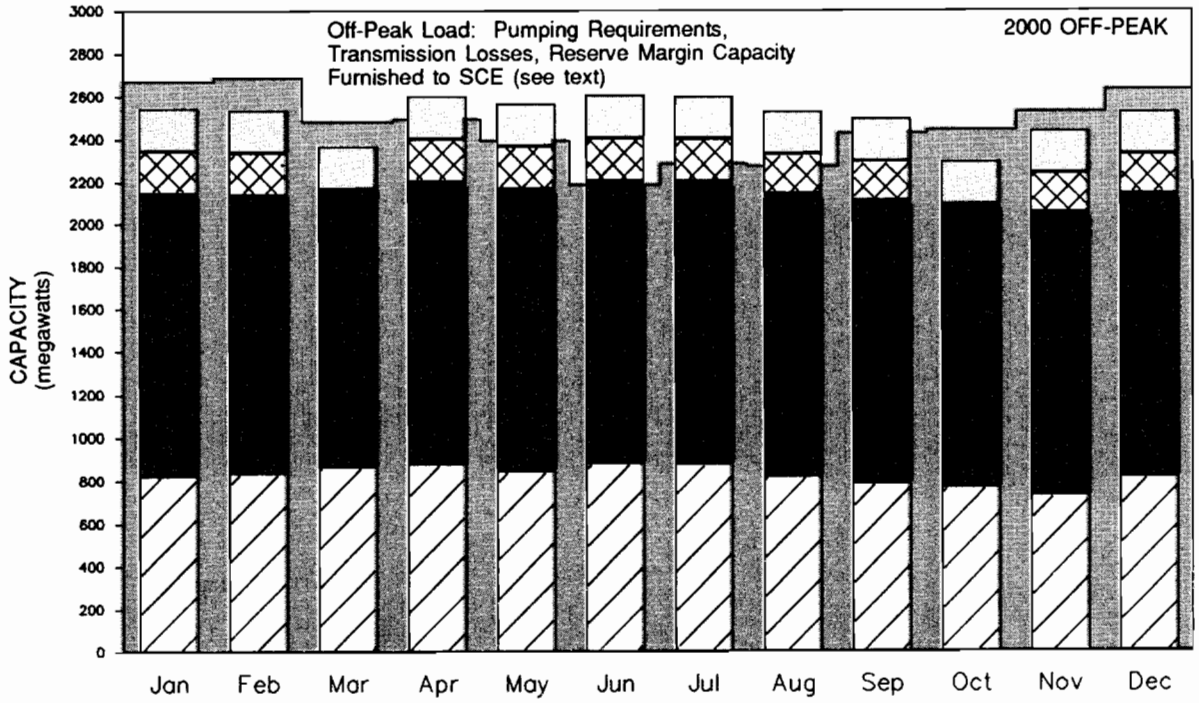




Firm Resources	Firm Power Purchases (beginning 1997)
Existing Coal	Reid Gardner Unit No. 4
Geothermal	Bottle Rock
SCE Exchange	Capacity provided by Southern California Edison under 1979 Power Contract and 1981 Capacity Exchange Agreement
Hydro	Hyatt-Thermalito, Recovery Plants, Pine Flat MWDSC Hydro, and Thermalito Diversion Dam
Load and Firm Power Sales	

SWP Capacity Loads and Resources





NOTES:

1. The 350MW contractual obligation to SCE is included in the load requirement, but it is anticipated that SCE will have little or no demand for this capacity during off-peak periods.
2. The apparent capacity deficits for the 1990 and 2000 on-peak periods are misleading because the SWP can drop loads to meet a portion of its operating reserves. In addition, available resources are understated (see text for further details). Actual deficits will be covered by short-term firm purchases.
3. Placement of resources in figure does not indicate a priority of use or need.

value of 21 mills per kWh for on-peak energy sales and 17 mills per kWh for off-peak energy sales at rates published in the Wharton Econometric Forecasting Associates' long-term forecast of June 1988 (Table 8.1, at "Composite Refiners Acquisition Cost of Oil"). The net cost of energy for SWP use is the unit cost of the energy actually used for SWP purposes. The unit transmission costs shown were calculated by dividing total annual SWP expenditures for power transmission services by the annual SWP energy requirements. (This calculation reflects the 75 percent of DWR's costs for firm transmission service waived by SCE according to the provisions of the Capacity Exchange Agreement.)

The effective unit costs shown in Table 18 represent the average costs for energy used to operate the SWP, exclusive of any surplus or unscheduled water service. However, because of allocation adjustments for costs of off-aqueduct power facilities and credits for generation at SWP recovery plants, the unit costs shown in Table 18 do not represent actual energy costs reflected in the annual statements of charges to respective contractors.

Table 18. Projected Energy Resources and Costs

Item	Calendar Year			
	1990	1995	2000	2004
ENERGY RESOURCES *millions of kilowatt-hours*				
Hyatt-Thermalito	1,655	2,143	2,143	2,143
SWP Recovery Plants				
Gianelli	142	158	174	190
Alamo	25	115	122	121
Devil Canyon	937	1,208	1,343	1,468
W. E. Warne	368	440	460	496
Castaic	629	669	700	754
San Luis Obispo	–	30	40	40
Pine Flat	318	387	387	387
MWDSC Hydro	197	260	246	225
Thermalito Diversion Dam	23	23	23	23
Mojave Siphon	–	98	107	116
SCE Exchange (a	1,674	1,354	1,052	865
Reid Gardner Unit No. 4	1,440	1,261	1,079	668
Bottle Rock	123	151	142	142
TERA Power Corp. (Wind)	6	6	6	0
Additional Firm Resources	--	--	1,752	3,504
CRA energy purchases	424	913	913	913
Energy purchases	1,425	702	347	176
Total Resources	**9,386**	**9,918**	**11,036**	**12,231**
SWP Pumping Energy Requirement (b (c	**8,505**	**9,918**	**11,036**	**12,137**
Firm Energy Sales	458	0	0	0
Surplus Economy Energy Sales	423	0	0	94
RESOURCES' COST (d *mills per kilowatt-hour*				
Hyatt-Thermalito	14	12	13	14
SWP Recovery Plants				
Gianelli	25	25	25	25
Alamo	30	30	30	30
Devil Canyon	25	25	25	25
W. E. Warne	25	25	25	25
Castaic	25	25	25	25
San Luis Obispo	–	25	25	25
Pine Flat	35	34	37	41
MWDSC Hydro	38	45	52	58
Thermalito Diversion Dam	32	33	33	33
Mojave Siphon	–	53	53	53
SCE Exchange	0	0	0	0
Reid Gardner Unit No. 4	58	77	91	114
Bottle Rock	186	168	202	227
TERA Power Corp. (Wind)	85	68	68	68
Additional Firm Resources	--	--	97	120
CRA energy purchases	17	22	32	45
Energy purchases (on-peak)	21	27	40	55
Energy purchases (off-peak)	17	22	32	45
Capacity purchases (e	--	8	10	13
Composite Cost of Resources	26	30	45	61
Firm Energy Sales	51	--	--	--
Value of Potential Energy Sales (on-peak)	21	--	--	55
Value of Potential Energy Sales (off-peak)	17	--	--	45
Value of Potential Capacity Sales (e	--	8	10	13
Net Cost of SWP Pumping Energy	**25**	**30**	**46**	**63**
Transmission Cost	5	5	5	5
Effective Unit Cost	**30**	**35**	**51**	**68**

a) Net energy gained from Southern California Edison Company under 1979 DWR-SCE Power Contract and 1981 Capacity Exchange Agreement.
b) Requirement based upon energy to deliver SWP contractors' requested entitlement water, recreation water, reservoir and aqueduct losses, and replacement of reservoir storage south of Delta; includes transmission losses.
c) Does not include energy deliveries to SCE pursuant to 1979 Power Contract and 1981 Capacity Exchange Agreement.
d) Includes allowance for future cost escalation.
e) Unit rate is dollars per killowatt-month.

Chapter VII
Future Costs and Financing

This chapter presents both a summary and a detailed explanation of SWP capital costs and financing, revenues and expenses, and bond activities. The overall numerical summary is in Table 19; more detailed presentations of financial matters are shown in additional tables, figures, and line item descriptions throughout the chapter.

The financial analysis demonstrates that projected contractor payments and other revenues will be adequate to pay annual OMP&R costs and to meet all repayment obligations on funds used to finance SWP construction and other authorized costs during the period 1989 through 2000. The current analysis indicates that future capital requirements through 2000 for power and water facilities and the Davis-Grunsky Act Program, along with special requirements for revenue bond financing, will be $948 million.

Capital costs and financing have been changed from those in Bulletin 132-88 to reflect changes in construction scheduling and cost estimates. Projected bond activities have also been revised to reflect these changes.

The following major SWP facilities planned for completion by 2000 are included in the financial analysis:

- Suisun Marsh Facilities (first stage of final facilities);
- final four units at Banks Pumping Plant;
- Mojave Siphon power generation facilities;
- enlargement of the East Branch of the California Aqueduct; and
- Coastal Branch - Phase II.

The financial analysis shown in Table 19 excludes the costs and financing of facilities to develop the remaining 2 million acre-feet of yield to meet the total 4.2 million acre-feet contractual commitment to all long-term SWP water contractors.

The financial analysis also excludes costs of associated works that, although essential for realizing full SWP benefits, are financed and constructed by local interests or State agencies other than DWR. These works include onshore recreation developments at SWP facilities and local distribution facilities.

Future Conditions

Future conditions may require changes in the financial analysis. For this reason, basic assumptions are reviewed and the financial analysis is updated annually. Notable contingencies that could change the financial analysis are:

- deviation from the assumptions regarding SWP power resources;
- deviation of actual rates of future construction-price escalation from those currently assumed for cost estimates;
- rescheduling of currently planned construction for future facilities;
- development of additional sources of water not foreseen at this time;
- capital costs associated with the Kern Water Bank and other additional conservation facilities;
- construction of Buttes Reservoir for Antelope Valley-East Kern Water Agency;
- enlargement of the San Luis Canal;
- changes in SWP contractors' entitlements due to changes in water needs, water conservation, or reclamation;
- inability of DWR to market sufficient revenue bonds;

Table 19. SWP Financial

in thousands of dollars

Line No.	Line Item	Calendar 1952-1988	1989	1990	1991	1992	1993	1994
	CAPITAL REQUIREMENTS							
1.	Initial Project Facilities	2,202,316	0	0	0	0	0	0
2.	North Bay Aqueduct-Phase II	84,842	2,734	696	65	6	0	0
3.	Delta & Suisun Marsh Facilities	127,416	2,351	1,996	1,681	1,031	1,082	1,136
4.	Final 4 Units at Banks Pumping Plant	5,685	17,499	18,353	15,162	1,482	0	0
5.	Coastal Branch Aqueduct-Phase II	5,638	1,764	3,536	9,913	77,722	100,343	78,608
6.	West Branch Aqueduct	80,061	1,652	7,257	10,079	1,042	2	0
7.	East Branch - Enlargement	88,637	63,786	79,426	64,460	38,387	23,247	8,379
8.	East Branch - Non-Enlargement	37,453	7,906	9,447	7,994	2,067	495	0
9.	Power Generation and Transmission Facilities	615,499	19,504	3,181	7,260	7,071	6,752	3,775
10.	Additional Conservation Facilities	77,708	6,990	6,632	5,475	3,197	3,357	3,524
11.	San Joaquin Drainage Facilities	29,560	1,291	1,211	1,265	1,328	1,395	1,465
12.	Other Costs	149,257	15,502	22,550	16,092	4,184	2,449	1,708
13.	**Total Project Construction Expenditures**	**3,504,072**	**140,979**	**154,285**	**139,446**	**137,517**	**139,122**	**98,595**
14.	Davis-Grunsky Act Program Costs	118,444	6,000	5,556	0	0	0	0
15.	Special Capital Requirements Under Revenue Bond Financing	354,814	0	10,000	11,000	12,000	12,000	5,570
16.	**Total Capital Requirements**	**3,977,330**	**146,979**	**169,841**	**150,446**	**149,517**	**151,122**	**104,165**
17.	Power Facilities Capital Requirements	1,282,459	83,214	82,114	70,500	41,675	18,505	7,550
18.	Water Facilities Capital Requirements	2,694,871	63,765	87,727	79,946	107,842	132,617	96,615
	FINANCING OF CAPITAL REQUIREMENTS							
	Power Revenue Bond Proceeds:							
19.	Power Bonds through Reid Gardner Series G	1,117,449	0	0	0	0	0	0
20.	Power Revenue Bond Series H	33,910	7,173	449	241	12	0	0
21.	Subtotal Power Revenue Bonds	1,151,359	7,173	449	241	12	0	0
	Water Revenue Bond Proceeds:							
22.	East Branch Enlargement-Series A,D & E	112,757	25,729	0	0	0	0	0
23.	East Branch Enlargement - Future	0	0	109,011	71,460	43,387	27,247	8,895
24.	Water System Facilities-Series B,C,D & E	211,514	0	0	0	0	0	0
25.	Water System Facilities-Future	0	0	0	40,920	78,520	91,363	59,197
26.	Subtotal Water Revenue Bonds	324,271	25,729	109,011	112,380	121,907	118,610	68,092
	Other Capital Financing:							
27.	Initial Project Facilities Bond Proceeds	1,452,389	0	0	0	0	0	0
28.	Davis-Grunsky Act Program Bond Proceeds	118,444	6,000	5,556	0	0	0	0
29.	Application of California Water Fund Monies (Tideland Oil Revenues)	503,005	1,291	1,211	1,265	1,328	1,395	1,465
30.	Application of Capital Resources Revenues to Construction	427,862	87,201	24,780	12,048	0	0	0
31.	Revenue Transfers Applied	0	19,585	28,834	24,512	26,270	31,117	34,608
32.	Subtotal Other Capital Financing	2,501,700	114,077	60,381	37,825	27,598	32,512	36,073
33.	**Total Financing of Capital Requirements**	**3,977,330**	**146,979**	**169,841**	**150,446**	**149,517**	**151,122**	**104,165**

Analysis, June 30, 1989

in thousands of dollars

Year						Total	Total		Line
1995	1996	1997	1998	1999	2000	1989-2000	1952-2000	Line Item	No.
								CAPITAL REQUIREMENTS	
0	0	0	0	0	0	0	2,202,316	Initial Project Facilities	1.
0	0	0	0	0	0	3,501	88,343	North Bay Aqueduct-Phase II	2.
1,194	1,107	1,013	1,063	1,117	1,172	15,943	143,359	Delta & Suisun Marsh Facilities	3.
0	0	0	0	0	0	52,496	58,181	Final 4 Units at Banks Pumping Plant	4.
21,608	652	619	481	0	0	295,246	300,884	Coastal Branch Aqueduct-Phase II	5.
0	0	0	0	0	0	20,032	100,093	West Branch Aqueduct	6.
0	0	0	0	0	0	277,685	366,322	East Branch - Enlargement	7.
562	0	0	0	0	0	28,471	65,924	East Branch - Non-Enlargement	8.
0	0	0	0	0	0	47,543	663,042	Power Generation and Transmission Facilities	9.
3,701	3,886	4,080	4,284	4,498	4,723	54,347	132,055	Additional Conservation Facilities	10.
1,538	1,615	1,696	1,780	1,869	1,963	18,416	47,976	San Joaquin Drainage Facilities	11.
2,001	2,026	2,053	2,082	611	641	71,899	221,156	Other Costs	12.
30,604	**9,286**	**9,461**	**9,690**	**8,095**	**8,499**	**885,579**	**4,389,651**	**Total Project Construction Expenditures**	**13.**
0	0	0	0	0	0	11,556	130,000	Davis-Grunsky Act Program Costs	14.
0	0	0	0	0	0	50,570	405,384	Special Capital Requirements Under Revenue Bond Financing	15.
30,604	**9,286**	**9,461**	**9,690**	**8,095**	**8,499**	**947,705**	**4,925,035**	**Total Capital Requirements**	**16.**
0	0	0	0	0	0	303,558	1,586,017	Power Facilities Capital Requirements	17.
30,604	9,286	9,461	9,690	8,095	8,499	644,147	3,339,018	Water Facilities Capital Requirements	18.
								FINANCING OF CAPITAL REQUIREMENTS	
								Power Revenue Bond Proceeds:	
0	0	0	0	0	0	0	1,117,449	Power Bonds through Reid Gardner Series G	19.
0	0	0	0	0	0	7,875	41,785	Power Revenue Bond Series H	20.
0	0	0	0	0	0	7,875	1,159,234	Subtotal Power Revenue Bonds	21.
								Water Revenue Bond Proceeds:	
0	0	0	0	0	0	25,729	138,486	East Branch Enlargement-Series A,D & E	22.
0	0	0	0	0	0	260,000	260,000	East Branch Enlargement - Future	23.
0	0	0	0	0	0	0	211,514	Water System Facilities-Series B,C,D & E	24.
0	0	0	0	0	0	270,000	270,000	Water System Facilities-Future	25.
0	0	0	0	0	0	555,729	880,000	Subtotal Water Revenue Bonds	26.
								Other Capital Financing:	
0	0	0	0	0	0	0	1,452,389	Initial Project Facilities Bond Proceeds	27.
0	0	0	0	0	0	11,556	130,000	Davis-Grunsky Act Program Bond Proceeds	28.
1,538	1,615	1,696	1,780	1,869	1,963	18,416	521,421	Application of California Water Fund Monies (Tideland Oil Revenues)	29.
0	0	0	0	0	0	124,029	551,891	Application of Capital Resources Revenues to Construction	30.
29,066	7,671	7,765	7,910	6,226	6,536	230,100	230,100	Revenue Transfers Applied	31.
30,604	9,286	9,461	9,690	8,095	8,499	384,101	2,885,801	Subtotal Other Capital Financing	32.
30,604	**9,286**	**9,461**	**9,690**	**8,095**	**8,499**	**947,705**	**4,925,035**	**Total Financing of Capital Requirements**	**33.**

Table 19. SWP Financial

in thousands of dollars

Line No.	Line Item	Calendar 1952-1988	1989	1990	1991	1992	1993	1994
	PROJECT REVENUES							
34.	Capital Resources Receipts	699,067	12,600	2,500	0	0	0	0
	Water Contractor Payments:							
35.	Transportation Capital	1,490,604	97,461	97,241	98,859	101,294	105,722	110,969
36.	Transportation Minimum	1,279,409	231,160	202,493	223,037	226,879	228,935	222,498
37.	Transportation Variable	650,386	50,875	80,004	83,493	72,510	76,816	72,186
38.	Delta Water Charge	510,088	65,617	71,809	72,674	72,814	72,956	73,082
39.	EB Enlargement Payments	13,304	13,979	13,980	24,969	32,643	38,735	43,341
40.	Water Revenue Bond Surcharge	5,462	11,421	10,637	10,619	13,033	17,581	22,793
41.	**Subtotal Water Contractor Payments Under Long-Term Water Supply Contracts**	**3,949,253**	**470,513**	**476,164**	**513,651**	**519,173**	**540,745**	**544,869**
42.	Revenue Bond Cover Adjustments	0	(19,321)	(20,399)	(20,677)	(22,829)	(25,216)	(27,988)
	OTHER REVENUES:							
43.	Federal Payments for Project Operating Costs	66,184	7,782	7,827	9,038	9,052	9,148	8,707
44.	Appropriations for Operating Costs Allocated to Recreation	16,657	0	0	0	0	0	0
45.	Local Agency Payments Under Davis-Grunsky Loan Repayment Contracts	18,221	2,000	2,000	2,000	2,000	2,000	2,000
46.	Revenue Bond Proceeds	267,634	0	0	11,280	11,920	11,280	7,920
47.	Interest Earnings on Operating Revenues	281,092	9,550	10,437	6,435	6,520	6,610	6,705
48.	Payments Under Oroville-Thermalito Power Sale Contract	249,279	0	0	0	0	0	0
49.	Miscellaneous Revenues	28,313	6,451	0	0	0	0	0
50.	**Subtotal Other Revenues**	**927,380**	**25,783**	**20,264**	**28,753**	**29,492**	**29,038**	**25,332**
51.	**Total Operating Revenues**	**4,876,633**	**476,975**	**476,029**	**521,727**	**525,836**	**544,567**	**542,213**
52.	**Total Operating Revenues and Capital Resources Revenues**	**5,575,700**	**489,575**	**478,529**	**521,727**	**525,836**	**544,567**	**542,213**
	PROJECT EXPENSES							
53.	Project Operation, Maintenance and Power Costs	1,841,616	221,798	242,146	257,153	249,057	251,752	237,854
54.	Deposits to Replacement Reserves	135,081	10,308	9,043	10,173	10,707	10,907	11,015
55.	Deposits to Special Reserves Under Revenue Bond Financing	409,061	(69,972)	(13,575)	6,655	19,581	18,767	16,019
	Payments of Debt Service:							
56.	Principal Repayments on Bonds Sold through June 31, 1989	399,816	46,290	47,045	49,175	51,399	54,419	57,460
57.	Interest on Bonds Sold through June 30, 1989	2,210,344	155,757	156,834	153,431	150,718	148,433	144,839
58.	Future East Branch Enlargement Bond Principal Repayments	0	0	0	580	1,030	1,405	1,750
59.	Future East Branch Enlargement Bond Interest Payments	0	0	0	8,000	13,554	17,471	20,559
60.	Future Water Bond Principal Repayments	0	0	0	0	240	715	1,305
61.	Future Water Bond Interest Payments	0	0	0	0	3,280	9,581	16,804
62.	**Total Principal**	**399,816**	**46,290**	**47,045**	**49,755**	**52,669**	**56,539**	**60,515**
63.	**Total Interest**	**2,210,344**	**155,757**	**156,834**	**161,431**	**167,552**	**175,485**	**182,202**
64.	**Subtotal Debt Service**	**2,610,160**	**202,047**	**203,879**	**211,186**	**220,221**	**232,024**	**242,717**
65.	California Water Fund Appropriation to Non-SWP purposes	70,000	53,950	0	0	0	0	0
66.	**Total Operating Expenses and Debt Service**	**5,065,918**	**418,131**	**441,493**	**485,167**	**499,566**	**513,450**	**507,605**
67.	Current Operating Funds	81,920	(35,342)	(16,578)	0	0	0	0
68.	California Water Fund Repayment Required for Current Construction	0	19,585	28,834	24,512	26,270	31,117	34,608
69.	California Water Fund Repayment Available for Future Construction	0	0	0	0	0	0	0
70.	Capital Resources Revenues Used for Construction	427,862	87,201	24,780	12,048	0	0	0
71.	**Total Project Expenses**	**5,575,700**	**489,575**	**478,529**	**521,727**	**525,836**	**544,567**	**542,213**

Analysis, June 30, 1989 (contd.)

in thousands of dollars

Year 1995	1996	1997	1998	1999	2000	Total 1989-2000	Total 1952-2000	Line Item	Line No.
								PROJECT REVENUES	
0	0	0	0	0	0	15,100	714,167	Capital Resources Receipts	34.
								Water Contractor Payments:	
114,989	116,039	116,003	115,958	115,892	115,756	1,306,183	2,796,787	Transportation Capital	35.
228,975	232,102	232,517	230,901	221,534	221,743	2,702,774	3,982,183	Transportation Minimum	36.
87,864	94,185	134,224	141,670	182,800	192,336	1,268,963	1,919,349	Transportation Variable	37.
73,237	73,347	73,401	73,422	73,441	73,463	869,263	1,379,351	Delta Water Charge	38.
43,936	43,941	43,931	43,939	43,953	43,945	431,291	444,595	EB Enlargement Payments	39.
26,134	26,151	26,166	26,176	26,181	26,187	243,079	248,541	Water Revenue Bond Surcharge	40.
575,135	**585,765**	**626,242**	**632,066**	**663,801**	**673,430**	**6,821,553**	**10,770,806**	**Subtotal Water Contractor Payments Under Long-Term Water Supply Contracts**	**41.**
(30,804)	(32,074)	(32,081)	(32,082)	(32,086)	(32,089)	(327,646)	(327,646)	Revenue Bond Cover Adjustments	42.
								OTHER REVENUES:	
11,072	13,147	10,090	12,963	12,305	13,031	124,162	190,346	Federal Payments for Project Operating Costs	43.
0	0	0	0	0	0	0	16,657	Appropriations for Operating Costs Allocated to Recreation	44.
2,000	2,000	2,000	2,000	2,000	2,000	24,000	42,221	Local Agency Payments Under Davis-Grunsky Loan Repayment Contracts	45.
0	0	0	0	0	0	42,400	310,034	Revenue Bond Proceeds	46.
6,810	6,920	7,035	7,155	7,285	7,420	88,882	369,974	Interest Earnings on Operating Revenues	47.
0	0	0	0	0	0	0	249,279	Payments Under Oroville-Thermalito Power Sale Contract	48.
0	0	0	0	0	0	6,451	34,764	Miscellaneous Revenues	49.
19,882	**22,067**	**19,125**	**22,118**	**21,590**	**22,451**	**285,895**	**1,213,275**	**Subtotal Other Revenues**	**50.**
564,213	**575,758**	**613,286**	**622,102**	**653,305**	**663,792**	**6,779,802**	**11,656,435**	**Total Operating Revenues**	**51.**
564,213	**575,758**	**613,286**	**622,102**	**653,305**	**663,792**	**6,794,902**	**12,370,602**	**Total Operating Revenues and Capital Resources Revenues**	**52.**
								PROJECT EXPENSES	
261,518	269,686	312,330	317,164	350,711	359,188	3,330,357	5,171,973	Project Operation, Maintenance and Power Costs	53.
13,003	16,056	13,013	16,887	16,128	17,776	155,016	290,097	Deposits to Replacement Reserves	54.
6,560	5,058	5,299	5,309	5,323	4,565	9,589	418,650	Deposits to Special Reserves Under Revenue Bond Financing	55.
								Payments of Debt Service:	
60,170	63,135	64,705	66,676	69,680	73,195	703,349	1,103,165	Principal Repayments on Bonds Sold through June 31, 1989	56.
141,656	138,521	134,771	131,234	127,567	124,457	1,708,218	3,918,562	Interest on Bonds Sold through June 30, 1989	57.
1,890	2,045	2,200	2,380	2,570	2,775	18,625	18,625	Future East Branch Enlargement Bond Principal Repayments	58.
20,419	20,268	20,104	19,928	19,748	19,533	179,583	179,583	Future East Branch Enlargement Bond Interest Payments	59.
1,745	1,890	2,040	2,205	2,380	2,570	15,090	15,090	Future Water Bond Principal Repayments	60.
21,419	21,280	21,128	20,965	20,789	20,598	155,844	155,844	Future Water Bond Interest Payments	61.
63,805	**67,070**	**68,945**	**71,261**	**74,630**	**78,540**	**737,064**	**1,136,880**	**Total Principal**	**62.**
183,494	**180,069**	**176,003**	**172,127**	**168,104**	**164,588**	**2,043,645**	**4,253,989**	**Total Interest**	**63.**
247,299	**247,139**	**244,948**	**243,388**	**242,734**	**243,128**	**2,780,709**	**5,390,869**	**Subtotal Debt Service**	**64.**
0	0	0	0	0	0	53,950	123,950	California Water Fund Appropriation to Non-SWP purposes	65.
528,380	**537,939**	**575,590**	**582,748**	**614,896**	**624,657**	**6,329,621**	**11,395,539**	**Total Operating Expenses and Debt Service**	**66.**
0	0	0	0	0	0	(51,920)	30,000	Current Operating Funds	67.
29,066	7,671	7,765	7,910	6,226	6,536	230,100	230,100	California Water Fund Repayment Required for Current Construction	68.
6,767	30,148	29,931	31,444	32,183	32,599	163,072	163,072	California Water Fund Repayment Available for Future Construction	69.
0	0	0	0	0	0	124,029	551,891	Capital Resources Revenues Used for Construction	70.
564,213	**575,758**	**613,286**	**622,102**	**653,305**	**663,792**	**6,794,902**	**12,370,602**	**Total Project Expenses**	**71.**

- changes in economic conditions, including interest rates;
- adverse impacts upon water contractors, resulting from water shortages due to insufficient supplies (see Chapter V);
- conditions that would change the abilities of SWP contractors to pay SWP costs; and
- the outcome of certain lawsuits now pending before the courts (see Chapter III).

Financial Analysis

The current SWP financial analysis shown in Table 19 is in two parts. Actual and projected capital expenditures and sources of financing are shown in Part 1. Part 2 shows actual and anticipated revenues and their application to pay SWP operating expenses and principal and interest on bonds, as well as provide a limited amount of construction funding.

Estimates of future capital expenditures include allowances for escalation of construction costs and relocation costs at 4 percent for 1989 and at 5 percent per year thereafter. State salaries are assumed to escalate at 6 percent for 1989, 4 percent for 1990 and at 5 percent per year thereafter. Land acquisition costs include escalation at 6.5 percent for 1989, 6.0 percent for 1990, 5.5 percent for 1991, and 5 percent per year thereafter. Capital expenditures for the SWP also include requirements other than those for construction, such as disbursements under the Davis-Grunsky Act Program (Line 14), and special capital requirements under revenue bond financing (Line 15).

Capital Requirements

Lines 1-18 in Table 19 show actual and projected SWP capital requirements through the year 2000.

Table 20 shows actual and projected SWP construction expenditures, together with a preliminary allocation of such expenditures among SWP purposes. A generalized construction schedule for current and future contracts is shown in Figure 14.

The following sections describe DWR's current assumptions concerning the costs of each facility of the future construction program through 2000, as shown in Table 19. Decisions to commence construction on facilities not yet under way will be made only after an examination of alternatives and upon completion of final EIRs and other review processes.

Line 1: Initial Project Facilities

Facilities included in the initial construction program are those completed before 1974 (see Bulletin 132-74, Chapter II). Additional costs after 1973 and estimated costs of remaining work on the initial SWP facilities are not included in this line.

Line 2: North Bay Aqueduct-Phase II

Phase II of the North Bay Aqueduct, which connects with existing Phase I facilities, 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.

Costs are included for increased capacity for the City of Vallejo and to provide excess peaking capacity to meet possible future peak summer demands. These additional costs were funded by advance payments from the Solano County Flood Control and Water Conservation District. These advance payments are included in Line 34.

Line 3: Delta and Suisun Marsh Facilities

The history column (1952-1988) of Line 3 includes 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. Included for Suisun Marsh are historic planning costs as well as construction costs through 1988.

The columns for 1989-2000 show Delta facilities planning costs and costs for construction of Suisun Marsh facilities. The construction costs are for only a portion of the final Suisun Marsh facilities: the Suisun Marsh Salinity Control Gates and an access road. Present plans are to evaluate the effectiveness of the control structure before proceeding with any additional facilities at Suisun Marsh.

Table 20. State Water Project Capital Expenditures

in thousands of dollars

Facilities and Construction Divisions	Expenditures Incurred Through 1988	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	17,218	37	17,255	925	0	15,989	341
Oroville Division	560,112	5,710	565,822	477,461	70,661	17,700	0
North Bay Aqueduct	88,809	4,085	92,894	92,894	0	0	0
Delta Facilities	148,124	15,943	164,067	120,377	0	43,690	0
South Bay Aqueduct	73,573	1,091	74,664	53,436	7,096	14,132	0
California Aqueduct:							
North San Joaquin Division	188,572	81,729	270,301	260,974	0	9,327	0
San Luis Division	207,165	21,281	228,446	216,764	0	11,682	0
South San Joaquin Division	273,740	22,220	295,960	279,370	0	16,590	0
Tehachapi Division	315,364	2,610	317,974	299,990	0	17,984	0
Mojave Division	235,024	23,315	258,339	233,728	0	24,611	0
Santa Ana Division	194,348	3,815	198,163	181,355	0	16,808	0
West Branch	510,730	20,032	530,762	499,749	0	31,013	0
Coastal Branch	20,005	295,246	315,251	315,251	0	0	0
Subtotal, California Aqueduct	**1,944,948**	**470,248**	**2,415,196**	**2,287,181**	**0**	**128,015**	**0**
Small Hydroelectric Power Generating Facilities	60,497	28,981	89,478	87,179	0	2,299	0
Off-Aqueduct Power Generating Facilities	432,686	7,875	440,561	440,561	0	0	0
East Branch Enlargement	88,637	277,685	366,322	366,322	0	0	0
San Joaquin Drainage Facilities	36,074	18,416	54,490	0	0	0	54,490
Planning and Preoperations (c	6,241	80,885	87,126	87,126	0	0	0
Unassigned	18,525	3,251	21,776	11,757	0	0	10,019
SUBTOTAL, PROJECT CONSTRUCTION EXPENDITURES	3,475,444	914,207	4,389,651	4,025,219	77,757	221,825	64,850
OTHER CAPITAL REQUIREMENTS							
Davis-Grunsky Act Program	118,305	11,695	130,000	0	0	0	130,000
TOTAL CAPITAL EXPENDITURES	**3,593,749**	**925,902**	**4,519,651**	**4,025,219**	**77,757**	**221,825**	**194,850**

a) Reflects DWR's allocation to this purpose, irrespective of federal payments.
b) Includes costs currently unassigned to purpose, planning costs of deleted features of project facilities, initial costs of inventoried items, joint costs assigned to the federal government, and costs assigned to the Davis-Grunsky Act Program.
c) Includes $31,368,882 Kern County Water Bank land purchase and planning expenses allocated to conservation facilities.

Line 4: Final Four Units at Banks Delta Pumping Plant

This line shows the costs for the final four 1,067-cfs units which are scheduled to be operational in 1991.

Line 5: Coastal Branch Aqueduct--Phase II

This line shows the planning costs for the Coastal Branch--Phase II. Future expenditures also include a projection of construction costs for this project.

Line 6: West Branch Aqueduct

The costs shown in Line 6 are for all facilities on the West Branch except Warne Powerplant. Warne Powerplant costs are included in Line 9. Included in this line are projected costs for the Vista Del Lago Visitors Center and Gorman Creek channel modifications.

Line 7: East Branch Aqueduct Enlargement

Line 7 shows 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 9.) Estimated East Branch Enlargement costs by facility are:

Facility	$ millions
Aqueduct	93.8
Pearblossom Pumping Plant	59.2
Alamo Powerplant	5.0 (a
Mojave Siphon Powerplant	37.4
Devil Canyon Powerplant and Bypass	170.9
Total	366.3

a) Expenditures for Unit 1 facilities allocated to enlargement. Construction of Unit 2 has been deferred.

All costs in this line are allocated to and repaid by the seven Southern California contractors participating in the East Branch Enlargement.

Line 8: East Branch Aqueduct Non-Enlargement

The costs shown in Line 8 are for all aqueduct costs on the East Branch that are not allocated to the enlargement project. This includes improvements constructed concurrently with the enlargement work. No costs for power plant construction at Mojave Siphon and Devil Canyon are included in this line.

Line 9: Power Generation and Transmission Facilities

Estimated capital costs for facilities included in Line 9 are:

Facility	$ millions
Powerplants	
Reid Gardner, Unit 4	255.3
Bottle Rock	120.3
South Geysers	58.1 (a
Devil Canyon	36.7 (b
Warne	84.5
Alamo	40.9
Mojave Siphon	32.0 (b
Thermalito Diversion Dam	14.6
Other Small Hydro Costs	3.0
Subtotal	645.4
Transmission Lines	
Midway-Wheeler Ridge	10.7
Geysers-Lakeville	6.9
Total	663.0

a) Expenditures to complete work in progress only; remaining work has been deferred (see Chapter IV).

b) Does not include East Branch Enlargement share of costs in Line 7.

Line 10: Additional Conservation Facilities

The costs shown in Line 10 are for planning of additional conservation facilities. Included in the history column (1952-1988) is $31.4 million for the purchase of land for the Kern Water Bank. No costs are shown in the financial analysis for construction of additional conservation facilities.

Line 11: San Joaquin Drainage Facilities

Included are the projected costs of (1) monitoring and reporting the quality and quantity of agricultural waste waters in the San Joaquin Valley, (2) continued operation of the solar pond system at Los Banos, and (3) a cooperative program with other agencies to develop methods for the disposal and/or treatment of agricultural drainage water. The drainage program and desalting facility are discussed in more detail in Chapter III. These costs are to be financed by California

Water Fund appropriations. No costs shown in this line are charged to SWP water contractors.

Line 12: Other Costs

These expenditures cover such items as general design and construction costs, completion of operation and maintenance facilities, and other completion activities for the initial facilities of the California Aqueduct. Portions of these costs will ultimately be allocated to aqueduct units described in the preceding paragraphs.

Line 12 includes expenditures that cover completion of monitoring and control systems and other completion activities for SWP facilities other than the California Aqueduct. Costs related to flood protection at Arroyo Pasajero in the San Luis reach of the California Aqueduct are included in this line. This line also includes past planning costs for Abbey Bridge and Dixie Refuge dams and reservoirs in the Upper Feather River area; DWR continues to assume that these facilities will be postponed until there is local support and demonstrated need for them.

Line 13: Total Project Construction Expenditures

This line is the total of Lines 1 through 12.

Line 14: Davis-Grunsky Act Program Costs

This financial assistance program for water developments constructed by local public agencies is discussed in more detail in Chapter III. As of December 31, 1988, DWR had disbursed $118.4 million (including $8.3 million for administration) in grants and loans for 114 local agencies throughout the State. DWR projects that funds presently authorized for the program will be disbursed prior to 1991.

Line 15: Special Capital Requirements under Revenue Bond Financing

This line shows the special capital requirements at the time revenue bonds are sold. The financial analysis assumes that proceeds from future revenue bonds will pay for bond discount, bond issuance costs, and debt service reserve requirements.

Application of proceeds to these special requirements for actual and assumed revenue bond sales is shown in Table 21.

Line 16: Total Capital Requirements

This line is the total of Lines 13, 14, and 15.

Line 17: Power Facilities Capital Requirements

This line is the total of capital requirements for power facilities contained in Lines 1-12, and that part of Line 15 associated with power revenue bonds.

Line 18: Water Facilities Capital Requirements

This line is the total of capital requirements for water facilities contained in Lines 1-12, and that part of Line 15 associated with water revenue bonds.

Financing of Capital Requirements

Three general types of financing have been used for the SWP:

- ***Burns-Porter Financing***, derived from the sale of California Water Resources Development Bonds (general obligation bonds) and the State's Tideland Oil Revenues deposited in the California Water Fund as authorized by the Burns-Porter Act (California Water Code Sections 12930-12944), approved by the electorate in November 1960.

- ***Revenue Bond Financing***, derived from the sale of revenue bonds as authorized by the Central Valley Project Act (California Water Code Sections 11100-11925). DWR'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).

- ***Capital Resources Financing***, derived from payments and appropriations (including a portion of Tideland Oil Revenues) as authorized by a variety of special contracts, cost-sharing agreements, and legislative actions concerning the SWP, plus accrued interest on these funds.

Table 21. Application of Revenue Bond Proceeeds

in millions of dollars

Bond Series	Application of Revenue Bond Proceeds						
		Other Capital Requirements					
	Construction Expenditures	Reim-bursement of General Fund	Bond Interest through One Year Following Completion of Con-struction	Operating Costs for One Year Following Completion of Con-struction	Bond Discount and Financing Costs	Subtotal	Total Principal Amount of Bonds
Oroville (a	218.0	2.6	19.9	1.5	3.0	27.0	245.0
Devil Canyon-Castaic (a	126.4	0.0	10.0	0.7	2.1	12.8	139.2
Pyramid Series A (a	74.0	0.0	19.2	1.0	1.6	21.8	95.8
Reid Gardner Series B (a	146.1	0.0	41.9	0.0	12.0	53.9	200.0
Reid Gardner Series C (a	91.1	0.0	17.9	7.9	8.1	33.9	125.0
Small Hydro-South Geysers Series D (a	49.6	0.0	19.9	0.0	5.5	25.4	75.0
Bottle Rock Series E (a	96.9	0.0	22.0	3.7	2.4	28.1	125.0
Alamo-South Geysers Series F (a	59.1	0.0	14.2	0.0	1.7	15.9	75.0
Reid Gardner Series G (a	1.6	0.0	0.0	0.0	237.9 (c	237.9	239.5
Power Facilities Series H (a	22.2	0.0	0.0	0.0	184.5 (d	184.5	206.7
East Branch Enlargement Series A (a	117.9	0.0	12.6 (e	0.0	1.5	14.1	132.0
Water System Facilities Series B (a	97.4	0.0	0.0	0.0	2.6	2.6	100.0
Water System Facilities Series C (a	0.5	0.0	0.0	0.0	8.5 (f	8.5	9.0
Water System Facilities Series D (a	95.0	0.0	3.8	0.0	1.2	5.0	100.0
Water System Facilities Series E (a	0.4	0.0	0.0	0.0	8.6 (g	8.6	9.0
Water System Facilities Series F (a	0.0	0.0	0.0	0.0	160.0 (h	160.0	160.0
Subtotal	**1,196.2**	**2.6**	**181.4**	**14.8**	**641.2**	**840.0**	**2,036.2**
Water System Facilities (b	246.0	0.0	0.0	0.0	24.0 (i	24.0	270.0
East Branch Enlargement (b	232.8	0.0	0.0	0.0	27.2 (i	27.2	260.0
Grand Total	**1,675.0**	**2.6**	**181.4**	**14.8**	**692.4**	**891.2**	**2,566.2**

a) Actual bond issue.
b) Assumed bond issue through the year 2000.
c) Total discount was $2.8 million. Remaining amount was used to re-fund Reid Gardner Series B bonds.
d) Total discount was $2.7 million. Remaining amount was used to re-fund portions of Reid Gardner Series C and Small Hydro-South Geysers Series D Bonds.
e) Interest capitalized 1-1/2 years.
f) Includes funds applied to Water System Facilities Series B and C debt service reserves.
g) Includes funds applied to Water System Facilities Series D and E debt service reserves.
h) Total discount was $9.0 million. Remaining amount was used to re-fund a portion of Reid Gardner Series G bonds.
i) Includes debt service reserves.

The Burns-Porter Act authorized an issue of $1.75 billion of general obligation bonds of the State, which are repaid by revenues received under the water supply contracts. This bond issue authorization includes a reservation of $130 million specifically for the Davis-Grunsky Act Program. Proceeds from the sale of general obligation bonds are deposited in the California Water Resources Development Bond Fund-Bond Proceeds Account, from which monies may be expended only for the construction of SWP facilities and for the Davis-Grunsky Act Program. Approximately 40 percent of the expenditures through 1988 for SWP construction and the Davis-Grunsky Act Program were financed with general obligation bonds.

Monies deposited in the California Water Fund are appropriated for purposes of the Burns-Porter Act. Such deposits are derived from a portion of the State's Tideland Oil Revenues under a continuing authorization. In the past, the Legislature has acted both to decrease and increase the level of deposits to the fund.

As of June 30, 1989, DWR has sold $2.0 billion of revenue bonds. This includes $9 million of Water System Revenue Bonds, Series E, sold

November 29, 1988, and $160.03 million of Water System Revenue Bonds, Series F, sold March 15, 1989. The Series E bonds were made taxable to comply with the arbitrage rebate requirements of the federal tax code. The proceeds of the Series E sale were used for funding the debt service reserves for Series D and E bonds. Proceeds from the Series F sale were used to refund a portion of the Series G Power Facilities Revenue Bonds. Additional issues of revenue bonds are planned to fund future SWP construction. 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. These purposes, in addition to construction, planning, and right of way costs, may include (1) funding the Debt Service Reserve Account and (2) payment of interest on bonds and water system operating expenses during the period specified by the resolution authorizing the bond issue.

Capital Resources revenues are deposited in the Central Valley Water Project Construction Fund and may be expended for (1) general obligation bond interest, and (2) construction of SWP facilities. Under DWR's financial management, the capital resources revenues are first used to the extent needed for coverage of any general obligation bond debt service that exceeds available revenues.

The financing of capital expenditures is described in Lines 19 through 33.

Line 19: Power Revenue Bonds--Series A Through G

This line shows the proceeds applied from power revenue bonds for the Oroville, Devil Canyon, Castaic, Pyramid, Reid Gardner, Bottle Rock, Alamo, South Geysers, and small hydro projects.

Line 20: Power Revenue Bonds--Series H

This line shows the proceeds applied from Series H power revenue bonds for Pyramid, Alamo, and Reid Gardner capital costs.

Line 21: Subtotal--Power Revenue Bonds

This line is the total of lines 19 and 20.

Line 22: East Branch Enlargement--Series A, D, and E

On July 15, 1987, DWR sold $132 million of Water System Revenue Bonds, Series A, to finance a portion of the East Branch Enlargement Project. The proceeds provided (1) $18.0 million for reimbursement of other SWP funds used for construction expenditures prior to the sale of bonds, (2) $99.9 million for ongoing construction work, and (3) $14.1 million for other requirements as shown in Line 15.

On June 14, 1988, DWR sold $100 million of Water System Revenue Bonds, Series D, to provide $95.0 million for reimbursement of other SWP funds used for construction expenditures prior to the sale of bonds. The remaining $5.0 million was used for other requirements as shown in Line 15.

On November 29, 1988, DWR sold $9 million of Water System Revenue Bonds, Series E, to provide $8.4 million for debt service reserves required for Series D and E bonds. The remaining $0.6 million was used for other requirements as shown in Line 15.

The amount of Series D and E proceeds allocated to the East Branch Enlargement Project was $6.5 million. The remaining proceeds were allocated to other SWP facilities and are included in Line 24.

Line 23: East Branch Enlargement--Future

Future water revenue bonds are needed to provide $260.0 million for completion of the East Branch Enlargement Project First Stage and for special capital requirements (discount and finance costs of bonds, debt service reserves, and interest on construction funds borrowed prior to the sale of bonds).

Line 24: Water System Facilities--Series B, C, D, and E

On May 5, 1987, DWR sold $100 million of Water System Revenue Bonds, Series B, to provide $97.4 million for reimbursement of other SWP funds expended prior to the sale for on-

going construction of SWP facilities. The remaining $2.6 million was used for other requirements as shown in Line 15.

On December 1, 1987, DWR sold $9 million of Water System Revenue Bonds, Series C, to provide $8.317 million for funding the debt service reserve requirements for Series B and C bonds and $0.135 million for other requirements as shown in Line 15. Both the debt service reserve and other requirements are included in Line 15. After the above requirements were met, the remaining $0.548 million was used for reimbursement of other SWP funds used for construction expenditures prior to the sale of the bonds.

The amount of Series D and E proceeds allocated to SWP projects other than the East Branch Enlargement Project was $102.5 million.

Line 25: Water System Facilities--Future

Future water revenue bonds are needed to provide $270 million for construction of SWP water system facilities and for special capital requirements (discount and finance cost of bonds and debt service reserves).

Line 26: Subtotal Water Revenue Bonds

This line is the total of Lines 20-25.

Line 27: Initial Project Facilities Bond Proceeds

This line includes financing of initial SWP facilities and planning costs for certain additional conservation facilities. Financing of initial facilities from general obligation bonds was completed in mid-1972, and amounted to $1.444 billion--i.e., the total of $1.75 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 that had been 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 have been used to finance planning studies of the Middle Fork Eel River Development (Line 10). This analysis does not use 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

For simplification, the entire $130 million of capital expenditures authorized for the Davis-Grunsky Act Program under the Burns-Porter Act are shown to be funded solely by proceeds from the sale of general obligation bonds. In fact, $28.0 million from the California Water Fund was used for the program in lieu of bond proceeds prior to 1969. The financial analysis assumes that the remaining $12.0 million in authorized Davis-Grunsky bonds will be sold prior to 1991. A State Pooled Money Investment loan of approximately $6 million is being used to finance current expenditures. This short-term loan will be repaid with proceeds from the sale of bonds.

Line 29: Application of California Water Fund Monies (Tideland Oil Revenues)

The Burns-Porter Act provides that any available money in the California Water Fund shall be used for construction in lieu of proceeds from the sale of general obligation bonds. When the Burns-Porter Act became effective in late 1960, approximately $97 million had been accumulated in the fund. This balance and continuing annual appropriations to the fund through June 18, 1968, financed a total of $176 million of Project construction costs.

On June 28, 1968, SB 261 became effective (California Statutes of 1968, Chapter 411), which transferred the remaining balance of the California Water Fund to the Central Valley Water Project Construction Fund and deferred accruals to the

California Water Fund until July 1, 1972. Since the latter date, appropriations from Tideland Oil Revenues have been deposited in the California Water Fund in annual amounts of $25 million through Fiscal Year 1980-81 and in the following amounts thereafter:

1981 - 82	$27,789,800	
1982 - 83	14,710,000	
1983 - 84	None	
1984 - 85	25,000,000	
1985 - 86	22,533,000	(a
1986 - 87	2,449,000	(b
1987 - 88	1,261,000	(c
1988 - 89	2,855,000	(b
1989 - 90	None	

a) Plus $2,467,000 for non-SWP purposes.
b) All for non-SWP purposes.
c) Plus $2,379,000 for non-SWP purposes.

The financial analysis assumes that appropriations of Tideland Oil Revenues will be made as needed to fund future costs of the San Joaquin drainage monitoring program (see Line 11).

Line 30: Application of Capital Resources Revenues to Construction

This line shows the application of Capital Resources Revenues for capital expenditures (see description for Line 34).

Line 31: Revenue Transfers Applied

This line shows monies that are assumed to be transferred to the California Water Fund pursuant to provisions of the Burns-Porter Act (see Lines 68 and 69), and subsequently reappropriated to construction.

Line 32: Subtotal Other Capital Financing

This line is the total of Lines 27-31.

Line 33: Total Financing of Capital Requirements

This line is the total of Lines 21, 26, and 32.

Project Revenues

SWP revenues, consisting primarily of SWP contractor payments, are deposited in two funds: the Central Valley Water Project Revenue Fund, in which are placed all revenues pledged to revenue bonds, and the California Water Resources Development Bond Fund-Systems Revenue Account, in which all other SWP operating revenues are placed. Use of these funds is limited to operating costs and debt service, except that revenues in excess of such costs can be transferred to the California Water Fund.

Line 34: Capital Resources Revenues

Sources of these revenues are (1) federal payments for SWP capital expenditures, (2) appropriations for capital cost allocated to recreation, (3) appropriations for SWP capital expenditures prior to the Burns-Porter Act and under SB 261, (4) Los Angeles Department of Water and Power payments for Castaic power development, (5) water contractor advances for construction of requested works, (6) investment earnings on the Capital Resources Account, and (7) 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, appropriated by the Legislature from Tideland Oil Revenues. No appropriations were received in the 1989-90 fiscal year. Because of the uncertainties over future legislative action, no appropriations are shown for 1989 through 2000. Legislation has been introduced to offset the amount owed to the SWP by the State for costs allocated to recreation against the amount the SWP owes the California Water Fund.

Lines 35-40: Water Contractor Payments

These lines show the separate elements of water contractor payments. The payments identified in Lines 35-40 are described in detail in Appendix B, with supplemental discussion in the following paragraphs. Line 37 also includes revenues sufficient to cover costs associated with sales of excess power.

OMP&R costs are repaid under the Transportation Charge as they are incurred and therefore do not

include any interest charges. Construction costs under the Transportation Charge and all construction and annual OMP&R cost under the Delta Water Charge are to be repaid with interest at the Project Interest Rate.

The Project Interest Rate is defined in Article 1(r) of the Standard Provisions for Water Supply Contracts as the weighted average of the rates paid on securities issued and loans obtained to finance SWP facilities, excluding Oroville Revenue Bonds. Under original contract provisions, the basis for determining the Project Interest Rate was the weighted average of rates paid on general obligation bond sales only. Under contract amendments executed in 1969, after issuance of Oroville Revenue Bonds, the basis was expanded to include rates on all other securities sold and loans obtained thereafter for financing SWP facilities, including revenue bonds (see 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 (Table 22). The Project Interest Rate calculation does not include proceeds from the sale of power revenue bonds for Off-Aqueduct Power Facilities, revenue bonds for the East Branch Enlargement, or Water Revenue Bonds covered under the Water Revenue Bond Amendment.

Table 23 presents information basic to the calculation of the Project Interest Rate. The discussion of contractors' water charges in Appendix B is based upon presently known conditions and supports DWR's determination of 1990 water charges, which were billed July 1, 1989. However, the following are significant differences between the sum of future charges shown in Lines 35-40 and the substantiation of 1990 charges discussed in Appendix B.

- Future capital costs discussed in Appendix B are based upon prices prevailing on December 31, 1988. Those shown in the financial analysis include allowances for price escalation.
- Pre-1988 charges discussed in Appendix B represent what the charges should have been under presently known conditions. Pre-1988 charges shown in Table 19 are those actually paid under previously determined bills.
- Charges discussed in Appendix B are unadjusted for past over- or under-payments. Table 19 charges for 1988 and thereafter include adjustments for any apparent over- or under-payments of pre-1988 charges.
- The charges discussed in Appendix B for East Branch Enlargement costs include the debt service and 25 percent cover for Series A and the East Branch Enlargement share of Series D and E bonds. Table 19 charges also include the debt service and cover for assumed future bonds.
- The water bond revenue surcharge discussed in Appendix B covers the Series B, C, D, and E bonds only. Table 19 surcharge values cover Series B, C, D, and E and the assumed future issues required to finance SWP construction.

Line 41: Subtotal Water Contractor Payments

This line is the total of Lines 35-40.

Line 42: Revenue Bond Cover Adjustments

This line shows the credit to contractors resulting from the cover of 25 percent of one 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.

For Off-Aqueduct Facilities, this amount is charged annually to contractors and collected through the minimum OMP&R component of the Transportation Charge. For the East Branch Enlargement facilities, the cover is collected through the capital component of the East Branch Enlargement Transportation Charge. For Water System Facilities, this amount is collected through the water bond surcharge. If not needed to meet annual bond service, the cover is credited back to the contractors in the following year. The amount varies in proportion to the debt service for these facilities.

Table 22. Revenue Bond Proceeds Affecting the Project Interest Rate

in millions of dollars

Project	REVENUE BOND PROCEEDS					
	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 the Project Interest Rate	Principal Amount of Bonds	Percent Total Amount Included in Calculating the Project Interest Rate
Devil Canyon - Castaic Project Revenue Bonds	125.3	1.5	1.4	125.2	139.2	90%
Pyramid Project Revenue Bonds (Series A)	71.2	0.5	1.1	71.8	95.8	75%
Alamo Project Bond Anticipation Note	16.8	0.1	0.3	17.0	24.4	70%
Small Hydro Project I Revenue Bonds (Series D)	25.4	0.2	1.5	26.7	37.5	71%
Alamo Project Revenue Bonds (Series F)	38.9	0.3	0.7	39.3	50.0	79%
Power Facilities Revenue Bonds (Series H):						
Pyramid Project	5.0	-	0.1	5.1	5.1	100%
Alamo Project	1.7	-	-	1.7	1.7	100%
Small Hydro Project I	25.2 (a	0.2	0.4	25.4	35.6	71%

a) Amount is 71 percent of the proceeds deposited in escrow account to re-fund portion of Series D bonds ($35.1 million) plus deposits to construction account ($0.3 million).

Line 43: Federal Payments for Project Operating Costs

Under the December 31, 1961, agreement between the State and the United States, DWR operates and maintains the San Luis Joint-Use Facilities. Under the January 12, 1972 supplement to the agreement, the USBR paid 45 percent of OM&R costs for these activities. (The percentage does not apply to power costs; the USBR and DWR provide their own power to pump their respective amounts of water through the joint facilities). This percentage is reviewed every five years by the USBR and DWR. For the calendar years 1981-1985, the federal share was 44.47 percent. The most recent review was completed in 1987 and resulted in a federal share of 44.09 percent for the calendar years 1987-1990. The amounts in Line 43 assume that the federal share continues at 44.09 percent for the calendar years 1991-2000.

Line 44: Appropriations for Operating Cost Allocated to Recreation

Under the Davis-Dolwig Act, the Legislature declared its intent that, except for funds provided pursuant to AB 12 (1966), DWR's budget shall include appropriations from the General Fund of monies necessary for enhancement of fish and wildlife and for recreation in connection with State water projects. Annual OMP&R costs allocated to recreation and fish and wildlife enhancement are paid by annual General Fund appropriations. For fiscal years 1983-84 through 1989-90, no funds were appropriated for this purpose. Because of the uncertainties over future legislative action, no appropriations are shown for 1989

Table 23. Actual Bond Sales and Project Interest Rates

Bond Sales	Date of Sale	Dollar-Years (a *$1,000*	Interest Cost *$1,000*	Interest Cost (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(d	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(d	10/23/79	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 (d	12/1/81	24,266	2,305	9.500	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(d	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(d	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	2,664,012	194,817	7.313	
$ 9,000,000 Series C Water System Revenue Bonds	12/01/87	324,000	32,130	9.917	
$100,000,000 Series D Water System Revenue Bonds	6/14/88	2,640,510	202,469	7.668	
$ 9,000,000 Series E Water System Revenue Bonds	12/16/88	319,500	31,995	10.014	
$160,030,000 Series F Water System Revenue Bonds	3/15/89	2,779,838	189,261	6.808	
Total		**105,282,840**	**6,374,298**		
"Project Interest Rate" Portion		63,621,853	2,998,367		4.713

a) *A unit equivalent to one dollar of principal amount outstanding for one year.*
b) The total interest cost (without regard to premiums received) divided by the total dollar-years, expressed as a percent.
c) Determined by dividing cumulative interest costs by cumulative dollar-years, expressed as a percent. Excluding Oroville Field Division, Power Revenue Bonds for Off-Aqueduct Facilties, and Water System Revenue Bonds, which do not affect the "Project Interst Rate."
d) These revenue bonds and revenue bond anticipation notes were sold at the following net interests costs and the indicated amounts (representing the sum of proceeds used for construction and the bond discount) were used in the calculations of the Project Interest Rate:

Devil Canyon-Castaic Revenue Bonds:	5.446%	$126,893,000
Pyramid Hydroelectric Revenue Bonds:	7.680%	$ 75,586,000
Alamo Bond Anticipation Notes:	10.036%	$ 18,034,000
Small Hydro Project I, Series D Revenue Bonds:	10.275%	$ 28,012,000
Alamo Project, Series F Revenue Bonds:	8.525%	$ 40,114,000
Power Facilities, Series H Revenue Bonds:	7.926%	$ 42,340,000

through 2000. Legislation has been introduced to offset the amount owed to the SWP by the State for costs allocated to fish and wildlife enhancement and recreation against the amount the SWP owes the California Water Fund.

Line 45: Local Agency Payments under Davis-Grunsky Loan Repayment Contracts

Over $48 million of loan funds have been disbursed as of December 31, 1988. Loan repayments received through December 31, 1988 are shown in the history column. The future amounts on Line 45 are based upon the loans currently outstanding. Repayment on any future loans under the Davis-Grunsky Act Program was assumed to be beyond the period covered by the financial analysis.

Line 46: Revenue Bond Proceeds

This line includes bond proceeds that are special reserves under revenue bond financing, described in Line 15. These proceeds are not classified as revenues, but are shown in this line to simplify the financial presentation since they are used for capitalized OMP&R costs, revenue bond service, and debt service reserves.

Line 47: Interest Earnings

This line includes interest earnings on unexpended proceeds from sale of general obligation bonds, interest on operating reserves, and other shortterm investment earnings on SWP revenues. Based upon experience to date, interest earnings are estimated at $7.6 million per year for 1989 and 1990 and at $5 million per year thereafter.

Line 48: Payments under Oroville-Thermalito Power Sale Contract

Prior to April 1, 1983, all of the power generation from Hyatt and Thermalito power plants was sold under a Power Sale Contract dated November 29, 1967, to three electric utilities (Pacific Gas and Electric Company, Southern California Edison Company, and San Diego Gas and Electric Company). The 1952-1988 entry includes final settlement of payments under the contract.

Line 49: Miscellaneous Revenues

This line shows all other operating revenues not included in Lines 35-48.

Line 50: Subtotal Other Revenues

This is the total of Lines 43-49.

Line 51: Total Operating Revenues

This is the total of Lines 41, 42, and 50.

Line 52: Total Operating Revenues and Capital Resources Revenues

This is the total of Lines 34 and 51.

Project Expenses

Project expenses include operation, maintenance, and power (OM&P) costs, deposits to replacement reserves, deposits to special reserves (see Line 55 description), debt service, deposits to operating reserves, repayment of the California Water Fund, and application of Capital Resources Revenues for construction (see Line 30).

Revenue bond proceeds earmarked for both debt service during construction and the first year's operating expenses are deposited in the Central Valley Water Project Construction Fund, and are disbursed in accordance with resolutions authorizing the issuance of such bonds. Water contractor revenues associated with power facility operating costs and debt service are deposited in the Central Valley Water Project Revenue Fund for appropriate disbursement. All other operating revenues, deposited in the California Water Revenue Fund-Systems Revenue Account, are disbursed in accordance with the following priorities of use as specified in the Burns-Porter Act:

- first, SWP operation, maintenance, power, and replacement costs;
- second, general obligation bond debt service;
- third, repayment of expenditures from the California Water Fund; and
- fourth, deposits to a reserve for future SWP construction.

Line 53: Project Operation, Maintenance, and Power Costs

Historical and projected OMP&R costs are presented in Table 24 by project facility, by composition, and by project purpose. Line 53 shows the OM&P portion of the Table 24 costs. Table 24 and Line 53 also include the operation and maintenance costs for the federal share of joint facilities and those OM&P costs allocated to recreation, which are in tended to be offset by revenues shown in Lines 43 and 44, respectively. Allowances for cost escalation are included in OM&P costs through 1991. Allowances for further future long-term price escalation are not included in these estimates since 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 cost is the major item of annual operating expense for the SWP, and there have been changes in the assumptions regarding future power sources and costs (see Chapter VI). Line 53 also includes costs associated with power transactions that result in the sale of power not required for the delivery of water.

Line 54: Deposits to Replacement Reserves

This line includes funds set aside as required by contract for replacement of existing SWP facilities. As of December 31, 1988, $13.4 million had been spent for replacement costs; the balance of the replacement reserve as of this date was $121.3 million. Replacement reserve amounts are also shown in Table 24.

Line 55: Deposits to Special Reserves under Revenue Bond Financing

Line 55 includes two major components: special reserves deposits, and the amount of capital resources revenue carryover from prior years needed for construction in the current year.

Special reserves deposits are the net of several income and expenditure items. The income items are deposits for power revenue bonds as follows:

- proceeds set aside to pay bond interest during construction (capitalized interest);
- proceeds set aside for the first year of operating costs (capitalized O&M);
- water contractor payments or bond proceeds set aside for debt service reserves;
- water contractor payments for revenue bond cover requirements; and

The history entry for Line 55 includes deposits to special reserves for all past bond sales shown in Table 21. For future power revenue and water revenue bonds, deposits to special reserves are included in the year of assumed sale. The history amount also includes advances to DWR's revolving fund for working funds to purchase mobile equipment and to meet day-to-day operating expenses.

The expenditure items are:

- total capitalized interest paid out;
- total capitalized O&M paid out;
- debt service cover payments returned to water contractors;
- debt service reserve payments returned to water contractors; and
- surplus account funds returned to water contractors or applied to meet expenses.

Special reserves are reduced over time as reserved amounts are used for their respective purposes. The amount shown each year in Line 55 indicates the change from the previous year. A negative number means a withdrawal of special reserves to meet expenses, while a positive number represents a deposit.

Lines 56-57: Payment of Service on Bonds Sold through June 30, 1989

These two lines show the total principal and interest payments on bonds sold to date. Table 25 summarizes payments on general obligation bonds (Series A through V), power revenue bonds by project, and water system revenue bonds.

The last bonds sold were the Series F Water System Revenue Bonds on March 15, 1989. Proceeds from the Series F bonds were used for the partial re-funding of the Reid Gardner Series G bonds.

Since 1978, the bond trustee has been retiring Oroville Revenue Bonds prior to the fixed maturity date as follows:

Year	Bonds Retired	Cost
1978	$ 4,045,000	$ 3,845,099
1979	9,730,000	8,933,093
1980	1,350,000	1,227,600
1981	2,865,000	1,805,862
1982	15,890,000	9,623,312
1983	18,865,000	16,776,000
1984	7,640,000	6,807,020
1985	10,215,000	9,044,000
1986	7,175,000	6,598,000
1987	8,980,000	8,808,104
1988	3,815,000	3,676,482

The schedule for service of Oroville Revenue Bonds shown in Table 25 is based upon a revised bond maturity schedule that reflects these early bond retirements.

Line 57 also includes over $0.3 million in interest payments to the General Fund for the temporary loan of $46.8 million in 1970. This loan was repaid by proceeds from the sale of Series N Water Bond Anticipation Notes.

Lines 58-59: Payments on Projected East Branch Enlargement Bonds

These lines show the projected annual service for future water revenue bonds shown on Line 23 for the East Branch Enlargement Project. Assumptions concerning the service on these future bonds are as follows:

- the interest costs for the water revenue bonds are estimated to average 8.0 percent; and
- the 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 60-61: Payments on Projected Future Water System Revenue Bonds

These lines show the projected annual service for future water revenue bonds shown on Line 25 for Water System Facilities. Assumptions concerning the service on these future bonds are the same as those described for Lines 58-59 above.

Lines 62-63: Total Payments of Bond Service

This is the total of interest payments shown on Lines 57, 59, and 61 and the total of principal payments shown on Lines 56, 58, and 60, respectively.

Line 64: Subtotal Debt Service

This is the total of Lines 62 and 63.

Line 65: California Water Fund Appropriation to non-SWP Purposes

In 1982 and 1983, DWR transferred a total of $70 million to the California Water Fund as repayment of Tideland Oil Revenues advanced in prior years for construction of SWP facilities. The Legislature subsequently appropriated all of these funds to the State's General Fund.

In 1989, the Legislature appropriated $32 million for General Fund programs at DWR and the State Water Resources Control Board, $12 million for the Delta Levee Protection Fund, and $10 million for flood control projects.

Line 66: Total Operating Expenses and Debt Service

This is the total of Lines 53, 54, 55, 64, and 65.

Line 67: Current Operating Funds

The amounts shown in this line are the funds available for future payment of operation and maintenance costs and debt service, and funds provided for drought contingencies. The history amount (1952-1988) is the December 31, 1988 cash balance for these funds in the Systems Revenue Account of the California Water Resources Development Bond Fund. Amounts over that needed for operating costs and debt service are

Table 24. SWP Operation, Maintenance,

in thousands of dollars

FEATURE	Calendar						
	1962-1988	1989	1990	1991	1992	1993	1994
BY PROJECT FACILITY							
Feather River Facilities	185,799	(4,407)	(3,517)	(3,448)	(3,551)	(3,540)	(3,519)
North Bay Aqueduct	2,916	1,557	1,386	1,460	1,423	1,442	1,460
Suisun Marsh	0	1,334	1,464	1,505	2,083	2,084	2,085
South Bay Aqueduct	59,708	6,230	6,873	7,162	6,639	6,754	6,774
California Aqueduct:							
Delta to Edmonston	766,342	102,287	113,433	117,951	115,899	114,452	112,358
Edmonston to Perris	518,658	58,477	74,374	80,782	77,908	82,285	75,927
West Branch	25,287	(7,285)	(10,882)	(10,087)	(12,365)	(11,739)	(13,267)
Coastal Branch	28,203	2,534	2,955	3,084	3,035	3,060	3,063
Off-Aqueduct Power Generating Facilities	286,353	67,490	58,929	60,117	65,241	64,260	60,241
Water Quality Monitoring	64,784	7,682	9,816	12,430	6,940	6,950	6,957
Davis-Grunsky Act Program	1,817	253	266	139	142	142	142
Subtotal	**1,939,867**	**236,152**	**255,097**	**271,095**	**263,394**	**266,150**	**252,221**
Payments to/Credits from PG&E under Comprehensive Agreement	23,390	(4,046)	(3,908)	(3,769)	(3,630)	(3,491)	(3,352)
Total OMP&R Costs	**1,963,257**	**232,106**	**251,189**	**267,326**	**259,764**	**262,659**	**248,869**
BY COMPOSITION							
Salaries and Expenses of Headquarters Personnel	372,928	38,149	44,364	47,641	41,854	41,853	41,854
Salaries and Expenses of Field Personnel	801,911	67,864	76,511	77,912	77,002	77,215	77,013
Pumping Power:							
Used by Pumping Plants	655,319	121,321	141,766	153,377	152,642	159,137	150,248
Produced by Generation Plants	(213,031)	(69,534)	(75,981)	(78,297)	(83,886)	(87,061)	(88,023)
Payments to/Credits from PG&E under Comprehensive Agreement	23,390	(4,046)	(3,908)	(3,769)	(3,630)	(3,491)	(3,352)
Off-Aqueduct Power Generating Facilities	286,353	67,490	58,929	60,117	65,241	64,260	60,241
Oroville-Thermalito Insurance Premiums	5,599	601	636	645	650	650	650
Less: Portion of Costs Incurred During Construction	(90,853)	(47)	(171)	(473)	(816)	(811)	(777)
Subtotal	**1,841,616**	**221,798**	**242,146**	**257,153**	**249,057**	**251,752**	**237,854**
Deposits to Replacement Reserves	121,641	10,308	9,043	10,173	10,707	10,907	11,015
Total OMP&R Costs	**1,963,257**	**232,106**	**251,189**	**267,326**	**259,764**	**262,659**	**248,869**
BY PROJECT PURPOSE							
Water Supply and Power Generation	1,833,531	224,437	241,084	255,542	248,342	251,019	237,712
Payments to/Credits from PG&E under Comprehensive Agreement	23,390	(4,046)	(3,908)	(3,769)	(3,630)	(3,491)	(3,352)
Recreation and Fish and Wildlife Enhancement	36,214	4,427	5,531	6,051	5,545	5,527	5,348
Flood Control	1,310	142	167	179	186	187	185
Miscellaneous Purposes:							
Federal Share, San Luis and Delta Facilities	66,117	6,723	7,827	9,038	9,052	9,148	8,707
Other (Davis-Grunsky, Drainage, City of Los Angeles)	2,695	423	488	285	269	269	269
Total OMP&R Costs	**1,963,257**	**232,106**	**251,189**	**267,326**	**259,764**	**262,659**	**248,869**

Power, and Replacement Costs

in thousands of dollars

Year								FEATURE
1995	1996	1997	1998	1999	2000	2001-2035	TOTAL	
								BY PROJECT FACILITY
(4,053)	(4,175)	(4,134)	(4,128)	(4,088)	(4,083)	(140,540)	(1,384)	Feather River Facilities
1,509	1,532	1,629	1,657	1,763	1,795	86,035	107,564	North Bay Aqueduct
2,088	2,089	2,089	2,089	2,089	2,089	54,023	77,111	Suisun Marsh
6,997	7,089	7,783	7,855	8,506	8,576	385,315	532,261	South Bay Aqueduct
								California Aqueduct:
121,287	126,022	141,423	147,492	165,145	169,597	8,923,354	11,237,042	Delta to Edmonston
83,490	87,430	109,261	114,768	135,230	142,593	8,961,063	10,602,246	Edmonston to Perris
(9,257)	(10,337)	(9,771)	(10,528)	(9,186)	(8,671)	(248,505)	(346,593)	West Branch
4,298	7,810	8,623	8,711	9,505	9,590	437,060	531,531	Coastal Branch
64,260	64,241	64,260	61,817	53,418	50,882	211,983	1,233,492	Off-Aqueduct Power Generating Facilities
6,973	6,973	6,973	6,973	6,973	6,973	129,758	287,155	Water Quality Monitoring
142	142	142	142	142	142	4,987	8,740	Davis-Grunsky Act Program
277,734	**288,816**	**328,278**	**336,848**	**369,497**	**379,483**	**18,804,533**	**24,269,165**	**Subtotal**
(3,213)	(3,074)	(2,935)	(2,797)	(2,658)	(2,519)	(8,838)	(24,840)	Payments to/Credits from PG&E under Comprehensive Agreement
274,521	**285,742**	**325,343**	**334,051**	**366,839**	**376,964**	**18,795,695**	**24,244,325**	**Total OMP&R Costs**
								BY COMPOSITION
41,854	41,854	41,854	41,854	41,854	41,854	1,397,567	2,277,334	Salaries and Expenses of Headquarters Personnel
79,833	79,833	79,828	79,827	79,821	79,822	2,720,857	4,455,249	Salaries and Expenses of Field Personnel
								Pumping Power:
175,210	180,679	224,000	231,993	275,294	288,423	17,777,842	20,687,251	Used by Pumping Plants
(93,883)	(94,497)	(95,327)	(96,180)	(97,668)	(99,924)	(3,872,382)	(5,145,674)	Produced by Generation Plants
(3,213)	(3,074)	(2,935)	(2,797)	(2,658)	(2,519)	(8,838)	(24,840)	Payments to/Credits from PG&E under Comprehensive Agreement
64,260	64,241	64,260	61,817	53,418	50,882	211,983	1,233,492	Off-Aqueduct Power Generating Facilities
650	650	650	650	650	650	22,750	36,081	Oroville-Thermalito Insurance Premiums
(3,193)	0	0	0	0	0	0	(97,141)	Less: Portion of Costs Incurred During Construction
261,518	**269,686**	**312,330**	**317,164**	**350,711**	**359,188**	**18,249,779**	**23,421,752**	**Subtotal**
13,003	16,056	13,013	16,887	16,128	17,776	545,916	822,573	Deposits to Replacement Reserves
274,521	**285,742**	**325,343**	**334,051**	**366,839**	**376,964**	**18,795,695**	**24,244,325**	**Total OMP&R Costs**
								BY PROJECT PURPOSE
260,686	269,690	312,008	317,669	350,838	360,016	18,197,413	23,359,987	Water Supply and Power Generation
(3,213)	(3,074)	(2,935)	(2,797)	(2,658)	(2,519)	(8,838)	(24,840)	Payments to\Credits from PG&E under Comprehensive Agreement
5,520	5,523	5,719	5,754	5,888	5,969	214,455	317,471	Recreation and Fish and Wildlife Enhancement
187	187	192	193	197	198	7,672	11,182	Flood Control
								Miscellaneous Purposes:
11,072	13,147	10,090	12,963	12,305	13,031	375,580	564,800	Federal Share, San Luis and Delta Facilities
269	269	269	269	269	269	9,413	15,725	Other (Davis-Grunsky, Drainage, City of Los Angeles)
274,521	**285,742**	**325,343**	**334,051**	**366,839**	**376,964**	**18,795,695**	**24,244,325**	**Total OMP&R Costs**

Table 25. Annual Service on Bonds Sold through June 30, 1989

in thousands of dollars (a

Calendar Year	Series A through V Water Bonds		Oroville Revenue Bonds		Devil Canyon-Castaic Project Revenue Bonds		Pyramid Project PFRB Series A and H		Reid Gardner Project PFRB Series B,C,G and H WSRB Series F	
	Principal	Interest	Principal	Interest	Principal	Interest	Principal	Interest	Principal	Interest
1964	0	3,333	0	0	0	0	0	0	0	0
1965	0	11,114	0	0	0	0	0	0	0	0
1966	0	16,742	0	0	0	0	0	0	0	0
1967	0	26,912	0	0	0	0	0	0	0	0
1968	0	37,760	0	3,876	0	0	0	0	0	0
1969	0	47,461	0	10,448	0	0	0	0	0	0
1970	0	53,291	0	13,145	0	0	0	0	0	0
1971	0	63,035	0	13,145	0	0	0	0	0	0
1972	0	69,148	1,260	13,112	0	0	0	0	0	0
1973	1,200	69,348	1,330	13,042	0	7,708	0	0	0	0
1974	3,000	69,533	1,400	12,969	0	7,708	0	0	0	0
1975	5,000	69,366	1,475	12,893	0	7,708	0	0	0	0
1976	7,000	69,408	1,555	12,811	0	7,708	0	0	0	0
1977	10,200	69,323	1,635	12,727	0	7,708	0	0	0	0
1978	12,700	69,312	5,775	12,537	0	7,708	0	0	0	0
1979	13,650	68,690	11,585	12,275	0	7,708	0	0	0	0
1980	16,050	67,968	3,265	11,739	0	7,708	0	7,900	0	0
1981	18,050	67,109	4,885	11,444	0	7,708	0	7,292	0	0
1982	19,250	66,162	17,920	10,968	0	7,708	0	7,292	0	7,972
1983	20,520	65,148	21,110	10,147	900	7,708	0	7,292	0	35,719
1984	21,785	64,068	10,005	9,013	955	7,647	640	7,292	0	35,719
1985	22,555	63,932	12,700	8,628	1,010	7,583	675	7,238	9,425	27,209
1986	23,830	61,742	11,435	7,859	1,070	7,515	715	7,377	3,805	32,882
1987	25,495	60,492	11,715	7,355	1,135	7,442	790	7,513	4,860	32,606
1988	26,770	59,165	6,685	6,722	1,205	7,366	830	7,447	5,065	32,295
1989	28,145	57,825	3,015	6,374	1,275	7,284	875	7,378	7,820	27,557
1990	29,385	56,473	3,175	7,048	1,355	7,198	930	7,304	6,675	29,782
1991	30,365	55,070	3,335	6,044	1,435	7,107	980	7,227	7,170	29,302
1992	31,295	53,640	3,510	5,866	1,520	7,010	1,040	7,145	7,745	28,761
1993	32,940	52,183	3,695	6,240	1,610	6,907	1,095	7,074	8,340	28,160
1994	34,525	50,660	3,885	5,482	1,705	6,799	1,165	7,000	9,000	27,496
1995	35,660	49,073	4,085	5,275	1,810	6,684	1,235	6,919	9,665	26,817
1996	36,900	47,436	4,300	5,299	1,920	6,561	1,305	6,835	10,405	26,069
1997	36,595	45,818	4,525	4,827	2,035	6,432	1,385	6,743	11,220	25,248
1998	36,675	44,226	4,760	4,585	2,155	6,295	1,470	6,646	11,985	24,459
1999	37,600	42,655	5,005	4,325	2,285	6,160	1,560	6,542	12,840	23,607
2000	38,890	41,033	5,280	4,805	2,420	6,040	1,655	6,431	13,735	22,685
2001	39,980	39,351	5,565	3,754	2,565	5,912	1,760	6,311	14,710	21,690
2002	41,120	37,620	5,865	3,444	2,720	5,773	1,870	6,183	15,760	20,614
2003	42,970	35,835	6,180	3,118	2,885	5,626	1,995	6,047	16,960	19,451
2004	45,160	33,957	6,520	2,774	3,055	5,470	2,120	5,900	18,405	17,976
2005	46,450	31,995	6,870	2,411	3,240	5,305	2,255	5,744	19,960	16,374
2006	47,740	29,971	7,245	2,028	3,435	5,130	2,405	5,580	21,720	14,631
2007	49,230	27,883	7,635	1,624	3,640	4,945	2,570	5,405	23,570	12,732
2008	51,220	25,727	4,995	1,278	3,860	4,749	2,740	5,218	25,600	10,649
2009	53,560	23,478	3,490	1,039	4,090	4,540	2,925	5,018	27,480	8,700
2010	55,250	21,134	3,700	832	4,335	4,319	3,120	4,804	29,490	6,633
2011	56,740	18,717	3,935	613	4,595	4,085	3,330	4,563	31,655	4,416
2012	58,530	16,216	4,195	379	4,875	3,837	3,555	4,304	33,995	2,290
2013	60,370	13,676	4,435	131	5,165	3,574	3,795	4,028	0	0
2014	57,900	11,244	60	2	5,475	3,303	4,055	3,734	0	0
2015	53,690	8,838	0	0	5,805	3,015	4,325	3,418	0	0
2016	46,130	6,626	0	0	6,150	2,710	4,620	3,083	0	0
2017	38,060	4,614	0	0	6,520	2,388	4,935	2,724	0	0
2018	25,350	2,980	0	0	6,910	2,045	5,265	2,340	0	0
2019	16,890	1,778	0	0	7,325	1,682	5,625	1,932	0	0
2020	17,320	934	0	0	7,765	1,298	6,005	1,495	0	0
2021	8,510	301	0	0	8,230	890	6,410	1,029	0	0
2022	1,800	48	0	0	8,725	458	6,845	532	0	0
2023	0	0	0	0	0	0	0	0	0	0
2023	0	0	0	0	0	0	0	0	0	0
			(b	(b						
TOTAL	**1,570,000**	**2,378,577**	**244,995**	**316,452**	**139,165**	**283,872**	**100,870**	**239,279**	**419,060**	**680,501**

a) PFRB = Power Facilities Revenue Bonds WSRB = Water System Revenue Bonds
b) Principal and interest schedule is adjusted to reflect early redemption of bonds.

Table 25. Annual Service on Bonds Sold through June 30, 1989 (contd.)

in thousands of dollars (a

Calendar Year	South Geysers Project PFRB Series D,F and H WSRB Series D & E		Small Hydro Project PFRB Series D and H		Bottle Rock Project PFRB Series E WSRB Series D & E		Alamo Project PFRB Series F and H		Subtotal	
	Principal	Interest	Principal	Interest	Principal	Interest	Principal	Interest	Principal	Interest
1964	0	0	0	0	0	0	0	0	0	3,333
1965	0	0	0	0	0	0	0	0	0	11,114
1966	0	0	0	0	0	0	0	0	0	16,742
1967	0	0	0	0	0	0	0	0	0	26,912
1968	0	0	0	0	0	0	0	0	0	41,636
1969	0	0	0	0	0	0	0	0	0	57,909
1970	0	0	0	0	0	0	0	0	0	66,436
1971	0	0	0	0	0	0	0	0	0	76,180
1972	0	0	0	0	0	0	0	0	1,260	82,260
1973	0	0	0	0	0	0	0	0	2,530	90,098
1974	0	0	0	0	0	0	0	0	4,400	90,210
1975	0	0	0	0	0	0	0	0	6,475	89,967
1976	0	0	0	0	0	0	0	0	8,555	89,927
1977	0	0	0	0	0	0	0	0	11,835	89,758
1978	0	0	0	0	0	0	0	0	18,475	89,557
1979	0	0	0	0	0	0	0	0	25,235	88,673
1980	0	0	0	0	0	0	0	0	19,315	95,315
1981	0	0	0	0	0	0	0	0	22,935	93,553
1982	0	0	0	0	0	0	0	0	37,170	100,102
1983	0	4,777	0	3,727	0	6017	0	2,449	42,530	142,984
1984	0	5,646	0	3,727	0	10315	0	4,198	33,385	147,625
1985	0	5,646	0	3,727	0	10315	0	4,198	46,365	138,476
1986	0	5,516	0	3,537	1240	10315	0	4,264	42,095	141,007
1987	0	5,385	0	3,348	1305	10253	265	4,329	45,565	138,723
1988	580	5,520	345	3,348	1390	10852	280	4,314	43,150	137,029
1989	709	5,648	365	3,328	1566	11599	295	4,299	44,065	131,292
1990	761	5,597	405	3,304	1678	11498	320	4,279	44,684	132,483
1991	818	5,540	430	3,277	1792	11383	335	4,257	46,660	129,207
1992	884	5,477	435	3,246	1926	11256	365	4,233	48,720	126,634
1993	956	5,406	470	3,214	2070	11115	390	4,206	51,566	124,505
1994	1,033	5,329	455	3,178	2226	10960	420	4,177	54,414	121,081
1995	1,121	5,242	490	3,142	2397	10790	450	4,144	56,913	118,086
1996	1,213	5,147	530	3,102	2589	10603	490	4,108	59,652	115,160
1997	1,326	5,043	560	3,059	2802	10399	530	4,070	60,978	111,639
1998	1,439	4,928	605	3,012	3032	10174	565	4,028	62,686	108,353
1999	1,562	4,802	655	2,961	3282	9928	620	3,981	65,409	104,961
2000	1,705	4,663	695	2,905	3563	9658	675	3,929	68,618	102,149
2001	1,859	4,510	765	2,844	3866	9366	725	3,874	71,795	97,612
2002	2,028	4,341	800	2,777	4206	9045	790	3,814	75,159	93,611
2003	2,222	4,156	790	2,705	4566	8694	860	3,747	79,428	89,379
2004	2,386	3,994	885	2,650	4979	8309	940	3,674	84,450	84,704
2005	2,561	3,821	970	2,589	5413	7890	1,020	3,594	88,739	79,723
2006	2,756	3,634	1,010	2,523	5899	7433	1,110	3,509	93,320	74,439
2007	2,957	3,432	1,085	2,455	6427	6936	1,210	3,414	98,324	68,826
2008	3,213	3,191	1,100	2,368	6998	6394	1,320	3,311	101,046	62,885
2009	3,470	2,929	1,120	2,280	7631	5803	1,435	3,200	105,201	56,987
2010	3,767	2,645	1,110	2,190	8312	5159	1,570	3,078	110,654	50,794
2011	4,085	2,338	1,110	2,102	9065	4456	1,705	2,945	116,220	44,235
2012	4,419	2,005	1,115	2,013	9887	3691	1,865	2,800	122,436	37,535
2013	4,798	1,643	1,740	1,924	10782	2855	2,035	2,641	93,120	30,472
2014	5,202	1,252	1,830	1,784	11765	1943	2,220	2,469	88,507	25,731
2015	5,568	826	1,925	1,638	708	949	2,420	2,281	74,441	20,965
2016	2,394	370	2,145	1,484	765	894	2,645	2,075	64,849	17,242
2017	167	169	2,295	1,312	826	835	2,885	1,851	55,688	13,893
2018	180	156	2,455	1,129	892	772	3,150	1,606	44,202	11,028
2019	194	142	2,615	932	964	703	3,440	1,339	37,053	8,508
2020	210	127	2,800	723	1041	629	3,755	1,047	38,896	6,253
2021	227	111	2,975	499	1124	549	4,105	728	31,581	4,107
2022	245	93	3,265	261	1213	462	4,480	380	26,573	2,234
2023	264	74	0	0	1310	369	0	0	1,574	443
2024	611	54	0	0	3027	268	0	0	3,638	322
TOTAL	69,890	141,325	42,345	100,324	144,524	281,834	51,685	130,840	2,782,534	4,553,004

Table 25. Annual Service on Bonds Sold through June 30, 1989 (contd.)

in thousands of dollars (a

Calendar Year	East Branch Enlargement WSRB Series A,D & E		Water System Facilities WSRB Series B,C,D & E		Subtotal		Grand Total	
	Principal	Interest	Principal	Interest	Principal	Interest	Principal	Interest
1964	0	0	0	0	0	0	0	3,333
1965	0	0	0	0	0	0	0	11,114
1966	0	0	0	0	0	0	0	16,742
1967	0	0	0	0	0	0	0	26,912
1968	0	0	0	0	0	0	0	41,636
1969	0	0	0	0	0	0	0	57,909
1970	0	0	0	0	0	0	0	66,436
1971	0	0	0	0	0	0	0	76,180
1972	0	0	0	0	0	0	1,260	82,260
1973	0	0	0	0	0	0	2,530	90,098
1974	0	0	0	0	0	0	4,400	90,210
1975	0	0	0	0	0	0	6,475	89,967
1976	0	0	0	0	0	0	8,555	89,927
1977	0	0	0	0	0	0	11,835	89,758
1978	0	0	0	0	0	0	18,475	89,557
1979	0	0	0	0	0	0	25,235	88,673
1980	0	0	0	0	0	0	19,315	95,315
1981	0	0	0	0	0	0	22,935	93,553
1982	0	0	0	0	0	0	37,170	100,102
1983	0	0	0	0	0	0	42,530	142,984
1984	0	0	0	0	0	0	33,385	147,625
1985	0	0	0	0	0	0	46,365	138,476
1986	0	4,021	0	0	0	4,021	42,095	145,028
1987	0	9,651	0	4,952	0	14,603	45,565	153,326
1988	995	9,876	710	11,033	1,705	20,909	44,855	157,938
1989	1,077	10,106	1,148	14,359	2,225	24,465	46,290	155,757
1990	1,134	10,050	1,227	14,301	2,361	24,351	47,045	156,835
1991	1,197	9,988	1,318	14,236	2,515	24,224	49,175	153,431
1992	1,265	9,920	1,414	14,164	2,679	24,084	51,399	150,718
1993	1,343	9,845	1,510	14,083	2,853	23,928	54,419	148,434
1994	1,427	9,764	1,619	13,994	3,046	23,758	57,460	144,838
1995	1,521	9,674	1,736	13,896	3,257	23,570	60,170	141,656
1996	1,620	9,575	1,863	13,786	3,483	23,361	63,135	138,521
1997	1,729	9,467	1,998	13,665	3,727	23,132	64,705	134,771
1998	1,849	9,349	2,141	13,532	3,990	22,881	66,676	131,234
1999	1,979	9,221	2,292	13,385	4,271	22,606	69,680	127,567
2000	2,120	9,083	2,457	13,225	4,577	22,308	73,195	124,457
2001	2,276	8,933	2,635	13,050	4,911	21,983	76,706	119,595
2002	2,437	8,769	2,830	12,860	5,267	21,629	80,426	115,240
2003	2,614	8,592	3,033	12,653	5,647	21,245	85,075	110,624
2004	2,807	8,403	3,249	12,430	6,056	20,833	90,506	105,536
2005	3,015	8,198	3,481	12,189	6,496	20,387	95,235	100,109
2006	3,238	7,978	3,731	11,931	6,969	19,909	100,289	94,347
2007	3,478	7,738	4,007	11,652	7,485	19,390	105,809	88,216
2008	3,738	7,477	4,296	11,353	8,034	18,830	109,080	81,715
2009	4,024	7,197	4,605	11,031	8,629	18,228	113,830	75,215
2010	4,326	6,895	4,940	10,683	9,266	17,578	119,920	68,372
2011	4,649	6,570	5,295	10,310	9,944	16,880	126,164	61,115
2012	4,998	6,221	5,681	9,910	10,679	16,131	133,115	53,666
2013	5,373	5,846	6,092	9,482	11,465	15,328	104,585	45,800
2014	5,780	5,443	6,533	9,021	12,313	14,464	100,820	40,195
2015	6,212	5,009	7,012	8,526	13,224	13,535	87,665	34,500
2016	6,681	4,543	7,520	7,994	14,201	12,537	79,050	29,779
2017	7,182	4,041	8,066	7,413	15,248	11,454	70,936	25,347
2018	7,729	3,502	8,649	6,790	16,378	10,292	60,580	21,320
2019	8,318	2,922	9,279	6,122	17,597	9,044	54,650	17,552
2020	8,953	2,297	9,956	5,405	18,909	7,702	57,805	13,955
2021	9,631	1,625	10,683	4,634	20,314	6,259	51,895	10,366
2022	10,366	902	11,455	3,809	21,821	4,711	48,394	6,945
2023	439	124	21,292	2,924	21,731	3,048	23,305	3,491
2024	1,014	90	12,249	1,085	13,263	1,175	16,901	1,497
							(c	(d
TOTAL	**138,538**	**268,905**	**188,002**	**395,868**	**326,540**	**664,773**	**3,109,074**	**5,217,777**

c) Serial maturities or mandatory requirements for term bonds.
d) Includes capitalized interest payments.

Table 26. Estimated Future Unit Water Charges

dollars per acre-foot (a

SWP Service Area	1990		2000	
	Unescalated	Escalated(b	Unescalated	Escalated(b
Feather River				
Capital, OM&R(c(d	34	34	23	27
North Bay				
Capital, OM&R	229	229	131	148
Power(e	13	13	16	21
Total	**242**	**242**	**147**	**169**
South Bay				
Capital, OM&R	59	59	55	70
Power(e	31	31	42	55
Total	**90**	**90**	**97**	**125**
Coastal				
Capital, OM&R	0	0	302	364
Power(e	0	0	89	117
Total	**0**	**0**	**391**	**481**
San Joaquin				
Capital, OM&R	35	35	35	44
Power(e	15	15	20	26
Total	**50**	**50**	**55**	**70**
Southern California				
Capital, OM&R	129	129	106	131
Power(e	85	85	125	165
Total	**214**	**214**	**231**	**296**

a) These estimated unit water charges differ from those in Table 26 of Bulletin 132-88 due to a number of factors, primarily changes in (1) projected water deliveries in some service areas, (2) OM&R costs projected for future years, and (3) projected power costs. Actual North Bay construction costs are lower than previously estimated.
b) These values reflect the effects of assumed future cost escalation.
c) Operation, maintenance, and replacement.
d) No power costs are incurred for water delivery to Feather River area contractors.
e) Power costs of transportation facilities to deliver SWP water to the service area, including costs of Off-Aqueduct Power Facilities.

used for repayment of the California Water Fund as shown in Line 65.

Line 68: California Water Fund Repayment Required for Current Construction

The Burns-Porter Act requires that, after operation, maintenance, replacement, and bond service requirements have been satisfied, SWP revenues shall be transferred to the California Water Fund to reimburse the fund for monies expended for construction of the State Water Resources Development System. For the financial analysis, repayment amounts through 2000 shown in Line 68 are required for financing scheduled capital expenditures.

Line 69: California Water Fund Repayment Available for Future Construction

Line 69 shows that some revenues in excess of expenses are available, beyond present construction requirements, to repay the California Water Fund. These funds would be available to fund a portion of future SWP facilities, and/or be credited as repayment against past California Water Fund expenditures (see Line 65). The amount shown could be transferred to Line 68 if addition-

al facilities are scheduled for construction which would require funding.

Line 70: Capital Resources Revenues Used for Construction

This line is the same as Line 30.

Line 71: Total Project Expenses

This is equal to the sum of Lines 66 through 70.

Future Costs of Water Service

Estimates of future water costs are useful to SWP contractors in short- and long-range planning of their water needs, operations, and budgets.

Unit water charges displayed in Table 26 represent future costs of water by SWP service area. The Table 26 unit rates include capital, transportation, and operating costs of existing and future SWP facilities accounted for in Table 19. The unit charges also assume that in 1990 and 2000 the SWP will be able to deliver full contractor requests for water. The unit water charges shown in Table 26 are shown both as unescalated 1989 dollars, and escalated rates reflecting assumed future inflation. DWR estimates of future capital expenditures include allowances for escalation of construction costs at 4 percent for 1990 and at 5 percent per year thereafter. The escalation rates for future power sources vary depending upon the source of energy.

Appendix B

Data and Computations Used in Determining Water Charges for 1990

Appendix B

Data and Computations Used in Determining Water Charges for 1990

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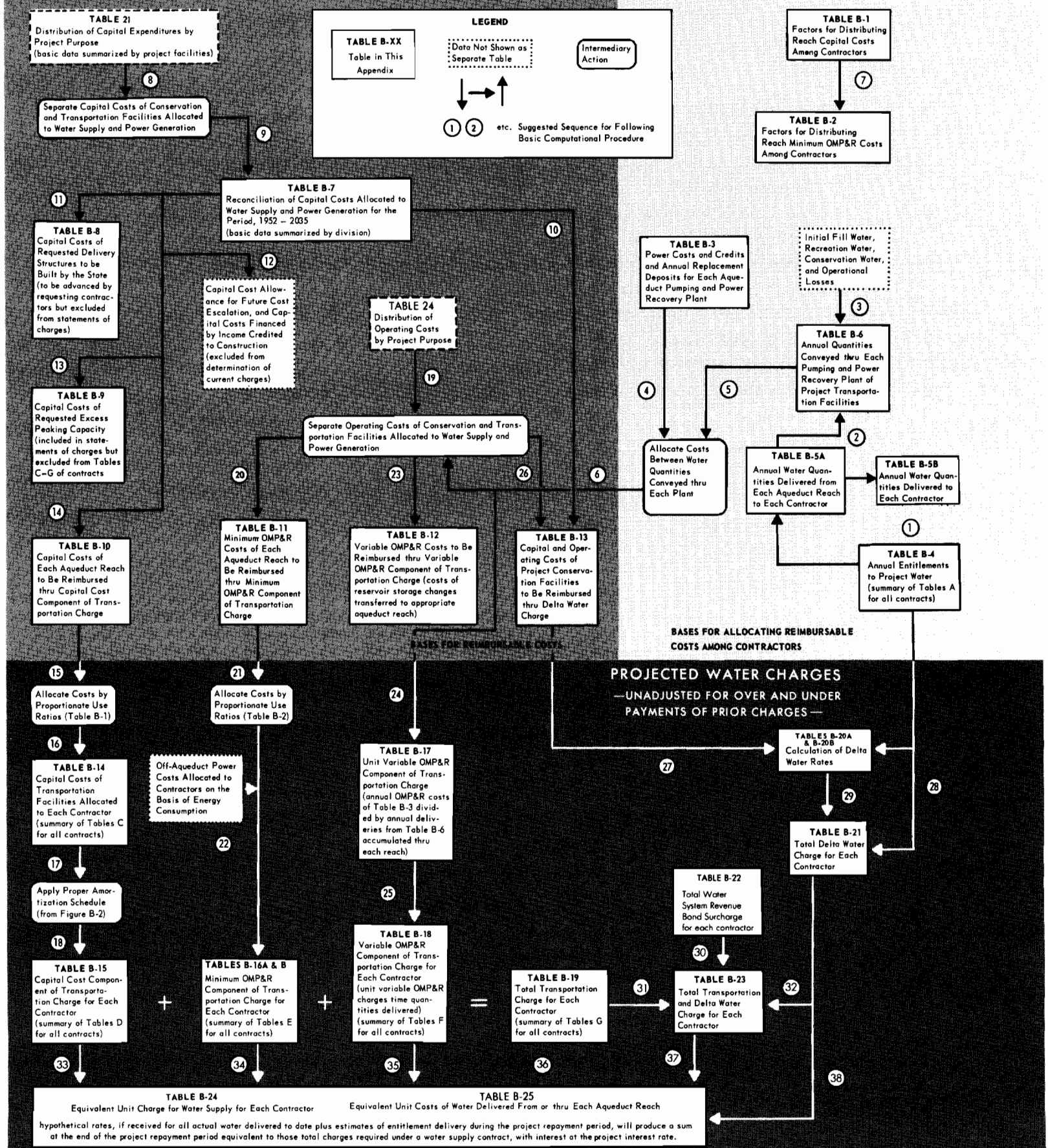
Figure B-1. Relationships of Data Used to Substantiate Statements of Charges



Appendix B
Data and Computations Used in Determining Water Charges for 1990

DWR annually furnishes statements of charges to the 30 long-term SWP water supply contractors. These statements are described in Article 29(e) of the "Standard Provisions for Water Supply Contract":

> *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), DWR annually performs a comprehensive review and redetermination of all water supply and financial aspects of the SWP for the entire Project repayment period. This annual redetermination is provided for in Water Contract Article 22(f), concerning the Delta Water Rate per acre-foot of future entitlement, and in Article 28, with regard to the annual Transportation Charges for the entire Project repayment period.

Appendix B documents the redetermination of water charges to be paid by contractors during calendar year 1990 and is based upon established data about the SWP, both known and projected, as of June 30, 1989. The computational procedures and interrelationships between tabulations in this appendix are outlined in Figures B-1 and B-2. All B-tables shown in Figures B-1 and B-2 are included at the end of this text. Appendix B also documents payments by contractors under amended Article 21 of the Standard Provisions for surplus water deliveries from the SWP.

Types of Water Charges

Costs of SWP facilities that are necessary for either the conservation and development of water supply, or the conveyance of such supply to SWP service areas, are included in charges to water contractors. The Standard Provisions classify these facilities as "Project Conservation Facilities" and "Project Transportation Facilities." Following is a list of the principal facilities in each classification:

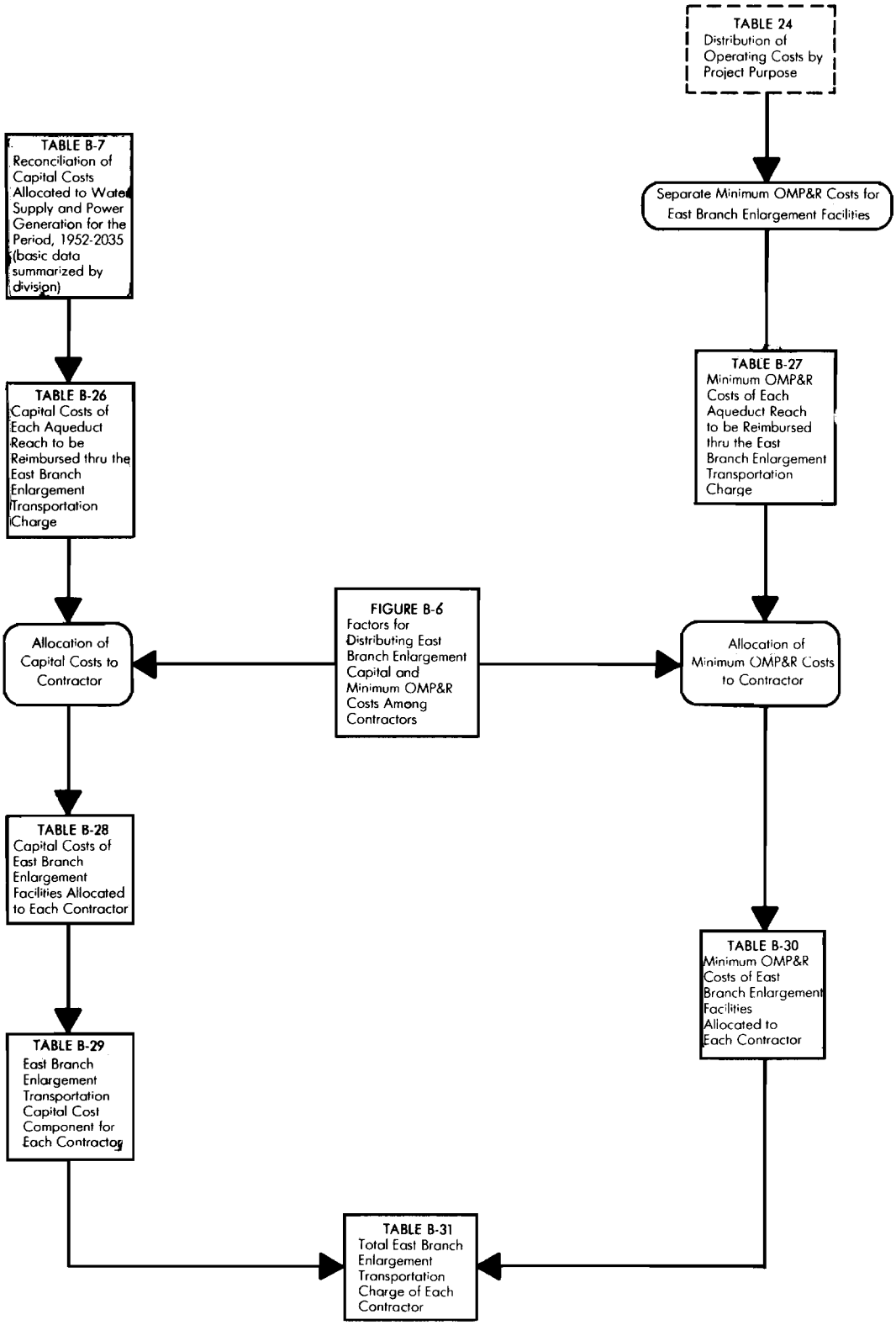
Project Conservation Facilities

- Frenchman Dam and Lake;
- Grizzly Valley Dam and Lake Davis;
- Antelope Dam and Lake;
- Oroville Dam and Lake Oroville;
- Oroville Power Facilities;
- Delta Facilities;
- Additional Conservation Facilities;
- A portion of the Governor Edmund G. Brown California Aqueduct from the Delta to Dos Amigos Pumping Plant; and
- B.F. Sisk San Luis Dam, San Luis Reservoir, and William R. Gianelli Pumping-Generating Plant.

Project Transportation Facilities

- Grizzly Valley Pipeline;
- North Bay Aqueduct;
- South Bay Aqueduct (including Del Valle Dam and Lake Del Valle);
- The remainder of the California Aqueduct from the Delta to Dos Amigos Pumping Plant and all facilities south, including dams and lakes in Southern California; and

Figure B-2. Relationships of Data Used to Substantiate East Branch Enlargement Charges



- Off-Aqueduct Power Facilities (Reid Gardner Unit No. 4, Bottle Rock Powerplant, and South Geysers Powerplant).

The Standard Provisions provide for two basic annual charges for Project water:

- The Delta Water Charge, which will be paid by all contractors and which will return all reimbursable costs of the Project Conservation Facilities to the State; and

- The Transportation Charge, in addition to the Delta Water Charge, which will be paid by those contractors served by the Project Transportation Facilities and which will return all reimbursable costs of such facilities to the State.

The Delta Water Charge is a unit charge applied to each acre-foot of SWP water the contractors are entitled to receive under their contracts. The unit charge, if applied to each acre-foot of all such entitlements for the remainder of the Project repayment period, will repay all outstanding reimbursable costs of the Project Conservation Facilities, with appropriate interest, by the end of the repayment period (2035).

The Transportation Charge is a charge 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 Project Transportation Facilities. Each contractor's allocated share of these reimbursable capital costs is amortized for repayment to the State and certain variations are allowed in the amortization methods. The contractors' shares of reimbursable operating costs are repaid essentially in the year such costs are incurred by the State.

The East Branch Enlargement Transportation Charge will be paid by seven Southern California contractors participating in the enlargement. San Bernardino Valley Municipal Water District elected to advance funds to pay the district's allocated East Branch Enlargement capital costs. The remaining contractors will pay an allocated share of the debt service on the revenue bonds sold to finance the enlargement. Each contractor also will pay an allocated share of the minimum OMP&R costs of the East Branch Enlargement.

Composition and Timing of Water Charges

As detailed in Figure B-3, the Delta Water Charge and the Transportation Charge consist of the following components:

- Conservation and transportation capital cost components, which will return to the State all reimbursable capital costs;

- Conservation and transportation minimum OMP&R components, which will return to the State all reimbursable operating costs that do not depend upon quantities of water actually delivered to the contractors; and

- A transportation variable OMP&R component, which will return to the State all reimbursable operating costs that depend upon, and vary with, quantities of water actually delivered to the contractors.

Article 28 of the Standard Provisions of the water supply contracts provides that Transportation Charges be redetermined each year. The tables in Appendix B present the numerical data used in this redetermination. Transportation Charges for prior years through 1988 shown in these tables do not equal those amounts actually paid by contractors. As provided under the Water System Revenue Bond Amendment to the Water Supply Contract, differences between actual payments and amounts computed in this redetermination are accumulated with interest and amortized during the remaining years of the contract repayment period. All adjustment computations are shown in the attachments accompanying each contractor's statement of charges and are reflected in revised copies of Tables C through G of the contract, also furnished to each long-term water supply contractor in the annual statement of charges.

The formula for computing the Delta Water Rate, Article 22(f) of the Standard Provisions, provides that all adjustments for prior overpayments or underpayments of the Delta Water Charge are accounted for in a redetermination of the rate. Since the redetermined rate applies to all future entitlements, such adjustments are amortized during the remainder of the Project repayment per-

Figure B-3. Composition of Delta Water Charge and Transportation Charge

CAPITAL COST COMPONENT	1. Planning, design, right of way, and construction costs of conservation facilities 2. O&M costs for newly constructed conservation facilities prior to initial operation 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, etc.) for conservation facilities 7. Program costs (portion) to mitigate impacts on current Delta fishery population due to SWP pumping prior to 1986 (DWR-DFG 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 (DWR-DFG Agreement)
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, etc.) for transportation facilities 6. Program costs (portion) to mitigate impacts on current Delta fishery population due to SWP pumping prior to 1986 (DWR-DFG 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 change) 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" transmission facilities 6. Replacement deposits for SWP control centers (portion) 7. Off-aqueduct power facility costs - bond service, bond cover costs (25% 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 (DWR-DFG 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 powerplant reach and charged to aqueduct pumping plants 3. Hyatt-Thermalito and Thermalito Diversion Dam powerplant 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 powerplants 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 (DWR-DFG Agreement)

NOTE: Excludes costs recovered under the East Branch Enlargement Transportation Charge.

iod. This Appendix B includes a redetermination of the Delta Water Rate for 1990.

These redeterminations exclude charges associated with water service other than the Delta Water Charge and the Transportation Charge. These excluded charges (and the manner in which such excluded charges are treated herein) are:

- Advances of funds pursuant to Article 24(d) of the Standard Provisions, for excess capacity constructed by the State at the request of contractors.

- Advances of funds pursuant to Article 10(d) of the Standard Provisions, for delivery structures (turnouts) constructed by the State at the request of contractors. Partial information is included in this appendix concerning actual and projected capital costs of such delivery structures. Statements concerning these costs and data are furnished to the appropriate contractors at various times and are not part of the annual statements.

- Payments for sale and service of surplus water to entities other than contractors, pursuant to Article 21 of the Standard Provisions are also excluded. These payments are generally based upon the unit rates shown in Table B-25. Net revenues resulting from "noncontractor" service are applied as described in Bulletin 132-71, page 24.

- Payments under the Devil Canyon-Castaic Contract for costs of the Devil Canyon and Castaic facilities allocable to power generation. Charges under the contract are billed separately from those under the Water Supply Contract. The treatment of such charges in relation to redetermined Transportation Charges is shown in special attachments to the bills of the six participating contractors.

The time and method of payment for corresponding components of the Delta Water Charge and the Transportation Charge are as follows:

- The capital cost components of the Delta Water Charge and the Transportation Charge are paid in two semiannual installments, due January 1 and July 1 of each year, on the basis of statements furnished by the State about July 1 of the preceding year.

- 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, on the basis of statements furnished by the State about July 1 of the preceding year.

- The variable OMP&R component of the Transportation Charge is paid in varying monthly amounts, due the 15th of the second month following actual water delivery. The charges are projected based upon a unit charge per acre-foot established about July 1 of the preceding year. These unit charges may be revised several times during the year to reflect current power costs and revenues. These unit charges are applied to actual monthly delivery quantities as determined by the State on or before the 15th of the month following actual delivery.

Bases for Allocating Reimbursable Costs among Contractors

This section discusses DWR's procedures (diagrammed in the upper right portion of Figure B-1) for allocating reimbursable costs of Project Transportation Facilities among contractors. These costs do not include annual costs of Off-Aqueduct power facilities, which are discussed in the "Project Water Charges" section.

Capital and Minimum OMP&R Costs

Figure B-7, following the text in this appendix, shows repayment reaches that are the bases for allocating reimbursable costs of Project Transportation Facilities among contractors.

Allocations of reimbursable capital costs and minimum OMP&R costs of each reach are based upon 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 described in Bulletin 132-70. The Bulletin 132-70 ratios were subsequently revised for (1) the North Bay Aque-

duct, (2) the South Bay Aqueduct, (3) the California Aqueduct from the Delta to the Coastal Branch, and (4) the Coastal Branch.

Revised ratios for the first reach of the California Aqueduct and for the South Bay Aqueduct are described in Bulletin 132-72 and reflect certain contract amendments executed early in 1972 regarding South Bay Aqueduct use (Bulletin 132-73, pages 33-35).

Bulletin 132-83 presented revised ratios for reaches in the Coastal Branch and in the California Aqueduct from the Delta to the Coastal Branch. These revisions reflect a contract amendment with Santa Barbara County Flood Control and Water Conservation District that reduced maximum annual entitlement from 57,700 acre-feet to 45,486 acre-feet.

Bulletin 132-86, page 170, presented revised ratios for reaches of the North Bay Aqueduct. These revisions reflect contract amendments executed with Solano County Flood Control and Water Conservation District in 1985 and with Napa County Flood Control and Water Conservation District in 1986.

Table B-1 presents the reach ratios currently applicable to reimbursable capital costs.

Table B-2 presents corresponding ratios for reimbursable minimum OMP&R costs. Requested excess capacity is omitted when deriving ratios in Table B-1 (because the capital costs for the excess capacity are paid on an incremental-cost basis and not a proportionate-use basis) but is accounted for in Table B-2.

Variable OMP&R Costs

Contract Article 26(a) provides that the variable OMP&R component of the Transportation Charge shall return to the State those costs that depend upon and vary with the amount of SWP water delivered. (The minimum OMP&R component returns those operating costs that do not vary with deliveries.) Article 26 (a) explains that all such costs for a reach for a given year shall be allocated among contractors in proportion to the actual annual use of that reach by the respective contractors.

Table B-3 summarizes total variable OMP&R costs for each SWP pumping and powerplant. These variable costs comprise the following:

- 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
- Annual payments to sinking fund reserves to finance periodic replacement of major plant machinery components having economic lives shorter than the Project repayment period. Sinking fund payments for 1962 through 1979 were based upon a schedule determined in 1970. Sinking fund payments for 1980 through 2035 are based upon revised replacement schedules. This schedule was updated in 1986. DWR plans to update the replacement deposit schedule at five-year intervals. Current sinking fund payments are substantially greater than those projected in 1970.

Table B-3 excludes plant capacity and energy costs associated with surplus water service after May 1, 1973. Prior to that date, surplus water service was charged the same unit variable OMP&R component as entitlement water service. The rate structure for surplus water service was significantly changed on May 1, 1973. Since then, capacity and energy costs for pumping surplus water have been allocated directly to those water contractors receiving that water service.

Water Conveyance

Four Appendix B tables present the water conveyance quantities that form the basis of allocation of variable OMP&R costs.

Table B-4 presents the schedules of annual entitlements as set forth in Table A and Article 6(a) of each water supply contract.

Table B-5A shows actual and projected entitlement water quantities delivered from each aqueduct reach to each contractor. Projected deliveries for 1989 through 2035 are based on

contractor requests for future water deliveries. The Table B-5A quantities also include non-Project water delivered to contractors and surplus water deliveries prior to May 1, 1973. (For a comparison of historical deliveries with annual entitlements, see Table 3 in Chapter II.)

Table B-5B presents a summary of actual and projected annual entitlement water quantities delivered or to be delivered to each contractor. The quantities also include non-Project water and surplus water delivered prior to May 1, 1973.

Table B-6 summarizes the annual entitlement water quantities conveyed, or to be conveyed, through each aqueduct pumping plant or powerplant 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 if the deliveries were actually conveyed that year from the Delta. 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 preconsolidation 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; and

- *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 one exception, "Reservoir Storage Changes" also includes SWP water placed into Southern California ground water storage in 1978 through 1982 (as positive amounts), and water withdrawn from storage and delivered to contractors in 1979, 1982, 1987, and 1988 (as negative amounts). The exception is Banks Pumping Plant, where ground water additions and withdrawals are included in "Conservation Water."

In addition, Table B-6 summarizes the following under the heading "Conservation Water" (Column 25):

- Net annual water amounts stored and projected to be stored in San Luis Reservoir; and

- 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 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 the Banks Pumping Plant (a joint transportation-conservation facility) that are allocated to the

Figure B-4. Cost Allocation Factors

Project Facilities	Water Supply and Power Generation		All Other Purposes (Nonreimbursable)	
	Capital Costs	Minimum OMP&R Costs	Capital Costs	Minimum OMP&R Costs
	(in percent)			
PROJECT CONSERVATION FACILITIES				
Frenchman Dam and Lake	21.5	0.0	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

a) Percentages shown are applicable to the remaining costs of the 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 Edward Hyatt and Thermalito powerplants and switchyards.
b) Percentage shown consists of 48.0 percent recreation and 26.8 percent flood control.
c) Percentage shown consists of 44.9 percent recreation and 33.1 percent flood control.

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 the Banks Pumping Plant. This transfer is equal to the variable OMP&R cost per acre-foot of delivery through the 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 non-Project water and surplus water delivered prior to May 1, 1973.

Bases for Reimbursable Costs

This section describes how the costs allocated by the procedures outlined in the preceding section are derived. The cost derivation process is diagrammed in the upper left quadrant of Figure B-1.

First, the capital and OMP&R costs of all SWP facilities are allocated among the various project purposes according to the allocation percentages in Figure B-4. These percentages are subject

to future revision. The redeterminations in this appendix are concerned only with the costs that are allocated to water supply and power generation.

Capital Costs

Capital costs used in the redetermination in this appendix reflect prices prevailing on December 31, 1988; 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.

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- 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 under amendments to contracts with MWDSC, San Gabriel Valley Municipal Water District, and Antelope Valley-East Kern Water Agency as follows:

- Additional costs incurred by the State for requested excess capacity;
- Advances, by water contractors, of funds for such costs; and
- Credits for advances in excess of costs, which were applied to the respective contractors' installments of the capital cost component of the Transportation Charge in 1981.

Under Amendment 2 of MWDSC's contract, 809 cfs of excess capacity originally was constructed in reaches of the West Branch at MWDSC's request. Under Amendment 7, this capacity was reclassified as basic capacity of the SWP transportation facilities. MWDSC 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 MWDSC's contract requires that additional costs for modifications to the Santa Ana Valley Pipeline (required for enlargement of Lake Perris) are to be allocated to MWDSC and returned to the State through payments of the Transportation Charge. The additional costs to be repaid through MWDSC's capital cost component for the aqueduct reach from Devil Canyon Powerplant to Barton Road total about $6.7 million as shown in 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 contractor payments of the capital cost component under the Transportation Charge and of debt service under the Devil Canyon-Castaic Contract.

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.

Table B-11 lists the actual and projected costs to be reimbursed through payments of (1) the minimum OMP&R component under the Transportation Charge, and (2) allocated operating costs under the Devil Canyon-Castaic Contract. Table B-11 includes the following types of operating costs, which are considered to be incurred in annual amounts that do not vary with the water quantities delivered to the contractors:

- All direct labor charges for field operation and maintenance personnel, including associated indirect costs;
- A distributed share of general operating costs that cannot be identified solely with one facility or aqueduct reach;
- Electric power transmission and station service costs allocable to aqueduct pumping and power recovery plants;

- All costs for equipment, materials, and supplies and for replacement of electronic control systems;

- Portions of the power and replacement costs of all up-aqueduct pumping and powerplants that are allocable to the annual conveyance of water (1) lost to evaporation and seepage from respective aqueduct reaches, or (2) placed into storage in respective reservoirs of the Project Transportation Facilities (after initial fill);

- Credits, which offset those costs in (2) above, for deliveries drawn from reservoir storage; and

- Escalation of projected operating costs at 6 percent per year for 1989, 4 percent for 1990, and 5 percent for 1991.

Table B-12 shows the portions of the variable OMP&R costs in Table B-3 that are allocable to the water supply delivery quantities shown in Table B-6 and reimbursed through payments of the variable OMP&R component of the Transportation Charge. The following adjustments are made to the Table B-3 costs to derive the Table B-12 costs:

- A portion 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 recreation developments.

- 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.

- 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.

- 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. The unit cost is equal to the variable OMP&R unit rate for the year the water is conveyed into storage. 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.

Table B-13 summarizes actual and projected capital and operating costs of the initial Project Conservation Facilities to be reimbursed through payments under (1) the Delta Water Charge, (2) Oroville power sales, and (3) Gianelli Pumping-Generating Plant credits. Included in Table B-13 are credits applied to the reimbursable capital costs of the Project Conservation Facilities pursuant to negotiated settlements concerning the magnitude of incurred planning costs for the period 1952 through 1978.

Project Water Charges

This section summarizes the redetermination of past and projected components of the Transportation Charge for annual revision of Tables C through G of each water contract. This section also includes the Water System Revenue Bond Surcharge and describes derivation of the unit Delta Water Rates. Equivalent unit charges for each acre-foot of entitlement water service are also summarized herein for each contractor and each aqueduct reach. All of these calculations are diagrammed in the lower half of Figure B-1.

Transportation Charges

The accumulation of allocated costs of each aqueduct reach to each contractor forms the basis for the annual components of the Transportation Charge.

Table B-14 summarizes each contractor's share of the capital costs of aqueduct reaches presented in Table B-10. These amounts are determined by applying proportionate-use ratios set forth in Table B-1 to the costs shown 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 MWDSC's Amendment 7, are included as negative capital costs in Table B-14 and in Table C of MWDSC's statement of charges for 1990. Empire West Side Irrigation District and Devil's Den Water District also prepaid capital costs (see Table B-14 footnotes).

Both Table B-14 and Table C of the six contracts for Project water service below Devil Canyon and Castaic powerplants include the capital costs reimbursable under the Devil Canyon-Castaic Contract.

Table B-15 summarizes the capital cost components of the Transportation Charge for each contractor for each year of the Project repayment period, based upon the amortization schedules shown in Figure B-5 and determined at the current Project Interest Rate of 4.713 percent per annum. These estimated components, subsequently adjusted for prior overpayments or underpayments, are set forth in Table D of the respective 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 under the Devil Canyon-Castaic Contract for the six contractors down-aqueduct from Devil Canyon and Castaic powerplants.

Table B-16A summarizes the minimum OMP&R components of the Transportation Charge for each year of the Project repayment period. These estimated components, subsequently adjusted for prior overpayments or underpayments, are set forth in Table E of the respective contracts. The total amounts shown in Table B-16A are determined by applying the proportionate-use ratios in Table B-2 to the reach costs presented in Table B-11. Table B-16A excludes charges for Off-Aqueduct Power Facilities, which are shown separately in Table B-16B.

Both Table B-16A and Table E for the six contractors down-aqueduct from Devil Canyon and Castaic powerplants include the portion of operating costs payable under the Devil Canyon-Castaic Contract.

Under operating agreements with DWR, Kern County Water Agency is billed for any additional operating costs caused by early installation of units by Berrenda Mesa Water District in Las Perillas and Badger Hill pumping plants (see Bulletin 132-71, page 7). Under these agreements, the following minimum OMP&R costs of Reach 31A are assigned directly to KCWA, with the remaining reach costs allocated by application of the proportionate-use ratios:

Year	Direct Charge	Year	Direct Charge
1969	$ 46,510	1981	$ 74,759
1970	46,302	1982	82,692
1971	140,072	1983	89,945
1972	95,016	1984	107,516
1973	72,452	1985	158,784
1974	100,688	1986	136,821
1975	127,456	1987	127,701
1976	138,500	1988	127,625
1977	120,749	1989	164,783
1978	159,728	1990	182,313
1979	121,207	1991	190,548
1980	150,715	1992	193,891
		1993	195,058
		1994	196,211
Total			$ 3,348,042

Table B-16B projects the annual charges for Off-Aqueduct Power Facilities allocated to each water contractor, adjusted for prior overpayments or underpayments of charges. These charges are to repay all Off-Aqueduct power costs including bond service, deposits for reserves, operation and maintenance costs, fuel costs, taxes, and insurance. The General Bond Resolution, adopted October 1, 1979, requires that sufficient revenues be collected each year to repay all of these 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 and not needed during the year are refunded to the contractors in the next year.

The following tabulation summarizes Off-Aqueduct Power Facility charges for 1988. The net charges for 1988 are allocated among contractors as shown in Table B-16B.

Figure B-5. Criteria for Amortization of 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
Devil's Den Water District	1968	(e
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	
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 Gorgonio 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	(f
Santa Clara Valley Water District	1963	
Solano County Flood Control and Water Conservation District	1973	
The Metropolitan Water District of Southern California	1963	
Tulare Lake Basin Water Conservation District	1968	(e
Ventura County Flood Control District	1964	

a) Allocated capital costs of transportation facilities are amortized in equal annual installments, unless otherwise noted.

b) Principal payments on each annual capital cost prior to 1971 delayed until calendar year 1972, except payments for 1963.

c) Payments on Delta Water Charge only.

d) Deferred and added to 1964 payment with accrued interest.

e) Under Article 45 of the contracts for supply of agricultural water, capital costs of transportation facilities allocated to agricultural water supply are amortized via an equivalent unit rate per acre-foot applied to the annual entitlements (Table B-4) through the Project repayment period.

f) Exception: all principal and interest payments for costs of "Coastal Stub" were deferred until 1976.

Item	1988
Charges	($)
Reid Gardner	87,721,647
Bottle Rock	18,854,937
South Geysers	6,181,846
Subtotal	112,758,430
Credits	($)
Off-Aqueduct Power Sales	3,842,381
Net Charges	**108,916,049**

The following tabulation shows projected charges for Off-Aqueduct Power Facilities and an amount equal to 25 percent of annual bond service for 1989 and each year thereafter.

Year	Total Annual Cost	25% Bond Service
1989	108,448,554	13,724,834
1990	128,917,871	13,997,784
1991	130,122,260	14,001,030
1992	135,302,249	14,012,274
1993	134,319,469	14,011,942
1994	130,295,011	14,010,825
1995	134,299,438	14,007,934
1996	134,273,635	14,006,550
1997	134,307,233	14,009,493
1998	131,836,881	14,003,978
1999	123,443,750	14,005,038
2000	120,894,125	14,002,433
2001	116,583,303	14,000,116
2002	111,236,735	13,998,284
2003	105,806,327	14,012,215
2004	98,470,269	14,012,452
2005	95,030,201	14,004,618
2006	89,759,837	14,018,362
2007	84,235,750	14,013,895
2008	79,882,780	14,011,293
2009	72,539,474	14,003,157
2010	68,991,034	14,001,637
2011	63,698,782	14,003,891
2012	58,493,733	14,071,229
2013	21,168,088	5,019,474
2014	35,763,317	5,040,725
2015	11,444,574	2,012,846
2016	5,530,480	1,106,095
2017	2,495,497	499,100
2018	2,499,541	499,909

The annual charges for Off-Aqueduct Power Facilities are allocated among contractors in proportion to the electrical energy required to pump entitlement water for the year. The initial allocation for the statements of charges is based upon estimates of energy to pump requested entitlement water deliveries. An interim adjustment in the allocation of power costs may be made in May of each year based upon April revisions in water delivery schedules for annual entitlement and updated cost estimates. A further adjustment is made the following year based upon actual entitlement water deliveries and actual costs for the year.

The energy required to pump each contractor's entitlement water is calculated using the following kWh/acre-foot factors for the pumping plants upstream from the delivery turnout.

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 powerplant for each year of the Project repayment period. These data are derived pursuant to Article 26(a) of the Standard Provisions, which specifies the following procedure for calculating the variable OMP&R component of the Transportation Charge:

- An annual charge per acre-foot of projected water deliveries to all contractors served from or through each reach is determined so 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 to the contractor downstream of the reach.

The data summarized in Table B-17 have been 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). These costs are excluded from the unit charges shown in Table B-17. Extra peaking charges for additional power capacity are shown below:

Pumping Plant	kWh per acre-foot (1	
	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
Las Perillas	77	511
Badger Hill	200	711
Buena Vista	242	676
Wheeler Ridge	295	971
Chrisman	639	1,610
Edmonston	2,236	3,846
Pearblossom	703	4,444
Oso	280	4,126

1) Includes transmission losses.

The unit rates shown in Table B-17 constitute the rate for the indicated pumping plants and powerplants. The cumulative rates shown constitute the total rate, cumulative from the Sacramento-San Joaquin Delta, and are applicable to deliveries from or downstream of the indicated pumping plants and powerplants. 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 shown in Table B-17 and the delivery quantities for each contractor from each reach as shown in Table B-5A, plus any costs for extra peaking service. These estimated components, subsequently adjusted for prior overpayments or underpayments, are set forth in Table F of the respective water supply contracts.

Table B-19 summarizes the annual Transportation Charges for each contractor (the sums of the corresponding amounts shown in Tables B-15, B-16A, B-16B, and B-18). These estimated 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 and Castaic powerplants include debt service and operating cost payments due under the Devil Canyon-Castaic Contract.

Delta Water Charges

Table B-20A shows the calculation of the Delta Water Rate for the "initial" conservation facilities applicable in 1990, in accordance with the amended Articles 22(e) and 22(g) of all 30 contracts. The top part of the table shows the calculation of the Delta Water Rate at a Project Interest Rate of 4.713 percent. This Delta Water Rate is used to compute future Delta Water Charges shown in Table B-21 for the 29 long-term water supply contractors who have signed an amendment to exclude interest costs from sale of water system revenue bonds from the Project Interest Rate. One Contractor (City of Yuba City) has not signed the Water System Revenue Bond Amendment to exclude interest costs from sale of water system revenue bonds. The Delta Water Rate and future Delta Water Charges to Yuba City in this appendix are based on a Project Interest Rate of 5.027 percent, which reflects the interest costs of the Water System Revenue Bonds, Series A, B, and D.

Table B-20B shows each component of the 1990 Delta Water Rates from Table B-20A.

Table B-21 summarizes the annual Delta Water Charge for each contractor. Table B-21 is developed by application of the total rate per acre-foot, as shown in Table B-20A, to the entitlement water for each contractor as shown in Table B-4.

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 E. This surcharge is in accordance with an amendment to the water supply contracts to provide for repayment of Water System Revenue Bond financing costs. All long-term water supply contractors except the City of Yuba City have signed this amendment.

Total Water Charges

Table B-23 summarizes 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 are unadjusted for prior overpayments or underpayments. The total Transportation Charge and Delta Water Charge for each contractor are detailed in Tables B-19 and B-21, respectively.

Equivalent Total Water Charges

Table B-24 presents the Transportation and Delta Water Charges in terms of the equivalent unit charge for each acre-foot of entitlement water now estimated to be delivered to the respective contractors. These equivalent charges, if applied to each acre-foot of entitlement water delivered to date, all surplus water delivered prior to May 1, 1973, and all entitlement water now estimated to be delivered during the remainder of the Project repayment period (Table B-5B), would provide the same principal sum at the end of the Project repayment period as annual payments to be made under the Delta Water Charge and Transportation Charge, plus interest at the Project Interest Rate. The Table B-24 equivalent unit Delta Water Charges are greater than those in Table B-20A because current estimates of entitlement water service are appreciably less than the amounts shown in Table A for most contractors.

Equivalent Water Costs by Reach

Table B-25 presents a summary of the equivalent unit transportation cost of conveying entitlement water through respective aqueduct reaches of the Project Transportation Facilities. These unit costs provide the basis of charges assessed (1) for "extra service" (such as for delivery of entitlements down-aqueduct from a contractor's turnout), (2) together with the Delta Water Charge per acre-foot, for surplus water service to entities other than the 30 long-term water supply contractors, and for (3) "wheeling service" to entities other than the long-term water supply contractors. A discussion of wheeling services in the California Aqueduct follows at the end of this Appendix B text.

The cumulative unit conveyance costs shown for reaches in Table B-25 do not necessarily equal the equivalent unit Transportation Charges to contractors served from such reaches. This is because the unit charges of Table B-24 account for the rate of water demand buildup and cost allocation factors of the individual contractors, whereas the unit costs of Table B-25 meld the effect of the respective buildups and allocation criteria of all contractors whose entitlements are conveyed through a given reach. Table B-25 also includes surplus water prior to May 1, 1983. Table B-25 does not include the unit costs of conservation and Water System Revenue Bond financing costs shown in Table B-22.

East Branch Enlargement Facility Charges

Table B-26 presents DWR's projection of annual capital costs of the East Branch Enlargement facilities for each aqueduct reach. These projections will be redetermined in future bulletins to include:

- A reallocation of costs of constructing the present East Branch facilities between Alamo Powerplant 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 through payments by the seven Southern California water contractors participating in the enlargement, in accordance with their amended water supply contracts (Figure B-6).

Table B-27 lists the projected minimum OMP&R costs for each reach of the enlargement to be repaid by the seven Southern California contractors participating in the East Branch Enlargement.

Currently, this table shows only the estimated incremental minimum OMP&R costs attributable to the East Branch Enlargement. Under Article

Figure B-6. Determination of Factors for Distributing Capital and Minimum OMP&R Costs of East Branch Enlargement Facilities among Participating Contractors

REACH NO.	DESCRIPTION
18A	Junction, West Branch California Aqueduct through Alamo Powerplant
19	Alamo Powerplant 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 Powerplant Facilities)
23C	Mojave Siphon Powerplant 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 Powerplant
26B	Devil Canyon Powerplant Bypass

SHARE OF ENLARGEMENT CAPACITY (cfs)

Reach No.	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		1200	1506
19		151	13	136	6		1200	1506
20A	35	151	13	136	6		1200	1541
20B	35	151	13	136	6		1200	1541
21	35	151	13	136			1200	1535
22A	35	151	13	136			1200	1535
22B		151	13	136			1200	1500
23B		184	67	212			1200	1663
23C		184	67				1200	1451
24		190	78				1200	1468
25		193	83			63	1200	1539
26A		193	83			63	1200	1539
26B							300	300

FACTORS FOR DISTRIBUTING CAPITAL AND MINIMUM OMP&R COSTS OF EAST BRANCH ENLARGEMENT FACILITIES (FLOW RATIOS)

Reach No.	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

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 DWR 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 shown in Table B-11.

Table B-28 summarizes each contractor's share of the estimated capital costs of the East Branch Enlargement.

Table B-29 summarizes the annual capital cost components of the East Branch Enlargement Transportation Charge for each participating contractor.

Table B-30 summarizes the minimum OMP&R components of the East Branch Enlargement Transportation Charge for each participating contractor for each year of the Project repayment period.

Table B-31 summarizes the annual East Branch Enlargement Transportation charges for each participating contractor (the sums of the corresponding amounts shown in Tables B-29 and B-30).

Surplus Water Service

Surplus water has been delivered from 1968 through 1986, except during the drought years of 1977 and 1988.

Table B-32 shows the quantities of surplus water delivered to long-term contractors during the period of May 1, 1973 through December 31, 1988.

Table B-33 shows the costs for power that have been incurred by the State at each pumping plant associated with surplus water deliveries shown in Table B-32.

Table B-34 shows the actual charges to each contractor for delivery of the surplus water quantities shown in Table B-32. The method of determining these charges is discussed in Bulletin 132-77, page 117.

Wheeling Services in the California Aqueduct

When the SWP has additional capability to move non-Project water through the California Aqueduct, services can include pumping, transportation (wheeling) and, if needed, storage in San Luis Reservoir. Through separate annual agreements, the SWP has provided wheeling to temporary federal water contractors, with the CVP providing the water and electrical power. In 1975, 20-year wheeling agreements were signed that provide for wheeling CVP water through SWP facilities to the Cross Valley Canal in Kern County. Additional agreements provide for storage, generally in cases when water cannot be wheeled directly to the user on a demand basis.

Wheeling and storage rates are developed for the most part from information shown in Appendix B. Wheeling rates are calculated from the Appendix B tables used in developing contractor charges for the year the water is wheeled. For example, wheeling rates for 1990 were developed from Appendix B tables in Bulletin 132-89.

Annual wheeling rates are developed from four sources:

- *Table B-25:* capital and minimum OMP&R equivalent unit transportation costs of water for the aqueduct reaches used;

- *Table B-20B:* that portion of the Delta Water Rate associated with capital and minimum costs of California Aqueduct reaches 1, 2A, 2B, and 3. For SWP purposes, a portion of costs for these reaches is allocated to SWP contractors as part of the Delta Water Rate. These costs are added to wheeling rates because they reflect the total costs of constructing and maintaining these reaches, irrespective of the SWP repayment system;

- *Variable replacement costs:* DWR charges a fixed rate for every acre-foot of water going through SWP pumping plants to provide funds for eventual replacement of equipment. Wheeling is through the Banks Pumping Plant and sometimes through the Dos Amigos Pumping Plant. For 1990, the rates for each plant, respectively, are $0.24 and $0.26. These rates are revised periodically; and

- *Fish agreement costs:* On December 30, 1986, DWR and the Department of Fish and Game entered into an agreement to provide a means to offset specific fish losses at the Banks Pumping Plant. Specific fish losses are calculated each year; these calculations are used to develop payment amounts for a fund to pay fishery program costs. These costs are then recalculated on an acre-foot basis by DWR, and reallocated to water users based on acre-feet of pumped water. Wheeling charges are based on estimates of the maximum likely fish losses associated with pumping in the Delta during the year.

During May, June, and July, the SWP operates under Delta export limitations as a condition of SWP water right permits. When deliveries from the California Aqueduct are requested during key summer months, some of the Cross Valley Canal Agreement or annual wheeling contractors may want to use water stored in the SWP share of San Luis Reservoir.

Advance deliveries are made from SWP water stored in San Luis Reservoir provided that the USBR agrees to replace the water later in the year. The San Luis Reservoir use charge is equal to the San Luis Reservoir portion of the Delta Water Rate as shown in Table B-20B, plus the estimated value of the net energy costs to replace water in the San Luis Reservoir.

For 1990, the basic wheeling charge to Reach 12E and to Reach 31A is shown in the following table:

Year	Agency(1	Pumping Plant	
		Dos Amigos ($)	Las Perillas and Badger Hill ($)
1972	KCWA	9,553	24,700
	TLBWSD	10	-
1973	KCWA	-	6,016
1974	KCWA	-	7,140
1975	KCWA	494	6,397
1976	KCWA	-	1,981
1978	KCWA	41,832	3,772
	DRWD	2,086	-
	Kings	43	-
	AVEKWA	2,322	-
1979	KCWA	-	3,245

1) KCWA = Kern County Water Agency
TLBWSD = Tulare Lake Basin W.S.D.
DRWD = Dudley Ridge Water District
Kings = County of Kings
AVEKWA = Antelope Valley-East Kern W.A.

These rates do not include charges for the following items and may increase, as necessary, due to:

- An annual minimum use-of-facility charge of $1,000 levied to assure the recovery of costs associated with implementation and administration of these wheeling contracts during 1989. The minimum fee will be applied to the first $1,000 of use-of-facilities charges incurred as a result of water delivered;

- A charge for the proportionate share of the costs to offset direct fish losses associated with SWP pumping at the Banks Pumping Plant, determined by DWR. For monthly billing purposes an estimate of $1 per acre-foot is used;

- A charge of $6.02 per acre-foot for use of the State's share of San Luis Reservoir, if releases from the State's share of the reservoir are required;

- Any identified increase in the cost of power operations as a result of the use of the State's share of the San Luis Reservoir, if releases from the State's share of the reservoir are

required during the May, June, and July pumping curtailment;

- Any identified increase in power operations as a result of the use of the State's share of San Luis Reservoir;

- Additional power scheduling and transmission charges if water is wheeled through Las Perillas Pumping Plant; and

- Any other identified increase in cost that would otherwise have to be borne by the SWP contractors as a result of the wheeling.

Surplus Water and Unscheduled Water Administrative Charges

The costs associated with administering the surplus and unscheduled water programs are divided into five categories and updated annually. Both programs are administered separately. The categories are as follows:

- *Category 1 - Setup Costs:* activities include setting up the initial surplus or unscheduled water program, receiving and verifying surplus water requests, preparing annual surplus or unscheduled water contracts, and determining surplus water availability.

- *Category 2 - Costs Determination:* activities include either preparing letters notifying all surplus water contractors, or verbally notifying all unscheduled water contractors of the maximum charge for water each month and determining final delivery amounts and charges.

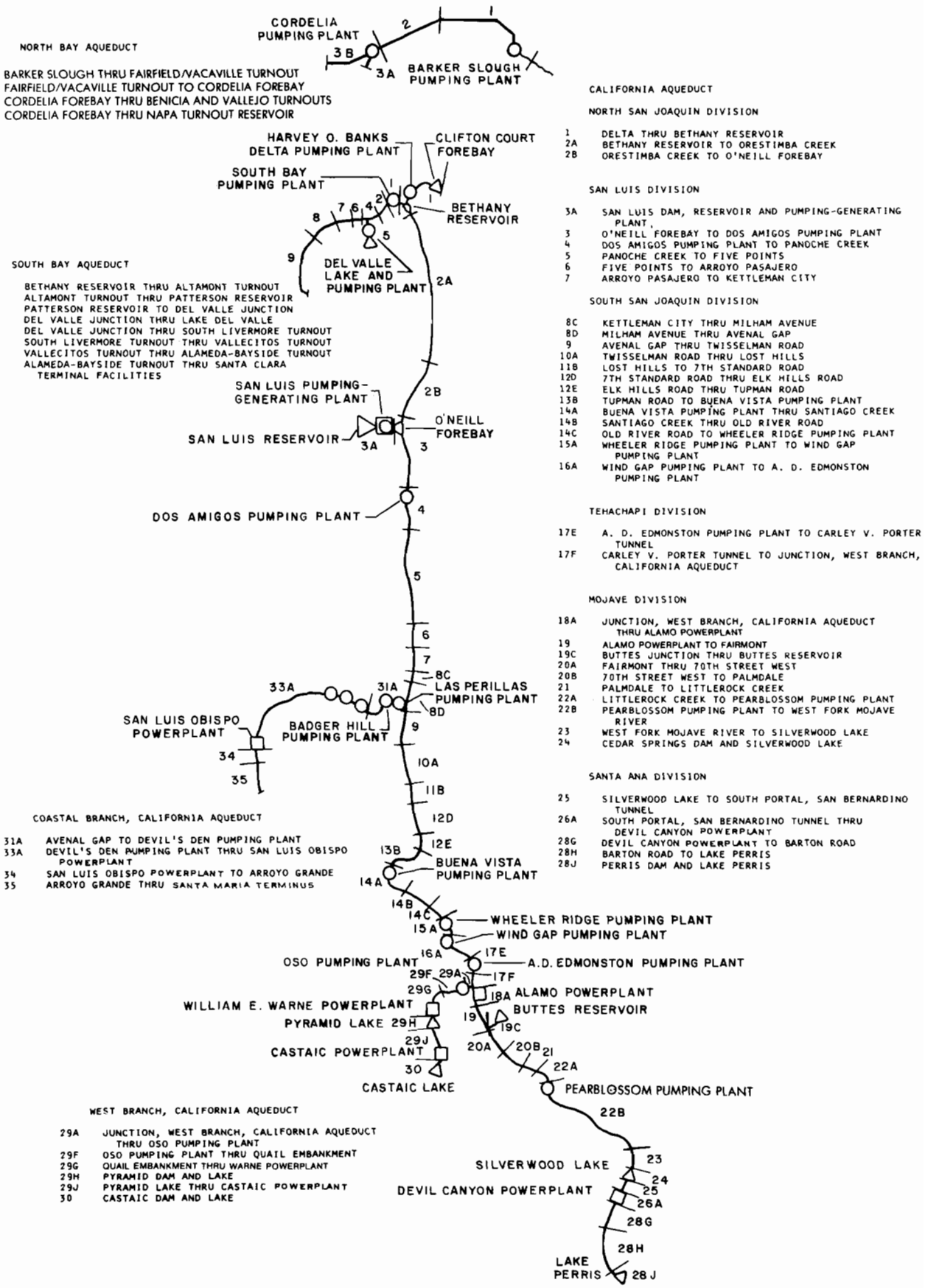
- *Category 3 - Schedule Revision Costs:* this is applicable to the surplus water program only. Activities include analyzing revised operation studies and preparing revised delivery schedules.

- *Category 4 - Delivery Billing Costs:* activities include analyzing delivery data from O&M field divisions, updating data summaries, and preparing monthly bills. The multiple scheduling each month for unscheduled water is included in the delivery billing costs.

- *Category 5 - Computer Program Development Costs:* activities include developing computer programs to allocate available surplus or unscheduled water among contractors and determining the power charge for pumping surplus or unscheduled water. These costs are not incurred annually.

Figure B-7. Repayment Reaches and Descriptions

PROJECT TRANSPORTATION FACILITIES



NORTH BAY AQUEDUCT

1 BARKER SLOUGH THRU FAIRFIELD/VACAVILLE TURNOUT
2 FAIRFIELD/VACAVILLE TURNOUT TO CORDELIA FOREBAY
3A CORDELIA FOREBAY THRU BENICIA AND VALLEJO TURNOUTS
3B CORDELIA FOREBAY THRU NAPA TURNOUT RESERVOIR

SOUTH BAY AQUEDUCT

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

COASTAL BRANCH, CALIFORNIA AQUEDUCT

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

WEST BRANCH, CALIFORNIA AQUEDUCT

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

CALIFORNIA AQUEDUCT

NORTH SAN JOAQUIN DIVISION

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

SAN LUIS DIVISION

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

SOUTH SAN JOAQUIN DIVISION

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

TEHACHAPI DIVISION

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

MOJAVE DIVISION

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

SANTA ANA DIVISION

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

Tables B-1 through B-34 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 FC&WCD	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	0.29667895	0.70332105					1.00000000
2	Fairfield/Vacaville Turnout to Cordelia Forebay	0.38414551	0.61585449					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	0.20663022	0.49237698	0.07499668	1.00000000
2	Altamont Turnout thru Patterson Reservoir			0.22599657	0.20663060	0.49237783	0.07499500	1.00000000
4	Patterson Reservoir to Del Valle Junction			0.19504794	0.21450018	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			0.00954802	0.00872977	0.02080260	0.00342519	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	0.00533047	0.00983404	0.02939503	0.00890866	0.00528393	0.00133628	0.00871425
2A	Bethany Reservoir to Orestimba Creek	0.00557252	0.01028060	0.03072975	0.00931319	0.00552151	0.00139638	0.00910607
2B	Orestimba Creek to O'Neill Forebay	0.00557864	0.01029191	0.03076360	0.00932344	0.00552915	0.00139831	0.00911867
3	O'Neill Forebay to Dos Amigos Pumping Plant	0.00557758	0.01028995	0.03075777	0.00932168	0.00552856	0.00139816	0.00911771
4	Dos Amigos Pumping Plant to Panoche Creek	0.00557646	0.01028790	0.03075165	0.00931982	0.00552794	0.00139801	0.00911670
5	Panoche Creek to Five Points	0.00557506	0.01028534	0.03074401	0.00931751	0.00552717	0.00139781	0.00911543
6	Five Points to Arroyo Pasajero	0.00557297	0.01028147	0.03073244	0.00931400	0.00552602	0.00139750	0.00911351
7	Arroyo Pasajero to Kettleman City	0.00557229	0.01028022	0.03072873	0.00931287	0.00552565	0.00139740	0.00911289
8C	Kettleman City thru Milham Avenue	0.00557143	0.01027864	0.03072405	0.00931145	0.00552517	0.00139729	0.00911211
8D	Milham Avenue thru Avenal Gap	0.00568653	0.01049097	0.03135878	0.00950380	0.00564073	0.00142650	0.00930269
9	Avenal Gap thru Twisselman Road			0.03437577	0.01041812	0.00618845	0.00156502	0.01020599
10A	Twisselman Road thru Lost Hills			0.03492681	0.01058510	0.00628966	0.00159061	0.01037292
11B	Lost Hills to 7th Standard Road			0.03848657	0.01166387	0.00694140	0.00175542	0.01144773
12D	7th Standard Road thru Elk Hills Road			0.04046660	0.01226391	0.00730484	0.00184732	0.01204709
12E	Elk Hills Road thru Tupman Road			0.04052108	0.01228043	0.00731580	0.00185010	0.01206514
13B	Tupman Road to Buena Vista Pumping Plant			0.04397523	0.01332721	0.00794772	0.00200992	0.01310729
14A	Buena Vista Pumping Plant thru Santiago Creek			0.04618687	0.01399742	0.00835456	0.00211281	0.01377821
14B	Santiago Creek thru Old River Road			0.04702647	0.01425185	0.00851020	0.00215219	0.01403490
14C	Old River Road to Wheeler Ridge Pumping Plant			0.04846556	0.01468794	0.00877627	0.00221947	0.01447369
15A	Wheeler Ridge Pumping Plant to Chrisman Pumping Plant			0.04927653	0.01493368	0.00892667	0.00225752	0.01472172
16A	Chrisman Pumping Plant to Edmonston Pumping Plant			0.05113509	0.01549688	0.00927017	0.00234438	0.01528821
17E	Edmonston Pumping Plant to Porter Tunnel			0.05355379	0.01622984	0.00971819	0.00245767	0.01602709
17F	Porter Tunnel to Junction, West Branch, Calif. Aqueduct			0.05366827	0.01626453	0.00973908	0.00246295	0.01606154
18A	Junction, West Branch, Calif. Aqueduct thru Alamo Pwp.			0.13238112		0.02399390	0.00606795	0.03957043
19	Alamo Powerplant to Fairmont			0.13237766		0.02399451	0.00606811	0.03957141
19C	Buttes Junction thru Buttes Reservoir			1.00000000				
20A	Fairmont thru 70th Street West			0.06847930		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 Powerplant to Barton Road							
28H	Barton Road to Lake Perris							
28J	Perris Dam and Lake Perris							
29A	Junction, West Branch, Calif. Aqueduct thru Oso P. P.				0.02736564			
29F	Oso Pumping Plant thru Quail Embankment				0.02736563			
29G	Quail Embankment thru Warne Powerplant				0.02736564			
29H	Pyramid Dam and Lake				0.02646380			
29J	Pyramid Lake thru Castaic Powerplant				0.02736563			
30	Castaic Dam and Lake				0.02637131			
31A	Avenal Gap to Devil's Den Pumping Plant	0.10560302	0.19482503					
33A	Devil's Den Pumping Plant thru San Luis Obispo Powerplant	0.35150790	0.64849210					
34	San Luis Obispo Powerplant to Arroyo Grande	0.24688802	0.75311198					
35	Arroyo Grande thru Santa Maria Terminus	0.18022524	0.81977476					

TABLE B-1. Factors for Distributing Reach Capital Costs among Contractors

Reach No.	SAN JOAQUIN VALLEY AREA								
	Devil's Den Water District	Dudley Ridge Water District	Empire West Side Irrigation District	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	0.00377824	0.01707931	0.00088687	0.00254710	0.02742073	0.30633442	0.00090702	0.00167139	0.03505306
2A	0.00394038	0.01781205	0.00092491	0.00266276	0.02864588	0.31948963	0.00094755	0.00174305	0.03655686
2B	0.00395099	0.01786013	0.00092740	0.00266569	0.02869070	0.32034362	0.00094904		0.03665560
3	0.00395208	0.01786513	0.00092766	0.00266517	0.02868917	0.32043064	0.00094899		0.03666585
4	0.00395323	0.01787039	0.00092794	0.00266463	0.02868756	0.32052214	0.00094893		0.03667664
5	0.00395466	0.01787694	0.00092828	0.00266396	0.02868556	0.32063639	0.00094886		0.03669011
6	0.00395684	0.01788685	0.00092879	0.00266296	0.02868253	0.32080926	0.00094875		0.03671048
7	0.00395753	0.01789003	0.00092896	0.00266264	0.02868156	0.32086471	0.00094872		0.03671701
8C	0.00395842	0.01789405	0.00092918	0.00266223	0.02868032	0.32093468	0.00094867		0.03672526
8D	0.00404591	0.01828966		0.00271722	0.02928492	0.32802221			0.01821042
9					0.03214521	0.32838224			
10A					0.03267760	0.31755652			
11B					0.03609912	0.24768443			
12D					0.03801001	0.20879251			
12E					0.03807068	0.20769413			
13B					0.01464596	0.16664965			
14A					0.00622935	0.13374077			
14B					0.00634719	0.11790931			
14C					0.00654829	0.09078926			
15A					0.00666217	0.07549599			
16A					0.00692172	0.04047416			
17E					0.00213551				
31A	0.07364766			0.05046239		0.57546190			

Reach No.	SOUTHERN CALIFORNIA AREA (continued)								Total
	Littlerock Creek Irrigation District	Mojave Water Agency	Palmdale Water District	San Bernardino Municipal Water District	San Gabriel Valley Municipal Water District	San Gorgonio Pass Water Agency	The Metropolitan Water District of Southern California	Ventura County Flood Control District	
1	0.00049187	0.01101303	0.00369180	0.02363192	0.00650449	0.00398446	0.43940271	0.00429334	1.00000000
2A	0.00051421	0.01151300	0.00385943	0.02469456	0.00679800	0.00416362	0.45932579	0.00448830	1.00000000
2B	0.00051477	0.01152575	0.00386368	0.02472869	0.00680672	0.00416938	0.45985088	0.00449324	1.00000000
3	0.00051469	0.01152359	0.00386296	0.02472605	0.00680580	0.00416893	0.45976950	0.00449238	1.00000000
4	0.00051459	0.01152131	0.00386218	0.02472327	0.00680482	0.00416846	0.45968394	0.00449149	1.00000000
5	0.00051448	0.01151846	0.00386122	0.02471980	0.00680361	0.00416788	0.45957709	0.00449037	1.00000000
6	0.00051427	0.01151416	0.00385978	0.02471455	0.00680178	0.00416698	0.45941542	0.00448869	1.00000000
7	0.00051421	0.01151278	0.00385931	0.02471286	0.00680118	0.00416671	0.45936358	0.00448816	1.00000000
8C	0.00051414	0.01151103	0.00385874	0.02471073	0.00680044	0.00416634	0.45929816	0.00448747	1.00000000
8D	0.00052475	0.01174889	0.00393847	0.02522753	0.00694206	0.00425349	0.46880430	0.00458017	1.00000000
9	0.00057523	0.01287942	0.00431739	0.02767698	0.00761389	0.00466647	0.51396901	0.00502081	1.00000000
10A	0.00058444	0.01308595	0.00438660	0.02812958	0.00773752	0.00474279	0.52223261	0.00510129	1.00000000
11B	0.00064401	0.01442004	0.00483371	0.03104405	0.00853455	0.00523416	0.57558975	0.00562119	1.00000000
12D	0.00067713	0.01516215	0.00508241	0.03266922	0.00897859	0.00550818	0.60527969	0.00591035	1.00000000
12E	0.00067804	0.01518261	0.00508926	0.03271816	0.00899156	0.00551643	0.60610827	0.00591831	1.00000000
13B	0.00073586	0.01647710	0.00552311	0.03554404	0.00976456	0.00599288	0.65787670	0.00642277	1.00000000
14A	0.00077287	0.01730602	0.00580090	0.03736329	0.01026124	0.00629961	0.69105032	0.00674576	1.00000000
14B	0.00078692	0.01762073	0.00590636	0.03805925	0.01045073	0.00641694	0.70365858	0.00686838	1.00000000
14C	0.00081102	0.01816015	0.00608712	0.03924904	0.01077498	0.00661755	0.72526113	0.00707853	1.00000000
15A	0.00082461	0.01846415	0.00618901	0.03992156	0.01095807	0.00673092	0.73744044	0.00719696	1.00000000
16A	0.00085571	0.01916080	0.00642247	0.04145755	0.01137675	0.00698987	0.76533786	0.00746838	1.00000000
17E	0.00089617	0.02006742	0.00672629	0.04346097	0.01192239	0.00732766	0.80165539	0.00782162	1.00000000
17F	0.00089809	0.02011032	0.00674067	0.04355439	0.01194796	0.00734341	0.80337045	0.00783834	1.00000000
18A	0.00221525	0.04960424	0.01662681	0.10730448	0.02944860	0.01809191	0.57469531		1.00000000
19	0.00221522	0.04960300	0.01662640	0.10730707	0.02944876	0.01809229	0.57469557		1.00000000
19C									1.00000000
20A	0.00237800	0.05324853	0.01784830	0.11522152	0.03161799	0.01942666	0.61700971		1.00000000
20B	0.00249470	0.05586075	0.01872390	0.12087843	0.03316986	0.02038045	0.64729088		1.00000000
21	0.00254199	0.05692052		0.12319480	0.03380324	0.02077093	0.65963498		1.00000000
22A		0.05773081		0.12495766	0.03428605	0.02106816	0.66905054		1.00000000
22B		0.05842135		0.12645207	0.03469614	0.02132008	0.67705257		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							0.95944607	0.01318829	1.00000000
29F							0.95944608	0.01318829	1.00000000
29G							0.95944609	0.01318827	1.00000000
29H							0.96446829	0.00906791	1.00000000
29J							0.95944608	0.01318829	1.00000000
30							0.96499830	0.00863039	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 FC&WCD	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	0.27960540	0.72039460					1.00000000
2	Fairfield/Vacaville Turnout to Cordelia Forebay	0.38414551	0.61585449					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	0.20663022	0.49237698	0.07499668	1.00000000
2	Altamont Turnout thru Patterson Reservoir			0.22599657	0.20663060	0.49237783	0.07499500	1.00000000
4	Patterson Reservoir to Del Valle Junction			0.19504794	0.21450018	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			0.00954802	0.00872977	0.02080260	0.00342519	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	0.00533047	0.00983404	0.02939503	0.00890866	0.00528393	0.00133628	0.00871425
2A	Bethany Reservoir to Orestimba Creek	0.00557252	0.01028060	0.03072975	0.00931319	0.00552151	0.00139638	0.00910607
2B	Orestimba Creek to O'Neill Forebay	0.00557864	0.01029191	0.03076360	0.00932344	0.00552915	0.00139831	0.00911867
3	O'Neill Forebay to Dos Amigos Pumping Plant	0.00557758	0.01028995	0.03075777	0.00932168	0.00552856	0.00139816	0.00911771
4	Dos Amigos Pumping Plant to Panoche Creek	0.00557646	0.01028790	0.03075165	0.00931982	0.00552794	0.00139801	0.00911670
5	Panoche Creek to Five Points	0.00557506	0.01028534	0.03074401	0.00931751	0.00552717	0.00139781	0.00911543
6	Five Points to Arroyo Pasajero	0.00557297	0.01028147	0.03073244	0.00931400	0.00552602	0.00139750	0.00911351
7	Arroyo Pasajero to Kettleman City	0.00557229	0.01028022	0.03072873	0.00931287	0.00552565	0.00139740	0.00911289
8C	Kettleman City thru Milham Avenue	0.00551634	0.01017702	0.03042012	0.00921937	0.00546665	0.00138249	0.00901561
8D	Milham Avenue thru Avenal Gap	0.00562864	0.01038416	0.03103938	0.00940703	0.00557923	0.00141095	0.00920128
9	Avenal Gap thru Twisselman Road			0.03398204	0.01029883	0.00611262	0.00154585	0.01008095
10A	Twisselman Road thru Lost Hills			0.03451663	0.01046082	0.00621065	0.00157063	0.01024262
11B	Lost Hills to 7th Standard Road			0.03796305	0.01150525	0.00684053	0.00172992	0.01128139
12D	7th Standard Road thru Elk Hills Road			0.03987187	0.01208371	0.00719023	0.00181834	0.01185809
12E	Elk Hills Road thru Tupman Road			0.03992308	0.01209924	0.00720053	0.00182095	0.01187505
13B	Tupman Road to Buena Vista Pumping Plant			0.04324825	0.01310695	0.00780757	0.00197447	0.01287616
14A	Buena Vista Pumping Plant thru Santiago Creek			0.04536499	0.01374841	0.00819606	0.00207273	0.01351685
14B	Santiago Creek thru Old River Road			0.04616419	0.01399059	0.00834387	0.00211013	0.01376063
14C	Old River Road to Wheeler Ridge Pumping Plant			0.04753264	0.01440528	0.00859629	0.00217396	0.01417689
15A	Wheeler Ridge Pumping Plant to Chrisman Pumping Plant			0.04830162	0.01463830	0.00873856	0.00220995	0.01441151
16A	Chrisman Pumping Plant to Edmonston Pumping Plant			0.05006206	0.01517177	0.00906311	0.00229202	0.01494676
17E	Edmonston Pumping Plant to Porter Tunnel			0.05234459	0.01586347	0.00948480	0.00239865	0.01564222
17F	Porter Tunnel to Junction, West Branch, Calif. Aqueduct			0.05245355	0.01589650	0.00950462	0.00240367	0.01567491
18A	Junction, West Branch, Calif. Aqueduct thru Alamo Pwp.			0.13238112		0.02399390	0.00606795	0.03957043
19	Alamo Powerplant to Fairmont			0.13237766		0.02399451	0.00606811	0.03957141
19C	Buttes Junction thru Buttes Reservoir			1.00000000				
20A	Fairmont thru 70th Street West			0.06847930		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 Powerplant to Barton Road							
28H	Barton Road to Lake Perris							
28J	Perris Dam and Lake Perris							
29A	Junction, West Branch, Calif. Aqueduct thru Oso P. P.			0.00304299	0.02728237			
29F	Oso Pumping Plant thru Quail Embankment			0.00304379	0.02728234			
29G	Quail Embankment thru Warne Powerplant				0.02736564			
29H	Pyramid Dam and Lake				0.02646380			
29J	Pyramid Lake thru Castaic Powerplant				0.02736563			
30	Castaic Dam and Lake				0.02637131			
31A	Avenal Gap to Devil's Den Pumping Plant	0.10560302	0.19482503					
33A	Devil's Den Pumping Plant thru San Luis Obispo Powerplant	0.35150790	0.64849210					
34	San Luis Obispo Powerplant to Arroyo Grande	0.24688802	0.75311198					
35	Arroyo Grande thru Santa Maria Terminus	0.18022524	0.81977476					

TABLE B-2. Factors for Distributing Reach Minimum OMP&R Costs among Contractors

Reach No.	SAN JOAQUIN VALLEY AREA								
	Devil's Den Water District	Dudley Ridge Water District	Empire West Side Irrigation District	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	0.00377824	0.01707931	0.00088687	0.00254710	0.02742073	0.30633442	0.00090702	0.00167139	0.03505306
2A	0.00394038	0.01781205	0.00092491	0.00266276	0.02864588	0.31948963	0.00094755	0.00174305	0.03655686
2B	0.00395099	0.01786013	0.00092740	0.00266569	0.02869070	0.32034362	0.00094904		0.03665560
3	0.00395208	0.01786513	0.00092766	0.00266517	0.02868917	0.32043064	0.00094899		0.03666585
4	0.00395323	0.01787039	0.00092794	0.00266463	0.02868756	0.32052214	0.00094893		0.03667664
5	0.00395466	0.01787694	0.00092828	0.00266396	0.02868556	0.32063639	0.00094886		0.03669011
6	0.00395684	0.01788685	0.00092879	0.00266296	0.02868253	0.32080926	0.00094875		0.03671048
7	0.00395753	0.01789003	0.00092896	0.00266264	0.02868156	0.32086471	0.00094872		0.03671701
8C	0.00390372	0.01764648	0.00091632	0.00263593	0.02836374	0.31651560	0.00093819		0.03621709
8D	0.00398843	0.01802948		0.00268958	0.02895220	0.32337797			0.01795137
9					0.03173493	0.32315570			
10A					0.03225002	0.31237848			
11B					0.03555316	0.24304304			
12D					0.03738966	0.20458362			
12E					0.03744664	0.20348854			
13B					0.01437747	0.16288986			
14A					0.00610657	0.13050491			
14B					0.00621833	0.11497394			
14C					0.00640883	0.08842321			
15A					0.00651639	0.07347673			
16A					0.00676126	0.03933050			
17E					0.00208231				
31A	0.07364766			0.05046239		0.57546190			

Reach No.	SOUTHERN CALIFORNIA AREA (continued)								Total
	Littlerock Creek Irrigation District	Mojave Water Agency	Palmdale Water District	San Bernardino Municipal Water District	San Gabriel Valley Municipal Water District	San Gorgonio Pass Water Agency	The Metropolitan Water District of Southern California	Ventura County Flood Control District	
1	0.00049187	0.01101303	0.00369180	0.02363192	0.00650449	0.00398446	0.43940271	0.00429334	1.00000000
2A	0.00051421	0.01151300	0.00385943	0.02469456	0.00679800	0.00416362	0.45932579	0.00448830	1.00000000
2B	0.00051477	0.01152575	0.00386368	0.02472869	0.00680672	0.00416938	0.45985088	0.00449324	1.00000000
3	0.00051469	0.01152359	0.00386296	0.02472605	0.00680580	0.00416893	0.45976950	0.00449238	1.00000000
4	0.00051459	0.01152131	0.00386218	0.02472327	0.00680482	0.00416846	0.45968394	0.00449149	1.00000000
5	0.00051448	0.01151846	0.00386122	0.02471980	0.00680361	0.00416788	0.45957709	0.00449037	1.00000000
6	0.00051427	0.01151416	0.00385978	0.02471455	0.00680178	0.00416698	0.45941542	0.00448869	1.00000000
7	0.00051421	0.01151278	0.00385931	0.02471286	0.00680118	0.00416671	0.45936358	0.00448816	1.00000000
8C	0.00050905	0.01139703	0.00382056	0.02444913	0.00673013	0.00412224	0.46619410	0.00444309	1.00000000
8D	0.00051940	0.01162908	0.00389834	0.02495260	0.00686817	0.00420714	0.47575203	0.00453354	1.00000000
9	0.00056864	0.01273174	0.00426793	0.02733801	0.00752279	0.00460932	0.52108733	0.00496332	1.00000000
10A	0.00057757	0.01293209	0.00433507	0.02777636	0.00764260	0.00468324	0.52938182	0.00504140	1.00000000
11B	0.00063524	0.01422367	0.00476794	0.03059312	0.00841338	0.00515813	0.58274744	0.00554474	1.00000000
12D	0.00066717	0.01493906	0.00500769	0.03215687	0.00884093	0.00542180	0.61234745	0.00582351	1.00000000
12E	0.00066803	0.01495830	0.00501414	0.03220286	0.00885312	0.00542956	0.61318897	0.00583099	1.00000000
13B	0.00072369	0.01620441	0.00543178	0.03491750	0.00959624	0.00588725	0.66464178	0.00631662	1.00000000
14A	0.00075911	0.01699773	0.00569765	0.03665478	0.01007092	0.00618017	0.69750337	0.00662575	1.00000000
14B	0.00077249	0.01729729	0.00579803	0.03731574	0.01025102	0.00629159	0.70996969	0.00674247	1.00000000
14C	0.00079541	0.01781020	0.00596992	0.03844447	0.01055888	0.00648190	0.73127981	0.00694231	1.00000000
15A	0.00080829	0.01809845	0.00606653	0.03908064	0.01073222	0.00658915	0.74327705	0.00705461	1.00000000
16A	0.00083775	0.01875829	0.00628766	0.04053196	0.01112817	0.00683383	0.77068316	0.00731170	1.00000000
17E	0.00087593	0.01961383	0.00657438	0.04241764	0.01164221	0.00715176	0.80626315	0.00764506	1.00000000
17F	0.00087775	0.01965466	0.00658807	0.04250631	0.01166651	0.00716671	0.80794577	0.00766097	1.00000000
18A	0.00221525	0.04960424	0.01662681	0.10730448	0.02944860	0.01809192	0.57469530		1.00000000
19	0.00221522	0.04960300	0.01662640	0.10730707	0.02944876	0.01809229	0.57469557		1.00000000
19C									1.00000000
20A	0.00237800	0.05324853	0.01784830	0.11522152	0.03161799	0.01942666	0.61700971		1.00000000
20B	0.00249470	0.05586075	0.01872390	0.12087843	0.03316986	0.02038045	0.64729088		1.00000000
21	0.00254199	0.05692052		0.12319480	0.03380324	0.02077093	0.65963498		1.00000000
22A		0.05773081		0.12495766	0.03428605	0.02106816	0.66905054		1.00000000
22B		0.05842135		0.12645207	0.03469614	0.02132008	0.67705257		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				0.11825184	0.03722720	0.01993915	0.82458181		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							0.95652648	0.01314816	1.00000000
29F							0.95652573	0.01314814	1.00000000
29G							0.95944609	0.01318827	1.00000000
29H							0.96446829	0.00906791	1.00000000
29J							0.95944608	0.01318829	1.00000000
30							0.96499830	0.00863039	1.00000000
31A									1.00000000
33A									1.00000000
34									1.00000000
35									1.00000000

TABLE B-3. Power Costs and Credits and Annual Replacement Deposits for Each Aqueduct Pumping and Power Recovery Plant

(in dollars)

	NORTH BAY AQUEDUCT			SOUTH BAY AQUEDUCT	CALIFORNIA AQUEDUCT					
	Reach 1	Reach 3A	Reach 3B	Reach 1 (b	Reach 1	Reach 4	Reach 14A	Reach 15A	Reach 16A	Reach 17E
Calendar Year	Barker Slough Pumping P.	Cordelia Pumping P. Solano	Cordelia Pumping P. Napa (a	South Bay & Del Valle Pumping P.	Banks Pumping P.	Dos Amigos Pumping P.	Buena Vista Pumping P.	Wheeler Ridge Pumping P.	Chrisman Pumping P.	Edmonston Pumping P.
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]
1961	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	38,130	0	0	0	0	0	0
1963	0	0	0	58,871	0	0	0	0	0	0
1964	0	0	0	75,239	0	0	0	0	0	0
1965	0	0	0	146,297	0	0	0	0	0	0
1966	0	0	0	198,643	0	0	0	0	0	0
1967	0	0	0	229,629	26,982	0	0	0	0	0
1968	0	0	7,128	342,761	1,324,777	239,505	0	0	0	0
1969	0	0	8,557	279,751	855,304	143,403	0	0	0	0
1970	0	0	13,666	448,383	368,508	217,820	2,939	0	0	0
1971	0	0	10,626	422,057	597,946	229,306	156,540	23,021	18,577	29,067
1972	0	0	14,430	623,564	1,110,833	575,291	348,668	187,825	385,935	1,263,087
1973	0	0	14,453	485,534	918,234	493,776	511,904	514,487	883,725	3,139,297
1974	0	0	17,508	510,873	997,269	560,461	556,968	595,585	1,048,196	3,700,573
1975	0	0	14,801	382,106	1,353,916	561,089	650,781	707,038	1,394,918	4,853,538
1976	0	0	20,867	589,007	916,728	596,426	701,061	687,677	1,414,902	4,917,776
1977	0	0	22,640	541,803	653,304	191,906	170,689	173,496	337,890	1,130,422
1978	0	0	21,670	568,381	3,871,011	723,989	1,009,556	968,744	1,782,668	6,281,786
1979	0	0	16,240	622,517	3,431,278	1,019,021	848,639	830,839	1,666,505	5,741,609
1980	0	0	19,933	523,471	2,332,510	1,086,934	993,580	982,670	1,993,401	6,564,178
1981	0	0	23,869	640,157	2,332,765	2,008,440	1,405,814	1,406,407	3,038,556	9,981,326
1982	0	0	11,855	552,698	3,716,318	1,473,644	1,341,082	1,398,351	2,823,207	9,784,753
1983	0	0	2,666	179,713	1,592,166	427,309	438,451	419,596	755,349	2,269,854
1984	0	0	4,484	280,951	1,789,670	925,068	729,317	676,836	1,244,477	3,840,029
1985	0	0	10,017	508,990	3,426,774	1,791,537	1,677,357	1,715,689	3,508,463	11,783,236
1986	0	0	15,389	863,348	7,936,808	2,714,286	2,566,247	2,624,726	5,448,996	18,467,345
1987	0	0	27,269	884,033	6,541,787	2,586,523	2,295,760	2,314,708	4,601,750	15,135,974
1988	15,366	42,347	28,671	966,657	7,422,089	2,843,356	2,772,204	2,816,760	5,618,406	18,580,925
1989	52,058	57,694	33,564	1,555,258	11,795,248	4,584,958	4,595,288	4,815,367	9,661,185	32,403,592
1990	52,561	51,341	34,653	1,633,458	13,385,589	5,278,811	5,526,299	6,008,258	12,197,003	41,662,186
1991	70,494	65,671	46,072	1,837,808	14,997,851	5,883,221	6,217,461	6,830,155	13,990,783	47,915,649
1992	77,023	71,055	56,736	2,199,755	19,804,946	6,875,920	7,465,764	8,254,463	17,025,486	58,688,555
1993	85,345	74,628	61,861	2,322,717	18,917,266	7,266,776	8,015,867	8,909,814	18,440,568	63,816,476
1994	93,802	73,650	64,886	2,260,878	16,949,338	6,870,785	7,456,131	8,254,368	17,009,438	58,626,534
1995	118,737	84,861	78,825	2,541,286	19,962,358	7,968,331	8,750,352	9,763,170	20,278,244	70,334,244
1996	126,825	89,798	86,089	2,626,523	20,351,436	8,287,582	9,089,970	10,142,750	21,019,159	72,780,641
1997	165,037	116,116	114,236	3,313,674	25,155,801	10,298,388	11,334,740	12,682,960	26,457,806	91,895,293
1998	175,580	122,629	123,682	3,385,207	25,723,797	10,676,952	11,836,631	13,258,774	27,731,842	96,000,800
1999	217,424	151,012	155,706	4,028,946	30,331,826	12,664,220	14,070,435	15,809,114	33,231,551	115,296,729
2000	229,803	158,802	166,977	4,098,051	31,061,653	13,251,912	14,860,930	16,754,764	35,284,723	122,222,865
2001	237,302	164,792	176,497	4,144,314	31,808,763	13,527,141	15,197,215	17,111,224	36,092,924	124,836,653
2002	245,157	171,216	186,542	4,193,925	32,424,299	13,872,429	15,657,135	17,648,068	37,184,771	128,510,153
2003	283,915	199,362	220,529	4,759,592	37,028,475	15,887,388	18,277,943	20,667,443	43,510,222	150,941,072
2004	324,087	228,893	256,718	5,322,020	41,386,633	17,941,596	20,935,921	23,772,893	50,011,591	173,888,967
2005	328,353	233,045	264,933	5,285,124	41,259,100	17,549,855	20,326,260	23,041,611	48,379,430	168,008,448
2006	335,682	235,427	276,760	5,339,128	41,520,927	18,099,732	21,250,843	24,100,061	50,639,934	175,905,472
2007	371,966	257,921	313,338	5,849,254	47,358,434	19,918,516	23,557,002	26,758,030	56,331,104	196,099,808
2008	378,978	259,595	325,500	5,887,227	46,834,986	20,217,100	24,029,478	27,321,037	57,515,227	200,301,932
2009	414,385	280,605	362,946	6,363,685	50,808,770	21,979,598	26,310,027	29,946,580	63,101,150	220,009,812
2010	420,996	281,704	375,669	6,388,603	51,672,280	22,165,825	26,604,357	30,290,450	63,853,586	222,817,399
2011	427,366	282,153	389,697	6,398,786	51,738,945	22,349,398	26,894,486	30,623,500	64,552,014	225,285,326
2012	434,802	283,284	404,820	6,424,440	52,422,085	22,286,921	26,765,930	30,461,031	64,184,937	224,098,942
2013	441,511	283,716	419,412	6,434,254	51,878,347	22,324,046	27,017,955	30,768,196	64,830,528	226,322,691
2014	448,946	284,898	435,269	6,461,044	52,612,857	22,369,833	27,075,305	30,841,354	64,992,100	226,953,934
2015	488,876	306,098	483,329	6,941,843	56,126,780	23,994,225	29,133,547	33,211,975	69,769,588	244,638,181
2016	494,811	306,364	498,668	6,947,863	56,271,397	23,932,455	29,062,036	33,142,518	69,643,635	244,255,410
2017	499,740	305,904	513,579	6,937,441	56,094,664	23,889,459	29,094,720	33,179,788	69,709,505	244,378,401
2018	505,015	305,767	529,508	6,934,331	55,398,015	23,862,713	29,108,322	33,201,449	69,791,348	244,689,902
2019	510,452	305,578	545,922	6,930,032	56,041,145	23,762,524	29,078,879	33,078,814	69,805,314	244,918,501
2020	510,631	302,429	557,117	6,858,628	55,579,325	23,421,365	28,598,585	32,590,551	69,041,924	242,202,883
2021	510,093	301,912	556,833	6,846,905	55,156,509	23,346,629	28,256,978	32,377,698	68,893,985	241,698,397
2022	510,026	301,823	557,170	6,844,889	55,407,376	23,084,610	28,193,947	32,324,391	68,699,130	241,594,153
2023	510,772	302,067	558,121	6,850,411	55,602,168	23,061,113	28,197,538	32,326,836	68,458,308	241,254,681
2024	510,420	301,858	558,405	6,845,688	54,914,997	22,827,105	28,211,048	32,344,839	68,254,064	241,236,495
2025	510,649	301,895	558,974	6,846,519	55,071,620	22,839,819	28,231,875	32,369,903	68,153,488	241,331,147
2026	511,000	302,103	559,358	6,851,224	55,366,570	22,846,908	28,237,111	32,374,762	67,980,583	241,257,346
2027	509,929	301,469	558,185	6,836,863	54,694,050	22,811,791	28,202,099	32,336,135	67,804,735	240,918,141
2028	510,278	301,676	558,568	6,841,546	54,891,360	22,838,067	28,239,735	32,380,737	67,914,084	241,295,693
2029	510,382	301,738	558,682	6,842,943	54,953,119	22,825,134	28,214,416	32,324,405	67,833,234	241,017,671
2030	510,154	301,603	558,432	6,839,881	54,671,371	22,722,674	28,235,200	32,325,972	67,892,345	241,125,542
2031	510,081	301,559	558,353	6,838,914	54,459,415	22,601,569	28,122,898	32,295,926	67,850,092	240,792,477
2032	509,520	301,228	557,738	6,831,390	54,426,073	22,523,769	28,092,617	32,265,505	68,042,898	241,360,606
2033	509,926	301,467	558,182	6,836,822	54,365,901	22,484,657	27,908,267	32,045,008	67,797,296	240,087,157
2034	510,118	301,581	558,392	6,839,399	54,968,061	22,382,703	27,688,141	31,682,026	67,269,368	238,107,352
2035	509,113	300,987	557,292	6,825,927	58,050,228	23,036,999	28,847,585	33,084,462	70,391,060	249,269,904
TOTAL	17,235,487	10,963,321	17,259,464	267,187,980	2,095,219,131	876,902,612	1,045,252,826	1,187,143,590	2,496,469,211	8,750,518,988

a) Power costs for the period 1968 through 1987 are for an interim facility.
b) The 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

(in dollars)

Calendar Year	CALIFORNIA AQUEDUCT (continued) Reach 18A Alamo Powerplant	Reach 22B Pearblossom Pumping Plant	Reach 23 Mojave Siphon Powerplant	Reach 26A Devil Canyon Powerplant	Reach 29A Oso Pumping Plant	Reach 29G Warne Powerplant	Reach 29J Castaic Powerplant	Reach 31A Las Perillas and Badger Hill Pumping Plants	Reach 33A Devil's Den, Bluestone and Polonio PP's and San Luis Obispo Pwp.	GRAND TOTAL
	[11]	[12]	[13]	[14]	[15]	[16]	[17]	[18]	[19]	[20]
1961	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	0	38,130
1963	0	0	0	0	0	0	0	0	0	58,871
1964	0	0	0	0	0	0	0	0	0	75,239
1965	0	0	0	0	0	0	0	0	0	146,297
1966	0	0	0	0	0	0	0	0	0	198,643
1967	0	0	0	0	0	0	0	6,517	0	263,128
1968	0	0	0	0	0	0	0	120,278	0	2,034,449
1969	0	0	0	0	0	0	0	79,620	0	1,366,635
1970	0	0	0	0	0	0	0	137,449	0	1,188,765
1971	0	64,807	0	0	1,696	0	0	171,389	0	1,725,032
1972	0	103,584	0	(3,112)	180,005	0	(385,696)	240,651	0	4,645,065
1973	0	615,309	0	(931,697)	274,450	0	(1,193,216)	128,730	0	5,854,986
1974	0	595,646	0	(939,072)	322,440	0	(1,823,397)	129,345	0	6,272,395
1975	0	616,327	0	(1,101,445)	457,487	0	(2,835,302)	101,109	0	7,156,363
1976	0	914,440	0	(1,520,412)	314,669	0	(2,512,021)	151,211	0	7,192,331
1977	0	318,880	0	(1,216,060)	53,119	0	(1,701,284)	85,538	0	762,343
1978	0	1,801,373	0	(3,298,247)	251,373	0	(2,361,377)	197,217	0	11,818,144
1979	0	1,813,744	0	(3,335,069)	157,934	0	(2,749,296)	209,088	0	10,273,049
1980	0	1,906,917	0	(3,508,195)	200,447	0	(2,721,871)	187,975	0	10,561,950
1981	0	2,188,998	0	(2,417,354)	525,486	0	(4,065,927)	189,627	0	17,258,164
1982	0	1,702,194	0	(3,149,543)	624,229	(973,898)	(3,476,130)	180,400	0	16,009,160
1983	0	360,343	0	(4,829,479)	234,684	(999,105)	(3,425,772)	(10,060)	0	(2,584,285)
1984	0	676,081	0	(7,768,115)	366,638	(2,299,250)	1,131,789	109,987	0	1,707,962
1985	0	1,253,811	0	(10,083,987)	1,165,845	(8,517,062)	(16,562,168)	163,279	0	(8,158,219)
1986	(1,061,528)	2,614,345	0	(12,055,166)	1,383,297	(6,331,000)	(11,562,523)	317,385	0	13,941,955
1987	(1,022,349)	1,913,267	0	(10,785,353)	1,381,569	(6,691,384)	(11,629,555)	264,070	0	7,818,069
1988	(726,450)	2,675,280	0	(14,240,379)	1,557,983	(7,444,225)	(13,009,125)	255,115	0	10,174,980
1989	(2,426,875)	4,999,211	0	(19,130,927)	2,230,442	(8,667,688)	(14,574,781)	369,075	0	32,352,669
1990	(690,131)	6,892,849	0	(23,256,881)	2,567,585	(9,118,362)	(16,418,600)	418,476	0	46,225,095
1991	(935,536)	7,694,376	0	(23,110,975)	2,989,680	(9,926,154)	(17,808,600)	460,322	0	57,218,278
1992	(3,119,303)	9,853,613	0	(27,580,844)	3,362,386	(11,013,676)	(17,398,600)	531,144	0	75,154,423
1993	(3,311,474)	10,786,669	(291,606)	(28,432,457)	3,540,045	(11,574,114)	(18,418,250)	543,530	0	80,753,661
1994	(3,216,298)	10,599,083	(4,785,158)	(29,160,525)	3,052,704	(9,916,346)	(15,767,250)	517,521	0	68,983,541
1995	(3,387,897)	12,638,292	(5,197,074)	(30,019,470)	3,512,086	(10,933,054)	(17,359,550)	807,707	967,307	90,908,755
1996	(3,449,988)	13,320,798	(5,275,355)	(30,609,652)	3,609,502	(10,600,755)	(16,870,050)	904,717	1,342,134	96,972,124
1997	(3,490,382)	16,832,635	(5,480,359)	(31,171,132)	4,325,953	(10,749,226)	(17,027,950)	1,129,140	1,922,799	137,825,529
1998	(3,534,798)	17,760,384	(5,584,345)	(31,735,474)	4,575,418	(10,740,928)	(16,993,350)	1,153,514	1,985,866	145,922,181
1999	(3,526,227)	21,014,864	(5,521,487)	(32,232,834)	5,425,841	(11,142,175)	(17,605,400)	1,372,870	2,553,419	186,295,834
2000	(3,588,125)	22,432,959	(5,688,702)	(33,317,397)	5,760,202	(11,418,275)	(18,086,500)	1,396,418	2,614,346	198,195,406
2001	(3,562,224)	22,856,204	(5,895,508)	(33,935,238)	5,895,513	(11,548,226)	(18,277,150)	1,412,182	2,655,132	202,902,510
2002	(3,574,031)	23,967,628	(6,150,067)	(34,755,922)	5,883,474	(11,376,576)	(17,953,750)	1,429,087	2,698,872	210,262,410
2003	(3,513,384)	27,661,273	(6,374,045)	(35,377,863)	7,034,907	(12,069,784)	(19,159,550)	1,621,838	3,197,593	254,796,926
2004	(3,549,076)	32,213,426	(6,169,783)	(36,405,946)	8,049,515	(12,315,638)	(19,446,450)	1,813,487	3,693,456	301,952,310
2005	(3,481,430)	31,707,421	(5,860,740)	(37,130,430)	7,527,001	(11,492,415)	(18,175,900)	1,800,915	3,660,927	293,231,508
2006	(3,561,853)	33,114,155	(6,535,854)	(37,637,025)	7,995,741	(12,080,908)	(19,074,750)	1,819,317	3,708,540	305,451,329
2007	(3,598,624)	36,953,097	(6,737,307)	(38,208,217)	8,788,092	(12,253,357)	(19,392,650)	1,993,143	4,158,292	348,517,842
2008	(3,584,565)	37,684,823	(6,708,952)	(38,905,328)	8,993,321	(12,498,706)	(19,795,350)	2,006,082	4,191,770	354,454,155
2009	(3,619,206)	41,667,948	(6,949,519)	(39,467,405)	9,700,015	(12,588,988)	(19,947,200)	2,168,436	4,611,840	395,153,479
2010	(3,646,589)	42,222,660	(6,771,545)	(40,126,988)	9,793,914	(12,707,021)	(20,124,550)	2,176,927	4,633,809	400,321,486
2011	(3,687,934)	42,962,298	(6,860,850)	(40,228,012)	9,848,089	(12,690,147)	(20,091,600)	2,180,397	4,642,788	405,016,700
2012	(3,638,126)	42,438,561	(6,776,898)	(40,324,176)	9,851,401	(12,740,619)	(20,147,750)	2,189,138	4,665,405	403,284,128
2013	(3,678,656)	43,089,979	(7,141,962)	(40,426,073)	9,930,749	(12,738,214)	(20,133,800)	2,192,482	4,674,056	406,489,217
2014	(3,650,699)	43,217,349	(7,167,720)	(40,487,142)	9,826,976	(12,715,856)	(20,103,000)	2,201,611	4,697,677	408,294,736
2015	(3,678,579)	46,547,693	(7,255,435)	(40,462,202)	10,659,344	(12,768,351)	(20,184,750)	2,365,444	5,121,572	445,439,178
2016	(3,665,586)	46,517,588	(7,264,657)	(40,505,835)	10,498,035	(12,722,405)	(20,102,750)	2,367,495	5,126,881	444,803,923
2017	(3,699,401)	46,485,788	(7,117,953)	(40,302,977)	10,614,838	(12,741,197)	(20,169,000)	2,363,945	5,117,693	445,154,937
2018	(3,654,567)	46,669,037	(6,900,176)	(40,847,637)	10,521,103	(12,741,514)	(20,107,450)	2,362,885	5,114,951	444,743,002
2019	(3,641,771)	46,719,966	(7,058,434)	(40,655,708)	10,434,538	(12,763,769)	(20,142,950)	2,361,420	5,111,161	445,341,614
2020	(3,678,869)	46,218,543	(7,006,971)	(40,684,968)	10,311,265	(12,755,824)	(20,130,550)	2,337,088	5,048,205	439,319,357
2021	(3,679,289)	46,164,206	(7,014,656)	(40,653,448)	10,293,576	(12,751,600)	(20,124,500)	2,333,094	5,037,870	437,551,192
2022	(3,683,191)	46,248,949	(7,040,944)	(40,830,623)	10,227,090	(12,746,201)	(20,110,800)	2,332,407	5,036,094	436,950,296
2023	(3,674,259)	46,199,618	(7,008,985)	(40,686,498)	10,315,998	(12,762,950)	(20,104,700)	2,334,289	5,040,962	436,775,490
2024	(3,681,093)	46,249,626	(6,983,068)	(40,934,976)	10,270,153	(12,775,700)	(20,127,850)	2,332,679	5,036,799	435,391,489
2025	(3,726,840)	46,252,945	(7,054,194)	(40,920,585)	10,276,773	(12,810,150)	(20,177,050)	2,332,962	5,037,531	435,427,281
2026	(3,729,060)	46,330,231	(7,051,915)	(40,837,735)	10,262,791	(12,758,300)	(20,092,600)	2,334,565	5,041,679	435,786,621
2027	(3,741,390)	46,223,682	(7,062,197)	(40,868,675)	10,295,523	(12,790,375)	(20,142,550)	2,329,672	5,029,017	434,246,104
2028	(3,730,860)	46,329,217	(7,091,930)	(41,073,325)	10,123,139	(12,785,075)	(20,135,550)	2,331,267	5,033,145	434,771,772
2029	(3,722,490)	46,229,939	(7,044,601)	(40,928,500)	10,075,999	(12,790,925)	(20,147,300)	2,331,743	5,034,377	434,419,966
2030	(3,728,820)	46,291,534	(7,034,266)	(41,017,750)	10,037,873	(12,796,675)	(20,160,200)	2,330,700	5,031,678	434,137,248
2031	(3,728,340)	46,302,554	(7,046,668)	(40,899,775)	10,012,142	(12,774,625)	(20,121,850)	2,330,371	5,030,826	433,435,919
2032	(3,746,580)	46,460,236	(7,124,048)	(41,137,825)	9,883,214	(12,786,975)	(20,139,750)	2,327,807	5,024,191	433,671,614
2033	(3,724,350)	46,101,428	(7,081,330)	(40,997,825)	9,832,378	(12,787,050)	(20,135,650)	2,329,658	5,028,981	431,460,923
2034	(3,693,780)	45,398,923	(6,953,229)	(40,987,400)	9,678,930	(12,811,250)	(20,167,300)	2,330,536	5,031,254	428,133,825
2035	(3,772,980)	46,752,994	(7,240,595)	(41,080,775)	10,319,799	(13,840,325)	(21,902,650)	2,325,945	5,019,376	447,454,346
TOTAL	(165,615,853)	1,651,410,598	(278,361,088)	(1,811,672,060)	388,468,404	(600,129,368)	(981,662,952)	89,151,368	173,410,271	15,229,151,930

TABLE B-4. Annual Entitlements to Project Water

(in acre-feet)

Calendar Year	NORTH BAY AREA			SOUTH BAY AREA (a				CENTRAL COASTAL AREA		
	(b Napa County FC&WCD	Solano County FC&WCD	Total	Alameda County FC&WCD, Zone 7	Alameda County Water District	Santa Clara Valley Water District	Total	San Luis Obispo County FC&WCD	Santa Barbara County FC&WCD	Total
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]
1962	0	0	0	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	6,745	21,250	27,995	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	25,000	45,486	70,486
1998	11,710	38,710	50,420	46,000	42,000	100,000	188,000	25,000	45,486	70,486
1999	12,330	39,170	51,500	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2000	13,050	39,620	52,670	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2001	13,665	40,080	53,745	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2002	14,185	40,540	54,725	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2003	14,800	41,000	55,800	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2004	15,400	41,450	56,850	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2005	16,000	41,500	57,500	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2006	16,450	41,550	58,000	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2007	17,000	41,600	58,600	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2008	17,650	41,650	59,300	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2009	18,200	41,700	59,900	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2010	18,750	41,750	60,500	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2011	19,400	41,800	61,200	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2012	19,950	41,850	61,800	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2013	20,600	41,900	62,500	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2014	21,250	41,950	63,200	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2015	21,900	42,000	63,900	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2016	22,500	42,000	64,500	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2017	23,100	42,000	65,100	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2018	23,700	42,000	65,700	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2019	24,300	42,000	66,300	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2020	24,900	42,000	66,900	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2021	25,000	42,000	67,000	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2022	25,000	42,000	67,000	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2023	25,000	42,000	67,000	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2024	25,000	42,000	67,000	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2025	25,000	42,000	67,000	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2026	25,000	42,000	67,000	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2027	25,000	42,000	67,000	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2028	25,000	42,000	67,000	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2029	25,000	42,000	67,000	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2030	25,000	42,000	67,000	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2031	25,000	42,000	67,000	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2032	25,000	42,000	67,000	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2033	25,000	42,000	67,000	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2034	25,000	42,000	67,000	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2035	25,000	42,000	67,000	46,000	42,000	100,000	188,000	25,000	45,486	70,486
TOTAL	878,500	1,848,396	2,726,896	2,494,607	2,459,248	6,510,783	11,464,638	1,227,000	2,231,494	3,458,494

a) Entitlement 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.

b) District's Table A quantities exclude amounts during the period 1968 through 1987 that are assumed to be supplied by non-Project water.

TABLE B-4. Annual Entitlements to Project Water

(in acre-feet)

Calendar Year	SAN JOAQUIN VALLEY AREA									
				Kern County Water Agency						
	Devil's Den Water District	Dudley Ridge Water District	Empire West Side Irrigation District	Municipal and Industrial	Agricultural	Total	County of Kings	Oak Flat Water District	Tulare Lake Basin Water Storage District	Total
	[11]	[12]	[13]	[14]	[15]	[16]	[17]	[18]	[19]	[20]
1962	0	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0	0	0	0
1967	0	0	0	0	0	0	0	0	0	0
1968	3,700	14,300	1,000	0	46,600	46,600	900	2,300	12,250	81,050
1969	5,000	14,325	3,000	0	95,700	95,700	1,200	2,500	46,350	168,075
1970	5,700	15,700	3,000	28,700	116,400	145,100	1,300	2,600	34,300	207,700
1971	6,700	17,900	3,000	35,700	154,600	190,300	1,300	2,800	36,500	258,500
1972	7,700	20,000	3,000	39,200	231,500	270,700	1,400	5,366	112,600	420,766
1973	8,700	22,000	3,000	43,500	267,000	310,500	1,500	3,100	43,552	392,352
1974	9,700	33,390	3,000	48,000	299,000	347,000	1,500	3,471	72,289	470,350
1975	10,700	40,555	3,000	52,700	358,120	410,820	1,600	3,576	86,258	556,509
1976	11,700	30,921	3,000	56,100	386,050	442,150	1,600	4,039	61,707	555,117
1977	12,700	30,400	3,000	60,600	423,000	483,600	1,700	3,700	59,000	594,100
1978	11,362	32,500	0	64,100	470,200	534,300	1,900	3,900	63,300	647,262
1979	12,700	38,544	3,000	67,600	516,300	583,900	2,000	4,000	71,241	715,385
1980	12,700	41,000	3,000	71,100	563,400	634,500	2,200	5,700	71,700	770,800
1981	12,700	41,000	3,000	74,800	616,600	691,400	2,300	4,300	76,000	830,700
1982	12,700	41,000	3,000	79,600	665,700	745,300	2,500	4,500	80,200	889,200
1983	12,700	42,900	3,000	83,500	721,600	805,100	2,800	4,600	9,548	880,648
1984	12,700	45,100	3,000	103,600	757,000	860,600	3,100	4,800	62,611	991,911
1985	12,700	47,200	3,000	108,900	806,100	915,000	3,400	4,900	45,549	1,031,749
1986	12,700	49,300	3,000	113,400	854,800	968,200	3,700	5,100	97,200	1,139,200
1987	12,700	51,400	3,000	119,100	904,400	1,023,500	4,000	5,200	101,400	1,201,200
1988	12,700	53,500	3,000	123,900	950,700	1,074,600	4,000	5,400	105,600	1,258,800
1989	12,700	55,600	3,000	128,200	984,100	1,112,300	4,000	5,600	109,900	1,303,100
1990	12,700	57,700	3,000	134,600	1,018,800	1,153,400	4,000	5,700	118,500	1,355,000
1991	12,700	57,700	3,000	134,600	1,018,800	1,153,400	4,000	5,700	118,500	1,355,000
1992	12,700	57,700	3,000	134,600	1,018,800	1,153,400	4,000	5,700	118,500	1,355,000
1993	12,700	57,700	3,000	134,600	1,018,800	1,153,400	4,000	5,700	118,500	1,355,000
1994	12,700	57,700	3,000	134,600	1,018,800	1,153,400	4,000	5,700	118,500	1,355,000
1995	12,700	57,700	3,000	134,600	1,018,800	1,153,400	4,000	5,700	118,500	1,355,000
1996	12,700	57,700	3,000	134,600	1,018,800	1,153,400	4,000	5,700	118,500	1,355,000
1997	12,700	57,700	3,000	134,600	1,018,800	1,153,400	4,000	5,700	118,500	1,355,000
1998	12,700	57,700	3,000	134,600	1,018,800	1,153,400	4,000	5,700	118,500	1,355,000
1999	12,700	57,700	3,000	134,600	1,018,800	1,153,400	4,000	5,700	118,500	1,355,000
2000	12,700	57,700	3,000	134,600	1,018,800	1,153,400	4,000	5,700	118,500	1,355,000
2001	12,700	57,700	3,000	134,600	1,018,800	1,153,400	4,000	5,700	118,500	1,355,000
2002	12,700	57,700	3,000	134,600	1,018,800	1,153,400	4,000	5,700	118,500	1,355,000
2003	12,700	57,700	3,000	134,600	1,018,800	1,153,400	4,000	5,700	118,500	1,355,000
2004	12,700	57,700	3,000	134,600	1,018,800	1,153,400	4,000	5,700	118,500	1,355,000
2005	12,700	57,700	3,000	134,600	1,018,800	1,153,400	4,000	5,700	118,500	1,355,000
2006	12,700	57,700	3,000	134,600	1,018,800	1,153,400	4,000	5,700	118,500	1,355,000
2007	12,700	57,700	3,000	134,600	1,018,800	1,153,400	4,000	5,700	118,500	1,355,000
2008	12,700	57,700	3,000	134,600	1,018,800	1,153,400	4,000	5,700	118,500	1,355,000
2009	12,700	57,700	3,000	134,600	1,018,800	1,153,400	4,000	5,700	118,500	1,355,000
2010	12,700	57,700	3,000	134,600	1,018,800	1,153,400	4,000	5,700	118,500	1,355,000
2011	12,700	57,700	3,000	134,600	1,018,800	1,153,400	4,000	5,700	118,500	1,355,000
2012	12,700	57,700	3,000	134,600	1,018,800	1,153,400	4,000	5,700	118,500	1,355,000
2013	12,700	57,700	3,000	134,600	1,018,800	1,153,400	4,000	5,700	118,500	1,355,000
2014	12,700	57,700	3,000	134,600	1,018,800	1,153,400	4,000	5,700	118,500	1,355,000
2015	12,700	57,700	3,000	134,600	1,018,800	1,153,400	4,000	5,700	118,500	1,355,000
2016	12,700	57,700	3,000	134,600	1,018,800	1,153,400	4,000	5,700	118,500	1,355,000
2017	12,700	57,700	3,000	134,600	1,018,800	1,153,400	4,000	5,700	118,500	1,355,000
2018	12,700	57,700	3,000	134,600	1,018,800	1,153,400	4,000	5,700	118,500	1,355,000
2019	12,700	57,700	3,000	134,600	1,018,800	1,153,400	4,000	5,700	118,500	1,355,000
2020	12,700	57,700	3,000	134,600	1,018,800	1,153,400	4,000	5,700	118,500	1,355,000
2021	12,700	57,700	3,000	134,600	1,018,800	1,153,400	4,000	5,700	118,500	1,355,000
2022	12,700	57,700	3,000	134,600	1,018,800	1,153,400	4,000	5,700	118,500	1,355,000
2023	12,700	57,700	3,000	134,600	1,018,800	1,153,400	4,000	5,700	118,500	1,355,000
2024	12,700	57,700	3,000	134,600	1,018,800	1,153,400	4,000	5,700	118,500	1,355,000
2025	12,700	57,700	3,000	134,600	1,018,800	1,153,400	4,000	5,700	118,500	1,355,000
2026	12,700	57,700	3,000	134,600	1,018,800	1,153,400	4,000	5,700	118,500	1,355,000
2027	12,700	57,700	3,000	134,600	1,018,800	1,153,400	4,000	5,700	118,500	1,355,000
2028	12,700	57,700	3,000	134,600	1,018,800	1,153,400	4,000	5,700	118,500	1,355,000
2029	12,700	57,700	3,000	134,600	1,018,800	1,153,400	4,000	5,700	118,500	1,355,000
2030	12,700	57,700	3,000	134,600	1,018,800	1,153,400	4,000	5,700	118,500	1,355,000
2031	12,700	57,700	3,000	134,600	1,018,800	1,153,400	4,000	5,700	118,500	1,355,000
2032	12,700	57,700	3,000	134,600	1,018,800	1,153,400	4,000	5,700	118,500	1,355,000
2033	12,700	57,700	3,000	134,600	1,018,800	1,153,400	4,000	5,700	118,500	1,355,000
2034	12,700	57,700	3,000	134,600	1,018,800	1,153,400	4,000	5,700	118,500	1,355,000
2035	12,700	57,700	3,000	134,600	1,018,800	1,153,400	4,000	5,700	118,500	1,355,000
TOTAL	817,562	3,432,735	199,000	7,693,900	58,053,670	65,747,570	233,900	353,652	6,910,055	77,694,474

TABLE B-4. Annual Entitlements to Project Water

(in acre-feet)

Calendar Year	SOUTHERN CALIFORNIA AREA									
	Antelope Valley-East Kern Water Agency	Castaic Lake Water Agency	Coachella Valley Water District	Crestline-Lake Arrowhead Water Agency	Desert Water Agency	Littlerock Creek Irrigation District	Mojave Water Agency	Palmdale Water District	San Bernardino Valley Municipal Water District	San Gabriel Valley Municipal Water District
	[21]	[22]	[23]	[24]	[25]	[26]	[27]	[28]	[29]	[30]
1962	0	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0	0	0	0
1967	0	0	0	0	0	0	0	0	0	0
1968	0	0	0	0	0	0	0	0	0	0
1969	0	0	0	0	0	0	0	0	0	0
1970	0	0	0	0	0	0	0	0	0	0
1971	0	0	0	0	0	0	0	0	0	0
1972	20,000	1,236	5,200	526	8,000	170	8,400	1,620	1,677	122
1973	25,000	3,700	5,800	870	9,000	290	10,700	2,940	48,000	11,500
1974	30,000	5,700	6,400	1,160	10,000	400	13,100	4,260	50,000	12,300
1975	35,000	7,500	7,000	1,450	11,000	520	15,400	5,580	52,500	13,100
1976	44,000	9,500	7,600	1,740	12,000	640	17,800	6,900	55,000	14,000
1977	50,000	11,400	8,421	2,030	13,000	730	20,200	8,220	57,500	14,800
1978	57,000	13,400	9,242	2,320	14,000	920	0	9,340	60,000	15,700
1979	63,000	15,300	10,063	2,610	15,000	1,040	24,900	10,260	62,500	16,600
1980	69,200	17,700	10,884	2,900	17,000	1,150	27,200	11,180	65,500	17,400
1981	75,000	20,100	12,105	3,190	19,000	1,270	23,100	11,700	68,500	18,300
1982	81,300	22,100	13,326	3,480	21,000	1,380	22,843	12,320	71,500	19,100
1983	87,700	24,600	14,547	3,770	23,000	1,500	34,300	12,940	74,500	19,900
1984	35,000	26,900	15,768	4,060	25,000	1,610	36,700	13,560	78,000	20,700
1985	40,000	29,100	16,989	4,350	27,000	1,730	39,000	14,180	81,500	21,800
1986	42,000	30,900	18,210	4,640	29,000	1,840	41,400	14,800	85,000	23,200
1987	44,000	32,900	19,431	4,930	31,500	1,960	43,700	15,420	89,000	24,600
1988	46,000	35,300	20,652	5,220	34,000	2,070	46,000	16,040	93,000	26,000
1989	125,700	37,400	21,873	5,510	36,500	2,190	48,500	16,660	97,000	27,400
1990	132,100	39,300	23,100	5,800	38,100	2,300	50,800	17,300	101,500	28,800
1991	138,400	41,500	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
1992	138,400	41,500	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
1993	138,400	41,500	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
1994	138,400	41,500	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
1995	138,400	41,500	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
1996	138,400	41,500	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
1997	138,400	41,500	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
1998	138,400	41,500	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
1999	138,400	41,500	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
2000	138,400	41,500	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
2001	138,400	41,500	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
2002	138,400	41,500	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
2003	138,400	41,500	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
2004	138,400	41,500	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
2005	138,400	41,500	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
2006	138,400	41,500	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
2007	138,400	41,500	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
2008	138,400	41,500	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
2009	138,400	41,500	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
2010	138,400	41,500	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
2011	138,400	41,500	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
2012	138,400	41,500	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
2013	138,400	41,500	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
2014	138,400	41,500	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
2015	138,400	41,500	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
2016	138,400	41,500	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
2017	138,400	41,500	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
2018	138,400	41,500	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
2019	138,400	41,500	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
2020	138,400	41,500	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
2021	138,400	41,500	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
2022	138,400	41,500	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
2023	138,400	41,500	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
2024	138,400	41,500	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
2025	138,400	41,500	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
2026	138,400	41,500	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
2027	138,400	41,500	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
2028	138,400	41,500	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
2029	138,400	41,500	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
2030	138,400	41,500	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
2031	138,400	41,500	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
2032	138,400	41,500	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
2033	138,400	41,500	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
2034	138,400	41,500	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
2035	138,400	41,500	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
TOTAL	7,330,000	2,251,536	1,286,111	321,556	2,107,600	127,210	2,810,043	983,720	5,909,177	1,641,322

TABLE B-4. Annual Entitlements to Project Water

(in acre-feet)

Calendar Year	SOUTHERN CALIFORNIA AREA				FEATHER RIVER AREA				South Bay Area Future Contractor	GRAND TOTAL
	San Gorgonio Pass Water Agency	The Metropolitan Water District of Southern California	Ventura County Flood Control District	Total	City of Yuba City	County of Butte	Plumas County FC&WCD	Total		
	[31]	[32]	[33]	[34]	[35]	[36]	[37]	[38]	[39]	[40]
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	0	0	300	250	550	0	191,500
1969	0	0	0	0	0	350	270	620	0	267,395
1970	0	0	0	0	0	400	300	700	0	322,600
1971	0	0	0	0	0	450	440	890	0	375,590
1972	0	154,772	0	201,723	0	500	470	970	0	741,759
1973	0	354,600	0	472,400	0	600	500	1,100	0	986,252
1974	0	454,900	0	588,220	0	700	530	1,230	0	1,182,200
1975	0	555,200	0	704,250	0	1,050	560	1,610	0	1,386,869
1976	0	655,600	0	824,780	0	1,400	590	1,990	0	1,508,387
1977	0	755,900	0	942,201	0	1,800	620	2,420	0	1,667,321
1978	0	856,300	0	1,038,222	0	1,200	650	1,850	0	1,818,034
1979	0	956,600	0	1,177,873	0	1,450	680	2,130	0	2,028,088
1980	6,800	1,057,000	1,000	1,304,914	0	1,100	710	1,810	0	2,214,770
1981	7,800	1,157,300	2,000	1,419,365	0	1,200	740	1,940	0	2,392,468
1982	8,800	1,257,600	3,000	1,537,749	0	1,200	770	1,970	0	2,574,545
1983	9,800	1,358,000	4,000	1,668,557	0	1,200	800	2,000	0	2,701,994
1984	10,800	1,458,300	5,000	1,731,398	1,600	1,200	830	3,630	0	2,884,337
1985	11,800	1,558,700	6,000	1,852,149	1,700	1,200	860	3,760	0	3,055,846
1986	12,900	1,659,300	8,000	1,971,190	2,100	1,200	890	4,190	0	3,292,290
1987	14,000	1,759,800	10,000	2,091,241	2,500	1,200	920	4,620	0	3,484,115
1988	15,100	1,860,400	13,000	2,212,782	2,900	1,200	960	5,060	0	3,688,335
1989	16,200	1,961,000	16,000	2,411,933	3,300	1,200	1,000	5,500	0	3,958,190
1990	17,300	2,011,500	20,000	2,487,900	3,800	1,200	1,040	6,040	0	4,108,321
1991	17,300	2,011,500	20,000	2,497,500	9,600	27,500	1,080	38,180	0	4,157,156
1992	17,300	2,011,500	20,000	2,497,500	9,600	27,500	1,120	38,220	0	4,165,116
1993	17,300	2,011,500	20,000	2,497,500	9,600	27,500	1,160	38,260	0	4,173,266
1994	17,300	2,011,500	20,000	2,497,500	9,600	27,500	1,200	38,300	0	4,180,501
1995	17,300	2,011,500	20,000	2,497,500	9,600	27,500	1,250	38,350	0	4,189,366
1996	17,300	2,011,500	20,000	2,497,500	9,600	27,500	1,300	38,400	0	4,195,611
1997	17,300	2,011,500	20,000	2,497,500	9,600	27,500	1,350	38,450	0	4,198,751
1998	17,300	2,011,500	20,000	2,497,500	9,600	27,500	1,400	38,500	0	4,199,906
1999	17,300	2,011,500	20,000	2,497,500	9,600	27,500	1,450	38,550	0	4,201,036
2000	17,300	2,011,500	20,000	2,497,500	9,600	27,500	1,510	38,610	0	4,202,266
2001	17,300	2,011,500	20,000	2,497,500	9,600	27,500	1,570	38,670	0	4,203,401
2002	17,300	2,011,500	20,000	2,497,500	9,600	27,500	1,630	38,730	0	4,204,441
2003	17,300	2,011,500	20,000	2,497,500	9,600	27,500	1,690	38,790	0	4,205,576
2004	17,300	2,011,500	20,000	2,497,500	9,600	27,500	1,750	38,850	0	4,206,686
2005	17,300	2,011,500	20,000	2,497,500	9,600	27,500	1,810	38,910	0	4,207,396
2006	17,300	2,011,500	20,000	2,497,500	9,600	27,500	1,880	38,980	0	4,207,966
2007	17,300	2,011,500	20,000	2,497,500	9,600	27,500	1,950	39,050	0	4,208,636
2008	17,300	2,011,500	20,000	2,497,500	9,600	27,500	2,020	39,120	0	4,209,406
2009	17,300	2,011,500	20,000	2,497,500	9,600	27,500	2,090	39,190	0	4,210,076
2010	17,300	2,011,500	20,000	2,497,500	9,600	27,500	2,160	39,260	0	4,210,746
2011	17,300	2,011,500	20,000	2,497,500	9,600	27,500	2,240	39,340	0	4,211,526
2012	17,300	2,011,500	20,000	2,497,500	9,600	27,500	2,320	39,420	0	4,212,206
2013	17,300	2,011,500	20,000	2,497,500	9,600	27,500	2,410	39,510	0	4,212,996
2014	17,300	2,011,500	20,000	2,497,500	9,600	27,500	2,500	39,600	0	4,213,786
2015	17,300	2,011,500	20,000	2,497,500	9,600	27,500	2,600	39,700	0	4,214,586
2016	17,300	2,011,500	20,000	2,497,500	9,600	27,500	2,700	39,800	0	4,215,286
2017	17,300	2,011,500	20,000	2,497,500	9,600	27,500	2,700	39,800	0	4,215,886
2018	17,300	2,011,500	20,000	2,497,500	9,600	27,500	2,700	39,800	0	4,216,486
2019	17,300	2,011,500	20,000	2,497,500	9,600	27,500	2,700	39,800	0	4,217,086
2020	17,300	2,011,500	20,000	2,497,500	9,600	27,500	2,700	39,800	0	4,217,686
2021	17,300	2,011,500	20,000	2,497,500	9,600	27,500	2,700	39,800	0	4,217,786
2022	17,300	2,011,500	20,000	2,497,500	9,600	27,500	2,700	39,800	0	4,217,786
2023	17,300	2,011,500	20,000	2,497,500	9,600	27,500	2,700	39,800	0	4,217,786
2024	17,300	2,011,500	20,000	2,497,500	9,600	27,500	2,700	39,800	0	4,217,786
2025	17,300	2,011,500	20,000	2,497,500	9,600	27,500	2,700	39,800	0	4,217,786
2026	17,300	2,011,500	20,000	2,497,500	9,600	27,500	2,700	39,800	0	4,217,786
2027	17,300	2,011,500	20,000	2,497,500	9,600	27,500	2,700	39,800	0	4,217,786
2028	17,300	2,011,500	20,000	2,497,500	9,600	27,500	2,700	39,800	0	4,217,786
2029	17,300	2,011,500	20,000	2,497,500	9,600	27,500	2,700	39,800	0	4,217,786
2030	17,300	2,011,500	20,000	2,497,500	9,600	27,500	2,700	39,800	0	4,217,786
2031	17,300	2,011,500	20,000	2,497,500	9,600	27,500	2,700	39,800	0	4,217,786
2032	17,300	2,011,500	20,000	2,497,500	9,600	27,500	2,700	39,800	0	4,217,786
2033	17,300	2,011,500	20,000	2,497,500	9,600	27,500	2,700	39,800	0	4,217,786
2034	17,300	2,011,500	20,000	2,497,500	9,600	27,500	2,700	39,800	0	4,217,786
2035	17,300	2,011,500	20,000	2,497,500	9,600	27,500	2,700	39,800	0	4,217,786
TOTAL	909,800	112,360,272	988,000	139,026,347	449,900	1,260,800	112,820	1,823,520	0	236,194,369

TABLE B-5A. Annual Water Quantities Delivered from Each Aqueduct Reach to Each Contractor

(in acre-feet)

Calendar Year	Grizzly Valley Pipeline PC FC&WCD	NORTH BAY AQUEDUCT Reach 1 SC FC&WCD	Reach 2 SC FC&WCD	Reach 3A SC FC&WCD	Reach 3B NC (a FC&WCD	Total	SOUTH BAY AQUEDUCT Reach 1 ACWD	Reach 1 AC FC&WCD	Reach 2 AC FC&WCD	Reach 4 AC FC&WCD	Reach 5 ACWD	Reach 5 AC FC&WCD
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]
1962	0	0	0	0	0	0	8,412	141	353	0	0	0
1963	0	0	0	0	0	0	10,914	814	917	0	0	0
1964	0	0	0	0	0	0	19,238	248	1,425	0	0	0
1965	0	0	0	0	0	0	15,280	637	1,830	138	0	0
1966	0	0	0	0	0	0	0	2,475	2,537	499	0	0
1967	0	0	0	0	0	0	0	1,527	2,391	862	0	0
1968	0	0	0	0	1,214	1,214	0	1,608	3,799	721	0	5
1969	0	0	0	0	2,687	2,687	0	1,165	3,459	1,851	0	160
1970	70	0	0	0	3,618	3,618	0	1,345	4,558	3,182	0	164
1971	64	0	0	0	2,521	2,521	0	546	1,908	2,403	0	160
1972	505	0	0	0	3,647	3,647	0	1,066	4,605	2,041	1,489	2,777
1973	679	0	0	0	3,792	3,792	0	430	1,123	1,193	0	229
1974	648	0	0	0	4,870	4,870	0	177	0	975	0	162
1975	405	0	0	0	6,840	6,840	0	137	1,783	1,864	0	120
1976	382	0	0	0	7,122	7,122	0	265	7,204	3,384	0	817
1977	303	0	0	0	8,226	8,226	0	210	4,491	2,213	0	524
1978	278	0	0	0	6,034	6,034	0	422	2,426	3,754	0	2,034
1979	329	0	0	0	6,561	6,561	0	197	4,283	5,567	0	3,937
1980	295	0	0	0	6,707	6,707	0	77	3,883	6,686	1,508	0
1981	355	0	0	0	9,001	9,001	0	1,250	4,648	5,273	5,752	1,157
1982	305	0	0	0	1,213	1,213	0	473	3,043	4,406	0	630
1983	262	0	0	0	2,287	2,287	0	179	2,712	1,714	0	50
1984	272	0	0	0	2,923	2,923	0	165	4,219	2,219	0	55
1985	254	0	0	0	4,039	4,039	0	213	5,199	2,060	0	63
1986	317	1,400	0	0	3,519	4,919	0	200	6,052	2,062	0	212
1987	452	1,550	0	0	7,693	9,243	0	218	7,538	2,372	0	285
1988	523	0	1	9,725	5,392	15,118	0	222	8,302	4,681	0	189
1989	1,000	0	1,300	17,120	6,166	24,586	0	195	8,843	5,190	0	3,364
1990	1,040	0	5,850	15,400	6,645	27,895	0	195	6,473	5,181	0	3,363
1991	1,080	0	6,500	15,800	7,124	29,424	0	195	6,729	5,721	0	3,902
1992	1,120	0	7,720	16,450	7,610	31,780	0	195	6,976	6,285	0	4,465
1993	1,160	0	9,600	16,530	8,107	34,237	0	195	7,234	6,825	0	5,006
1994	1,208	0	13,250	16,935	8,931	39,116	0	195	7,499	7,353	0	5,526
1995	1,256	0	16,900	17,340	9,755	43,995	0	205	7,874	7,721	0	5,802
1996	1,304	0	17,570	17,746	10,414	45,730	0	215	8,250	8,088	0	6,078
1997	1,352	0	18,240	18,152	11,073	47,465	0	225	8,624	8,457	0	6,354
1998	1,400	0	18,910	18,558	11,732	49,200	0	225	8,624	8,457	0	6,354
1999	1,469	0	19,580	18,964	12,391	50,935	0	225	8,624	8,457	0	6,354
2000	1,522	0	20,250	19,370	13,050	52,670	0	225	8,624	8,457	0	6,354
2001	1,577	0	20,300	19,696	13,640	53,636	0	225	8,624	8,457	0	6,354
2002	1,632	0	20,350	20,022	14,230	54,602	0	225	8,624	8,457	0	6,354
2003	1,690	0	20,400	20,348	14,820	55,568	0	225	8,624	8,457	0	6,354
2004	1,766	0	20,450	20,674	15,410	56,534	0	225	8,624	8,457	0	6,354
2005	1,827	0	20,500	21,000	16,000	57,500	0	225	8,624	8,457	0	6,354
2006	1,890	0	20,550	21,000	16,540	58,090	0	225	8,624	8,457	0	6,354
2007	1,954	0	20,600	21,000	17,080	58,680	0	225	8,624	8,457	0	6,354
2008	2,020	0	20,650	21,000	17,620	59,270	0	225	8,624	8,457	0	6,354
2009	2,012	0	20,700	21,000	18,160	59,860	0	225	8,624	8,457	0	6,354
2010	2,183	0	20,750	21,000	18,700	60,450	0	225	8,624	8,457	0	6,354
2011	2,256	0	20,800	21,000	19,340	61,140	0	225	8,624	8,457	0	6,354
2012	2,332	0	20,850	21,000	19,980	61,830	0	225	8,624	8,457	0	6,354
2013	2,410	0	20,900	21,000	20,620	62,520	0	225	8,624	8,457	0	6,354
2014	2,449	0	20,950	21,000	21,260	63,210	0	225	8,624	8,457	0	6,354
2015	2,515	0	21,000	21,000	21,900	63,900	0	225	8,624	8,457	0	6,354
2016	2,580	0	21,000	21,000	22,500	64,500	0	225	8,624	8,457	0	6,354
2017	2,642	0	21,000	21,000	23,100	65,100	0	225	8,624	8,457	0	6,354
2018	2,700	0	21,000	21,000	23,700	65,700	0	225	8,624	8,457	0	6,354
2019	2,700	0	21,000	21,000	24,300	66,300	0	225	8,624	8,457	0	6,354
2020	2,700	0	21,000	21,000	24,900	66,900	0	225	8,624	8,457	0	6,354
2021	2,700	0	21,000	21,000	24,920	66,920	0	225	8,624	8,457	0	6,354
2022	2,700	0	21,000	21,000	24,940	66,940	0	225	8,624	8,457	0	6,354
2023	2,700	0	21,000	21,000	24,960	66,960	0	225	8,624	8,457	0	6,354
2024	2,700	0	21,000	21,000	24,980	66,980	0	225	8,624	8,457	0	6,354
2025	2,700	0	21,000	21,000	25,000	67,000	0	225	8,624	8,457	0	6,354
2026	2,700	0	21,000	21,000	25,000	67,000	0	225	8,624	8,457	0	6,354
2027	2,700	0	21,000	21,000	25,000	67,000	0	225	8,624	8,457	0	6,354
2028	2,700	0	21,000	21,000	25,000	67,000	0	225	8,624	8,457	0	6,354
2029	2,700	0	21,000	21,000	25,000	67,000	0	225	8,624	8,457	0	6,354
2030	2,700	0	21,000	21,000	25,000	67,000	0	225	8,624	8,457	0	6,354
2031	2,700	0	21,000	21,000	25,000	67,000	0	225	8,624	8,457	0	6,354
2032	2,700	0	21,000	21,000	25,000	67,000	0	225	8,624	8,457	0	6,354
2033	2,700	0	21,000	21,000	25,000	67,000	0	225	8,624	8,457	0	6,354
2034	2,700	0	21,000	21,000	25,000	67,000	0	225	8,624	8,457	0	6,354
2035	2,700	0	21,000	21,000	25,000	67,000	0	225	8,624	8,457	0	6,354
TOTAL	105,944	2,950	885,421	949,830	971,504	2,809,705	53,844	26,772	490,902	444,307	8,749	299,042

a) For 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

(in acre-feet)

Calendar Year	SOUTH BAY AQUEDUCT (b (continued)					CALIFORNIA AQUEDUCT					
						NORTH SAN JOAQUIN DIVISION	SOUTH SAN JOAQUIN DIVISION				
	Reach 6 AC FC&WCD	Reach 7 ACWD	Reach 8 ACWD	Reach 9 SCVWD	Total	Reach 2A OFWD (c	Reach 8C TLBWSD	Reach 8C EWSID	Reach 8C CK	Reach 8D KCWA (AG)	Reach 8D DRWD
	[13]	[14]	[15]	[16]	[17]	[18]	[19]	[20]	[21]	[22]	[23]
1962	0	0	0	0	8,906	0	0	0	0	0	0
1963	0	0	0	0	12,645	0	0	0	0	0	0
1964	0	0	0	0	20,911	0	0	0	0	0	0
1965	0	1,127	0	15,014	34,026	0	0	0	0	0	0
1966	0	14,864	0	34,538	54,913	0	0	0	0	0	0
1967	0	12,882	0	39,101	56,763	0	0	0	0	0	0
1968	0	24,817	0	70,105	101,055	3,084	25,100	1,978	900	0	26,360
1969	0	813	0	62,264	69,712	3,016	7,081	56	100	0	31,375
1970	0	0	0	80,311	89,560	5,911	0	3,942	0	0	40,407
1971	0	5,961	0	87,606	98,584	7,212	80,906	5,990	3,700	0	41,053
1972	0	26,182	0	100,266	138,426	8,166	144,843	5,795	1,400	0	42,443
1973	0	2,521	0	88,582	94,078	3,214	26,317	3,000	1,500	1,500	22,057
1974	0	0	4	88,000	89,318	3,471	32,603	3,000	1,500	0	33,390
1975	714	393	593	88,000	93,604	3,576	41,536	3,000	1,600	0	40,555
1976	5,461	13,774	7,526	88,000	126,431	4,112	26,595	3,000	1,600	0	41,421
1977	5,206	11,284	7,556	76,220	107,704	1,472	12,984	738	1,530	0	11,153
1978	2,348	854	5,009	95,727	112,574	3,906	3,934	454	2,070	0	51,747
1979	5,341	3,430	7,444	91,991	122,190	6,149	74,758	1,739	2,000	0	38,544
1980	6,144	2,824	6,702	88,000	115,824	5,700	35,140	894	2,200	0	41,000
1981	7,262	7,595	8,570	88,000	129,507	4,300	50,888	5,859	2,300	0	41,000
1982	4,571	1,776	4,540	87,261	106,700	3,838	4,405	361	1,536	0	41,000
1983	111	0	3,157	86,733	94,656	3,822	1,001	0	3,550	0	42,900
1984	126	0	3,338	88,000	98,122	5,700	3,677	0	3,100	0	45,100
1985	7,537	11,203	7,813	88,000	122,088	5,433	68,638	5,197	3,400	0	46,251
1986	2,083	5,311	7,068	88,000	110,988	5,107	40,017	1,170	3,700	0	50,249
1987	12,993	15,488	9,902	88,000	136,796	5,625	30,359	2,525	4,000	0	46,288
1988	12,436	24,259	9,205	87,961	147,255	4,412	46,281	3,475	4,000	0	47,994
1989	13,408	26,725	9,700	90,000	157,425	6,163	62,592	3,000	4,000	0	63,031
1990	16,788	32,300	9,700	92,000	166,000	5,700	48,310	3,000	4,000	0	57,700
1991	17,453	18,070	23,930	94,000	170,000	5,700	48,310	3,000	4,000	0	57,700
1992	18,079	13,037	28,963	96,000	174,000	5,700	48,310	3,000	4,000	0	57,700
1993	18,740	12,686	29,314	98,000	178,000	5,700	48,310	3,000	4,000	0	57,700
1994	19,427	12,596	29,404	100,000	182,000	5,700	48,310	3,000	4,000	0	57,700
1995	20,398	12,596	29,404	100,000	184,000	5,700	48,310	3,000	4,000	0	57,700
1996	21,369	12,596	29,404	100,000	186,000	5,700	48,310	3,000	4,000	0	57,700
1997	22,340	12,596	29,404	100,000	188,000	5,700	48,310	3,000	4,000	0	57,700
1998	22,340	12,596	29,404	100,000	188,000	5,700	48,310	3,000	4,000	0	57,700
1999	22,340	12,596	29,404	100,000	188,000	5,700	48,310	3,000	4,000	0	57,700
2000	22,340	12,596	29,404	100,000	188,000	5,700	48,310	3,000	4,000	0	57,700
2001	22,340	12,596	29,404	100,000	188,000	5,700	48,310	3,000	4,000	0	57,700
2002	22,340	12,596	29,404	100,000	188,000	5,700	48,310	3,000	4,000	0	57,700
2003	22,340	12,596	29,404	100,000	188,000	5,700	48,310	3,000	4,000	0	57,700
2004	22,340	12,596	29,404	100,000	188,000	5,700	48,310	3,000	4,000	0	57,700
2005	22,340	12,596	29,404	100,000	188,000	5,700	48,310	3,000	4,000	0	57,700
2006	22,340	12,596	29,404	100,000	188,000	5,700	48,310	3,000	4,000	0	57,700
2007	22,340	12,596	29,404	100,000	188,000	5,700	48,310	3,000	4,000	0	57,700
2008	22,340	12,596	29,404	100,000	188,000	5,700	48,310	3,000	4,000	0	57,700
2009	22,340	12,596	29,404	100,000	188,000	5,700	48,310	3,000	4,000	0	57,700
2010	22,340	12,596	29,404	100,000	188,000	5,700	48,310	3,000	4,000	0	57,700
2011	22,340	12,596	29,404	100,000	188,000	5,700	48,310	3,000	4,000	0	57,700
2012	22,340	12,596	29,404	100,000	188,000	5,700	48,310	3,000	4,000	0	57,700
2013	22,340	12,596	29,404	100,000	188,000	5,700	48,310	3,000	4,000	0	57,700
2014	22,340	12,596	29,404	100,000	188,000	5,700	48,310	3,000	4,000	0	57,700
2015	22,340	12,596	29,404	100,000	188,000	5,700	48,310	3,000	4,000	0	57,700
2016	22,340	12,596	29,404	100,000	188,000	5,700	48,310	3,000	4,000	0	57,700
2017	22,340	12,596	29,404	100,000	188,000	5,700	48,310	3,000	4,000	0	57,700
2018	22,340	12,596	29,404	100,000	188,000	5,700	48,310	3,000	4,000	0	57,700
2019	22,340	12,596	29,404	100,000	188,000	5,700	48,310	3,000	4,000	0	57,700
2020	22,340	12,596	29,404	100,000	188,000	5,700	48,310	3,000	4,000	0	57,700
2021	22,340	12,596	29,404	100,000	188,000	5,700	48,310	3,000	4,000	0	57,700
2022	22,340	12,596	29,404	100,000	188,000	5,700	48,310	3,000	4,000	0	57,700
2023	22,340	12,596	29,404	100,000	188,000	5,700	48,310	3,000	4,000	0	57,700
2024	22,340	12,596	29,404	100,000	188,000	5,700	48,310	3,000	4,000	0	57,700
2025	22,340	12,596	29,404	100,000	188,000	5,700	48,310	3,000	4,000	0	57,700
2026	22,340	12,596	29,404	100,000	188,000	5,700	48,310	3,000	4,000	0	57,700
2027	22,340	12,596	29,404	100,000	188,000	5,700	48,310	3,000	4,000	0	57,700
2028	22,340	12,596	29,404	100,000	188,000	5,700	48,310	3,000	4,000	0	57,700
2029	22,340	12,596	29,404	100,000	188,000	5,700	48,310	3,000	4,000	0	57,700
2030	22,340	12,596	29,404	100,000	188,000	5,700	48,310	3,000	4,000	0	57,700
2031	22,340	12,596	29,404	100,000	188,000	5,700	48,310	3,000	4,000	0	57,700
2032	22,340	12,596	29,404	100,000	188,000	5,700	48,310	3,000	4,000	0	57,700
2033	22,340	12,596	29,404	100,000	188,000	5,700	48,310	3,000	4,000	0	57,700
2034	22,340	12,596	29,404	100,000	188,000	5,700	48,310	3,000	4,000	0	57,700
2035	22,340	12,596	29,404	100,000	188,000	5,700	48,310	3,000	4,000	0	57,700
TOTAL	1,089,255	819,208	1,425,002	6,565,680	11,222,761	365,589	3,041,915	193,173	233,686	1,500	3,539,518

b) For the period June 1962 through November 1967, deliveries were supplied by non-Project water.

c) Includes 425 AF of 1988 advance entitlement.

TABLE B-5A. Annual Water Quantities Delivered from Each Aqueduct Reach to Each Contractor

(in acre-feet)

Calendar Year	CALIFORNIA AQUEDUCT (continued)											
	SOUTH SAN JOAQUIN DIVISION (continued)											
	Reach 8D (contd.)		Reach 9			Reach 10A			Reach 11B		Reach 12E	
	CK	TLBWSD	KCWA (M&I)	KCWA (AG)	TLBWSD	KCWA (M&I)	KCWA (AG)	TLBWSD	KCWA (M&I)	KCWA (AG)	KCWA (M&I)	KCWA (AG)
	[24]	[25]	[26]	[27]	[28]	[29]	[30]	[31]	[32]	[33]	[34]	[35]
1962	0	0	0	0	0	0	0	0	0	0	0	0
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	30,951	0	0	0	0	0	24,776	0	0
1969	0	0	0	24,489	0	0	0	2,842	0	64,682	0	0
1970	0	3,408	0	46,114	1,855	0	158	4,315	0	72,279	0	9,279
1971	0	41,579	0	58,356	0	0	9,973	0	0	63,773	0	28,056
1972	0	113,550	0	75,464	0	0	5,876	0	0	72,358	0	62,342
1973	0	24,147	0	54,583	0	0	22,948	0	0	67,544	0	13,082
1974	0	39,686	0	63,814	0	10,019	22,719	0	0	87,476	2,651	4,248
1975	0	44,722	0	50,021	0	2,791	72,121	0	0	85,675	0	10,787
1976	0	32,216	0	53,465	0	74	50,444	0	0	85,067	37,519	20,555
1977	0	5,097	0	24,668	0	201	34,451	0	3,981	29,603	20,280	1,737
1978	0	8,119	0	72,231	0	0	161,889	0	0	88,753	47,133	15,011
1979	0	80,363	0	74,524	0	285	153,245	0	484	108,379	50,740	61,567
1980	0	34,104	0	79,946	0	3,780	131,836	0	3,112	103,207	32,039	22,252
1981	0	32,550	0	76,508	0	341	133,500	0	494	104,395	59,917	58,470
1982	214	14,146	0	76,877	0	4,700	164,832	0	798	99,081	36,139	75,587
1983	0	5	2,217	84,573	0	0	146,493	0	2,069	94,117	0	10,950
1984	0	2,066	4,100	85,732	0	6,910	150,302	0	2,349	124,819	63,941	39,929
1985	0	41,153	0	67,696	0	6,495	153,473	0	10,666	118,646	69,839	84,117
1986	0	39,338	0	79,943	0	5,065	198,099	0	8,673	124,836	62,109	51,540
1987	0	62,725	0	97,732	0	900	226,521	0	13,074	111,877	95,297	86,223
1988	0	48,035	1,100	83,858	0	8,229	213,795	0	13,509	114,031	86,390	123,249
1989	0	73,958	0	108,747	0	2,700	263,752	0	20,000	147,094	104,700	176,296
1990	0	70,190	0	91,200	0	2,600	245,053	0	20,000	129,059	113,400	173,588
1991	0	70,190	0	91,200	0	2,600	245,053	0	20,000	129,059	113,400	173,588
1992	0	70,190	0	91,200	0	2,600	245,053	0	20,000	129,059	113,400	173,588
1993	0	70,190	0	91,200	0	2,600	245,053	0	20,000	129,059	113,400	173,588
1994	0	70,190	0	91,200	0	2,600	245,053	0	20,000	129,059	113,400	173,588
1995	0	70,190	0	91,200	0	2,600	245,053	0	20,000	129,059	113,400	173,588
1996	0	70,190	0	91,200	0	2,600	245,053	0	20,000	129,059	113,400	173,588
1997	0	70,190	0	91,200	0	2,600	245,053	0	20,000	129,059	113,400	173,588
1998	0	70,190	0	91,200	0	2,600	245,053	0	20,000	129,059	113,400	173,588
1999	0	70,190	0	91,200	0	2,600	245,053	0	20,000	129,059	113,400	173,588
2000	0	70,190	0	91,200	0	2,600	245,053	0	20,000	129,059	113,400	173,588
2001	0	70,190	0	91,200	0	2,600	245,053	0	20,000	129,059	113,400	173,588
2002	0	70,190	0	91,200	0	2,600	245,053	0	20,000	129,059	113,400	173,588
2003	0	70,190	0	91,200	0	2,600	245,053	0	20,000	129,059	113,400	173,588
2004	0	70,190	0	91,200	0	2,600	245,053	0	20,000	129,059	113,400	173,588
2005	0	70,190	0	91,200	0	2,600	245,053	0	20,000	129,059	113,400	173,588
2006	0	70,190	0	91,200	0	2,600	245,053	0	20,000	129,059	113,400	173,588
2007	0	70,190	0	91,200	0	2,600	245,053	0	20,000	129,059	113,400	173,588
2008	0	70,190	0	91,200	0	2,600	245,053	0	20,000	129,059	113,400	173,588
2009	0	70,190	0	91,200	0	2,600	245,053	0	20,000	129,059	113,400	173,588
2010	0	70,190	0	91,200	0	2,600	245,053	0	20,000	129,059	113,400	173,588
2011	0	70,190	0	91,200	0	2,600	245,053	0	20,000	129,059	113,400	173,588
2012	0	70,190	0	91,200	0	2,600	245,053	0	20,000	129,059	113,400	173,588
2013	0	70,190	0	91,200	0	2,600	245,053	0	20,000	129,059	113,400	173,588
2014	0	70,190	0	91,200	0	2,600	245,053	0	20,000	129,059	113,400	173,588
2015	0	70,190	0	91,200	0	2,600	245,053	0	20,000	129,059	113,400	173,588
2016	0	70,190	0	91,200	0	2,600	245,053	0	20,000	129,059	113,400	173,588
2017	0	70,190	0	91,200	0	2,600	245,053	0	20,000	129,059	113,400	173,588
2018	0	70,190	0	91,200	0	2,600	245,053	0	20,000	129,059	113,400	173,588
2019	0	70,190	0	91,200	0	2,600	245,053	0	20,000	129,059	113,400	173,588
2020	0	70,190	0	91,200	0	2,600	245,053	0	20,000	129,059	113,400	173,588
2021	0	70,190	0	91,200	0	2,600	245,053	0	20,000	129,059	113,400	173,588
2022	0	70,190	0	91,200	0	2,600	245,053	0	20,000	129,059	113,400	173,588
2023	0	70,190	0	91,200	0	2,600	245,053	0	20,000	129,059	113,400	173,588
2024	0	70,190	0	91,200	0	2,600	245,053	0	20,000	129,059	113,400	173,588
2025	0	70,190	0	91,200	0	2,600	245,053	0	20,000	129,059	113,400	173,588
2026	0	70,190	0	91,200	0	2,600	245,053	0	20,000	129,059	113,400	173,588
2027	0	70,190	0	91,200	0	2,600	245,053	0	20,000	129,059	113,400	173,588
2028	0	70,190	0	91,200	0	2,600	245,053	0	20,000	129,059	113,400	173,588
2029	0	70,190	0	91,200	0	2,600	245,053	0	20,000	129,059	113,400	173,588
2030	0	70,190	0	91,200	0	2,600	245,053	0	20,000	129,059	113,400	173,588
2031	0	70,190	0	91,200	0	2,600	245,053	0	20,000	129,059	113,400	173,588
2032	0	70,190	0	91,200	0	2,600	245,053	0	20,000	129,059	113,400	173,588
2033	0	70,190	0	91,200	0	2,600	245,053	0	20,000	129,059	113,400	173,588
2034	0	70,190	0	91,200	0	2,600	245,053	0	20,000	129,059	113,400	173,588
2035	0	70,190	0	91,200	0	2,600	245,053	0	20,000	129,059	113,400	173,588
TOTAL	214	3,969,707	7,417	5,665,492	1,855	172,090	13,588,865	7,157	999,209	7,929,182	5,985,094	8,940,325

TABLE B-5A. Annual Water Quantities Delivered from Each Aqueduct Reach to Each Contractor

(in acre-feet)

Calendar Year	CALIFORNIA AQUEDUCT (continued)											TEHACHAPI DIVISION
	SOUTH SAN JOAQUIN DIVISION (continued)											
	Reach 13B		Reach 14A		Reach 14B		Reach 14C		Reach 15A	Reach 16A		Reach 17E
	KCWA (M&I)	KCWA (AG)	KCWA (M&I)	KCWA (AG)	KCWA (M&I)	KCWA (AG)	KCWA (M&I)	KCWA (AG)	KCWA (AG)	KCWA (M&I)	KCWA (AG)	KCWA (M&I)
	[36]	[37]	[38]	[39]	[40]	[41]	[42]	[43]	[44]	[45]	[46]	[47]
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	4,891	0	0	0	3	0	0	0	0	0	0
1971	0	0	0	23,844	0	49,929	0	24,187	3,552	0	0	0
1972	0	17,388	0	26,621	0	77,034	0	35,016	6,064	0	4,768	0
1973	0	9,297	0	15,328	0	47,040	0	19,043	19,916	0	1,961	0
1974	8,038	4,246	0	7,794	0	32,356	0	12,601	18,000	3,000	1,564	0
1975	8,538	7,059	0	10,306	0	27,736	0	12,783	35,420	3,200	9,867	0
1976	5,626	8,855	0	268	0	35,296	0	9,005	39,551	3,500	11,667	0
1977	0	5,024	0	8,299	0	13,539	0	3,757	6,158	3,420	685	0
1978	21,773	7,601	0	34,029	0	72,351	0	24,542	31,148	7,989	1,655	0
1979	5,663	17,766	3,012	27,356	0	59,413	0	22,372	38,602	2,813	15,808	0
1980	0	22,515	4,312	16,876	0	40,513	0	19,953	37,817	2,700	16,145	0
1981	7,844	14,037	4,511	13,007	8	42,753	7	18,729	39,033	2,636	18,156	0
1982	0	25,553	5,373	22,602	184	57,739	0	26,479	47,782	1,289	17,209	0
1983	0	3,491	1,168	20,302	0	57,922	0	26,613	37,426	1,400	17,907	0
1984	12,117	26,178	137	35,369	10	79,179	2	34,996	49,848	1,382	24,202	0
1985	0	67,711	206	33,103	0	72,855	0	31,758	44,078	1,309	16,820	0
1986	0	66,551	180	26,384	0	70,864	0	34,566	42,461	1,213	15,559	0
1987	5,609	40,374	610	30,098	9	67,710	10	31,019	34,748	1,665	10,170	0
1988	9,298	47,167	604	32,796	4	75,983	0	37,166	41,992	1,913	8,999	0
1989	3,000	34,740	800	45,219	0	89,430	0	47,017	48,392	2,000	17,537	0
1990	0	35,500	800	35,075	0	80,000	0	44,000	45,075	2,200	17,850	0
1991	0	35,500	800	35,075	0	80,000	0	44,000	45,075	2,200	17,850	0
1992	0	35,500	800	35,075	0	80,000	0	44,000	45,075	2,200	17,850	0
1993	0	35,500	800	35,075	0	80,000	0	44,000	45,075	2,200	17,850	0
1994	0	35,500	800	35,075	0	80,000	0	44,000	45,075	2,200	17,850	0
1995	0	35,500	800	35,075	0	80,000	0	44,000	45,075	2,200	17,850	0
1996	0	35,500	800	35,075	0	80,000	0	44,000	45,075	2,200	17,850	0
1997	0	35,500	800	35,075	0	80,000	0	44,000	45,075	2,200	17,850	0
1998	0	35,500	800	35,075	0	80,000	0	44,000	45,075	2,200	17,850	0
1999	0	35,500	800	35,075	0	80,000	0	44,000	45,075	2,200	17,850	0
2000	0	35,500	800	35,075	0	80,000	0	44,000	45,075	2,200	17,850	0
2001	0	35,500	800	35,075	0	80,000	0	44,000	45,075	2,200	17,850	0
2002	0	35,500	800	35,075	0	80,000	0	44,000	45,075	2,200	17,850	0
2003	0	35,500	800	35,075	0	80,000	0	44,000	45,075	2,200	17,850	0
2004	0	35,500	800	35,075	0	80,000	0	44,000	45,075	2,200	17,850	0
2005	0	35,500	800	35,075	0	80,000	0	44,000	45,075	2,200	17,850	0
2006	0	35,500	800	35,075	0	80,000	0	44,000	45,075	2,200	17,850	0
2007	0	35,500	800	35,075	0	80,000	0	44,000	45,075	2,200	17,850	0
2008	0	35,500	800	35,075	0	80,000	0	44,000	45,075	2,200	17,850	0
2009	0	35,500	800	35,075	0	80,000	0	44,000	45,075	2,200	17,850	0
2010	0	35,500	800	35,075	0	80,000	0	44,000	45,075	2,200	17,850	0
2011	0	35,500	800	35,075	0	80,000	0	44,000	45,075	2,200	17,850	0
2012	0	35,500	800	35,075	0	80,000	0	44,000	45,075	2,200	17,850	0
2013	0	35,500	800	35,075	0	80,000	0	44,000	45,075	2,200	17,850	0
2014	0	35,500	800	35,075	0	80,000	0	44,000	45,075	2,200	17,850	0
2015	0	35,500	800	35,075	0	80,000	0	44,000	45,075	2,200	17,850	0
2016	0	35,500	800	35,075	0	80,000	0	44,000	45,075	2,200	17,850	0
2017	0	35,500	800	35,075	0	80,000	0	44,000	45,075	2,200	17,850	0
2018	0	35,500	800	35,075	0	80,000	0	44,000	45,075	2,200	17,850	0
2019	0	35,500	800	35,075	0	80,000	0	44,000	45,075	2,200	17,850	0
2020	0	35,500	800	35,075	0	80,000	0	44,000	45,075	2,200	17,850	0
2021	0	35,500	800	35,075	0	80,000	0	44,000	45,075	2,200	17,850	0
2022	0	35,500	800	35,075	0	80,000	0	44,000	45,075	2,200	17,850	0
2023	0	35,500	800	35,075	0	80,000	0	44,000	45,075	2,200	17,850	0
2024	0	35,500	800	35,075	0	80,000	0	44,000	45,075	2,200	17,850	0
2025	0	35,500	800	35,075	0	80,000	0	44,000	45,075	2,200	17,850	0
2026	0	35,500	800	35,075	0	80,000	0	44,000	45,075	2,200	17,850	0
2027	0	35,500	800	35,075	0	80,000	0	44,000	45,075	2,200	17,850	0
2028	0	35,500	800	35,075	0	80,000	0	44,000	45,075	2,200	17,850	0
2029	0	35,500	800	35,075	0	80,000	0	44,000	45,075	2,200	17,850	0
2030	0	35,500	800	35,075	0	80,000	0	44,000	45,075	2,200	17,850	0
2031	0	35,500	800	35,075	0	80,000	0	44,000	45,075	2,200	17,850	0
2032	0	35,500	800	35,075	0	80,000	0	44,000	45,075	2,200	17,850	0
2033	0	35,500	800	35,075	0	80,000	0	44,000	45,075	2,200	17,850	0
2034	0	35,500	800	35,075	0	80,000	0	44,000	45,075	2,200	17,850	0
2035	0	35,500	800	35,075	0	80,000	0	44,000	45,075	2,200	17,850	0
TOTAL	87,506	2,063,444	57,713	2,043,051	215	4,749,645	19	2,495,602	2,695,438	142,629	1,031,779	0

TABLE B-5A. Annual Water Quantities Delivered from Each Aqueduct Reach to Each Contractor

(in acre-feet)

Calendar Year	CALIFORNIA AQUEDUCT (continued)											
	MOJAVE DIVISION											
	Reach 18A	Reach 19	Reach 20A		Reach 20B		Reach 21		Reach 22A	Reach 22B		
	AVEKWA	AVEKWA	PWD	AVEKWA	PWD	AVEKWA	LCID	PWD	AVEKWA	MWDSC (d	CVWD (d	AVEKWA (e
	[48]	[49]	[50]	[51]	[52]	[53]	[54]	[55]	[56]	[57]	[58]	[59]
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	338	0	0	0	0	0
1973	0	0	0	0	0	0	290	0	0	(14,800)	5,800	0
1974	0	1,223	0	0	0	0	400	0	0	(16,400)	6,400	0
1975	0	7,622	0	420	0	0	520	0	0	(18,000)	7,000	0
1976	3,808	23,063	0	471	0	416	589	0	0	(19,600)	7,600	0
1977	1,231	8,927	0	773	0	271	111	0	0	0	0	0
1978	1,321	36,333	0	5,549	0	934	208	0	0	(25,384)	10,084	0
1979	2,098	49,910	0	7,555	0	930	133	0	0	(25,063)	10,063	0
1980	2,610	61,534	0	7,605	0	655	191	0	3	(27,884)	10,884	0
1981	2,340	65,690	0	10,333	0	966	1,270	0	46	(31,105)	12,105	0
1982	1,669	41,127	0	7,313	0	8	0	0	174	(34,326)	13,326	0
1983	43	26,377	0	6,253	0	20	38	0	268	(37,547)	14,547	0
1984	90	22,462	0	9,558	0	2	1	0	550	(40,768)	15,768	0
1985	8	23,440	1,510	11,613	32	217	0	0	1,786	(43,989)	16,989	0
1986	8	16,898	3,041	13,808	45	0	163	10	1,735	(47,210)	18,210	0
1987	0	15,958	2,389	15,493	1,624	151	1,080	1,366	2,278	(50,931)	19,431	214
1988	0	13,471	366	17,117	1,261	281	419	143	3,210	(54,652)	20,652	0
1989	0	27,095	0	23,190	8,190	60	2,070	0	4,655	(58,373)	21,873	0
1990	0	25,550	0	25,600	10,440	1,100	0	0	5,235	(61,200)	23,100	0
1991	0	23,815	0	28,250	13,050	1,200	2,300	0	5,735	(61,200)	23,100	0
1992	0	24,315	0	31,850	16,110	1,300	2,300	0	6,535	(61,200)	23,100	0
1993	0	23,315	0	35,750	17,300	1,400	2,300	0	7,535	(61,200)	23,100	0
1994	0	24,315	0	39,650	17,300	1,500	2,300	0	8,535	(61,200)	23,100	0
1995	0	25,630	0	41,793	17,300	1,581	2,300	0	8,996	(61,200)	23,100	0
1996	0	27,076	0	44,151	17,300	1,670	2,300	0	9,504	(61,200)	23,100	0
1997	0	28,521	0	46,508	17,300	1,759	2,300	0	10,011	(61,200)	23,100	0
1998	0	29,967	0	48,866	17,300	1,849	2,300	0	10,519	(61,200)	23,100	0
1999	0	31,412	0	51,223	17,300	1,938	2,300	0	11,027	(61,200)	23,100	0
2000	0	32,858	0	53,581	17,300	2,027	2,300	0	11,534	(61,200)	23,100	0
2001	0	34,173	0	55,724	17,300	2,108	2,300	0	11,996	(61,200)	23,100	0
2002	0	35,487	0	57,867	17,300	2,189	2,300	0	12,457	(61,200)	23,100	0
2003	0	36,801	0	60,011	17,300	2,270	2,300	0	12,918	(61,200)	23,100	0
2004	0	38,116	0	62,154	17,300	2,351	2,300	0	13,379	(61,200)	23,100	0
2005	0	39,430	0	64,297	17,300	2,432	2,300	0	13,841	(61,200)	23,100	0
2006	0	39,430	0	64,297	17,300	2,432	2,300	0	13,841	(61,200)	23,100	0
2007	0	39,430	0	64,297	17,300	2,432	2,300	0	13,841	(61,200)	23,100	0
2008	0	39,430	0	64,297	17,300	2,432	2,300	0	13,841	(61,200)	23,100	0
2009	0	39,430	0	64,297	17,300	2,432	2,300	0	13,841	(61,200)	23,100	0
2010	0	39,430	0	64,297	17,300	2,432	2,300	0	13,841	(61,200)	23,100	0
2011	0	39,430	0	64,297	17,300	2,432	2,300	0	13,841	(61,200)	23,100	0
2012	0	39,430	0	64,297	17,300	2,432	2,300	0	13,841	(61,200)	23,100	0
2013	0	39,430	0	64,297	17,300	2,432	2,300	0	13,841	(61,200)	23,100	0
2014	0	39,430	0	64,297	17,300	2,432	2,300	0	13,841	(61,200)	23,100	0
2015	0	39,430	0	64,297	17,300	2,432	2,300	0	13,841	(61,200)	23,100	0
2016	0	39,430	0	64,297	17,300	2,432	2,300	0	13,841	(61,200)	23,100	0
2017	0	39,430	0	64,297	17,300	2,432	2,300	0	13,841	(61,200)	23,100	0
2018	0	39,430	0	64,297	17,300	2,432	2,300	0	13,841	(61,200)	23,100	0
2019	0	39,430	0	64,297	17,300	2,432	2,300	0	13,841	(61,200)	23,100	0
2020	0	39,430	0	64,297	17,300	2,432	2,300	0	13,841	(61,200)	23,100	0
2021	0	43,430	0	64,297	17,300	2,432	2,300	0	13,841	(61,200)	23,100	0
2022	0	45,430	0	64,297	17,300	2,432	2,300	0	13,841	(61,200)	23,100	0
2023	0	51,430	0	64,297	17,300	2,432	2,300	0	13,841	(61,200)	23,100	0
2024	0	55,430	0	64,297	17,300	2,432	2,300	0	13,841	(61,200)	23,100	0
2025	0	57,830	0	64,297	17,300	2,432	2,300	0	13,841	(61,200)	23,100	0
2026	0	57,830	0	64,297	17,300	2,432	2,300	0	13,841	(61,200)	23,100	0
2027	0	57,830	0	64,297	17,300	2,432	2,300	0	13,841	(61,200)	23,100	0
2028	0	57,830	0	64,297	17,300	2,432	2,300	0	13,841	(61,200)	23,100	0
2029	0	57,830	0	64,297	17,300	2,432	2,300	0	13,841	(61,200)	23,100	0
2030	0	57,830	0	64,297	17,300	2,432	2,300	0	13,841	(61,200)	23,100	0
2031	0	57,830	0	64,297	17,300	2,432	2,300	0	13,841	(61,200)	23,100	0
2032	0	57,830	0	64,297	17,300	2,432	2,300	0	13,841	(61,200)	23,100	0
2033	0	57,830	0	64,297	17,300	2,432	2,300	0	13,841	(61,200)	23,100	0
2034	0	57,830	0	64,297	17,300	2,432	2,300	0	13,841	(61,200)	23,100	0
2035	0	57,830	0	64,297	17,300	2,432	2,300	0	13,841	(61,200)	23,100	0
TOTAL	15,226	2,345,211	7,306	2,813,236	794,652	106,545	111,321	1,519	589,692	(3,361,232)	1,273,332	214

d) In accordance with the Exchange Agreement between the noted agencies, MWDSC 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.

e) 1988 advance entitlement.

TABLE B-5A. Annual Water Quantities Delivered from Each Aqueduct Reach to Each Contractor

(in acre-feet)

Calendar	CALIFORNIA AQUEDUCT (continued)										
	MOJAVE DIVISION (continued)					SANTA ANA DIVISION					
	Reach 22B (contd.)		Reach 23	Reach 24		Reach 26A			Reach 28G	Reach 28H	Reach 28J
Year	DWA (d	MWA	MWA	CLAWA	MWDSC	SBVMWD (f	SGVMWD	SGPWA	MWDSC	MWDSC	MWDSC
	[60]	[61]	[62]	[63]	[64]	[65]	[66]	[67]	[68]	[69]	[70]
1962	0	0	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0	0	0	0	0
1967	0	0	0	0	0	0	0	0	0	0	0
1968	0	0	0	0	0	0	0	0	0	0	0
1969	0	0	0	0	0	0	0	0	0	0	0
1970	0	0	0	0	0	0	0	0	0	0	0
1971	0	0	0	0	0	0	0	0	0	0	0
1972	0	55	0	464	0	1,275	0	0	0	0	0
1973	9,000	0	0	461	444	32,426	0	0	18,942	0	0
1974	10,000	0	14	627	84,981	16,605	612	0	0	0	0
1975	11,000	0	0	825	169,960	13,865	5,450	0	0	0	251
1976	12,000	0	0	1,002	215,312	12,273	6,071	0	0	55	2,000
1977	0	22	58	1,109	64,823	24,833	8,996	0	0	43	2,442
1978	15,300	0	0	1,209	297,708	4,055	7,771	0	0	48	64,054
1979	15,000	4,000	0	1,260	260,903	18	290	0	0	1,290	94,353
1980	17,000	4,000	0	1,239	300,345	0	1,085	0	0	3,013	91,532
1981	19,000	4,000	0	1,485	395,678	16,021	3,619	0	0	4,365	149,405
1982	21,000	10,500	0	1,238	215,123	8,409	12,599	0	0	3,961	155,629
1983	23,000	0	0	911	175,288	5,994	734	0	0	6,645	41,616
1984	25,000	0	0	1,128	122,311	5,556	7,656	0	0	109,743	5,672
1985	27,000	0	0	1,422	147,599	7,390	5,028	0	0	182,781	6,538
1986	29,000	0	0	1,506	215,265	6,421	9,454	0	0	131,439	30,071
1987	31,500	17	0	1,849	175,012	18,751	10,630	0	0	144,743	26,315
1988	34,000	9	0	2,006	247,101	21,386	8,948	0	0	199,641	22,209
1989	36,500	360	0	2,465	299,800	34,800	13,000	0	0	272,204	56,393
1990	38,100	550	0	2,665	385,400	45,800	13,000	0	0	342,500	49,100
1991	38,100	630	0	2,900	385,900	45,800	13,000	0	0	348,500	42,600
1992	38,100	890	0	3,105	451,000	45,800	13,000	0	0	394,400	42,600
1993	38,100	1,220	0	3,280	472,200	50,000	13,000	0	0	401,200	42,600
1994	38,100	1,580	0	3,453	515,450	50,000	14,000	0	0	392,950	42,600
1995	38,100	50,800	0	3,625	558,700	50,000	15,000	0	0	384,700	42,600
1996	38,100	50,800	0	3,788	576,104	50,000	15,340	0	0	389,040	42,600
1997	38,100	50,800	0	3,951	593,508	50,000	15,680	0	0	393,380	42,600
1998	38,100	50,800	0	4,114	610,912	50,000	16,020	0	0	397,720	42,600
1999	38,100	50,800	0	4,277	628,316	50,000	16,360	0	0	402,060	42,600
2000	38,100	50,800	0	4,440	645,700	50,000	16,700	17,300	0	406,400	42,600
2001	38,100	50,800	0	4,586	671,280	50,000	17,040	17,300	0	409,020	42,600
2002	38,100	50,800	0	4,732	696,860	50,000	17,380	17,300	0	411,640	42,600
2003	38,100	50,800	0	4,878	722,440	50,000	17,720	17,300	0	414,260	42,600
2004	38,100	50,800	0	5,024	748,020	54,000	18,060	17,300	0	416,880	42,600
2005	38,100	50,800	0	5,170	773,600	58,000	18,400	17,300	0	419,500	42,600
2006	38,100	50,800	0	5,256	792,580	62,000	18,740	17,300	0	421,260	42,600
2007	38,100	50,800	0	5,342	811,560	66,000	19,080	17,300	0	423,020	42,600
2008	38,100	50,800	0	5,828	830,540	70,000	19,420	17,300	0	424,780	42,600
2009	38,100	50,800	0	5,514	849,520	74,000	19,760	17,300	0	426,540	42,600
2010	38,100	50,800	0	5,600	868,500	78,000	20,100	17,300	0	428,300	42,600
2011	38,100	50,800	0	5,640	868,500	82,000	20,460	17,300	0	428,300	42,600
2012	38,100	50,800	0	5,680	868,500	86,000	20,820	17,300	0	428,300	42,600
2013	38,100	50,800	0	5,720	868,500	90,000	21,180	17,300	0	428,300	42,600
2014	38,100	50,800	0	5,760	868,500	92,000	21,540	17,300	0	428,300	42,600
2015	38,100	50,800	0	5,800	868,500	94,000	21,900	17,300	0	428,300	42,600
2016	38,100	50,800	0	5,800	868,500	96,000	22,240	17,300	0	428,300	42,600
2017	38,100	50,800	0	5,800	868,500	98,000	22,580	17,300	0	428,300	42,600
2018	38,100	50,800	0	5,800	868,500	100,000	22,920	17,300	0	428,300	42,600
2019	38,100	50,800	0	5,800	868,500	100,480	23,260	17,300	0	428,300	42,600
2020	38,100	50,800	0	5,800	868,500	100,960	23,600	17,300	0	428,300	42,600
2021	38,100	50,800	0	5,800	868,500	101,440	23,940	17,300	0	428,300	42,600
2022	38,100	50,800	0	5,800	868,500	101,920	24,280	17,300	0	428,300	42,600
2023	38,100	50,800	0	5,800	868,500	102,400	24,620	17,300	0	428,300	42,600
2024	38,100	50,800	0	5,800	868,500	102,600	24,960	17,300	0	428,300	42,600
2025	38,100	50,800	0	5,800	868,500	102,600	25,300	17,300	0	428,300	42,600
2026	38,100	50,800	0	5,800	868,500	102,600	25,640	17,300	0	428,300	42,600
2027	38,100	50,800	0	5,800	868,500	102,600	25,980	17,300	0	428,300	42,600
2028	38,100	50,800	0	5,800	868,500	102,600	26,320	17,300	0	428,300	42,600
2029	38,100	50,800	0	5,800	868,500	102,600	26,660	17,300	0	428,300	42,600
2030	38,100	50,800	0	5,800	868,500	102,600	27,000	17,300	0	428,300	42,600
2031	38,100	50,800	0	5,800	868,500	102,600	27,360	17,300	0	428,300	42,600
2032	38,100	50,800	0	5,800	868,500	102,600	27,720	17,300	0	428,300	42,600
2033	38,100	50,800	0	5,800	868,500	102,600	28,080	17,300	0	428,300	42,600
2034	38,100	50,800	0	5,800	868,500	102,600	28,440	17,300	0	428,300	42,600
2035	38,100	50,800	0	5,800	868,500	102,600	28,800	17,300	0	428,300	42,600
TOTAL	2,087,900	2,110,633	72	258,334	38,688,243	3,855,878	1,064,343	622,800	18,942	20,215,521	2,714,580

f) Includes 1,650 AF recaptured from ground water storage in 1982, 10,000 AF in 1987, and 8,749 AF in 1988. This water was stored under DWR's Ground Water Demonstration Program.

TABLE B-5A. Annual Water Quantities Delivered from Each Aqueduct Reach to Each Contractor

(in acre-feet)

Calendar Year	CALIFORNIA AQUEDUCT (continued)												GRAND TOTAL
	WEST BRANCH					COASTAL BRANCH						Total	
	Reach 29F	Reach 29H	Reach 30			Reach 31A		Reach 33A	Reach 34	Reach 35			
	AVEKWA	VCFCD	MWDSC (g	VCFCD	CLWA	KCWA (AG.)	DDWD	SLOC FC&WCD	SLOC FC&WCD	SLOC FC&WCD	SBC FC&WCD		
	[71]	[72]	[73]	[74]	[75]	[76]	[77]	[78]	[79]	[80]	[81]	[82]	[83]
1962	0	0	0	0	0	0	0	0	0	0	0	0	8,906
1963	0	0	0	0	0	0	0	0	0	0	0	0	12,645
1964	0	0	0	0	0	0	0	0	0	0	0	0	20,911
1965	0	0	0	0	0	0	0	0	0	0	0	0	34,026
1966	0	0	0	0	0	0	0	0	0	0	0	0	54,913
1967	0	0	0	0	0	0	0	0	0	0	0	0	56,763
1968	0	0	0	0	0	71,657	7,382	0	0	0	0	192,188	294,457
1969	0	0	0	0	0	52,094	9,970	0	0	0	0	195,705	268,104
1970	0	0	0	0	0	71,910	11,739	0	0	0	0	276,211	369,459
1971	0	0	0	0	0	98,481	12,490	0	0	0	0	553,081	654,250
1972	53	0	71,938	0	0	107,850	13,905	0	0	0	0	895,006	1,037,584
1973	20	0	155,297	0	0	69,227	9,418	0	0	0	0	639,002	737,551
1974	36	0	209,136	0	0	68,474	9,700	0	0	0	0	783,984	878,820
1975	26	0	374,280	0	0	74,516	10,700	0	0	0	0	1,129,728	1,230,577
1976	24	0	420,684	0	0	78,358	11,700	0	0	0	0	1,245,662	1,379,597
1977	0	0	122,447	0	0	35,504	5,075	0	0	0	0	465,442	581,675
1978	0	0	171,139	0	0	81,242	11,362	0	0	0	0	1,339,268	1,458,154
1979	0	0	145,591	0	7	104,017	19,138	0	0	0	0	1,537,075	1,666,155
1980	0	0	164,721	0	1,210	97,497	13,882	0	0	0	0	1,407,163	1,529,989
1981	0	0	277,503	0	5,761	97,054	12,700	0	0	0	0	1,779,479	1,918,342
1982	0	0	351,362	0	9,516	83,076	12,700	0	0	0	0	1,642,128	1,750,346
1983	0	0	157,519	0	9,476	87,859	12,659	0	0	0	0	1,089,626	1,186,831
1984	0	0	260,624	0	11,477	119,098	12,741	0	0	0	0	1,489,814	1,591,131
1985	0	0	390,696	0	12,401	110,124	12,099	0	0	0	0	1,863,528	1,989,909
1986	0	0	379,275	0	13,928	118,298	13,301	0	0	0	0	1,882,290	1,998,514
1987	0	0	417,285	0	16,167	116,259	11,821	0	0	0	0	1,984,570	2,131,061
1988	0	0	488,265	0	18,904	109,435	11,534	0	0	0	0	2,219,986	2,382,882
1989	0	0	542,217	0	24,480	119,561	14,745	0	0	0	0	2,769,453	2,952,464
1990	0	0	654,000	0	27,720	118,000	12,700	0	0	0	0	2,943,660	3,138,595
1991	0	0	654,000	0	31,040	118,000	12,700	0	0	0	0	2,953,720	3,154,224
1992	0	0	654,000	0	34,800	118,000	12,700	0	0	0	0	3,077,005	3,283,905
1993	0	310	654,000	0	39,000	118,000	12,700	0	0	0	0	3,119,410	3,332,807
1994	0	260	619,000	15,000	41,500	118,000	12,700	0	0	0	0	3,144,393	3,366,717
1995	0	500	584,000	15,000	41,500	118,000	12,700	10,000	5,000	10,000	45,486	3,269,511	3,498,762
1996	0	900	595,000	15,000	41,500	118,000	12,700	10,000	5,000	10,000	45,486	3,307,559	3,540,593
1997	0	1,300	606,000	15,000	41,500	118,000	12,700	10,000	5,000	10,000	45,486	3,345,604	3,582,421
1998	0	1,700	617,000	15,000	41,500	118,000	12,700	10,000	5,000	10,000	45,486	3,383,653	3,622,253
1999	0	2,100	628,000	15,000	41,500	118,000	12,700	10,000	5,000	10,000	45,486	3,421,699	3,662,103
2000	0	2,500	639,000	15,000	41,500	118,000	12,700	10,000	5,000	10,000	45,486	3,477,026	3,719,218
2001	0	2,838	648,420	15,000	41,500	118,000	12,700	10,000	5,000	10,000	45,486	3,519,471	3,762,684
2002	0	3,176	657,840	15,000	41,500	118,000	12,700	10,000	5,000	10,000	45,486	3,561,914	3,806,148
2003	0	3,514	667,260	15,000	41,500	118,000	12,700	10,000	5,000	10,000	45,486	3,604,358	3,849,616
2004	0	3,852	676,680	15,000	41,500	118,000	12,700	10,000	5,000	10,000	45,486	3,650,802	3,897,102
2005	0	4,200	686,100	15,000	41,500	118,000	12,700	10,000	5,000	10,000	45,486	3,697,256	3,944,583
2006	0	4,362	695,540	15,000	41,500	118,000	12,700	10,000	5,000	10,000	45,486	3,732,024	3,980,004
2007	0	4,524	704,980	15,000	41,500	118,000	12,700	10,000	5,000	10,000	45,486	3,766,792	4,015,426
2008	0	4,686	714,420	15,000	41,500	118,000	12,700	10,000	5,000	10,000	45,486	3,801,960	4,051,250
2009	0	4,848	723,860	15,000	41,500	118,000	12,700	10,000	5,000	10,000	45,486	3,836,328	4,086,200
2010	0	5,000	733,300	15,000	41,500	118,000	12,700	10,000	5,000	10,000	45,486	3,871,086	4,121,719
2011	0	5,000	733,300	15,000	41,500	118,000	12,700	10,000	5,000	10,000	45,486	3,875,486	4,126,882
2012	0	5,000	733,300	15,000	41,500	118,000	12,700	10,000	5,000	10,000	45,486	3,879,886	4,132,048
2013	0	5,000	733,300	15,000	41,500	118,000	12,700	10,000	5,000	10,000	45,486	3,884,286	4,137,216
2014	0	5,000	733,300	15,000	41,500	118,000	12,700	10,000	5,000	10,000	45,486	3,886,686	4,140,345
2015	0	5,000	733,300	15,000	41,500	118,000	12,700	10,000	5,000	10,000	45,486	3,889,086	4,143,501
2016	0	5,000	733,300	15,000	41,500	118,000	12,700	10,000	5,000	10,000	45,486	3,891,426	4,146,506
2017	0	5,000	733,300	15,000	41,500	118,000	12,700	10,000	5,000	10,000	45,486	3,893,766	4,149,508
2018	0	5,000	733,300	15,000	41,500	118,000	12,700	10,000	5,000	10,000	45,486	3,896,106	4,152,506
2019	0	5,000	733,300	15,000	41,500	118,000	12,700	10,000	5,000	10,000	45,486	3,896,926	4,153,926
2020	0	5,000	733,300	15,000	41,500	118,000	12,700	10,000	5,000	10,000	45,486	3,897,746	4,155,346
2021	0	5,000	733,300	15,000	41,500	118,000	12,700	10,000	5,000	10,000	45,486	3,902,566	4,160,186
2022	0	5,000	733,300	15,000	41,500	118,000	12,700	10,000	5,000	10,000	45,486	3,905,386	4,163,026
2023	0	5,000	733,300	15,000	41,500	118,000	12,700	10,000	5,000	10,000	45,486	3,912,206	4,169,866
2024	0	5,000	733,300	15,000	41,500	118,000	12,700	10,000	5,000	10,000	45,486	3,916,746	4,174,426
2025	0	5,000	733,300	15,000	41,500	118,000	12,700	10,000	5,000	10,000	45,486	3,919,486	4,177,186
2026	0	5,000	733,300	15,000	41,500	118,000	12,700	10,000	5,000	10,000	45,486	3,919,826	4,177,526
2027	0	5,000	733,300	15,000	41,500	118,000	12,700	10,000	5,000	10,000	45,486	3,920,166	4,177,866
2028	0	5,000	733,300	15,000	41,500	118,000	12,700	10,000	5,000	10,000	45,486	3,920,506	4,178,206
2029	0	5,000	733,300	15,000	41,500	118,000	12,700	10,000	5,000	10,000	45,486	3,920,846	4,178,546
2030	0	5,000	733,300	15,000	41,500	118,000	12,700	10,000	5,000	10,000	45,486	3,921,186	4,178,886
2031	0	5,000	733,300	15,000	41,500	118,000	12,700	10,000	5,000	10,000	45,486	3,921,546	4,179,246
2032	0	5,000	733,300	15,000	41,500	118,000	12,700	10,000	5,000	10,000	45,486	3,921,906	4,179,606
2033	0	5,000	733,300	15,000	41,500	118,000	12,700	10,000	5,000	10,000	45,486	3,922,266	4,179,966
2034	0	5,000	733,300	15,000	41,500	118,000	12,700	10,000	5,000	10,000	45,486	3,922,626	4,180,326
2035	0	5,000	733,300	15,000	41,500	118,000	12,700	10,000	5,000	10,000	45,486	3,922,986	4,180,686
TOTAL	159	175,570	37,244,879	630,000	1,998,887	7,399,591	844,961	410,000	205,000	410,000	1,864,926	197,527,270	211,665,680

g) Deliveries exclude 6,171 AF of 1982 exchange water.

TABLE B-5B. Annual Water Quantities Delivered to Each Contractor

(in acre-feet)

Calendar Year	NORTH BAY AREA			SOUTH BAY AREA (b				CENTRAL COASTAL AREA		
	(a Napa County FC&WCD	Solano County FC&WCD	Total	Alameda County FC&WCD, Zone 7	Alameda County Water District	Santa Clara Valley Water District	Total	San Luis Obispo County FC&WCD	Santa Barbara County FC&WCD	Total
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]
1962	0	0	0	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	87,261	106,700	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	6,166	18,420	24,586	31,000	36,425	90,000	157,425	0	0	0
1990	6,645	21,250	27,895	32,000	42,000	92,000	166,000	0	0	0
1991	7,124	22,300	29,424	34,000	42,000	94,000	170,000	0	0	0
1992	7,610	24,170	31,780	36,000	42,000	96,000	174,000	0	0	0
1993	8,107	26,130	34,237	38,000	42,000	98,000	178,000	0	0	0
1994	8,931	30,185	39,116	40,000	42,000	100,000	182,000	0	0	0
1995	9,755	34,240	43,995	42,000	42,000	100,000	184,000	25,000	45,486	70,486
1996	10,414	35,316	45,730	44,000	42,000	100,000	186,000	25,000	45,486	70,486
1997	11,073	36,392	47,465	46,000	42,000	100,000	188,000	25,000	45,486	70,486
1998	11,732	37,468	49,200	46,000	42,000	100,000	188,000	25,000	45,486	70,486
1999	12,391	38,544	50,935	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2000	13,050	39,620	52,670	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2001	13,640	39,996	53,636	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2002	14,230	40,372	54,602	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2003	14,820	40,748	55,568	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2004	15,410	41,124	56,534	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2005	16,000	41,500	57,500	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2006	16,540	41,550	58,090	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2007	17,080	41,600	58,680	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2008	17,620	41,650	59,270	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2009	18,160	41,700	59,860	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2010	18,700	41,750	60,450	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2011	19,340	41,800	61,140	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2012	19,980	41,850	61,830	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2013	20,620	41,900	62,520	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2014	21,260	41,950	63,210	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2015	21,900	42,000	63,900	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2016	22,500	42,000	64,500	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2017	23,100	42,000	65,100	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2018	23,700	42,000	65,700	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2019	24,300	42,000	66,300	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2020	24,900	42,000	66,900	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2021	24,920	42,000	66,920	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2022	24,940	42,000	66,940	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2023	24,960	42,000	66,960	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2024	24,980	42,000	66,980	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2025	25,000	42,000	67,000	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2026	25,000	42,000	67,000	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2027	25,000	42,000	67,000	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2028	25,000	42,000	67,000	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2029	25,000	42,000	67,000	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2030	25,000	42,000	67,000	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2031	25,000	42,000	67,000	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2032	25,000	42,000	67,000	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2033	25,000	42,000	67,000	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2034	25,000	42,000	67,000	46,000	42,000	100,000	188,000	25,000	45,486	70,486
2035	25,000	42,000	67,000	46,000	42,000	100,000	188,000	25,000	45,486	70,486
TOTAL	971,504	1,838,201	2,809,705	2,350,278	2,306,803	6,565,680	11,222,761	1,025,000	1,864,926	2,889,926

a) For the period 1968 through 1987, deliveries are non-Project water pumped through an interim facility.

b) For the period June 1962 through November 1967, deliveries were supplied by non-Project water.

TABLE B-5B. Annual Water Quantities Delivered to Each Contractor

(in acre-feet)

Calendar Year	SAN JOAQUIN VALLEY AREA									
	Devil's Den Water District	Dudley Ridge Water District	Empire West Side Irrigation District	Kern County Water Agency			County of Kings	Oak Flat Water District	Tulare Lake Basin Water Storage District	Total
				Municipal and Industrial	Agricultural	Total				
	[11]	[12]	[13]	[14]	[15]	[16]	[17]	[18]	[19]	[20]
1962	0	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0	0	0	0
1967	0	0	0	0	0	0	0	0	0	0
1968	7,382	26,360	1,978	0	127,384	127,384	900	3,084	25,100	192,188
1969	9,970	31,375	56	0	141,265	141,265	100	3,016	9,923	195,705
1970	11,739	40,407	3,942	0	204,634	204,634	0	5,911	9,578	276,211
1971	12,490	41,053	5,990	0	360,151	360,151	3,700	7,212	122,485	553,081
1972	13,905	42,443	5,795	0	490,781	490,781	1,400	8,166	258,393	820,883
1973	9,418	22,057	3,000	0	341,469	341,469	1,500	3,214	50,464	431,122
1974	9,700	33,390	3,000	23,708	323,292	347,000	1,500	3,471	72,289	470,350
1975	10,700	40,555	3,000	14,529	396,291	410,820	1,600	3,576	86,258	556,509
1976	11,700	41,421	3,000	46,719	392,531	439,250	1,600	4,112	58,811	559,894
1977	5,075	11,153	738	27,882	163,425	191,307	1,530	1,472	18,081	229,356
1978	11,362	51,747	454	76,895	590,452	667,347	2,070	3,906	12,053	748,939
1979	19,138	38,544	1,739	62,997	683,049	746,046	2,000	6,149	155,121	968,737
1980	13,882	41,000	894	45,943	588,557	634,500	2,200	5,700	69,244	767,420
1981	12,700	41,000	5,859	75,758	615,642	691,400	2,300	4,300	83,438	840,997
1982	12,700	41,000	361	48,483	696,817	745,300	1,750	3,838	18,551	823,500
1983	12,659	42,900	0	6,854	587,653	594,507	3,550	3,822	1,006	658,444
1984	12,741	45,100	0	90,948	769,652	860,600	3,100	5,700	5,743	932,984
1985	12,099	46,251	5,197	88,515	800,381	888,896	3,400	5,433	109,791	1,071,067
1986	13,301	50,249	1,170	77,240	829,101	906,341	3,700	5,107	79,355	1,059,223
1987	11,821	46,288	2,525	117,174	852,731	969,905	4,000	5,625	93,084	1,133,248
1988	11,534	47,994	3,475	121,047	888,471	1,009,518	4,000	4,412	94,316	1,175,249
1989	14,745	63,031	3,000	133,200	1,097,785	1,230,985	4,000	6,163	136,550	1,458,474
1990	12,700	57,700	3,000	139,000	1,014,400	1,153,400	4,000	5,700	118,500	1,355,000
1991	12,700	57,700	3,000	139,000	1,014,400	1,153,400	4,000	5,700	118,500	1,355,000
1992	12,700	57,700	3,000	139,000	1,014,400	1,153,400	4,000	5,700	118,500	1,355,000
1993	12,700	57,700	3,000	139,000	1,014,400	1,153,400	4,000	5,700	118,500	1,355,000
1994	12,700	57,700	3,000	139,000	1,014,400	1,153,400	4,000	5,700	118,500	1,355,000
1995	12,700	57,700	3,000	139,000	1,014,400	1,153,400	4,000	5,700	118,500	1,355,000
1996	12,700	57,700	3,000	139,000	1,014,400	1,153,400	4,000	5,700	118,500	1,355,000
1997	12,700	57,700	3,000	139,000	1,014,400	1,153,400	4,000	5,700	118,500	1,355,000
1998	12,700	57,700	3,000	139,000	1,014,400	1,153,400	4,000	5,700	118,500	1,355,000
1999	12,700	57,700	3,000	139,000	1,014,400	1,153,400	4,000	5,700	118,500	1,355,000
2000	12,700	57,700	3,000	139,000	1,014,400	1,153,400	4,000	5,700	118,500	1,355,000
2001	12,700	57,700	3,000	139,000	1,014,400	1,153,400	4,000	5,700	118,500	1,355,000
2002	12,700	57,700	3,000	139,000	1,014,400	1,153,400	4,000	5,700	118,500	1,355,000
2003	12,700	57,700	3,000	139,000	1,014,400	1,153,400	4,000	5,700	118,500	1,355,000
2004	12,700	57,700	3,000	139,000	1,014,400	1,153,400	4,000	5,700	118,500	1,355,000
2005	12,700	57,700	3,000	139,000	1,014,400	1,153,400	4,000	5,700	118,500	1,355,000
2006	12,700	57,700	3,000	139,000	1,014,400	1,153,400	4,000	5,700	118,500	1,355,000
2007	12,700	57,700	3,000	139,000	1,014,400	1,153,400	4,000	5,700	118,500	1,355,000
2008	12,700	57,700	3,000	139,000	1,014,400	1,153,400	4,000	5,700	118,500	1,355,000
2009	12,700	57,700	3,000	139,000	1,014,400	1,153,400	4,000	5,700	118,500	1,355,000
2010	12,700	57,700	3,000	139,000	1,014,400	1,153,400	4,000	5,700	118,500	1,355,000
2011	12,700	57,700	3,000	139,000	1,014,400	1,153,400	4,000	5,700	118,500	1,355,000
2012	12,700	57,700	3,000	139,000	1,014,400	1,153,400	4,000	5,700	118,500	1,355,000
2013	12,700	57,700	3,000	139,000	1,014,400	1,153,400	4,000	5,700	118,500	1,355,000
2014	12,700	57,700	3,000	139,000	1,014,400	1,153,400	4,000	5,700	118,500	1,355,000
2015	12,700	57,700	3,000	139,000	1,014,400	1,153,400	4,000	5,700	118,500	1,355,000
2016	12,700	57,700	3,000	139,000	1,014,400	1,153,400	4,000	5,700	118,500	1,355,000
2017	12,700	57,700	3,000	139,000	1,014,400	1,153,400	4,000	5,700	118,500	1,355,000
2018	12,700	57,700	3,000	139,000	1,014,400	1,153,400	4,000	5,700	118,500	1,355,000
2019	12,700	57,700	3,000	139,000	1,014,400	1,153,400	4,000	5,700	118,500	1,355,000
2020	12,700	57,700	3,000	139,000	1,014,400	1,153,400	4,000	5,700	118,500	1,355,000
2021	12,700	57,700	3,000	139,000	1,014,400	1,153,400	4,000	5,700	118,500	1,355,000
2022	12,700	57,700	3,000	139,000	1,014,400	1,153,400	4,000	5,700	118,500	1,355,000
2023	12,700	57,700	3,000	139,000	1,014,400	1,153,400	4,000	5,700	118,500	1,355,000
2024	12,700	57,700	3,000	139,000	1,014,400	1,153,400	4,000	5,700	118,500	1,355,000
2025	12,700	57,700	3,000	139,000	1,014,400	1,153,400	4,000	5,700	118,500	1,355,000
2026	12,700	57,700	3,000	139,000	1,014,400	1,153,400	4,000	5,700	118,500	1,355,000
2027	12,700	57,700	3,000	139,000	1,014,400	1,153,400	4,000	5,700	118,500	1,355,000
2028	12,700	57,700	3,000	139,000	1,014,400	1,153,400	4,000	5,700	118,500	1,355,000
2029	12,700	57,700	3,000	139,000	1,014,400	1,153,400	4,000	5,700	118,500	1,355,000
2030	12,700	57,700	3,000	139,000	1,014,400	1,153,400	4,000	5,700	118,500	1,355,000
2031	12,700	57,700	3,000	139,000	1,014,400	1,153,400	4,000	5,700	118,500	1,355,000
2032	12,700	57,700	3,000	139,000	1,014,400	1,153,400	4,000	5,700	118,500	1,355,000
2033	12,700	57,700	3,000	139,000	1,014,400	1,153,400	4,000	5,700	118,500	1,355,000
2034	12,700	57,700	3,000	139,000	1,014,400	1,153,400	4,000	5,700	118,500	1,355,000
2035	12,700	57,700	3,000	139,000	1,014,400	1,153,400	4,000	5,700	118,500	1,355,000
TOTAL	844,961	3,539,518	193,173	7,451,892	58,603,914	66,055,806	233,900	365,589	7,020,634	78,253,581

TABLE B-5B. Annual Water Quantities Delivered to Each Contractor

(in acre-feet)

Calendar Year	SOUTHERN CALIFORNIA AREA									
	Antelope Valley-East Kern Water Agency	Castaic Lake Water Agency	Coachella Valley Water District	Crestline-Lake Arrowhead Water Agency	Desert Water Agency	Littlerock Creek Irrigation District	Mojave Water Agency	Palmdale Water District	San Bernardino Valley Municipal Water District	San Gabriel Valley Municipal Water District
	[21]	[22]	[23]	[24]	[25]	[26]	[27]	[28]	[29]	[30]
1962	0	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0	0	0	0
1967	0	0	0	0	0	0	0	0	0	0
1968	0	0	0	0	0	0	0	0	0	0
1969	0	0	0	0	0	0	0	0	0	0
1970	0	0	0	0	0	0	0	0	0	0
1971	0	0	0	0	0	0	0	0	0	0
1972	53	0	0	464	0	338	55	0	1,275	0
1973	20	0	5,800	461	9,000	290	0	0	32,426	0
1974	1,259	0	6,400	627	10,000	400	14	0	16,605	612
1975	8,068	0	7,000	825	11,000	520	0	0	13,865	5,450
1976	27,782	0	7,600	1,002	12,000	589	0	0	12,273	6,071
1977	11,202	0	0	1,109	0	111	80	0	24,833	8,996
1978	44,137	0	10,084	1,209	15,300	208	0	0	4,055	7,771
1979	60,493	7	10,063	1,260	15,000	133	4,000	0	18	290
1980	72,407	1,210	10,884	1,239	17,000	191	4,000	0	0	1,085
1981	79,375	5,761	12,105	1,485	19,000	1,270	4,000	0	16,021	3,619
1982	50,291	9,516	13,326	1,238	21,000	0	10,500	0	8,409	12,599
1983	32,961	9,476	14,547	911	23,000	38	0	0	5,994	734
1984	32,662	11,477	15,768	1,128	25,000	1	0	0	5,556	7,656
1985	37,064	12,401	16,989	1,422	27,000	0	0	1,542	7,390	5,028
1986	32,449	13,928	18,210	1,506	29,000	163	0	3,096	6,421	9,454
1987	34,094	16,167	19,431	1,849	31,500	1,080	17	5,379	18,751	10,630
1988	34,079	18,904	20,652	2,006	34,000	419	9	1,770	21,386	8,948
1989	55,000	24,480	21,873	2,465	36,500	2,070	360	8,190	34,800	13,000
1990	57,485	27,720	23,100	2,665	38,100	0	550	10,440	45,800	13,000
1991	59,000	31,040	23,100	2,900	38,100	2,300	630	13,050	45,800	13,000
1992	64,000	34,800	23,100	3,105	38,100	2,300	890	16,110	45,800	13,000
1993	68,000	39,000	23,100	3,280	38,100	2,300	1,220	17,300	50,000	13,000
1994	74,000	41,500	23,100	3,453	38,100	2,300	1,580	17,300	50,000	14,000
1995	78,000	41,500	23,100	3,625	38,100	2,300	50,800	17,300	50,000	15,000
1996	82,401	41,500	23,100	3,788	38,100	2,300	50,800	17,300	50,000	15,340
1997	86,799	41,500	23,100	3,951	38,100	2,300	50,800	17,300	50,000	15,680
1998	91,201	41,500	23,100	4,114	38,100	2,300	50,800	17,300	50,000	16,020
1999	95,600	41,500	23,100	4,277	38,100	2,300	50,800	17,300	50,000	16,360
2000	100,000	41,500	23,100	4,440	38,100	2,300	50,800	17,300	50,000	16,700
2001	104,001	41,500	23,100	4,586	38,100	2,300	50,800	17,300	50,000	17,040
2002	108,000	41,500	23,100	4,732	38,100	2,300	50,800	17,300	50,000	17,380
2003	112,000	41,500	23,100	4,878	38,100	2,300	50,800	17,300	50,000	17,720
2004	116,000	41,500	23,100	5,024	38,100	2,300	50,800	17,300	54,000	18,060
2005	120,000	41,500	23,100	5,170	38,100	2,300	50,800	17,300	58,000	18,400
2006	120,000	41,500	23,100	5,256	38,100	2,300	50,800	17,300	62,000	18,740
2007	120,000	41,500	23,100	5,342	38,100	2,300	50,800	17,300	66,000	19,080
2008	120,000	41,500	23,100	5,828	38,100	2,300	50,800	17,300	70,000	19,420
2009	120,000	41,500	23,100	5,514	38,100	2,300	50,800	17,300	74,000	19,760
2010	120,000	41,500	23,100	5,600	38,100	2,300	50,800	17,300	78,000	20,100
2011	120,000	41,500	23,100	5,640	38,100	2,300	50,800	17,300	82,000	20,460
2012	120,000	41,500	23,100	5,680	38,100	2,300	50,800	17,300	86,000	20,820
2013	120,000	41,500	23,100	5,720	38,100	2,300	50,800	17,300	90,000	21,180
2014	120,000	41,500	23,100	5,760	38,100	2,300	50,800	17,300	92,000	21,540
2015	120,000	41,500	23,100	5,800	38,100	2,300	50,800	17,300	94,000	21,900
2016	120,000	41,500	23,100	5,800	38,100	2,300	50,800	17,300	96,000	22,240
2017	120,000	41,500	23,100	5,800	38,100	2,300	50,800	17,300	98,000	22,580
2018	120,000	41,500	23,100	5,800	38,100	2,300	50,800	17,300	100,000	22,920
2019	120,000	41,500	23,100	5,800	38,100	2,300	50,800	17,300	100,480	23,260
2020	120,000	41,500	23,100	5,800	38,100	2,300	50,800	17,300	100,960	23,600
2021	124,000	41,500	23,100	5,800	38,100	2,300	50,800	17,300	101,440	23,940
2022	126,000	41,500	23,100	5,800	38,100	2,300	50,800	17,300	101,920	24,280
2023	132,000	41,500	23,100	5,800	38,100	2,300	50,800	17,300	102,400	24,620
2024	136,000	41,500	23,100	5,800	38,100	2,300	50,800	17,300	102,600	24,960
2025	138,400	41,500	23,100	5,800	38,100	2,300	50,800	17,300	102,600	25,300
2026	138,400	41,500	23,100	5,800	38,100	2,300	50,800	17,300	102,600	25,640
2027	138,400	41,500	23,100	5,800	38,100	2,300	50,800	17,300	102,600	25,980
2028	138,400	41,500	23,100	5,800	38,100	2,300	50,800	17,300	102,600	26,320
2029	138,400	41,500	23,100	5,800	38,100	2,300	50,800	17,300	102,600	26,660
2030	138,400	41,500	23,100	5,800	38,100	2,300	50,800	17,300	102,600	27,000
2031	138,400	41,500	23,100	5,800	38,100	2,300	50,800	17,300	102,600	27,360
2032	138,400	41,500	23,100	5,800	38,100	2,300	50,800	17,300	102,600	27,720
2033	138,400	41,500	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,080
2034	138,400	41,500	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,440
2035	138,400	41,500	23,100	5,800	38,100	2,300	50,800	17,300	102,600	28,800
TOTAL	5,870,283	1,998,887	1,273,332	258,334	2,087,900	111,321	2,110,705	803,477	3,855,878	1,064,343

TABLE B-5B. Annual Water Quantities Delivered to Each Contractor

(in acre-feet)

Calendar Year	SOUTHERN CALIFORNIA AREA (contd.)				FEATHER RIVER AREA				South Bay Area Future Contractor	GRAND TOTAL
	San Gorgonio Pass Water Agency	The Metropolitan Water District of Southern California	Ventura County Flood Control District	Total	City of Yuba City	County of Butte	Plumas County FC&WCD	Total		
	[31]	[32]	[33]	[34]	[35]	[36]	[37]	[38]	[39]	[40]
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	0	0	0	0	0	0	294,457
1969	0	0	0	0	0	0	0	0	0	268,104
1970	0	0	0	0	0	0	70	70	0	369,459
1971	0	0	0	0	0	192	64	256	0	654,442
1972	0	71,938	0	74,123	0	186	505	691	0	1,037,770
1973	0	159,883	0	207,880	0	53	679	732	0	737,604
1974	0	277,717	0	313,634	0	127	648	775	0	878,947
1975	0	526,491	0	573,219	0	253	405	658	0	1,230,830
1976	0	618,451	0	685,768	0	527	382	909	0	1,380,124
1977	0	189,755	0	236,086	0	706	303	1,009	0	582,381
1978	0	507,565	0	590,329	0	579	278	857	0	1,458,733
1979	0	477,074	0	568,338	0	302	329	631	0	1,666,457
1980	0	531,727	0	639,743	0	267	295	562	0	1,530,256
1981	0	795,846	0	938,482	0	221	355	576	0	1,918,563
1982	0	691,749	0	818,628	0	334	305	639	0	1,750,680
1983	0	343,521	0	431,182	0	325	262	587	0	1,187,156
1984	0	457,582	0	556,830	108	177	272	557	0	1,591,416
1985	0	683,625	0	792,461	62	308	254	624	0	1,990,279
1986	0	708,840	0	823,067	328	313	317	958	0	1,999,155
1987	0	712,424	0	851,322	88	459	452	999	0	2,131,608
1988	0	902,564	0	1,044,737	303	385	523	1,211	0	2,383,570
1989	0	1,112,241	0	1,310,979	1,500	1,200	1,000	3,700	0	2,955,164
1990	0	1,369,800	0	1,588,660	1,800	1,200	1,040	4,040	0	3,141,595
1991	0	1,369,800	0	1,598,720	2,000	1,200	1,080	4,280	0	3,157,424
1992	0	1,480,800	0	1,722,005	2,200	27,500	1,120	30,820	0	3,313,605
1993	0	1,508,800	310	1,764,410	2,400	27,500	1,160	31,060	0	3,362,707
1994	0	1,508,800	15,260	1,789,393	2,400	27,500	1,208	31,108	0	3,396,617
1995	0	1,508,800	15,500	1,844,025	2,600	27,500	1,256	31,356	0	3,528,862
1996	0	1,541,544	15,900	1,882,073	2,880	27,500	1,304	31,684	0	3,570,973
1997	0	1,574,288	16,300	1,920,118	3,160	27,500	1,352	32,012	0	3,613,081
1998	0	1,607,032	16,700	1,958,167	3,440	27,500	1,400	32,340	0	3,653,193
1999	0	1,639,776	17,100	1,996,213	3,720	27,500	1,469	32,689	0	3,693,323
2000	17,300	1,672,500	17,500	2,051,540	4,000	27,500	1,522	33,022	0	3,750,718
2001	17,300	1,710,120	17,838	2,093,985	4,400	27,500	1,577	33,477	0	3,794,584
2002	17,300	1,747,740	18,176	2,136,428	4,800	27,500	1,632	33,932	0	3,838,448
2003	17,300	1,785,360	18,514	2,178,872	5,200	27,500	1,690	34,390	0	3,882,316
2004	17,300	1,822,980	18,852	2,225,316	5,600	27,500	1,766	34,866	0	3,930,202
2005	17,300	1,860,600	19,200	2,271,770	6,000	27,500	1,827	35,327	0	3,978,083
2006	17,300	1,890,780	19,362	2,306,538	6,720	27,500	1,890	36,110	0	4,014,224
2007	17,300	1,920,960	19,524	2,341,306	7,440	27,500	1,954	36,894	0	4,050,366
2008	17,300	1,951,140	19,686	2,376,474	8,160	27,500	2,020	37,680	0	4,086,910
2009	17,300	1,981,320	19,848	2,410,842	8,880	27,500	2,012	38,392	0	4,122,580
2010	17,300	2,011,500	20,000	2,445,600	9,600	27,500	2,183	39,283	0	4,158,819
2011	17,300	2,011,500	20,000	2,450,000	9,600	27,500	2,256	39,356	0	4,163,982
2012	17,300	2,011,500	20,000	2,454,400	9,600	27,500	2,332	39,432	0	4,169,148
2013	17,300	2,011,500	20,000	2,458,800	9,600	27,500	2,410	39,510	0	4,174,316
2014	17,300	2,011,500	20,000	2,461,200	9,600	27,500	2,449	39,549	0	4,177,445
2015	17,300	2,011,500	20,000	2,463,600	9,600	27,500	2,515	39,615	0	4,180,601
2016	17,300	2,011,500	20,000	2,465,940	9,600	27,500	2,580	39,680	0	4,183,606
2017	17,300	2,011,500	20,000	2,468,280	9,600	27,500	2,642	39,742	0	4,186,608
2018	17,300	2,011,500	20,000	2,470,620	9,600	27,500	2,700	39,800	0	4,189,606
2019	17,300	2,011,500	20,000	2,471,440	9,600	27,500	2,700	39,800	0	4,191,026
2020	17,300	2,011,500	20,000	2,472,260	9,600	27,500	2,700	39,800	0	4,192,446
2021	17,300	2,011,500	20,000	2,477,080	9,600	27,500	2,700	39,800	0	4,197,286
2022	17,300	2,011,500	20,000	2,479,900	9,600	27,500	2,700	39,800	0	4,200,126
2023	17,300	2,011,500	20,000	2,486,720	9,600	27,500	2,700	39,800	0	4,206,966
2024	17,300	2,011,500	20,000	2,491,260	9,600	27,500	2,700	39,800	0	4,211,526
2025	17,300	2,011,500	20,000	2,494,000	9,600	27,500	2,700	39,800	0	4,214,286
2026	17,300	2,011,500	20,000	2,494,340	9,600	27,500	2,700	39,800	0	4,214,626
2027	17,300	2,011,500	20,000	2,494,680	9,600	27,500	2,700	39,800	0	4,214,966
2028	17,300	2,011,500	20,000	2,495,020	9,600	27,500	2,700	39,800	0	4,215,306
2029	17,300	2,011,500	20,000	2,495,360	9,600	27,500	2,700	39,800	0	4,215,646
2030	17,300	2,011,500	20,000	2,495,700	9,600	27,500	2,700	39,800	0	4,215,986
2031	17,300	2,011,500	20,000	2,496,060	9,600	27,500	2,700	39,800	0	4,216,346
2032	17,300	2,011,500	20,000	2,496,420	9,600	27,500	2,700	39,800	0	4,216,706
2033	17,300	2,011,500	20,000	2,496,780	9,600	27,500	2,700	39,800	0	4,217,066
2034	17,300	2,011,500	20,000	2,497,140	9,600	27,500	2,700	39,800	0	4,217,426
2035	17,300	2,011,500	20,000	2,497,500	9,600	27,500	2,700	39,800	0	4,217,786
TOTAL	622,800	95,520,933	805,570	116,383,763	339,789	1,219,314	105,944	1,665,047	0	213,224,783

TABLE B-6. Annual Water Quantities Conveyed through Each Pumping and Power Recovery Plant of Project Transportation Facilities

(in acre-feet)

Calendar Year	NORTH BAY AQUEDUCT											
	Barker Slough Pumping Plant				Cordelia Pumping Plant Solano County FC&WCD				Cordelia Pumping Plant Napa County FC&WCD			
	Initial Fill Water	Operational Losses	Water Supply Delivery	Total	Initial Fill Water	Operational Losses	Water Supply Delivery	Total	Initial Fill Water	Operational Losses	Water Supply Delivery (a	Total
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[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	9	4,039	4,048
1986	0	0	0	0	0	0	0	0	0	(4)	3,515	3,511
1987	0	0	0	0	0	0	0	0	0	0	1,550	1,550
1988	0	(1)	15,088	15,087	0	0	9,695	9,695	0	(1)	5,392	5,391
1989	0	51	24,586	24,637	0	5	17,120	17,125	0	5	6,166	6,171
1990	0	51	27,895	27,946	0	5	15,400	15,405	0	5	6,645	6,650
1991	0	51	29,424	29,475	0	5	15,800	15,805	0	5	7,124	7,129
1992	0	51	31,780	31,831	0	5	16,450	16,455	0	5	7,610	7,615
1993	0	51	34,237	34,288	0	5	16,530	16,535	0	5	8,107	8,112
1994	0	51	39,116	39,167	0	5	16,935	16,940	0	5	8,931	8,936
1995	0	51	43,995	44,046	0	5	17,340	17,345	0	5	9,755	9,760
1996	0	51	45,730	45,781	0	5	17,746	17,751	0	5	10,414	10,419
1997	0	51	47,465	47,516	0	5	18,152	18,157	0	5	11,073	11,078
1998	0	51	49,200	49,251	0	5	18,558	18,563	0	5	11,732	11,737
1999	0	51	50,935	50,986	0	5	18,964	18,969	0	5	12,391	12,396
2000	0	51	52,670	52,721	0	5	19,370	19,375	0	5	13,050	13,055
2001	0	51	53,636	53,687	0	5	19,696	19,701	0	5	13,640	13,645
2002	0	51	54,602	54,653	0	5	20,022	20,027	0	5	14,230	14,235
2003	0	51	55,568	55,619	0	5	20,348	20,353	0	5	14,820	14,825
2004	0	51	56,534	56,585	0	5	20,674	20,679	0	5	15,410	15,415
2005	0	51	57,500	57,551	0	5	21,000	21,005	0	5	16,000	16,005
2006	0	51	58,090	58,141	0	5	21,000	21,005	0	5	16,540	16,545
2007	0	51	58,680	58,731	0	5	21,000	21,005	0	5	17,080	17,085
2008	0	51	59,270	59,321	0	5	21,000	21,005	0	5	17,620	17,625
2009	0	51	59,860	59,911	0	5	21,000	21,005	0	5	18,160	18,165
2010	0	51	60,450	60,501	0	5	21,000	21,005	0	5	18,700	18,705
2011	0	51	61,140	61,191	0	5	21,000	21,005	0	5	19,340	19,345
2012	0	51	61,830	61,881	0	5	21,000	21,005	0	5	19,980	19,985
2013	0	51	62,520	62,571	0	5	21,000	21,005	0	5	20,620	20,625
2014	0	51	63,210	63,261	0	5	21,000	21,005	0	5	21,260	21,265
2015	0	51	63,900	63,951	0	5	21,000	21,005	0	5	21,900	21,905
2016	0	51	64,500	64,551	0	5	21,000	21,005	0	5	22,500	22,505
2017	0	51	65,100	65,151	0	5	21,000	21,005	0	5	23,100	23,105
2018	0	51	65,700	65,751	0	5	21,000	21,005	0	5	23,700	23,705
2019	0	51	66,300	66,351	0	5	21,000	21,005	0	5	24,300	24,305
2020	0	51	66,900	66,951	0	5	21,000	21,005	0	5	24,900	24,905
2021	0	51	66,920	66,971	0	5	21,000	21,005	0	5	24,920	24,925
2022	0	51	66,940	66,991	0	5	21,000	21,005	0	5	24,940	24,945
2023	0	51	66,960	67,011	0	5	21,000	21,005	0	5	24,960	24,965
2024	0	51	66,980	67,031	0	5	21,000	21,005	0	5	24,980	24,985
2025	0	51	67,000	67,051	0	5	21,000	21,005	0	5	25,000	25,005
2026	0	51	67,000	67,051	0	5	21,000	21,005	0	5	25,000	25,005
2027	0	51	67,000	67,051	0	5	21,000	21,005	0	5	25,000	25,005
2028	0	51	67,000	67,051	0	5	21,000	21,005	0	5	25,000	25,005
2029	0	51	67,000	67,051	0	5	21,000	21,005	0	5	25,000	25,005
2030	0	51	67,000	67,051	0	5	21,000	21,005	0	5	25,000	25,005
2031	0	51	67,000	67,051	0	5	21,000	21,005	0	5	25,000	25,005
2032	0	51	67,000	67,051	0	5	21,000	21,005	0	5	25,000	25,005
2033	0	51	67,000	67,051	0	5	21,000	21,005	0	5	25,000	25,005
2034	0	51	67,000	67,051	0	5	21,000	21,005	0	5	25,000	25,005
2035	0	51	67,000	67,051	0	5	21,000	21,005	0	5	25,000	25,005

a) For 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

(in acre-feet)

Calendar Year	SOUTH BAY AQUEDUCT						CALIFORNIA AQUEDUCT							
	South Bay Pumping Plant						North San Joaquin Division							
							Banks Pumping Plant							
							Transportation Water							
	Initial Fill Water	Operational Losses	Reservoir Storage Changes	Deliveries: Water Supply (b	Deliveries: Recreation	Total	Initial Fill Water	Operational Losses	Reservoir Storage Changes	Deliveries: Water Supply	Deliveries: Recreation	Total	Conservation Water	Total
	[13]	[14]	[15]	[16]	[17]	[18]	[19]	[20]	[21]	[22]	[23]	[24]	[25]	[26]
1961	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
1963	71	185	0	12,645	0	12,901	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
1965	93	729	0	34,026	0	34,848	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
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)	106,700	129	85,245	5,979	45,662	90,901	1,748,828	4,646	1,896,016	337,775	2,233,791
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	2,002	(9,815)	98,122	158	90,467	38,649	62,633	(124,798)	1,591,047	4,387	1,571,918	13,601	1,585,519
1985	0	1,211	(1,608)	120,246	152	120,001	0	68,360	137,208	1,971,543	2,597	2,179,708	(117,433)	2,062,275
1986	0	2,217	319	110,988	130	113,654	0	82,958	37,865	1,993,278	3,865	2,117,966	205,399	2,323,365
1987	0	2,612	(610)	136,796	137	138,935	0	43,658	(25,255)	2,109,447	7,672	2,135,522	(457,466)	1,678,056
1988	0	3,634	0	147,460	142	151,236	0	234,249	(25,977)	2,360,249	3,704	2,572,225	(301,121)	2,271,104
1989	0	2,975	0	157,425	400	160,800	0	104,623	22,093	2,929,259	6,210	3,062,185	(12,060)	3,050,125
1990	0	3,344	0	166,000	400	169,744	0	103,946	(64,071)	3,109,625	6,210	3,155,710	(6,080)	3,149,630
1991	0	3,341	0	170,000	400	173,741	0	104,011	4,236	3,123,720	6,210	3,238,177	19,093	3,257,270
1992	0	3,531	0	174,000	400	177,931	0	107,462	(42,010)	3,251,005	6,210	3,322,667	525,695	3,848,362
1993	0	3,475	0	178,000	400	181,875	0	109,034	24,828	3,297,410	6,210	3,437,482	117,542	3,555,024
1994	0	3,403	0	182,000	400	185,803	0	108,738	(72,418)	3,326,393	6,210	3,368,923	(105,461)	3,263,462
1995	0	3,374	0	184,000	400	187,774	0	108,425	22,696	3,453,511	6,210	3,590,842	4,578	3,595,420
1996	0	3,337	0	186,001	400	189,738	0	108,562	2,618	3,493,560	6,210	3,610,950	(44,149)	3,566,801
1997	0	3,299	0	188,000	400	191,699	0	108,341	(2,165)	3,533,604	6,210	3,645,990	17,306	3,663,296
1998	0	3,299	0	188,000	400	191,699	0	108,290	442	3,571,653	6,210	3,686,595	(16,240)	3,670,355
1999	0	3,299	0	188,000	400	191,699	0	108,264	(11,071)	3,609,699	6,210	3,713,102	10,893	3,723,995
2000	0	3,299	0	188,000	400	191,699	0	108,191	18,059	3,665,026	6,210	3,797,486	(48,578)	3,748,908
2001	0	3,299	0	188,000	400	191,699	0	108,051	(3,232)	3,707,471	6,210	3,818,500	(14,198)	3,804,302
2002	0	3,299	0	188,000	400	191,699	0	107,913	(8,771)	3,749,914	6,210	3,855,266	(22,575)	3,832,691
2003	0	3,299	0	188,000	400	191,699	0	107,787	27,492	3,792,358	6,210	3,933,847	(22,097)	3,911,750
2004	0	3,299	0	188,000	400	191,699	0	107,961	51,919	3,838,802	6,210	4,004,892	(54,046)	3,950,846
2005	0	3,299	0	188,000	400	191,699	0	107,846	(58,241)	3,885,256	6,210	3,941,071	24,456	3,965,527
2006	0	3,299	0	188,000	400	191,699	0	107,393	(9,061)	3,920,024	6,210	4,024,566	(73,379)	3,951,187
2007	0	3,299	0	188,000	400	191,699	0	108,695	735	3,954,792	6,210	4,070,432	88,174	4,158,606
2008	0	3,299	0	188,000	400	191,699	0	108,694	1,928	3,989,560	6,210	4,106,392	(23,695)	4,082,697
2009	0	3,299	0	188,000	400	191,699	0	108,547	8,369	4,024,328	6,210	4,147,454	(26,467)	4,120,987
2010	0	3,299	0	188,000	400	191,699	0	108,544	(4,193)	4,059,086	6,210	4,169,647	10,012	4,179,659
2011	0	3,299	0	188,000	400	191,699	0	108,552	13,939	4,063,485	6,210	4,192,186	(14,176)	4,178,010
2012	0	3,299	0	188,000	400	191,699	0	108,495	(13,877)	4,067,886	6,210	4,168,714	50,425	4,219,139
2013	0	3,299	0	188,000	400	191,699	0	108,457	1,912	4,072,286	6,210	4,188,865	(22,783)	4,166,082
2014	0	3,299	0	188,000	400	191,699	0	108,413	(3,673)	4,074,686	6,210	4,185,636	25,633	4,211,269
2015	0	3,299	0	188,000	400	191,699	0	108,542	2,820	4,077,086	6,210	4,194,658	4,740	4,199,398
2016	0	3,299	0	188,000	400	191,699	0	108,514	(4,938)	4,079,426	6,210	4,189,212	16,643	4,205,855
2017	0	3,299	0	188,000	400	191,699	0	108,649	(3,334)	4,081,766	6,210	4,193,291	4,448	4,197,739
2018	0	3,299	0	188,000	400	191,699	0	108,078	(998)	4,084,106	6,210	4,197,396	(49,163)	4,148,233
2019	0	3,299	0	188,000	400	191,699	0	108,048	2,122	4,084,926	6,210	4,201,306	4,011	4,205,317
2020	0	3,299	0	188,000	400	191,699	0	108,006	(503)	4,085,746	6,210	4,199,459	20,067	4,219,526
2021	0	3,299	0	188,000	400	191,699	0	108,006	(851)	4,086,566	6,210	4,199,931	(9,359)	4,190,572
2022	0	3,299	0	188,000	400	191,699	0	108,008	961	4,087,386	6,210	4,202,565	15,187	4,217,752
2023	0	3,299	0	188,000	400	191,699	0	108,200	(2,966)	4,088,206	6,210	4,199,650	32,945	4,232,595
2024	0	3,299	0	188,000	400	191,699	0	107,962	(9)	4,088,746	6,210	4,202,909	(16,655)	4,186,254
2025	0	3,299	0	188,000	400	191,699	0	108,165	1,367	4,089,086	6,210	4,204,828	(2,411)	4,202,417
2026	0	3,299	0	188,000	400	191,699	0	108,291	(1,012)	4,089,426	6,210	4,202,915	26,314	4,229,229
2027	0	3,299	0	188,000	400	191,699	0	108,185	54	4,089,766	6,210	4,204,215	(15,612)	4,188,603
2028	0	3,299	0	188,000	400	191,699	0	108,264	2,174	4,090,106	6,210	4,206,754	4,083	4,210,837
2029	0	3,299	0	188,000	400	191,699	0	108,276	(1,796)	4,090,446	6,210	4,203,136	20,989	4,224,125
2030	0	3,299	0	188,000	400	191,699	0	107,967	1,198	4,090,786	6,210	4,206,161	6,593	4,212,754
2031	0	3,299	0	188,000	400	191,699	0	107,997	(594)	4,091,146	6,210	4,204,759	1,570	4,206,329
2032	0	3,299	0	188,000	400	191,699	0	108,114	10,325	4,091,506	6,210	4,216,155	(4,057)	4,212,098
2033	0	3,299	0	188,000	400	191,699	0	108,103	(215)	4,091,866	6,210	4,205,964	(2,082)	4,203,882
2034	0	3,299	0	188,000	400	191,699	0	108,178	(20,108)	4,092,226	6,210	4,186,506	64,546	4,251,052
2035	0	3,299	0	188,000	400	191,699	0	109,777	102,674	4,092,586	6,210	4,311,247	198,290	4,509,537

b) For the period June 1962 through November 1967, deliveries were supplied by non-SWP water.

TABLE B-6. Annual Water Quantities Conveyed through Each Pumping and Power Recovery Plant of Project Transportation Facilities

(in acre-feet)

Calendar Year	CALIFORNIA AQUEDUCT											
	San Luis Division						South San Joaquin Division					
	Dos Amigos Pumping Plant						Buena Vista Pumping Plant					
	Initial Fill Water	Operational Losses	Reservoir Storage Changes	Deliveries: Water Supply	Deliveries: Recreation	Total	Initial Fill Water	Operational Losses	Reservoir Storage Changes	Deliveries: Water Supply	Deliveries: Recreation	Total
	[27]	[28]	[29]	[30]	[31]	[32]	[33]	[34]	[35]	[36]	[37]	[38]
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	33,526	108,407	1,638,290	4,205	1,790,407	0	29,424	108,407	997,285	4,045	1,139,161
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	63,337	(114,983)	1,487,225	3,849	1,478,077	0	37,813	(114,983)	785,066	3,702	711,598
1985	0	38,585	138,816	1,847,145	2,082	2,026,628	0	40,842	138,816	992,606	1,950	1,174,214
1986	0	49,378	37,546	1,877,183	3,426	1,967,533	0	45,343	37,546	1,014,294	3,285	1,100,468
1987	0	14,021	(24,645)	1,967,026	7,121	1,963,523	0	34,311	(24,645)	1,017,355	6,937	1,033,958
1988	0	191,748	(25,977)	2,208,377	3,305	2,377,453	0	40,209	(25,977)	1,235,447	3,175	1,252,854
1989	0	66,978	22,093	2,765,671	7,120	2,861,862	0	45,294	22,093	1,561,374	7,010	1,635,771
1990	0	65,575	(64,071)	2,937,925	7,120	2,946,549	0	43,891	(64,071)	1,813,625	7,010	1,800,455
1991	0	66,157	4,236	2,948,020	7,120	3,025,533	0	44,473	4,236	1,823,720	7,010	1,879,439
1992	0	62,020	(42,010)	3,071,305	7,120	3,098,435	0	40,336	(42,010)	1,947,005	7,010	1,952,341
1993	0	62,095	24,828	3,113,710	7,120	3,207,753	0	40,373	24,828	1,989,410	7,010	2,061,621
1994	0	62,019	(72,418)	3,138,693	7,120	3,135,414	0	40,123	(72,418)	2,014,393	7,010	1,989,108
1995	0	62,221	22,696	3,263,811	7,120	3,355,848	0	40,325	22,696	2,069,025	7,010	2,139,056
1996	0	62,344	2,618	3,301,859	7,120	3,373,941	0	40,448	2,618	2,107,073	7,010	2,157,149
1997	0	61,937	(2,165)	3,339,904	7,120	3,406,796	0	40,041	(2,165)	2,145,118	7,010	2,190,004
1998	0	62,057	442	3,377,953	7,120	3,447,572	0	40,161	442	2,183,167	7,010	2,230,780
1999	0	62,090	(11,071)	3,415,999	7,120	3,474,138	0	40,194	(11,071)	2,221,213	7,010	2,257,346
2000	0	62,079	18,059	3,471,326	7,120	3,558,584	0	40,183	18,059	2,276,540	7,010	2,341,792
2001	0	62,091	(3,232)	3,513,771	7,120	3,579,750	0	40,195	(3,232)	2,318,985	7,010	2,362,958
2002	0	61,995	(8,771)	3,556,214	7,120	3,616,558	0	40,099	(8,771)	2,361,428	7,010	2,399,766
2003	0	61,854	27,492	3,598,658	7,120	3,695,124	0	39,958	27,492	2,403,872	7,010	2,478,332
2004	0	62,381	51,919	3,645,102	7,120	3,766,522	0	40,485	51,919	2,450,316	7,010	2,549,730
2005	0	62,306	(58,241)	3,691,556	7,120	3,702,741	0	40,410	(58,241)	2,496,770	7,010	2,485,949
2006	0	61,939	(9,061)	3,726,324	7,120	3,786,322	0	40,043	(9,061)	2,531,538	7,010	2,569,530
2007	0	61,837	735	3,761,092	7,120	3,830,784	0	39,941	735	2,566,306	7,010	2,613,992
2008	0	62,065	1,928	3,795,860	7,120	3,866,973	0	40,169	1,928	2,601,074	7,010	2,650,181
2009	0	62,009	8,369	3,830,628	7,120	3,908,126	0	40,113	8,369	2,635,842	7,010	2,691,334
2010	0	62,173	(4,193)	3,865,386	7,120	3,930,486	0	40,277	(4,193)	2,670,600	7,010	2,713,694
2011	0	62,222	13,939	3,869,785	7,120	3,953,066	0	40,326	13,939	2,674,999	7,010	2,736,274
2012	0	62,150	(13,877)	3,874,186	7,120	3,929,579	0	40,254	(13,877)	2,679,400	7,010	2,712,787
2013	0	62,159	1,912	3,878,586	7,120	3,949,777	0	40,263	1,912	2,683,800	7,010	2,732,985
2014	0	62,058	(3,673)	3,880,986	7,120	3,946,491	0	40,162	(3,673)	2,686,200	7,010	2,729,699
2015	0	62,137	2,820	3,883,386	7,120	3,955,463	0	40,241	2,820	2,688,600	7,010	2,738,671
2016	0	62,102	(4,938)	3,885,726	7,120	3,950,010	0	40,206	(4,938)	2,690,940	7,010	2,733,218
2017	0	61,946	(3,334)	3,888,066	7,120	3,953,798	0	40,050	(3,334)	2,693,280	7,010	2,737,006
2018	0	61,826	(998)	3,890,406	7,120	3,958,354	0	39,930	(998)	2,695,620	7,010	2,741,562
2019	0	61,802	2,122	3,891,226	7,120	3,962,270	0	39,906	2,122	2,696,440	7,010	2,745,478
2020	0	61,814	(503)	3,892,046	7,120	3,960,477	0	39,918	(503)	2,697,260	7,010	2,743,685
2021	0	61,810	(851)	3,892,866	7,120	3,960,945	0	39,914	(851)	2,698,080	7,010	2,744,153
2022	0	61,804	961	3,893,686	7,120	3,963,571	0	39,908	961	2,698,900	7,010	2,746,779
2023	0	61,787	(2,966)	3,894,506	7,120	3,960,447	0	39,891	(2,966)	2,699,720	7,010	2,743,655
2024	0	61,768	(9)	3,895,046	7,120	3,963,925	0	39,872	(9)	2,700,260	7,010	2,747,133
2025	0	61,792	1,367	3,895,386	7,120	3,965,665	0	39,896	1,367	2,700,600	7,010	2,748,873
2026	0	61,782	(1,012)	3,895,726	7,120	3,963,616	0	39,886	(1,012)	2,700,940	7,010	2,746,824
2027	0	61,797	54	3,896,066	7,120	3,965,037	0	39,901	54	2,701,280	7,010	2,748,245
2028	0	61,781	2,174	3,896,406	7,120	3,967,481	0	39,885	2,174	2,701,620	7,010	2,750,689
2029	0	61,792	(1,796)	3,896,746	7,120	3,963,862	0	39,896	(1,796)	2,701,960	7,010	2,747,070
2030	0	61,820	1,198	3,897,086	7,120	3,967,224	0	39,924	1,198	2,702,300	7,010	2,750,432
2031	0	61,808	(594)	3,897,446	7,120	3,965,780	0	39,912	(594)	2,702,660	7,010	2,748,988
2032	0	61,821	10,325	3,897,806	7,120	3,977,072	0	39,925	10,325	2,703,020	7,010	2,760,280
2033	0	61,810	(215)	3,898,166	7,120	3,966,881	0	39,914	(215)	2,703,380	7,010	2,750,089
2034	0	61,820	(20,108)	3,898,526	7,120	3,947,358	0	39,924	(20,108)	2,703,740	7,010	2,730,566
2035	0	62,219	102,674	3,898,886	7,120	4,070,899	0	40,323	102,674	2,704,100	7,010	2,854,107

TABLE B-6. Annual Water Quantities Conveyed through Each Pumping and Power Recovery Plant of Project Transportation Facilities

(in acre-feet)

Calendar Year	CALIFORNIA AQUEDUCT (continued)											
	South San Joaquin Division (continued)											
	Wheeler Ridge Pumping Plant						Chrisman Pumping Plant					
	Initial Fill Water	Operational Losses	Reservoir Storage Changes	Deliveries: Water Supply	Deliveries: Recreation	Total	Initial Fill Water	Operational Losses	Reservoir Storage Changes	Deliveries: Water Supply	Deliveries: Recreation	Total
	[39]	[40]	[41]	[42]	[43]	[44]	[45]	[46]	[47]	[48]	[49]	[50]
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	237,654	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	44,876	108,407	884,908	4,045	1,042,236	0	34,009	108,407	837,126	4,045	983,587
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	45,226	(114,983)	635,373	3,702	569,318	0	32,355	(114,983)	585,525	3,702	506,599
1985	0	49,394	138,816	854,684	1,950	1,044,844	0	51,110	138,816	810,606	1,950	1,002,482
1986	0	47,369	37,546	882,300	3,285	970,500	0	50,047	37,546	839,839	3,285	930,717
1987	0	51,642	(24,645)	887,899	6,937	921,833	0	36,422	(24,645)	853,151	6,937	871,865
1988	0	55,148	(25,977)	1,088,894	3,175	1,121,240	0	41,108	(25,977)	1,046,900	3,175	1,065,206
1989	0	41,664	22,093	1,378,908	7,010	1,449,675	0	41,414	22,093	1,330,516	7,010	1,401,033
1990	0	40,261	(64,071)	1,653,750	7,010	1,636,950	0	40,011	(64,071)	1,608,675	7,010	1,591,625
1991	0	40,843	4,236	1,663,845	7,010	1,715,934	0	40,593	4,236	1,618,770	7,010	1,670,609
1992	0	36,706	(42,010)	1,787,130	7,010	1,788,836	0	36,456	(42,010)	1,742,055	7,010	1,743,511
1993	0	36,743	24,828	1,829,535	7,010	1,898,116	0	36,493	24,828	1,784,460	7,010	1,852,791
1994	0	36,493	(72,418)	1,854,518	7,010	1,825,603	0	36,243	(72,418)	1,809,443	7,010	1,780,278
1995	0	36,695	22,696	1,909,150	7,010	1,975,551	0	36,445	22,696	1,864,075	7,010	1,930,226
1996	0	36,818	2,618	1,947,198	7,010	1,993,644	0	36,568	2,618	1,902,123	7,010	1,948,319
1997	0	36,411	(2,165)	1,985,243	7,010	2,026,499	0	36,161	(2,165)	1,940,168	7,010	1,981,174
1998	0	36,531	442	2,023,292	7,010	2,067,275	0	36,281	442	1,978,217	7,010	2,021,950
1999	0	36,564	(11,071)	2,061,338	7,010	2,093,841	0	36,314	(11,071)	2,016,263	7,010	2,048,516
2000	0	36,553	18,059	2,116,665	7,010	2,178,287	0	36,303	18,059	2,071,590	7,010	2,132,962
2001	0	36,565	(3,232)	2,159,110	7,010	2,199,453	0	36,315	(3,232)	2,114,035	7,010	2,154,128
2002	0	36,469	(8,771)	2,201,553	7,010	2,236,261	0	36,219	(8,771)	2,156,478	7,010	2,190,936
2003	0	36,328	27,492	2,243,997	7,010	2,314,827	0	36,078	27,492	2,198,922	7,010	2,269,502
2004	0	36,855	51,919	2,290,441	7,010	2,386,225	0	36,605	51,919	2,245,366	7,010	2,340,900
2005	0	36,780	(58,241)	2,336,895	7,010	2,322,444	0	36,530	(58,241)	2,291,820	7,010	2,277,119
2006	0	36,413	(9,061)	2,371,663	7,010	2,406,025	0	36,163	(9,061)	2,326,588	7,010	2,360,700
2007	0	36,311	735	2,406,431	7,010	2,450,487	0	36,061	735	2,361,356	7,010	2,405,162
2008	0	36,539	1,928	2,441,199	7,010	2,486,676	0	36,289	1,928	2,396,124	7,010	2,441,351
2009	0	36,483	8,369	2,475,967	7,010	2,527,829	0	36,233	8,369	2,430,892	7,010	2,482,504
2010	0	36,647	(4,193)	2,510,725	7,010	2,550,189	0	36,397	(4,193)	2,465,650	7,010	2,504,864
2011	0	36,696	13,939	2,515,124	7,010	2,572,769	0	36,446	13,939	2,470,049	7,010	2,527,444
2012	0	36,624	(13,877)	2,519,525	7,010	2,549,282	0	36,374	(13,877)	2,474,450	7,010	2,503,957
2013	0	36,633	1,912	2,523,925	7,010	2,569,480	0	36,383	1,912	2,478,850	7,010	2,524,155
2014	0	36,532	(3,673)	2,526,325	7,010	2,566,194	0	36,282	(3,673)	2,481,250	7,010	2,520,869
2015	0	36,611	2,820	2,528,725	7,010	2,575,166	0	36,361	2,820	2,483,650	7,010	2,529,841
2016	0	36,576	(4,938)	2,531,065	7,010	2,569,713	0	36,326	(4,938)	2,485,990	7,010	2,524,388
2017	0	36,420	(3,334)	2,533,405	7,010	2,573,501	0	36,170	(3,334)	2,488,330	7,010	2,528,176
2018	0	36,300	(998)	2,535,745	7,010	2,578,057	0	36,050	(998)	2,490,670	7,010	2,532,732
2019	0	36,276	2,122	2,536,565	7,010	2,581,973	0	36,026	2,122	2,491,490	7,010	2,536,648
2020	0	36,288	(503)	2,537,385	7,010	2,580,180	0	36,038	(503)	2,492,310	7,010	2,534,855
2021	0	36,284	(851)	2,538,205	7,010	2,580,648	0	36,034	(851)	2,493,130	7,010	2,535,323
2022	0	36,278	961	2,539,025	7,010	2,583,274	0	36,028	961	2,493,950	7,010	2,537,949
2023	0	36,261	(2,966)	2,539,845	7,010	2,580,150	0	36,011	(2,966)	2,494,770	7,010	2,534,825
2024	0	36,242	(9)	2,540,385	7,010	2,583,628	0	35,992	(9)	2,495,310	7,010	2,538,303
2025	0	36,266	1,367	2,540,725	7,010	2,585,368	0	36,016	1,367	2,495,650	7,010	2,540,043
2026	0	36,256	(1,012)	2,541,065	7,010	2,583,319	0	36,006	(1,012)	2,495,990	7,010	2,537,994
2027	0	36,271	54	2,541,405	7,010	2,584,740	0	36,021	54	2,496,330	7,010	2,539,415
2028	0	36,255	2,174	2,541,745	7,010	2,587,184	0	36,005	2,174	2,496,670	7,010	2,541,859
2029	0	36,266	(1,796)	2,542,085	7,010	2,583,565	0	36,016	(1,796)	2,497,010	7,010	2,538,240
2030	0	36,294	1,198	2,542,425	7,010	2,586,927	0	36,044	1,198	2,497,350	7,010	2,541,602
2031	0	36,282	(594)	2,542,785	7,010	2,585,483	0	36,032	(594)	2,497,710	7,010	2,540,158
2032	0	36,295	10,325	2,543,145	7,010	2,596,775	0	36,045	10,325	2,498,070	7,010	2,551,450
2033	0	36,284	(215)	2,543,505	7,010	2,586,584	0	36,034	(215)	2,498,430	7,010	2,541,259
2034	0	36,294	(20,108)	2,543,865	7,010	2,567,061	0	36,044	(20,108)	2,498,790	7,010	2,521,736
2035	0	36,693	102,674	2,544,225	7,010	2,690,602	0	36,443	102,674	2,499,150	7,010	2,645,277

TABLE B-6. Annual Water Quantities Conveyed through Each Pumping and Power Recovery Plant of Project Transportation Facilities

(in acre-feet)

Calendar Year	CALIFORNIA AQUEDUCT (continued)											
	Tehachapi Division						Mojave Divsion					
	Edmonston Pumping Plant						Alamo Powerplant					
	Initial Fill Water	Operational Losses	Reservoir Storage Changes	Deliveries: Water Supply	Deliveries: Recreation	Total	Initial Fill Water	Operational Losses	Reservoir Storage Changes	Deliveries: Water Supply	Deliveries: Recreation	Total
	[51]	[52]	[53]	[54]	[55]	[56]	[57]	[58]	[59]	[60]	[61]	[62]
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	37,731	108,407	818,628	4,045	968,811	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	41,213	(114,983)	559,941	3,702	489,873	0	0	0	0	0	0
1985	0	47,521	138,816	792,477	1,950	980,764	0	0	0	0	0	0
1986	0	38,514	37,546	823,067	3,285	902,412	0	14,898	12,258	429,864	1,508	458,528
1987	0	33,397	(24,645)	841,316	6,937	857,005	0	12,960	(15,181)	407,864	1,239	406,882
1988	0	43,350	(25,977)	1,035,988	3,175	1,056,536	0	21,707	5,568	528,819	971	557,065
1989	0	39,864	22,093	1,310,979	7,010	1,379,946	0	22,860	(4,454)	744,282	1,630	764,318
1990	0	38,461	(64,071)	1,588,625	7,010	1,570,025	0	22,401	(15,559)	906,905	1,630	915,377
1991	0	39,043	4,236	1,598,720	7,010	1,649,009	0	22,655	(850)	913,680	1,630	937,115
1992	0	34,906	(42,010)	1,722,005	7,010	1,721,911	0	20,777	(30,535)	1,033,205	1,630	1,025,077
1993	0	34,943	24,828	1,764,410	7,010	1,831,191	0	20,791	2,982	1,071,100	1,630	1,096,503
1994	0	34,693	(72,418)	1,789,393	7,010	1,758,678	0	20,701	(2,585)	1,113,633	1,630	1,133,379
1995	0	34,895	22,696	1,844,025	7,010	1,908,626	0	20,757	(8,690)	1,203,025	1,630	1,216,722
1996	0	35,018	2,618	1,882,073	7,010	1,926,719	0	20,778	3,184	1,229,673	1,630	1,255,265
1997	0	34,611	(2,165)	1,920,118	7,010	1,959,574	0	20,718	(118)	1,256,318	1,630	1,278,548
1998	0	34,731	442	1,958,167	7,010	2,000,350	0	20,746	15,587	1,282,967	1,630	1,320,930
1999	0	34,764	(11,071)	1,996,213	7,010	2,026,916	0	20,758	(10,396)	1,309,613	1,630	1,321,605
2000	0	34,753	18,059	2,051,540	7,010	2,111,362	0	20,778	9,700	1,353,540	1,630	1,385,648
2001	0	34,765	(3,232)	2,093,985	7,010	2,132,528	0	20,715	(9,321)	1,386,227	1,630	1,399,251
2002	0	34,669	(8,771)	2,136,428	7,010	2,169,336	0	20,706	7,001	1,418,912	1,630	1,448,249
2003	0	34,528	27,492	2,178,872	7,010	2,247,902	0	20,678	1,390	1,451,598	1,630	1,475,296
2004	0	35,055	51,919	2,225,316	7,010	2,319,300	0	20,858	24,953	1,488,284	1,630	1,535,725
2005	0	34,980	(58,241)	2,271,770	7,010	2,255,519	0	20,984	(23,443)	1,524,970	1,630	1,524,141
2006	0	34,613	(9,061)	2,306,538	7,010	2,339,100	0	20,851	(2,831)	1,550,136	1,630	1,569,786
2007	0	34,511	735	2,341,306	7,010	2,383,562	0	20,878	2,424	1,575,302	1,630	1,600,234
2008	0	34,739	1,928	2,376,074	7,010	2,419,751	0	20,881	(3,045)	1,600,468	1,630	1,619,934
2009	0	34,683	8,369	2,410,842	7,010	2,460,904	0	20,811	6,543	1,625,634	1,630	1,654,618
2010	0	34,847	(4,193)	2,445,600	7,010	2,483,264	0	20,965	(4,160)	1,650,800	1,630	1,669,235
2011	0	34,896	13,939	2,449,999	7,010	2,505,844	0	20,994	15,432	1,655,199	1,630	1,693,255
2012	0	34,824	(13,877)	2,454,400	7,010	2,482,357	0	20,890	(14,522)	1,659,600	1,630	1,667,598
2013	0	34,833	1,912	2,458,800	7,010	2,502,555	0	20,817	2,146	1,664,000	1,630	1,688,593
2014	0	34,732	(3,673)	2,461,200	7,010	2,499,269	0	20,778	(2,234)	1,666,400	1,630	1,686,574
2015	0	34,811	2,820	2,463,600	7,010	2,508,241	0	20,809	901	1,668,800	1,630	1,692,140
2016	0	34,776	(4,938)	2,465,940	7,010	2,502,788	0	20,777	(3,539)	1,671,140	1,630	1,690,008
2017	0	34,620	(3,334)	2,468,280	7,010	2,506,576	0	20,707	(4,737)	1,673,480	1,630	1,691,080
2018	0	34,500	(998)	2,470,620	7,010	2,511,132	0	20,578	(64)	1,675,820	1,630	1,697,964
2019	0	34,476	2,122	2,471,440	7,010	2,515,048	0	20,539	1,605	1,676,640	1,630	1,700,414
2020	0	34,488	(503)	2,472,260	7,010	2,513,255	0	20,551	(504)	1,677,460	1,630	1,699,137
2021	0	34,484	(851)	2,473,080	7,010	2,513,723	0	20,547	(596)	1,678,280	1,630	1,699,861
2022	0	34,478	961	2,473,900	7,010	2,516,349	0	20,539	1,794	1,679,100	1,630	1,703,063
2023	0	34,461	(2,966)	2,474,720	7,010	2,513,225	0	20,543	(1,918)	1,679,920	1,630	1,700,175
2024	0	34,442	(9)	2,475,260	7,010	2,516,703	0	20,544	70	1,680,460	1,630	1,702,704
2025	0	34,466	1,367	2,475,600	7,010	2,518,443	0	20,512	(404)	1,680,800	1,630	1,702,538
2026	0	34,456	(1,012)	2,475,940	7,010	2,516,394	0	20,519	650	1,681,140	1,630	1,703,939
2027	0	34,471	54	2,476,280	7,010	2,517,815	0	20,540	(269)	1,681,480	1,630	1,703,381
2028	0	34,455	2,174	2,476,620	7,010	2,520,259	0	20,513	2,110	1,681,820	1,630	1,706,073
2029	0	34,466	(1,796)	2,476,960	7,010	2,516,640	0	20,527	(2,360)	1,682,160	1,630	1,701,957
2030	0	34,494	1,198	2,477,300	7,010	2,520,002	0	20,537	150	1,682,500	1,630	1,704,817
2031	0	34,482	(594)	2,477,660	7,010	2,518,558	0	20,529	(90)	1,682,860	1,630	1,704,929
2032	0	34,495	10,325	2,478,020	7,010	2,529,850	0	20,527	10,190	1,683,220	1,630	1,715,567
2033	0	34,484	(215)	2,478,380	7,010	2,519,659	0	20,515	(100)	1,683,580	1,630	1,705,625
2034	0	34,494	(20,108)	2,478,740	7,010	2,500,136	0	20,517	(21,176)	1,683,940	1,630	1,684,911
2035	0	34,893	102,674	2,479,100	7,010	2,623,677	0	20,530	31,584	1,684,300	1,630	1,738,044

TABLE B-6. Annual Water Quantities Conveyed through Each Pumping and Power Recovery Plant of Project Transportation Facilities

(in acre-feet)

Calendar Year	CALIFORNIA AQUEDUCT (continued)											
	Mojave Division (continued)											
	Pearblossom Pumping Plant						Mojave Siphon Powerplant					
	Initial Fill Water	Operational Losses	Reservoir Storage Changes	Deliveries: Water Supply	Deliveries: Recreation	Total	Initial Fill Water	Operational Losses	Reservoir Storage Changes	Deliveries: Water Supply	Deliveries: Recreation	Total
	[63]	[64]	[65]	[66]	[67]	[68]	[69]	[70]	[71]	[72]	[73]	[74]
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	4,891	48,383	407,459	1,919	462,652	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	18,526	(24,236)	252,066	1,494	247,850	0	0	0	0	0	0
1985	0	24,748	(2,676)	350,758	1,076	373,906	0	0	0	0	0	0
1986	0	31,039	12,258	394,156	1,508	438,961	0	0	0	0	0	0
1987	0	29,064	15,181	367,525	1,239	413,009	0	0	0	0	0	0
1988	0	32,219	5,568	492,551	971	531,309	0	0	0	0	0	0
1989	0	17,510	(4,454)	679,022	1,430	693,508	0	0	0	0	0	0
1990	0	17,051	(15,559)	839,015	1,430	841,937	0	0	0	0	0	0
1991	0	17,305	(850)	839,330	1,430	857,215	0	0	0	0	0	0
1992	0	15,427	(30,535)	950,795	1,430	937,117	0	0	0	0	0	0
1993	0	15,441	2,982	983,500	1,430	1,003,353	0	0	0	0	0	0
1994	0	15,351	(2,585)	1,020,033	1,430	1,034,229	0	11,881	(2,585)	1,018,453	1,430	1,029,179
1995	0	15,407	(8,690)	1,105,425	1,430	1,113,572	0	11,937	(8,690)	1,054,625	1,430	1,059,302
1996	0	15,428	3,184	1,127,672	1,430	1,147,714	0	11,958	3,184	1,076,872	1,430	1,093,444
1997	0	15,368	(118)	1,149,919	1,430	1,166,599	0	11,898	(118)	1,099,119	1,430	1,112,329
1998	0	15,396	15,587	1,172,166	1,430	1,204,579	0	11,926	15,587	1,121,366	1,430	1,150,309
1999	0	15,408	(10,396)	1,194,413	1,430	1,200,855	0	11,938	(10,396)	1,143,613	1,430	1,146,585
2000	0	15,428	9,700	1,233,940	1,430	1,260,498	0	11,958	9,700	1,183,140	1,430	1,206,228
2001	0	15,365	(9,321)	1,262,626	1,430	1,270,100	0	11,895	(9,321)	1,211,826	1,430	1,215,830
2002	0	15,356	7,001	1,291,312	1,430	1,315,099	0	11,886	7,001	1,240,512	1,430	1,260,829
2003	0	15,328	1,390	1,319,998	1,430	1,338,146	0	11,858	1,390	1,269,198	1,430	1,283,876
2004	0	15,508	24,953	1,352,684	1,430	1,394,575	0	12,038	24,953	1,301,884	1,430	1,340,305
2005	0	15,634	(23,443)	1,385,370	1,430	1,378,991	0	12,164	(23,443)	1,334,570	1,430	1,324,721
2006	0	15,501	(2,831)	1,410,536	1,430	1,424,636	0	12,031	(2,831)	1,359,736	1,430	1,370,366
2007	0	15,528	2,424	1,435,702	1,430	1,455,084	0	12,058	2,424	1,384,902	1,430	1,400,814
2008	0	15,531	(3,045)	1,460,868	1,430	1,474,784	0	12,061	(3,045)	1,410,068	1,430	1,420,514
2009	0	15,461	6,543	1,486,034	1,430	1,509,468	0	11,991	6,543	1,435,234	1,430	1,455,198
2010	0	15,615	(4,160)	1,511,200	1,430	1,524,085	0	12,145	(4,160)	1,460,400	1,430	1,469,815
2011	0	15,644	15,432	1,515,600	1,430	1,548,106	0	12,174	15,432	1,464,800	1,430	1,493,836
2012	0	15,540	(14,522)	1,520,000	1,430	1,522,448	0	12,070	(14,522)	1,469,200	1,430	1,468,178
2013	0	15,467	2,146	1,524,400	1,430	1,543,443	0	11,997	2,146	1,473,600	1,430	1,489,173
2014	0	15,428	(2,234)	1,526,800	1,430	1,541,424	0	11,958	(2,234)	1,476,000	1,430	1,487,154
2015	0	15,459	901	1,529,200	1,430	1,546,990	0	11,989	901	1,478,400	1,430	1,492,720
2016	0	15,427	(3,539)	1,531,540	1,430	1,544,858	0	11,957	(3,539)	1,480,740	1,430	1,490,588
2017	0	15,357	(4,737)	1,533,880	1,430	1,545,930	0	11,887	(4,737)	1,483,080	1,430	1,491,660
2018	0	15,228	(64)	1,536,220	1,430	1,552,814	0	11,758	(64)	1,485,420	1,430	1,498,544
2019	0	15,189	1,605	1,537,040	1,430	1,555,264	0	11,719	1,605	1,486,240	1,430	1,500,994
2020	0	15,201	(504)	1,537,860	1,430	1,553,987	0	11,731	(504)	1,487,060	1,430	1,499,717
2021	0	15,197	(596)	1,538,680	1,430	1,554,711	0	11,727	(596)	1,487,880	1,430	1,500,441
2022	0	15,189	1,794	1,539,500	1,430	1,557,913	0	11,719	1,794	1,488,700	1,430	1,503,643
2023	0	15,193	(1,918)	1,540,320	1,430	1,555,025	0	11,723	(1,918)	1,489,520	1,430	1,500,755
2024	0	15,194	70	1,540,860	1,430	1,557,554	0	11,724	70	1,490,060	1,430	1,503,284
2025	0	15,162	(404)	1,541,200	1,430	1,557,388	0	11,692	(404)	1,490,400	1,430	1,503,118
2026	0	15,169	650	1,541,540	1,430	1,558,789	0	11,699	650	1,490,740	1,430	1,504,519
2027	0	15,190	(269)	1,541,880	1,430	1,558,231	0	11,720	(269)	1,491,080	1,430	1,503,961
2028	0	15,163	2,110	1,542,220	1,430	1,560,923	0	11,693	2,110	1,491,420	1,430	1,506,653
2029	0	15,177	(2,360)	1,542,560	1,430	1,556,807	0	11,707	(2,360)	1,491,760	1,430	1,502,537
2030	0	15,187	150	1,542,900	1,430	1,559,667	0	11,717	150	1,492,100	1,430	1,505,397
2031	0	15,179	(90)	1,543,260	1,430	1,559,779	0	11,709	(90)	1,492,460	1,430	1,505,509
2032	0	15,177	10,190	1,543,620	1,430	1,570,417	0	11,707	10,190	1,492,820	1,430	1,516,147
2033	0	15,165	(100)	1,543,980	1,430	1,560,475	0	11,695	(100)	1,493,180	1,430	1,506,205
2034	0	15,167	(21,176)	1,544,340	1,430	1,539,761	0	11,697	(21,176)	1,493,540	1,430	1,485,491
2035	0	15,180	31,584	1,544,700	1,430	1,592,894	0	11,710	31,584	1,493,900	1,430	1,538,624

TABLE B-6. Annual Water Quantities Conveyed through Each Pumping and Power Recovery Plant of Project Transportation Facilities

(in acre-feet)

Calendar Year	CALIFORNIA AQUEDUCT (continued)											
	Santa Ana Division						West Branch, California Aqueduct					
	Devil Canyon Powerplant						Oso Pumping Plant					
	Initial Fill Water	Operational Losses	Reservoir Storage Changes	Deliveries: Water Supply	Deliveries: Recreation	Total	Initial Fill Water	Operational Losses	Reservoir Storage Changes	Deliveries: Water Supply	Deliveries: Recreation	Total
	[75]	[76]	[77]	[78]	[79]	[80]	[81]	[82]	[83]	[84]	[85]	[86]
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	5,012	48,521	395,721	1,798	451,052	0	24,292	60,024	360,878	2,126	447,320
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	12,904	(844)	250,938	1,414	264,412	0	11,630	(139,219)	275,212	2,208	149,831
1985	0	13,922	(8,793)	349,336	956	355,421	0	29,403	141,492	403,097	874	574,866
1986	0	9,646	8,339	392,650	1,378	412,013	0	23,816	25,288	393,203	1,777	444,084
1987	0	9,204	(11,355)	365,445	1,118	364,412	0	20,686	(9,464)	433,452	5,698	450,372
1988	0	11,090	2,238	490,536	861	504,725	0	21,515	(31,545)	507,169	2,204	499,343
1989	0	9,808	(1,648)	676,197	1,250	685,607	0	16,954	26,547	566,697	5,380	615,578
1990	0	9,398	(6,459)	835,800	1,250	839,989	0	16,010	(48,512)	681,720	5,380	654,598
1991	0	9,633	(9,312)	835,800	1,250	837,371	0	16,338	5,086	685,040	5,380	711,844
1992	0	8,315	(1,664)	946,800	1,250	954,701	0	14,079	(11,475)	688,800	5,380	696,784
1993	0	8,352	18	979,000	1,250	988,620	0	14,102	21,846	693,310	5,380	734,638
1994	0	8,251	(3,905)	1,015,000	1,250	1,020,596	0	13,942	(69,833)	675,760	5,380	625,249
1995	0	8,270	(742)	1,051,000	1,250	1,059,778	0	14,088	31,386	641,000	5,380	691,854
1996	0	8,245	(1,644)	1,073,084	1,250	1,080,935	0	14,190	(566)	652,400	5,380	671,404
1997	0	8,305	768	1,095,168	1,250	1,105,491	0	13,843	(2,047)	663,800	5,380	680,976
1998	0	8,269	884	1,117,252	1,250	1,127,655	0	13,935	(15,145)	675,200	5,380	679,370
1999	0	8,277	(938)	1,139,336	1,250	1,147,925	0	13,956	(675)	686,600	5,380	705,261
2000	0	8,288	1,551	1,178,700	1,250	1,189,789	0	13,925	8,359	698,000	5,380	725,664
2001	0	8,277	284	1,207,240	1,250	1,217,051	0	14,000	6,089	707,758	5,380	733,227
2002	0	8,333	4,447	1,235,780	1,250	1,249,810	0	13,913	(15,772)	717,516	5,380	721,037
2003	0	8,342	2,767	1,264,320	1,250	1,276,679	0	13,800	26,102	727,274	5,380	772,556
2004	0	8,399	3,444	1,296,860	1,250	1,309,953	0	14,147	26,966	737,032	5,380	783,525
2005	0	8,395	(337)	1,329,400	1,250	1,338,708	0	13,946	(34,798)	746,800	5,380	731,328
2006	0	8,393	490	1,354,480	1,250	1,364,613	0	13,712	(6,230)	756,402	5,380	769,264
2007	0	8,405	928	1,379,560	1,250	1,390,143	0	13,583	(1,689)	766,004	5,380	783,278
2008	0	8,423	846	1,404,640	1,250	1,415,159	0	13,808	4,973	775,606	5,380	799,767
2009	0	8,399	721	1,429,720	1,250	1,440,090	0	13,822	1,826	785,208	5,380	806,236
2010	0	8,406	1,254	1,454,800	1,250	1,465,710	0	13,832	(33)	794,800	5,380	813,979
2011	0	8,421	798	1,459,160	1,250	1,469,629	0	13,852	(1,493)	794,800	5,380	812,539
2012	0	8,396	(1,523)	1,463,520	1,250	1,471,643	0	13,884	645	794,800	5,380	814,709
2013	0	8,390	104	1,467,880	1,250	1,477,624	0	13,966	(234)	794,800	5,380	813,912
2014	0	8,405	1,199	1,470,240	1,250	1,481,094	0	13,904	(1,439)	794,800	5,380	812,645
2015	0	8,420	(966)	1,472,600	1,250	1,481,304	0	13,952	1,919	794,800	5,380	816,051
2016	0	8,400	(1,135)	1,474,940	1,250	1,483,455	0	13,949	(1,399)	794,800	5,380	812,730
2017	0	8,244	(17,481)	1,477,280	1,250	1,469,293	0	13,863	1,403	794,800	5,380	815,446
2018	0	8,058	3,924	1,479,620	1,250	1,492,852	0	13,872	(934)	794,800	5,380	813,118
2019	0	8,054	(290)	1,480,440	1,250	1,489,454	0	13,887	517	794,800	5,380	814,584
2020	0	8,056	(457)	1,481,260	1,250	1,490,109	0	13,887	1	794,800	5,380	814,068
2021	0	8,055	(2,131)	1,482,080	1,250	1,489,254	0	13,887	(255)	794,800	5,380	813,812
2022	0	8,055	3,578	1,482,900	1,250	1,495,783	0	13,889	(833)	794,800	5,380	813,236
2023	0	8,055	(5,216)	1,483,720	1,250	1,487,809	0	13,868	(1,048)	794,800	5,380	813,000
2024	0	8,055	2,071	1,484,260	1,250	1,495,636	0	13,848	(79)	794,800	5,380	813,949
2025	0	8,054	2,370	1,484,600	1,250	1,496,274	0	13,904	1,771	794,800	5,380	815,855
2026	0	8,055	(1,011)	1,484,940	1,250	1,493,234	0	13,887	(1,662)	794,800	5,380	812,405
2027	0	8,063	(3,296)	1,485,280	1,250	1,491,297	0	13,881	323	794,800	5,380	814,384
2028	0	8,054	4,117	1,485,620	1,250	1,499,041	0	13,892	64	794,800	5,380	814,136
2029	0	8,056	(1,456)	1,485,960	1,250	1,493,810	0	13,889	564	794,800	5,380	814,633
2030	0	8,055	1,042	1,486,300	1,250	1,496,647	0	13,907	1,048	794,800	5,380	815,135
2031	0	8,055	(3,090)	1,486,660	1,250	1,492,875	0	13,903	(504)	794,800	5,380	813,579
2032	0	8,054	4,719	1,487,020	1,250	1,501,043	0	13,918	135	794,800	5,380	814,233
2033	0	8,070	(475)	1,487,380	1,250	1,496,225	0	13,919	(115)	794,800	5,380	813,984
2034	0	8,070	(1,296)	1,487,740	1,250	1,495,764	0	13,927	1,068	794,800	5,380	815,175
2035	0	8,058	1,773	1,488,100	1,250	1,499,181	0	14,313	71,090	794,800	5,380	885,583

TABLE B-6. Annual Water Quantities Conveyed through Each Pumping and Power Recovery Plant of Project Transportation Facilities

(in acre-feet)

Calendar Year	CALIFORNIA AQUEDUCT (continued)											
	West Branch, California Aqueduct (continued)											
	Warne Powerplant						Castaic Powerplant					
	Initial Fill Water	Operational Losses	Reservoir Storage Changes	Deliveries: Water Supply	Deliveries: Recreation	Total	Initial Fill Water	Operational Losses	Reservoir Storage Changes	Deliveries: Water Supply	Deliveries: Recreation	Total
	[87]	[88]	[89]	[90]	[91]	[92]	[93]	[94]	[95]	[96]	[97]	[98]
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	24,420	60,024	360,878	2,126	447,448	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	23,008	25,288	393,203	1,777	443,276	0	(5,440)	25,120	393,203	1,777	414,660
1987	0	22,871	(9,464)	433,452	5,698	452,557	0	1,467	(6,069)	433,452	2,734	431,584
1988	0	23,702	(31,545)	507,169	2,204	501,530	0	13,710	(28,590)	507,169	1,023	493,312
1989	0	15,044	26,547	566,697	5,380	613,668	0	9,319	19,177	566,697	2,330	597,523
1990	0	14,100	(48,512)	681,720	5,380	652,688	0	8,375	(48,512)	681,720	2,330	643,913
1991	0	14,428	5,086	685,040	5,380	709,934	0	8,703	5,086	685,040	2,330	701,159
1992	0	12,169	(11,475)	688,800	5,380	694,874	0	5,881	(16,377)	688,800	2,330	680,634
1993	0	12,192	21,846	693,310	5,380	732,728	0	5,907	21,846	693,000	2,330	723,083
1994	0	12,032	(69,833)	675,760	5,380	623,339	0	5,747	(69,833)	675,500	2,330	613,744
1995	0	12,178	31,386	641,000	5,380	689,944	0	5,893	31,386	640,500	2,330	680,109
1996	0	12,280	(566)	652,400	5,380	669,494	0	5,995	(566)	651,500	2,330	659,259
1997	0	11,933	(2,047)	663,800	5,380	679,066	0	5,648	(2,047)	662,500	2,330	668,431
1998	0	12,025	(15,145)	675,200	5,380	677,460	0	5,740	(15,145)	673,500	2,330	666,425
1999	0	12,046	(675)	686,600	5,380	703,351	0	5,761	(675)	684,500	2,330	691,916
2000	0	12,015	8,359	698,000	5,380	723,754	0	5,730	8,359	695,500	2,330	711,919
2001	0	12,090	6,089	707,758	5,380	731,317	0	5,805	6,089	704,920	2,330	719,144
2002	0	12,003	(15,772)	717,516	5,380	719,127	0	5,718	(15,772)	714,340	2,330	706,616
2003	0	11,890	26,102	727,274	5,380	770,646	0	5,605	26,102	723,760	2,330	757,797
2004	0	12,237	26,966	737,032	5,380	781,615	0	5,952	26,966	733,180	2,330	768,428
2005	0	12,036	(34,798)	746,800	5,380	729,418	0	5,751	(34,798)	742,600	2,330	715,883
2006	0	11,802	(6,230)	756,402	5,380	767,354	0	5,517	(6,230)	752,040	2,330	753,657
2007	0	11,673	(1,689)	766,004	5,380	781,368	0	5,388	(1,689)	761,480	2,330	767,509
2008	0	11,898	4,973	775,606	5,380	797,857	0	5,613	4,973	770,920	2,330	783,836
2009	0	11,912	1,826	785,208	5,380	804,326	0	5,627	1,826	780,360	2,330	790,143
2010	0	11,922	(33)	794,800	5,380	812,069	0	5,637	(33)	789,800	2,330	797,734
2011	0	11,942	(1,493)	794,800	5,380	810,629	0	5,657	(1,493)	789,800	2,330	796,294
2012	0	11,974	645	794,800	5,380	812,799	0	5,689	645	789,800	2,330	798,464
2013	0	12,056	(234)	794,800	5,380	812,002	0	5,771	(234)	789,800	2,330	797,667
2014	0	11,994	(1,439)	794,800	5,380	810,735	0	5,709	(1,439)	789,800	2,330	796,400
2015	0	12,042	1,919	794,800	5,380	814,141	0	5,757	1,919	789,800	2,330	799,806
2016	0	12,039	(1,399)	794,800	5,380	810,820	0	5,754	(1,399)	789,800	2,330	796,485
2017	0	11,953	1,403	794,800	5,380	813,536	0	5,668	1,403	789,800	2,330	799,201
2018	0	11,962	(934)	794,800	5,380	811,208	0	5,677	(934)	789,800	2,330	796,873
2019	0	11,977	517	794,800	5,380	812,674	0	5,692	517	789,800	2,330	798,339
2020	0	11,977	1	794,800	5,380	812,158	0	5,692	1	789,800	2,330	797,823
2021	0	11,977	(255)	794,800	5,380	811,902	0	5,692	(255)	789,800	2,330	797,567
2022	0	11,979	(833)	794,800	5,380	811,326	0	5,694	(833)	789,800	2,330	796,991
2023	0	11,958	(1,048)	794,800	5,380	811,090	0	5,673	(1,048)	789,800	2,330	796,755
2024	0	11,938	(79)	794,800	5,380	812,039	0	5,653	(79)	789,800	2,330	797,704
2025	0	11,994	1,771	794,800	5,380	813,945	0	5,709	1,771	789,800	2,330	799,610
2026	0	11,977	(1,662)	794,800	5,380	810,495	0	5,692	(1,662)	789,800	2,330	796,160
2027	0	11,971	323	794,800	5,380	812,474	0	5,686	323	789,800	2,330	798,139
2028	0	11,982	64	794,800	5,380	812,226	0	5,697	64	789,800	2,330	797,891
2029	0	11,979	564	794,800	5,380	812,723	0	5,694	564	789,800	2,330	798,388
2030	0	11,997	1,048	794,800	5,380	813,225	0	5,712	1,048	789,800	2,330	798,890
2031	0	11,993	(504)	794,800	5,380	811,669	0	5,708	(504)	789,800	2,330	797,334
2032	0	12,008	135	794,800	5,380	812,323	0	5,723	135	789,800	2,330	797,988
2033	0	12,009	(115)	794,800	5,380	812,074	0	5,724	(115)	789,800	2,330	797,739
2034	0	12,017	1,068	794,800	5,380	813,265	0	5,732	1,068	789,800	2,330	798,930
2035	0	12,403	71,090	794,800	5,380	883,673	0	6,118	71,090	789,800	2,330	869,338

TABLE B-6. Annual Water Quantities Conveyed through Each Pumping and Power Recovery Plant of Project Transportation Facilities

(in acre-feet)

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 and San Luis Obispo Powerplant		
	Initial Fill Water	Operational Losses	Water Supply Delivery	Total	Operational Losses	Water Supply Delivery	Total
	[99]	[100]	[101]	[102]	[103]	[104]	[105]
1961	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0
1967	0	0	0	0	0	0	0
1968	210	873	79,039	80,122	0	0	0
1969	0	1,042	62,064	63,106	0	0	0
1970	0	638	83,649	84,287	0	0	0
1971	0	3,455	110,971	114,426	0	0	0
1972	0	1,745	121,755	123,500	0	0	0
1973	0	5,479	78,645	84,124	0	0	0
1974	0	7,344	78,174	85,518	0	0	0
1975	0	5,819	85,216	91,035	0	0	0
1976	0	6,562	90,058	96,620	0	0	0
1977	0	5,777	40,579	46,356	0	0	0
1978	0	9,085	92,604	101,689	0	0	0
1979	0	10,896	123,155	134,051	0	0	0
1980	0	9,449	111,379	120,828	0	0	0
1981	0	13,232	109,754	122,986	0	0	0
1982	0	7,984	95,776	103,760	0	0	0
1983	0	5,710	100,518	106,228	0	0	0
1984	0	5,740	126,387	132,127	0	0	0
1985	0	7,563	120,823	128,386	0	0	0
1986	0	8,562	131,599	140,161	0	0	0
1987	0	11,363	128,080	139,443	0	0	0
1988	0	12,831	120,969	133,800	0	0	0
1989	0	590	134,306	134,896	0	0	0
1990	0	590	130,700	131,290	0	0	0
1991	0	590	130,700	131,290	0	0	0
1992	0	590	130,700	131,290	0	0	0
1993	0	628	130,700	131,328	38	0	38
1994	0	802	130,700	131,502	212	0	212
1995	0	802	201,186	201,988	212	70,486	70,698
1996	0	802	201,186	201,988	212	70,486	70,698
1997	0	802	201,186	201,988	212	70,486	70,698
1998	0	802	201,186	201,988	212	70,486	70,698
1999	0	802	201,186	201,988	212	70,486	70,698
2000	0	802	201,186	201,988	212	70,486	70,698
2001	0	802	201,186	201,988	212	70,486	70,698
2002	0	802	201,186	201,988	212	70,486	70,698
2003	0	802	201,186	201,988	212	70,486	70,698
2004	0	802	201,186	201,988	212	70,486	70,698
2005	0	802	201,186	201,988	212	70,486	70,698
2006	0	802	201,186	201,988	212	70,486	70,698
2007	0	802	201,186	201,988	212	70,486	70,698
2008	0	802	201,186	201,988	212	70,486	70,698
2009	0	802	201,186	201,988	212	70,486	70,698
2010	0	802	201,186	201,988	212	70,486	70,698
2011	0	802	201,186	201,988	212	70,486	70,698
2012	0	802	201,186	201,988	212	70,486	70,698
2013	0	802	201,186	201,988	212	70,486	70,698
2014	0	802	201,186	201,988	212	70,486	70,698
2015	0	802	201,186	201,988	212	70,486	70,698
2016	0	802	201,186	201,988	212	70,486	70,698
2017	0	802	201,186	201,988	212	70,486	70,698
2018	0	802	201,186	201,988	212	70,486	70,698
2019	0	802	201,186	201,988	212	70,486	70,698
2020	0	802	201,186	201,988	212	70,486	70,698
2021	0	802	201,186	201,988	212	70,486	70,698
2022	0	802	201,186	201,988	212	70,486	70,698
2023	0	802	201,186	201,988	212	70,486	70,698
2024	0	802	201,186	201,988	212	70,486	70,698
2025	0	802	201,186	201,988	212	70,486	70,698
2026	0	802	201,186	201,988	212	70,486	70,698
2027	0	802	201,186	201,988	212	70,486	70,698
2028	0	802	201,186	201,988	212	70,486	70,698
2029	0	802	201,186	201,988	212	70,486	70,698
2030	0	802	201,186	201,988	212	70,486	70,698
2031	0	802	201,186	201,988	212	70,486	70,698
2032	0	802	201,186	201,988	212	70,486	70,698
2033	0	802	201,186	201,988	212	70,486	70,698
2034	0	802	201,186	201,988	212	70,486	70,698
2035	0	802	201,186	201,988	212	70,486	70,698

TABLE B-7. Reconciliation of Capital Costs Allocated to Water Supply and Power Generation

(in thousands of dollars)

Item	Project Costs Allocated to Water Supply and Power Generation							Capital Costs Allocated to Other Purposes	Total State Water Project Capital Cost
	Misc. Income Credited to Construc- tion (a	Allowance for Future Price Escalation (b	Costs of Construc- tion of Delivery Structures (c	Costs of Requested Excess Capacity and Future Enlargement (d	Capital Cost Component of Delta Water Charge (e (g	Capital Cost Component of Trans- portation Water Charge (f	Water Supply and Power Total		
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]
CONSERVATION FACILITIES									
Upper Feather Division									
Frenchman Dam and Lake	180	0	0	0	609	0	789	2,903	3,692
Grizzly Valley Dam and Lake Davis	65	0	0	0	36	0	101	6,969	7,070
Antelope Dam and Lake	0	0	0	0	0	0	0	5,705	5,705
Abbey Bridge Dam and Reservoir	35	0	0	0	0	0	35	518	553
Dixie Refuge Dam and Reservoir	0	0	0	0	0	0	0	235	235
Total, Upper Feather Division	280	0	0	0	645	0	925	16,330	17,255
Oroville Division									
Multipurpose Facilities	3,127	384	149	0	367,692	0	371,352	87,137	458,489
Specific Power Facilities	379	99	0	0	105,631	0	106,109	1,224	107,333
Total, Oroville Division	3,506	483	149	0	473,323	0	477,461	88,361	565,822
California Aqueduct									
North San Joaquin Division	207	691	0	0	80,300	0	81,198	2,745	83,943
San Luis Division	418	247	0	0	99,164	0	99,829	4,191	104,020
Total, California Aqueduct	625	938	0	0	179,464	0	181,027	6,936	187,963
Delta Facilities	1,630	2,280	0	0	116,467	0	120,377	43,690	164,067
Planning and Pre-operation	3	24,460	0	0	104,933	0	129,396	0	129,396
TOTAL, CONSERVATION FACILITIES	6,044	28,161	149	0	874,832	0	909,286	155,317	1,064,503
TRANSPORTATION FACILITIES									
Upper Feather Division									
Grizzly Valley Pipeline	0	0	0	0	0	341	341	0	341
North Bay Aqueduct	223	248	638	0	0	91,785	92,894	0	92,894
South Bay Aqueduct	1,783	112	624	0	0	50,917	53,436	21,228	74,664
California Aqueduct									
North San Joaquin Division	460	1,065	15	0	0	178,236	179,776	6,582	186,358
San Luis Division	100	1,453	0	0	0	115,382	116,935	7,491	124,426
South San Joaquin Division	315	959	3,263	2,065	0	272,768	279,370	15,590	295,960
Tehachapi Division	24	203	4	5,229	0	294,530	299,990	17,684	317,674
Mojave Division	896	2,960	517	0	0	318,833	323,206	24,611	347,817
Santa Ana Division	857	186	3,223	9,710	0	167,379	181,355	16,808	198,163
West Branch	37,574	988	2,936	37	0	458,214	499,749	31,013	530,762
Coastal Branch	11	22,481	96	0	0	292,663	315,251	0	315,251
Total, California Aqueduct	40,237	30,295	10,054	17,041	0	2,098,005	2,195,632	120,779	2,316,411
TOTAL, TRANSPORTATION FACILITIES	42,243	30,655	11,316	17,041	0	2,241,048	2,342,303	142,007	2,484,310
EAST BRANCH ENLARGEMENT	0	0	0	0	0	366,322	366,322	0	366,322
SAN JOAQUIN DRAINAGE FACILITIES	0	0	0	0	0	0	0	54,490	54,490
OFF-AQUEDUCT POWER GENERATION FACILITIES	0	100	0	0	0	440,561	440,661	0	440,661
LAND PURCHASE - KERN WATER BANK	0	0	0	0	34,686	0	34,686	0	34,686
UNASSIGNED AND DAVIS- GRUNSKY	0	0	0	0	0	0	0	142,618	142,618
Subtotal	48,287	58,916	11,465	17,041	909,518	3,047,931	4,093,158	494,432	4,587,590
Less: 2001-2035 Costs	0	11,374	0	0	14,295	0	25,669	0	25,669
TOTAL (h	48,287	47,542	11,465	17,041	895,223	3,047,931	4,067,489	494,432	4,561,921

a) Miscellaneous project receipts that are applied for accounting purposes to reduce the capital costs of the particular facilities.

b) These allowances are included for planning the future financial program, but not for determining current water charges. The costs shown in this appendix are based on prices prevailing on December 31, 1988.

c) See Table B-8.

d) See Table B-9.

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

f) See Table B-10.

g) The planning and pre-operation costs of conservation facilities include $42,269,775 of planning costs financed from Systems Revenue and not included in Table 20.

h) See Table 20, Chapter VII.

TABLE B-8. SWP Capital Costs of Requested Delivery Structures

(in dollars)

Project Service Area and Water Supply Contractor	Calendar Year Capital Costs (a						
	1952-1987	1988	1989	1990	1991	1992	Total
	[1]	[2]	[3]	[4]	[5]	[6]	[7]
FEATHER RIVER AREA							
County of Butte	104,924	0	0	0	0	0	104,924
Thermalito Irrigation District (b	43,939	0	0	0	0	0	43,939
Subtotal	148,863	0	0	0	0	0	148,863
NORTH BAY AREA							
Napa County Flood Control and Water Conservation District	13,590	0	0	0	0	0	13,590
Solano County Flood Control and Water Conservation District	588,280	10,156	25,900	0	0	0	624,336
Subtotal	601,870	10,156	25,900	0	0	0	637,926
SOUTH BAY AREA							
Alameda County Flood Control and Water Conservation District, Zone 7	224,357	0	3,000	0	0	0	227,357
Alameda County Water District	143,789	0	2,700	0	0	0	146,489
Santa Clara Valley Water District	0	0	0	0	0	0	0
San Francisco Water Department (b	0	0	250,000	0	0	0	250,000
Subtotal	368,146	0	255,700	0	0	0	623,846
SAN JOAQUIN VALLEY AREA							
Devil's Den Water District	77,557	0	0	0	0	0	77,557
Dudley Ridge Water District	287,669	0	0	0	0	0	287,669
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	2,709,182	0	0	0	0	0	2,709,182
Oak Flat Water District	13,753	0	0	0	0	0	13,753
Tracy Golf and Country Club (c	1,028	0	0	0	0	0	1,028
Tulare Lake Basin Water Storage District	277,483	0	0	0	0	0	277,483
Subtotal	3,378,322	0	0	0	0	0	3,378,322
SOUTHERN CALIFORNIA AREA							
Antelope Valley-East Kern Water Agency	341,495	2,365	10,400	0	0	0	354,260
Castaic Lake Water Agency	346,978	0	0	0	0	0	346,978
Coachella Valley Water District	14,206	0	0	0	0	0	14,206
Crestline-Lake Arrowhead Water Agency	12,097	0	0	0	0	0	12,097
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	65,377	0	1,000	0	0	0	66,377
Palmdale Water District	30,806	3,367	0	0	0	0	34,173
San Bernardino Valley Municipal Water District	613,173	91,586	75,400	0	0	0	780,159
San Gabriel Valley Municipal Water District	131,052	0	0	0	0	0	131,052
San Gorgonio Pass Water Agency	66,530	0	0	0	0	0	66,530
The Metropolitan Water District of Southern California	4,261,525	0	482,100	0	0	0	4,743,625
Ventura County Flood Control District	79,699	0	0	0	0	0	79,699
Subtotal	6,010,108	97,318	568,900	0	0	0	6,676,326
TOTAL	10,507,309	107,474	850,500	0	0	0	11,465,283

a) Approximate only, not to be construed as invoice amounts.
b) Not a SWP water supply contractor.
c) Not a SWP water supply contractor, but has contracted for water.

TABLE B-9. Capital Costs of Requested Excess Peaking Capacity

(in dollars unless otherwise indicated)

Calendar Year	Total Advance Payments and Credits for Excess Capacity	Total Incremental Costs for Excess Capacity	Over payment (+) or Under payment (-) (a	Annual Surplus Money Investment Fund Interest Rate (b Jan-Jun	Annual Surplus Money Investment Fund Interest Rate (b Jul-Dec	Net Over or Underpayment With Interest (c
	[1]	[2]	[3]	[4]	[5]	[6]
			THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA			
1965	0	158,000	(158,000)	3.968%	4.184%	(163,412)
1966	8,056,000	435,800	7,620,200	4.540%	5.057%	7,701,103
1967	9,094,963	1,878,270	7,216,693	4.815%	4.744%	15,524,533
1968	1,523,252	2,887,351	(1,364,099)	5.330%	5.540%	14,959,187
1969	8,310,651	3,059,310	5,251,341	5.946%	6.389%	21,369,973
1970	3,426,736	2,397,102	1,029,634	7.071%	7.125%	23,986,083
1971	1,086,045	1,146,648	(60,603)	5.154%	5.580%	25,238,017
1972	(4,244,807)	487,394	(4,732,201)	4.477%	4.977%	21,532,965
1973	(15,913,829)	25,041	(15,938,870)	6.023%	8.717%	6,014,116
1974	0	37,775	(37,775)	9.222%	10.351%	6,576,393
1975	0	2,085	(2,095)	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	(1,175,775)	-	-	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

a) Overpayment or underpayment for each calendar year - column (1) minus column (2).
b) Interest rates shown are annual rates. Interest is credited daily at applicable rates on funds deposited in the State's Surplus Money Investment Fund.
c) Amounts shown are end-of-year balances. Interest on overpayments is credited at applicable Surplus Money Investment Fund Interest Rates shown in columns(4) and (5). Interest on underpayments is charged at the 1980 Project Interest Rate of 4.584 percent.

TABLE B-9. Capital Costs of Requested Excess Peaking Capacity

(in dollars)

Reach Number	ANNUAL REQUIRED ADVANCE OF FUNDS — Incremental Costs and Advance Payments by Calendar Year													Reach Total
	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1981	
	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]	[15]	[16]	[17]	[18]	[19]	[20]
	THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA													
	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	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													
28J									(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 Adjustments													
	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												(h	
			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													
	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												(h	
				85,495	52,625	101,648	34,062	(12,794)	(205,354)	0		0	(134,869)	(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

(in dollars)

Calendar Year	UPPER FEATHER DIVISION	NORTH BAY AQUEDUCT					SOUTH BAY AQUEDUCT			
		Reach 1	Reach 2	Reach 3A	Reach 3B	Total	Reach 1	Reach 2	Reach 4	Reach 5
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[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	52,418	75,611	216	13,170	141,415	104,246	2,846	8,915	12,700
1977	28	53,228	65,662	2,171	23,239	144,300	176,180	3,625	3,225	16,132
1978	38	57,726	57,158	723	26,996	142,603	237,250	4,494	3,668	12,903
1979	23	314,974	91,367	1,524	65,804	473,669	115,031	17,151	8,515	30,805
1980	26	410,435	111,600	1,518	123,282	646,835	399,822	17,708	8,249	31,085
1981	34	439,505	147,295	2,149	23,781	612,730	(169,021)	3,589	6,520	17,295
1982	11	944,245	357,720	2,579	123,372	1,427,916	(41,745)	17,110	4,427	40,027
1983	19	1,087,234	1,076,627	(3,075)	525,630	2,686,416	429,171	73,118	34,721	68,880
1984	26	1,873,535	2,318,617	408	1,070,327	5,262,887	508,495	36,145	9,346	92,006
1985	29	2,279,463	7,851,027	7,150	3,401,956	13,539,596	25,796	1,893	3,666	26,964
1986	31	16,589,442	10,028,012	1,199,816	1,743,191	29,560,461	60,138	12,709	14,435	15,016
1987	32	12,475,118	7,331,580	1,847,836	1,608,768	23,263,302	116,551	14,165	26,490	31,736
1988	56	3,208,263	1,542,346	866,796	494,828	6,112,233	127,674	12,015	19,967	6,851
1989	0	1,272,900	1,119,900	117,300	180,000	2,690,100	71,000	17,000	11,000	15,876
1990	0	342,900	151,200	68,400	95,500	658,000	89,000	8,000	6,000	7,308
1991	0	1,000	0	0	56,500	57,500	190,000	41,000	19,000	37,296
1992	0	0	0	0	5,000	5,000	91,000	23,000	12,000	20,916
1993	0	0	0	0	0	0	0	1,000	0	504
1994	0	0	0	0	0	0	0	0	0	0
1995	0	0	0	0	0	0	0	0	0	0
1996	0	0	0	0	0	0	0	0	0	0
1997	0	0	0	0	0	0	0	0	0	0
1998	0	0	0	0	0	0	0	0	0	0
1999	0	0	0	0	0	0	0	0	0	0
2000	0	0	0	0	0	0	0	0	0	0
TOTAL	340,806	42,053,392	32,665,050	4,115,511	12,950,616	91,784,569	16,209,503	1,493,328	4,434,078	10,968,786

TABLE B-10. Capital Costs of Each Aqueduct Reach to Be Reimbursed through Capital Cost Component of Transportation Charge

(in dollars)

Calendar Year	SOUTH BAY AQUEDUCT (continued)					CALIFORNIA AQUEDUCT NORTH SAN JOAQUIN DIVISION			
	Reach 6	Reach 7	Reach 8	Reach 9	Total	Reach 1	Reach 2A	Reach 2B	Total
	[11]	[12]	[13]	[14]	[15]	[16]	[17]	[18]	[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	167,485	641,806	45,533	65,943	753,282
1977	270	1,310	8,651	24,938	234,331	272,223	20,283	22,568	315,074
1978	231	1,204	1,631	17,123	278,504	442,321	36,221	9,714	488,256
1979	1,367	1,721	2,134	7,322	184,046	975,174	59,695	26,106	1,060,975
1980	1,321	1,718	2,182	7,102	469,187	3,603,812	96,760	38,789	3,739,361
1981	308	1,461	1,397	5,070	(133,381)	(120,820)	1,487,444	202,275	1,568,899
1982	670	1,286	1,352	3,701	26,828	1,408,839	38,356	28,501	1,475,696
1983	377	5,233	7,446	21,341	640,287	665,976	77,066	260,730	1,003,772
1984	243	1,819	1,627	13,145	662,826	1,544,794	40,850	37,965	1,623,609
1985	339	1,497	1,973	5,954	68,082	689,689	21,387	141,792	852,868
1986	844	2,343	2,801	10,516	118,802	534,450	58,732	110,828	704,010
1987	1,264	2,792	3,262	21,460	217,720	687,448	85,111	4,713,238	5,485,797
1988	1,925	2,458	2,923	16,523	190,336	2,415,628	89,858	482,551	2,988,037
1989	2,000	1,000	11,500	9,000	138,376	15,363,746	72,653	29,328	15,465,727
1990	1,000	1,000	1,000	5,000	118,308	15,841,989	71,987	25,995	15,939,971
1991	4,000	3,000	4,000	15,000	313,296	13,361,462	127,976	54,656	13,544,094
1992	3,000	2,000	3,000	9,000	163,916	2,399,544	68,654	29,994	2,498,192
1993	0	0	0	0	1,504	999,810	0	0	999,810
1994	0	0	0	0	0	999,810	0	0	999,810
1995	0	0	0	0	0	999,810	0	0	999,810
1996	0	0	0	0	0	999,810	0	0	999,810
1997	0	0	0	0	0	999,810	0	0	999,810
1998	0	0	0	0	0	999,810	0	0	999,810
1999	0	0	0	0	0	0	0	0	0
2000	0	0	0	0	0	0	0	0	0
TOTAL	533,282	3,825,316	4,837,244	8,615,475	50,917,012	111,612,628	41,148,722	25,474,287	178,235,637

TABLE B-10. Capital Costs of Each Aqueduct Reach to Be Reimbursed through Capital Cost Component of Transportation Charge

(in dollars)

Calendar Year	CALIFORNIA AQUEDUCT (continued)								
	SAN LUIS DIVISION						SOUTH SAN JOAQUIN DIVISION		
	Reach 3	Reach 4	Reach 5	Reach 6	Reach 7	Subtotal	Reach 8C	Reach 8D	Reach 9
	[20]	[21]	[22]	[23]	[24]	[25]	[26]	[27]	[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	79,381	13,041	5,138	41,687	156,732	19,931	76,280	62,164
1977	35,707	77,851	9,412	4,028	9,655	136,653	21,096	70,005	97,952
1978	8,539	78,584	7,006	3,536	6,994	104,659	7,584	40,453	17,395
1979	(35,394)	306,075	19,463	9,485	(242,253)	57,376	10,474	6,181	6,227
1980	66,622	1,659,006	191,307	75,209	185,384	2,177,528	2,158	17,492	17,706
1981	29,113	(996,700)	(40,312)	(14,168)	850,288	(171,779)	1,145	9,622	9,527
1982	95,240	(550,294)	14,987	7,560	3,490,841	3,058,334	1,678	4,945	4,208
1983	89,551	(443,334)	24,669	11,303	1,812,459	1,494,648	7,532	10,483	9,149
1984	38,411	(67,102)	34,214	16,833	3,066,236	3,088,592	26,533	10,623	6,948
1985	66,757	189,668	25,931	11,866	578,962	873,184	6,949	9,271	7,636
1986	85,671	795,512	62,802	23,892	1,402,879	2,370,756	9,299	29,757	26,883
1987	28,613	(102,065)	49,704	19,777	927,434	923,463	13,037	23,386	62,093
1988	67,143	(1,192,801)	69,018	28,560	1,475,678	447,598	7,198	35,449	110,578
1989	180,878	571,458	21,689	7,544	3,114,257	3,895,826	11,316	56,580	745,441
1990	15,514	320,620	16,974	6,601	6,037,557	6,397,266	4,715	51,865	778,446
1991	65,582	491,303	70,725	25,461	4,513,669	5,166,740	18,860	96,186	165,496
1992	41,606	231,978	45,264	16,031	29,233	364,112	12,259	75,440	61,295
1993	0	0	0	0	0	0	0	18,860	18,860
1994	0	0	0	0	0	0	0	0	0
1995	0	0	0	0	0	0	0	0	0
1996	0	0	0	0	0	0	0	0	0
1997	0	0	0	0	0	0	0	0	0
1998	0	0	0	0	0	0	0	0	0
1999	0	0	0	0	0	0	0	0	0
2000	0	0	0	0	0	0	0	0	0
TOTAL	15,391,329	26,835,008	21,961,115	5,652,249	45,542,146	115,381,847	815,109	12,838,880	10,263,303

TABLE B-10. Capital Costs of Each Aqueduct Reach to Be Reimbursed through Capital Cost Component of Transportation Charge

(in dollars)

Calendar Year	CALIFORNIA AQUEDUCT (continued)								
	SOUTH SAN JOAQUIN DIVISION (continued)								
	Reach 10A	Reach 11B	Reach 12D	Reach 12E	Reach 13B	Reach 14A	Reach 14B	Reach 14C	Reach 15A
	[29]	[30]	[31]	[32]	[33]	[34]	[35]	[36]	[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	507,535	59,753	42,776	434,578
1977	75,628	52,919	22,826	54,444	81,293	302,126	49,972	30,152	235,700
1978	48,754	16,469	(2,816)	27,331	43,126	205,261	(653)	1,500	145,512
1979	241	6,906	13,401	14,229	25,411	313,965	9,846	7,856	251,091
1980	18,165	18,814	15,611	27,499	34,190	1,835,103	29,171	23,024	1,767,245
1981	10,290	14,875	26,466	20,959	25,503	(1,197,506)	27,538	33,661	(1,185,613)
1982	4,998	4,720	6,062	5,698	13,728	(676,108)	7,425	28,895	(681,447)
1983	11,779	8,644	13,203	11,327	33,879	655,953	15,572	23,066	117,147
1984	8,300	29,396	94,580	52,299	23,343	653,748	80,315	66,803	70,329
1985	9,017	6,591	5,564	6,902	8,811	98,810	8,499	5,758	45,731
1986	29,504	19,138	22,331	24,473	26,184	95,398	26,073	19,282	144,839
1987	23,689	16,048	17,861	19,760	20,514	126,915	20,773	13,574	240,234
1988	32,216	20,762	23,842	26,708	33,090	270,558	26,008	19,165	166,972
1989	56,580	32,062	42,435	35,834	42,435	2,800,798	38,663	31,119	3,061,635
1990	268,755	245,651	127,776	33,948	40,549	337,594	35,834	29,233	300,817
1991	305,532	267,340	139,092	54,694	61,295	422,464	66,953	50,922	357,397
1992	71,668	41,492	47,150	45,264	50,922	201,802	51,865	40,549	149,937
1993	20,746	11,316	18,860	14,145	16,974	18,860	13,202	11,316	4,715
1994	0	0	0	0	0	0	0	0	0
1995	0	0	0	0	0	0	0	0	0
1996	0	0	0	0	0	0	0	0	0
1997	0	0	0	0	0	0	0	0	0
1998	0	0	0	0	0	0	0	0	0
1999	0	0	0	0	0	0	0	0	0
2000	0	0	0	0	0	0	0	0	0
TOTAL	9,905,808	12,773,868	11,327,130	7,687,030	15,901,333	62,388,135	8,640,365	7,165,109	42,968,910

TABLE B-10. Capital Costs of Each Aqueduct Reach to Be Reimbursed through Capital Cost Component of Transportation Charge

(in dollars)

Calendar Year	CALIFORNIA AQUEDUCT (continued)								
	SOUTH SAN JOAQUIN (contd.)		TEHACHAPI DIVISION			MOJAVE DIVISION			
	Reach 16A	Subtotal	Reach 17E	Reach 17F	Subtotal	Reach 18A	Reach 19	Reach 19C	Reach 20A
	[38]	[39]	[40]	[41]	[42]	[43]	[44]	[45]	[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	618,072	2,154,146	1,124,500	174,629	1,299,129	121,043	84,593	6,786	59,967
1977	581,088	1,675,201	660,735	31,512	692,247	261,400	133,767	7,521	117,878
1978	252,220	802,136	752,967	27,956	780,923	553,014	57,150	5,872	51,615
1979	570,804	1,236,632	2,288,392	61,381	2,349,773	743,615	339,536	10,831	37,085
1980	3,999,628	7,805,806	18,914,107	6,046	18,920,153	1,330,429	1,073,430	3,604	308,188
1981	(2,708,171)	(4,911,704)	(4,966,608)	6,903	(4,959,705)	1,344,813	845,669	4,498	48,603
1982	(1,620,219)	(2,895,417)	11,944,444	5,317	11,949,761	6,824,321	741,321	3,920	30,521
1983	216,612	1,134,346	9,289,563	7,322	9,296,885	10,682,338	61,202	2,596	37,390
1984	147,158	1,270,375	3,386,460	31,694	3,418,154	8,265,763	309,593	3,124	17,591
1985	59,747	279,286	1,835,556	10,018	1,845,574	5,260,678	226,435	3,885	67,269
1986	120,214	593,375	1,207,659	33,674	1,241,333	2,042,225	2,070,419	4,261	765,359
1987	226,338	824,222	1,171,708	13,639	1,185,347	844,571	499,913	4,671	162,028
1988	370,116	1,142,662	2,279,925	16,809	2,296,734	820,314	77,595	12,599	67,825
1989	6,448,232	13,403,130	651,141	2,829	653,970	80,155	745,913	0	93,357
1990	586,074	2,841,257	375,314	1,886	377,200	5,658	590,318	0	1,030,699
1991	504,505	2,510,736	625,680	7,544	633,224	11,316	95,243	0	113,160
1992	255,553	1,105,196	317,791	4,715	322,506	5,658	18,860	0	20,746
1993	20,746	188,600	0	0	0	0	0	0	0
1994	0	0	0	0	0	0	0	0	0
1995	0	0	0	0	0	0	0	0	0
1996	0	0	0	0	0	0	0	0	0
1997	0	0	0	0	0	0	0	0	0
1998	0	0	0	0	0	0	0	0	0
1999	0	0	0	0	0	0	0	0	0
2000	0	0	0	0	0	0	0	0	0
TOTAL	70,093,087	272,768,067	240,164,127	54,365,762	294,529,889	45,684,036	24,597,646	250,097	17,506,483

TABLE B-10. Capital Costs of Each Aqueduct Reach to Be Reimbursed through Capital Cost Component of Transportation Charge

(in dollars)

Calendar Year	CALIFORNIA AQUEDUCT (continued)								
	MOJAVE DIVISION (contd.)							SANTA ANA DIVISION	
	Reach 20B	Reach 21	Reach 22A	Reach 22B	Reach 23	Reach 24	Subtotal	Reach 25	Reach 26A
	[47]	[48]	[49]	[50]	[51]	[52]	[53]	[54]	[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	3,103,929	84,188	204,705	3,837,748	475,176	1,494,750
1977	120,160	71,389	49,445	1,654,593	60,112	232,230	2,708,495	76,255	776,085
1978	68,838	32,855	18,183	565,337	36,484	210,198	1,599,546	57,463	131,076
1979	36,225	18,948	10,675	576,019	10,633	103,615	1,887,182	29,960	80,482
1980	284,545	133,526	121,171	2,361,399	42,229	559,963	6,218,484	31,462	181,638
1981	32,194	13,211	6,458	(868,131)	46,908	203,929	1,678,152	5,861	68,934
1982	74,087	10,928	12,990	466,227	182,170	73,079	8,419,564	8,887	139,927
1983	55,818	23,930	9,098	462,982	912,895	51,334	12,299,583	4,155	514,813
1984	35,429	844,610	6,217	131,932	552,676	35,047	10,201,982	4,198	220,148
1985	66,454	15,116	1,144,124	593,096	908,422	49,912	8,335,391	5,727	16,663
1986	54,086	226,180	1,161,777	1,085,496	224,558	54,602	7,688,963	13,198	111,343
1987	53,088	46,743	65,536	3,677,488	145,227	94,637	5,593,902	7,767	18,167
1988	52,950	45,229	404,537	571,295	312,497	138,127	2,502,968	10,045	42,760
1989	37,720	38,663	22,632	5,622,637	1,201,382	42,435	7,884,894	1,886	589,846
1990	73,554	81,098	24,518	6,744,336	2,357,500	39,606	10,947,287	6,601	(203,217)
1991	89,585	106,559	40,549	4,027,081	6,030,485	111,274	10,625,252	11,316	2,029,336
1992	17,917	18,860	12,259	1,228,729	6,006,910	64,124	7,394,063	3,772	124,476
1993	0	0	0	0	6,221,914	0	6,221,914	0	0
1994	0	0	0	0	2,927,072	0	2,927,072	0	0
1995	0	0	0	0	524,308	0	524,308	0	0
1996	0	0	0	0	0	0	0	0	0
1997	0	0	0	0	0	0	0	0	0
1998	0	0	0	0	0	0	0	0	0
1999	0	0	0	0	0	0	0	0	0
2000	0	0	0	0	0	0	0	0	0
TOTAL	20,206,269	11,240,253	9,431,489	107,287,794	32,759,346	49,870,642	318,834,055	24,804,581	41,378,381

TABLE B-10. Capital Costs of Each Aqueduct Reach to Be Reimbursed through Capital Cost Component of Transportation Charge

(in dollars)

Calendar Year	CALIFORNIA AQUEDUCT (contd.)								
	SANTA ANA DIVISION (contd.)				WEST BRANCH				
	Reach 28G a)	Reach 28H	Reach 28J	Subtotal	Reach 29A	Reach 29F	Reach 29G	Reach 29H	Reach 29J
	[56]	[57]	[58]	[59]	[60]	[61]	[62]	[63]	[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	396,828	650,417	1,274,484	706,244	650,209
1977	127,106	89,036	323,091	1,391,573	420,682	3,018,637	2,152,961	196,012	1,135,148
1978	147,112	153,867	347,482	837,000	1,337,521	2,219,135	6,694,615	57,817	149,932
1979	29,723	19,225	225,947	385,337	966,393	2,168,382	19,813,742	597,858	331,313
1980	137,833	154,821	1,077,900	1,583,654	1,543,584	4,108,143	24,537,814	550,337	204,751
1981	28,804	22,647	61,323	187,569	(854,536)	2,699,859	19,806,507	94,795	28,838
1982	13,697	57,386	37,860	257,757	(474,526)	348,325	17,953,359	188,981	40,158
1983	16,051	88,515	(269,781)	353,753	149,362	179,938	7,081,245	215,277	21,801
1984	15,686	13,668	50,322	304,022	94,428	68,314	2,870,753	337,363	17,919
1985	18,649	12,846	50,438	104,323	177,205	23,375	2,125,665	82,854	37,109
1986	43,119	38,340	94,099	300,099	129,766	56,289	279,368	105,379	91,988
1987	27,627	20,001	54,228	127,790	211,879	447,770	720,344	191,813	44,769
1988	41,684	28,714	59,055	182,258	436,406	26,344	1,560,904	133,256	56,509
1989	8,487	4,715	122,590	727,524	533,738	92,414	400,775	349,853	21,689
1990	24,518	26,404	173,512	27,818	320,148	13,202	2,300,448	2,855,404	11,316
1991	46,207	36,777	262,154	2,385,790	398,889	45,264	5,343,509	468,671	34,891
1992	17,917	9,430	124,476	280,071	156,538	27,347	389,459	108,445	19,803
1993	0	0	0	0	0	0	0	0	0
1994	0	0	0	0	0	0	0	0	0
1995	0	0	0	0	0	0	0	0	0
1996	0	0	0	0	0	0	0	0	0
1997	0	0	0	0	0	0	0	0	0
1998	0	0	0	0	0	0	0	0	0
1999	0	0	0	0	0	0	0	0	0
2000	0	0	0	0	0	0	0	0	0
TOTAL	23,827,796	23,482,565	53,885,648	167,378,971	35,034,030	29,248,502	125,927,456	55,307,695	74,683,031

a) Includes excess capacity costs (not shown in Table B-9) allocated to MWDSC 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

(in dollars)

Calendar Year	CALIFORNIA AQUEDUCT (contd.)								GRAND TOTAL
	WEST BRANCH (continued)		COASTAL BRANCH					Total	
	Reach 30	Subtotal	Reach 31A	Reach 33A	Reach 34	Reach 35	Subtotal		
	[65]	[66]	[67]	[68]	[69]	[70]	[71]	[72]	[73]
1952	1,408	5,655	0	0	0	0	0	98,857	99,353
1953	4,346	17,457	0	0	0	0	0	309,387	311,812
1954	5,743	23,074	0	0	0	0	0	394,688	402,143
1955	1,943	7,809	0	0	0	0	0	159,842	169,342
1956	2,077	8,348	0	0	0	0	0	255,679	351,551
1957	7,684	30,877	0	0	0	0	0	708,753	1,464,452
1958	13,931	55,142	0	0	0	0	0	1,331,616	2,286,623
1959	44,384	134,727	28,046	49,114	7,441	8,236	92,837	2,096,392	2,967,412
1960	84,703	255,409	34,404	70,450	8,507	14,265	127,626	2,937,049	4,660,833
1961	123,330	239,953	13,801	17,868	1,501	3,931	37,101	4,650,264	8,545,244
1962	348,366	671,447	10,121	7,798	524	1,689	20,132	5,827,774	8,875,171
1963	521,491	1,167,566	20,470	14,299	880	2,943	38,592	18,981,487	24,610,278
1964	1,372,464	2,232,275	315,418	26,963	1,687	5,639	349,707	31,550,813	41,736,060
1965	3,383,950	4,943,858	747,023	36,178	2,118	7,060	792,379	57,936,405	62,664,743
1966	9,364,753	14,872,117	2,258,915	35,864	1,736	5,764	2,302,279	124,748,128	129,110,330
1967	17,618,827	53,187,979	6,310,419	38,331	1,891	6,213	6,356,854	187,465,580	194,146,365
1968	15,736,691	57,595,765	2,707,580	30,784	1,324	4,369	2,744,057	192,593,079	197,978,911
1969	16,228,175	34,690,908	423,797	26,549	907	2,905	454,158	182,530,023	184,473,490
1970	22,330,328	50,497,652	269,194	24,368	851	2,787	297,200	206,720,774	207,082,650
1971	16,890,503	40,115,145	164,446	32,230	1,315	3,804	201,795	158,414,033	158,624,739
1972	3,818,001	2,874,264	131,332	17,601	522	1,660	151,115	68,228,670	68,362,291
1973	13,426,222	25,999,878	182,493	16,154	542	1,758	200,947	45,110,823	45,263,853
1974	2,988,318	4,334,592	190,866	18,799	463	1,405	211,533	24,036,199	24,402,166
1975	1,808,235	4,782,778	64,582	36,012	2,255	6,656	109,505	21,065,768	21,318,838
1976	1,253,067	4,931,249	198,266	68,903	5,088	14,988	287,245	17,183,957	17,492,908
1977	345,023	7,268,463	918,515	81,543	1,834	5,387	1,007,279	15,194,985	15,573,644
1978	763,445	11,222,465	37,342	55,507	1,302	3,852	98,003	15,932,988	16,354,133
1979	282,145	24,159,833	39,511	117,027	1,505	4,433	162,476	31,299,584	31,957,322
1980	2,055,206	32,999,835	199,745	404,607	1,059	3,113	608,524	74,053,345	75,169,393
1981	275,379	22,050,842	11,316	(255,590)	1,284	3,778	(239,212)	15,203,062	15,682,445
1982	338,464	18,394,759	(16,332)	(157,910)	472	1,381	(172,389)	40,488,065	41,942,820
1983	556,120	8,203,743	79,200	33,626	684	2,006	115,516	33,902,246	37,228,968
1984	1,120,074	4,508,851	30,781	18,424	601	1,761	51,567	24,467,152	30,392,891
1985	277,963	2,724,171	32,332	18,165	1,483	4,361	56,341	15,071,138	28,678,845
1986	223,968	886,758	89,412	136,582	13,503	39,830	279,327	14,064,621	43,743,915
1987	169,840	1,786,415	66,852	1,011,295	89,606	264,384	1,432,137	17,359,073	40,840,127
1988	160,164	2,373,583	101,994	1,136,298	96,960	286,080	1,621,332	13,555,172	19,857,797
1989	115,989	1,514,458	64,000	1,495,281	89,167	264,310	1,912,758	45,458,287	48,286,763
1990	1,113,683	6,614,201	47,000	2,805,801	195,057	467,662	3,515,520	46,660,520	47,436,828
1991	2,667,747	8,958,971	209,000	8,025,344	700,558	1,370,276	10,305,178	54,129,985	54,500,781
1992	167,854	869,446	154,000	51,982,113	5,181,430	14,608,105	71,925,648	84,759,234	84,928,150
1993	1,886	1,886	320,000	64,880,781	6,635,529	19,469,897	91,306,207	98,718,417	98,719,921
1994	0	0	504,000	62,585,357	2,577,506	6,293,942	71,960,805	75,887,687	75,887,687
1995	0	0	200,000	18,692,393	516,368	531,723	19,940,484	21,464,602	21,464,602
1996	0	0	0	552,000	120,000	128,000	800,000	1,799,810	1,799,810
1997	0	0	0	483,000	105,000	112,000	700,000	1,699,810	1,699,810
1998	0	0	0	345,000	75,000	80,000	500,000	1,499,810	1,499,810
1999	0	0	0	0	0	0	0	0	0
2000	0	0	0	0	0	0	0	0	0
TOTAL	138,013,890	458,214,604	17,159,841	215,014,909	16,445,460	44,042,353	292,662,563	2,098,005,633	2,241,048,020

TABLE B-11. Minimum OMP&R Costs of Each Aqueduct Reach to Be Reimbursed through Minimum OMP&R Component of Transportation Charge

(in dollars)

Calendar Year	UPPER FEATHER DIVISION	NORTH BAY AQUEDUCT					SOUTH BAY AQUEDUCT			
		Reach 1	Reach 2	Reach 3A	Reach 3B	Total	Reach 1	Reach 2	Reach 4	Reach 5
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[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	85,264	85,264	1,143,840	212,974	242,118	111,986
1981	3,847	0	0	0	101,347	101,347	884,829	130,138	167,135	204,895
1982	10,956	0	0	0	194,252	194,252	1,170,233	143,561	252,417	118,493
1983	(422)	0	0	0	80,581	80,581	1,267,805	91,008	378,190	170,113
1984	643	0	0	0	138,700	138,700	1,994,022	113,789	340,324	36,750
1985	2,599	0	0	0	261,065	261,065	2,062,461	208,531	428,020	266,520
1986	2,595	0	0	0	229,120	229,120	1,831,566	289,068	305,132	208,656
1987	2,595	0	0	0	308,869	308,869	2,110,826	164,641	399,675	284,548
1988	2,600	0	0	0	342,803	342,803	2,026,801	181,325	326,307	353,481
1989	2,672	543,849	144,548	254,361	206,862	1,149,620	2,359,339	262,548	368,931	315,531
1990	2,687	553,592	145,145	249,811	241,370	1,189,918	2,766,941	284,449	406,915	353,754
1991	2,660	560,136	145,214	260,387	248,642	1,214,379	2,782,905	303,053	428,297	372,861
1992	2,704	570,762	147,973	265,267	232,731	1,216,733	2,512,731	307,874	436,279	355,617
1993	2,709	572,291	148,343	265,978	233,075	1,219,687	2,514,092	307,679	436,887	353,974
1994	2,775	572,597	148,608	266,067	233,205	1,220,477	2,516,422	308,142	437,559	354,333
1995	2,725	575,921	149,253	267,652	234,369	1,227,195	2,526,431	309,547	439,650	358,529
1996	2,725	576,958	149,483	268,140	234,744	1,229,325	2,529,856	310,034	440,371	359,786
1997	2,725	579,619	149,498	269,531	235,461	1,234,109	2,532,154	310,264	441,015	362,848
1998	2,725	579,909	149,501	269,681	235,538	1,234,629	2,532,403	310,290	441,087	363,208
1999	2,725	582,509	149,516	271,040	236,238	1,239,303	2,534,650	310,515	441,716	366,356
2000	2,725	582,788	149,518	271,186	236,314	1,239,806	2,534,891	310,540	441,787	366,707
2001	2,725	582,976	149,519	271,283	236,365	1,240,143	2,535,052	310,556	441,832	366,930
2002	2,725	583,177	149,521	271,389	236,419	1,240,506	2,535,225	310,574	441,881	367,180
2003	2,725	585,462	149,534	272,583	237,034	1,244,613	2,619,900	317,509	457,309	376,523
2004	2,725	599,321	150,905	273,769	240,772	1,264,767	2,625,427	317,997	458,503	379,570
2005	2,725	599,173	150,905	273,691	240,732	1,264,501	2,625,299	317,983	458,466	379,384
2006	2,725	599,391	150,906	273,805	240,792	1,264,894	2,625,487	318,003	458,519	379,655
2007	2,725	601,453	150,918	274,883	241,346	1,268,600	2,627,267	318,180	459,015	382,136
2008	2,725	601,606	150,920	274,963	241,387	1,268,876	2,627,399	318,195	459,055	382,334
2009	2,725	603,532	150,931	275,969	241,906	1,272,338	2,629,062	318,361	459,522	384,674
2010	2,725	603,633	150,932	276,021	241,932	1,272,518	2,629,149	318,369	459,546	384,789
2011	2,725	602,718	150,662	275,607	241,571	1,270,558	2,625,342	317,818	458,774	383,547
2012	2,725	602,821	150,662	275,661	241,600	1,270,744	2,625,433	317,827	458,798	383,669
2013	2,725	602,861	150,663	275,681	241,613	1,270,818	2,625,467	317,831	458,809	383,726
2014	2,725	602,970	150,664	275,737	241,641	1,271,012	2,625,560	317,840	458,835	383,851
2015	2,725	604,914	150,676	276,753	242,163	1,274,506	2,627,238	318,009	459,308	386,219
2016	2,725	604,938	150,677	276,765	242,171	1,274,551	2,627,259	318,011	459,314	386,251
2017	2,725	604,896	150,677	276,743	242,160	1,274,476	2,627,224	318,007	459,304	386,201
2018	2,725	604,883	150,677	276,737	242,158	1,274,455	2,627,212	318,007	459,301	386,184
2019	2,725	604,866	150,677	276,727	242,154	1,274,424	2,627,196	318,004	459,294	386,150
2020	2,725	604,579	150,676	276,577	242,076	1,273,908	2,626,946	317,978	459,220	385,780
2021	2,725	604,532	150,675	276,553	242,064	1,273,824	2,529,828	310,065	441,751	378,017
2022	2,725	591,942	149,202	276,548	238,775	1,256,467	2,529,820	310,063	441,746	377,994
2023	2,725	591,965	149,203	276,559	238,781	1,256,508	2,529,839	310,065	441,750	378,012
2024	2,725	590,855	149,075	276,549	238,351	1,254,830	2,524,711	309,647	440,825	377,576
2025	2,725	590,858	149,075	276,551	238,352	1,254,836	2,524,714	309,646	440,824	377,571
2026	2,725	590,877	149,076	276,561	238,357	1,254,871	2,524,730	309,647	440,826	377,579
2027	2,725	590,819	149,075	276,531	238,341	1,254,766	2,524,679	309,641	440,810	377,504
2028	2,725	590,838	149,075	276,541	238,346	1,254,800	2,524,694	309,641	440,810	377,506
2029	2,725	590,844	149,075	276,543	238,348	1,254,810	2,524,698	309,640	440,807	377,492
2030	2,725	590,831	149,075	276,537	238,345	1,254,788	2,524,686	309,638	440,801	377,460
2031	2,725	590,827	149,075	276,535	238,344	1,254,781	2,524,682	309,636	440,797	377,435
2032	2,725	590,797	149,075	276,519	238,336	1,254,727	2,524,655	309,633	440,787	377,390
2033	2,725	590,819	149,075	276,531	238,341	1,254,766	2,524,674	309,635	440,793	377,419
2034	2,725	590,829	149,075	276,537	238,344	1,254,785	2,524,682	309,636	440,794	377,427
2035	2,725	590,774	149,075	276,508	238,329	1,254,686	2,524,634	309,629	440,776	377,337

TABLE B-11. Minimum OMP&R Costs of Each Aqueduct Reach to Be Reimbursed through Minimum OMP&R Component of Transportation Charge

(in dollars)

Calendar Year	SOUTH BAY AQUEDUCT (continued)					CALIFORNIA AQUEDUCT NORTH SAN JOAQUIN DIVISION			
	Reach 6	Reach 7	Reach 8	Reach 9	Total	Reach 1	Reach 2A	Reach 2B	Subtotal
	[11]	[12]	[13]	[14]	[15]	[16]	[17]	[18]	[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	1,917,994	292,380	196,564	2,406,938
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	1,867,065	2,367,627	472,667	247,610	3,087,904
1981	4,038	20,110	17,587	98,150	1,526,882	2,649,939	435,449	154,251	3,239,639
1982	2,282	23,145	22,313	204,963	1,937,407	3,228,040	608,114	247,749	4,083,903
1983	4,427	53,280	76,055	218,460	2,259,338	4,268,952	810,293	275,538	5,354,783
1984	4,449	44,017	23,563	455,036	3,011,950	4,743,453	810,512	291,584	5,845,549
1985	19,556	79,482	67,032	238,079	3,369,681	5,706,750	811,093	280,795	6,798,638
1986	20,758	49,604	59,136	363,344	3,127,264	5,760,050	994,469	391,096	7,145,615
1987	17,676	25,135	38,392	415,715	3,456,608	6,082,734	1,141,875	450,099	7,674,708
1988	27,014	36,223	45,546	348,724	3,345,421	6,301,309	1,068,235	456,888	7,826,432
1989	52,516	47,623	54,690	213,518	3,674,696	7,488,024	1,107,301	293,663	8,888,988
1990	54,284	48,920	56,517	233,495	4,205,275	7,677,191	1,250,946	281,433	9,209,570
1991	56,741	51,425	59,216	246,479	4,300,977	7,805,480	1,351,714	248,578	9,405,772
1992	57,785	52,332	60,259	250,791	4,033,668	7,658,178	1,376,457	252,593	9,287,228
1993	57,793	52,372	60,270	251,004	4,034,071	7,669,769	1,377,624	252,122	9,299,515
1994	57,899	52,463	60,378	251,449	4,038,645	7,669,825	1,379,372	252,346	9,301,543
1995	58,148	52,687	60,631	252,520	4,058,143	7,700,264	1,387,035	253,950	9,341,249
1996	58,236	52,765	60,721	252,899	4,064,668	7,710,453	1,389,887	254,561	9,354,901
1997	58,236	52,765	60,721	252,899	4,070,902	7,722,006	1,395,968	256,421	9,374,395
1998	58,236	52,765	60,721	252,899	4,071,609	7,723,264	1,396,711	256,647	9,376,622
1999	58,236	52,765	60,721	252,899	4,077,858	7,734,556	1,402,663	258,467	9,395,686
2000	58,236	52,765	60,721	252,899	4,078,546	7,735,773	1,403,398	258,692	9,397,863
2001	58,236	52,765	60,721	252,899	4,078,991	7,736,583	1,403,796	258,813	9,399,192
2002	58,236	52,765	60,721	252,899	4,079,481	7,832,421	1,404,312	258,972	9,495,705
2003	59,927	54,597	63,391	259,615	4,208,771	7,842,344	1,409,582	260,583	9,512,509
2004	60,000	54,676	63,507	259,905	4,219,585	7,967,178	1,441,678	275,688	9,684,544
2005	60,000	54,676	63,507	259,905	4,219,220	7,966,527	1,441,307	275,575	9,683,409
2006	60,000	54,676	63,507	259,905	4,219,752	7,967,478	1,441,853	275,740	9,685,071
2007	60,000	54,676	63,507	259,905	4,224,686	7,976,422	1,446,460	277,150	9,700,032
2008	60,000	54,676	63,507	259,905	4,225,071	7,977,091	1,446,896	277,283	9,701,270
2009	60,000	54,676	63,507	259,905	4,229,707	7,985,452	1,451,390	278,656	9,715,498
2010	60,000	54,676	63,507	259,905	4,229,941	7,985,888	1,451,564	278,711	9,716,163
2011	59,895	54,582	63,399	259,454	4,222,811	7,975,141	1,449,232	278,308	9,702,681
2012	59,895	54,582	63,399	259,454	4,223,057	7,975,590	1,449,447	278,374	9,703,411
2013	59,895	54,582	63,399	259,454	4,223,163	7,975,766	1,449,592	278,418	9,703,776
2014	59,895	54,582	63,399	259,454	4,223,416	7,976,232	1,449,806	278,484	9,704,522
2015	59,895	54,582	63,399	259,454	4,228,104	7,984,672	1,454,373	279,881	9,718,926
2016	59,895	54,582	63,399	259,454	4,228,165	7,984,777	1,454,446	279,902	9,719,125
2017	59,895	54,582	63,399	259,454	4,228,066	7,984,597	1,454,361	279,877	9,718,835
2018	59,895	54,582	63,399	259,454	4,228,034	7,984,541	1,454,317	279,863	9,718,721
2019	59,895	54,582	63,399	259,454	4,227,974	7,984,460	1,454,169	279,818	9,718,447
2020	59,895	54,582	63,399	259,464	4,227,254	7,870,365	1,453,361	279,571	9,603,297
2021	57,911	52,432	60,265	251,571	4,081,840	7,870,161	1,453,309	279,555	9,603,025
2022	57,911	52,432	60,265	251,571	4,081,802	7,747,610	1,424,294	267,178	9,439,082
2023	57,911	52,432	60,265	251,571	4,081,845	7,747,704	1,424,294	267,178	9,439,176
2024	57,807	52,319	60,100	251,156	4,074,141	7,733,935	1,421,389	263,028	9,418,352
2025	57,807	52,319	60,100	251,156	4,074,137	7,733,946	1,421,321	263,008	9,418,275
2026	57,807	52,319	60,100	251,156	4,074,164	7,734,022	1,421,251	262,986	9,418,259
2027	57,807	52,319	60,100	251,156	4,074,016	7,733,768	1,421,074	262,933	9,417,775
2028	57,807	52,319	60,100	251,156	4,074,033	7,733,843	1,420,959	262,896	9,417,698
2029	57,807	52,319	60,100	251,156	4,074,019	7,733,861	1,420,822	262,855	9,417,538
2030	57,807	52,319	60,100	251,156	4,073,967	7,733,800	1,420,656	262,804	9,417,260
2031	57,807	52,319	60,100	251,156	4,073,932	7,733,778	1,420,493	262,756	9,417,027
2032	57,807	52,319	60,100	251,156	4,073,847	7,733,641	1,420,360	262,714	9,416,715
2033	57,807	52,319	60,100	251,156	4,073,903	7,733,737	1,420,416	262,731	9,416,884
2034	57,807	52,319	60,100	251,156	4,073,921	7,733,781	1,420,406	262,728	9,416,915
2035	57,807	52,319	60,100	251,156	4,073,758	7,733,535	1,420,106	262,636	9,416,277

TABLE B-11. Minimum OMP&R Costs of Each Aqueduct Reach to Be Reimbursed through Minimum OMP&R Component of Transportation Charge

(in dollars)

Calendar Year	CALIFORNIA AQUEDUCT (continued)								
	SAN LUIS DIVISION						SOUTH SAN JOAQUIN DIVISION		
	Reach 3	Reach 4	Reach 5	Reach 6	Reach 7	Subtotal	Reach 8C	Reach 8D	Reach 9
	[20]	[21]	[22]	[23]	[24]	[25]	[26]	[27]	[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	224,096	843,154	144,213	99,760	180,894	1,492,117	69,973	150,679	129,756
1980	243,519	1,183,234	222,919	127,618	281,850	2,059,140	57,727	274,851	185,158
1981	266,846	1,065,127	192,593	90,373	1,612,031	3,226,970	80,130	198,392	144,314
1982	281,871	1,254,562	212,362	116,020	1,452,809	3,317,624	60,237	272,465	236,266
1983	215,360	1,950,155	343,331	132,739	2,157,241	4,798,826	49,885	386,993	225,203
1984	226,007	2,377,076	334,500	163,617	2,111,069	5,212,269	42,173	458,600	300,757
1985	349,821	3,060,233	358,484	175,738	1,623,117	5,567,393	64,957	552,496	258,629
1986	409,337	2,960,973	491,600	258,123	619,536	4,739,569	93,837	499,704	608,256
1987	368,736	3,083,240	452,736	245,283	468,491	4,618,486	122,551	479,384	489,077
1988	360,676	2,703,216	620,594	299,776	679,687	4,663,949	109,828	465,069	477,508
1989	400,736	2,959,363	541,233	314,049	505,503	4,720,884	157,382	599,864	483,804
1990	423,616	3,043,352	617,745	336,684	574,762	4,996,159	165,479	641,371	521,109
1991	452,705	2,984,434	655,370	307,305	516,777	4,916,591	175,329	678,351	549,651
1992	461,416	2,973,577	669,724	290,684	500,893	4,896,294	178,257	691,017	560,287
1993	463,792	2,974,505	671,182	291,377	501,883	4,902,739	178,555	692,974	561,815
1994	465,273	2,974,216	672,182	291,911	502,895	4,906,477	178,866	693,128	561,769
1995	472,507	2,995,019	678,428	294,412	506,873	4,947,239	179,646	697,062	565,098
1996	475,216	3,001,901	680,803	295,351	508,347	4,961,618	179,924	698,541	566,358
1997	481,663	3,017,460	687,295	297,421	510,962	4,994,801	179,991	701,957	569,555
1998	482,448	3,019,220	688,105	297,680	511,288	4,998,741	179,999	702,382	569,954
1999	488,758	3,034,418	694,434	299,699	513,838	5,031,147	180,065	705,712	573,073
2000	489,538	3,036,145	695,257	299,962	514,171	5,035,073	180,073	706,145	573,477
2001	489,959	3,037,261	695,748	300,118	514,367	5,037,453	180,078	706,404	573,719
2002	490,506	3,038,496	696,332	300,306	514,603	5,040,243	180,084	706,711	574,007
2003	496,092	3,051,824	701,854	302,067	516,829	5,068,666	180,142	709,617	576,728
2004	511,894	3,134,417	719,676	307,729	526,814	5,200,530	180,512	713,637	580,370
2005	511,500	3,133,552	719,321	307,616	526,671	5,198,660	180,508	713,449	580,194
2006	512,078	3,134,833	719,863	307,790	526,890	5,201,454	182,549	725,404	588,306
2007	516,961	3,146,787	724,744	309,347	528,856	5,226,695	182,601	727,972	590,710
2008	517,423	3,147,715	725,165	309,481	529,026	5,228,810	182,605	728,193	590,918
2009	522,187	3,158,980	729,875	310,983	530,923	5,252,948	182,653	730,671	593,238
2010	522,372	3,159,527	730,058	311,043	530,997	5,253,997	182,656	730,767	593,328
2011	519,921	3,152,449	728,130	310,177	529,503	5,240,180	182,778	732,179	594,126
2012	520,151	3,153,034	728,352	310,249	529,593	5,241,379	182,781	732,295	594,234
2013	520,305	3,153,222	728,383	310,256	529,605	5,241,771	182,781	732,312	594,249
2014	520,531	3,153,821	728,597	310,326	529,693	5,242,968	182,783	732,424	594,354
2015	525,373	3,165,202	733,368	311,847	531,614	5,267,404	182,832	734,934	596,706
2016	525,451	3,165,321	733,393	311,856	531,624	5,267,645	182,831	734,948	596,717
2017	525,359	3,165,060	733,269	311,816	531,574	5,267,078	182,831	734,883	596,657
2018	525,312	3,164,953	733,185	311,790	531,540	5,266,780	182,830	734,838	596,615
2019	525,154	3,164,732	732,961	311,719	531,452	5,266,018	182,828	734,721	596,506
2020	524,298	3,162,919	732,069	311,433	531,091	5,261,810	182,820	734,251	596,065
2021	524,244	3,162,644	731,958	311,397	531,047	5,261,290	182,818	734,193	596,012
2022	513,460	3,087,633	718,686	307,225	522,681	5,149,685	182,814	734,004	595,834
2023	513,460	3,087,724	718,681	307,223	522,678	5,149,766	182,814	734,002	595,832
2024	511,864	3,080,271	716,685	306,545	521,575	5,136,940	179,074	713,406	581,700
2025	511,791	3,080,254	716,638	306,529	521,556	5,136,768	179,073	713,381	581,677
2026	511,716	3,080,312	716,606	306,519	521,544	5,136,697	179,074	713,363	581,663
2027	511,531	3,079,956	716,439	306,466	521,476	5,135,868	179,071	713,276	581,579
2028	511,408	3,079,988	716,367	306,443	521,447	5,135,653	179,070	713,239	581,544
2029	511,262	3,079,952	716,275	306,414	521,410	5,135,313	177,984	706,969	577,318
2030	511,085	3,079,743	716,041	306,338	521,317	5,134,524	177,982	706,845	577,203
2031	510,915	3,079,580	715,820	306,268	521,226	5,133,809	177,980	706,729	577,093
2032	510,775	3,079,299	715,588	306,195	521,133	5,132,990	177,978	706,608	576,980
2033	510,833	3,079,431	715,648	306,213	521,158	5,133,283	177,978	706,639	577,008
2034	510,824	3,079,477	715,648	306,214	521,157	5,133,320	177,978	706,638	577,008
2035	510,504	3,079,074	715,390	306,131	521,053	5,132,152	177,975	706,502	576,882

TABLE B-11. Minimum OMP&R Costs of Each Aqueduct Reach to Be Reimbursed through Minimum OMP&R Component of Transportation Charge

(in dollars)

Calendar Year	CALIFORNIA AQUEDUCT (continued) SOUTH SAN JOAQUIN DIVISION (continued)								
	Reach 10A	Reach 11B	Reach 12D	Reach 12E	Reach 13B	Reach 14A	Reach 14B	Reach 14C	Reach 15A
	[29]	[30]	[31]	[32]	[33]	[34]	[35]	[36]	[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	108,644	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	284,210	120,898	123,123	167,251	164,752	2,034,976	189,132	238,608	1,485,665
1981	200,068	77,048	33,432	113,288	171,799	1,741,450	163,808	161,097	1,800,041
1982	268,222	160,085	144,247	226,860	226,683	1,813,449	197,646	16,300	1,954,699
1983	311,748	137,657	125,954	205,661	219,548	2,434,294	201,535	183,756	2,564,432
1984	396,474	164,049	108,830	226,227	245,237	3,288,352	329,637	204,899	3,186,635
1985	350,396	255,092	209,894	297,570	364,426	3,549,939	235,482	178,899	3,523,634
1986	435,982	264,751	257,402	360,402	346,252	3,758,940	321,256	360,361	3,549,302
1987	539,713	393,697	381,338	520,189	316,465	3,708,419	468,971	245,580	4,035,922
1988	576,407	372,057	319,993	465,180	313,379	3,512,138	415,872	291,484	3,848,225
1989	727,494	380,855	333,103	518,762	556,161	3,909,839	453,501	318,343	4,107,117
1990	594,100	391,858	358,442	564,741	600,136	4,318,073	484,305	340,283	4,396,617
1991	591,430	412,191	376,553	597,923	635,651	4,442,165	507,174	358,021	4,228,972
1992	573,968	420,013	384,398	609,341	647,987	4,286,637	517,140	365,069	4,181,618
1993	575,139	421,046	385,733	611,010	650,728	4,296,280	518,303	365,973	4,189,466
1994	575,041	421,143	385,392	611,394	650,933	4,294,668	518,333	365,937	4,188,274
1995	578,491	423,492	387,931	614,581	654,513	4,313,512	521,533	368,217	4,204,710
1996	579,800	424,371	388,907	615,759	655,852	4,319,822	522,719	369,062	4,210,213
1997	583,232	426,262	391,971	617,735	658,647	4,331,913	525,926	371,409	4,217,290
1998	583,660	426,498	392,352	617,982	658,996	4,333,304	526,338	371,710	4,218,077
1999	587,006	428,343	395,340	619,908	661,722	4,345,099	529,451	373,988	4,224,986
2000	587,441	428,584	395,730	620,159	662,077	4,346,443	529,847	374,278	4,225,744
2001	587,703	428,726	395,961	620,308	662,288	4,347,330	530,105	374,467	4,226,251
2002	588,010	428,897	396,237	620,487	662,540	4,348,311	530,401	374,683	4,226,799
2003	590,930	430,506	398,843	622,167	664,918	4,358,711	533,166	376,707	4,232,887
2004	594,936	432,787	401,861	624,873	668,109	4,521,931	537,002	379,447	4,391,227
2005	594,748	432,684	401,693	624,764	667,955	4,521,286	536,846	379,335	4,390,840
2006	602,731	438,156	407,624	631,347	679,634	4,568,269	543,509	384,896	4,424,415
2007	605,312	439,578	409,927	632,832	681,735	4,577,574	545,940	386,676	4,429,883
2008	605,535	439,700	410,126	632,959	681,917	4,578,289	546,141	386,820	4,430,295
2009	608,024	441,072	412,350	634,393	683,946	4,587,061	548,479	388,532	4,435,418
2010	608,122	441,126	412,436	634,450	684,025	4,587,483	548,571	388,600	4,435,677
2011	608,870	441,585	413,069	634,808	685,439	4,591,694	549,128	389,185	4,437,221
2012	608,988	441,649	413,174	634,876	685,534	4,592,153	549,244	389,269	4,437,496
2013	609,005	441,658	413,189	634,884	685,547	4,592,315	549,276	389,293	4,437,598
2014	609,117	441,719	413,290	634,951	685,640	4,592,778	549,384	389,371	4,437,882
2015	611,640	443,111	415,543	636,402	687,694	4,601,644	551,753	391,106	4,443,058
2016	611,654	443,118	415,554	636,410	687,704	4,601,722	551,756	391,108	4,443,115
2017	611,587	443,082	415,495	636,372	687,651	4,601,541	551,714	391,076	4,443,009
2018	611,543	443,058	415,456	636,347	687,617	4,601,451	551,671	391,047	4,442,967
2019	611,425	442,993	415,351	636,280	687,520	4,601,273	551,570	390,972	4,442,892
2020	610,952	442,733	414,930	636,007	687,135	4,599,796	551,087	390,617	4,442,082
2021	610,894	442,700	414,877	635,973	687,088	4,599,424	550,900	390,483	4,441,916
2022	610,705	442,595	414,708	635,864	686,932	4,429,488	550,748	390,370	4,272,131
2023	610,702	442,594	414,706	635,862	686,931	4,429,573	550,761	390,381	4,272,190
2024	596,563	432,964	404,815	623,940	667,161	4,345,355	538,803	380,614	4,209,900
2025	596,539	432,951	404,794	623,927	667,141	4,345,350	538,790	380,603	4,209,906
2026	596,522	432,941	404,777	623,917	667,127	4,345,409	538,791	380,606	4,209,954
2027	596,433	432,893	404,699	623,866	667,055	4,345,141	538,717	380,552	4,209,799
2028	596,395	432,872	404,664	623,843	667,024	4,345,178	538,701	380,539	4,209,841
2029	592,244	430,014	401,598	620,395	660,883	4,320,658	535,276	377,666	4,192,261
2030	592,120	429,945	401,488	620,324	660,782	4,320,524	535,197	377,609	4,192,212
2031	592,002	429,880	401,383	620,256	660,688	4,320,374	535,084	377,526	4,192,181
2032	591,881	429,814	401,274	620,186	660,588	4,320,114	534,947	377,427	4,192,065
2033	591,912	429,831	401,301	620,204	660,613	4,320,161	534,932	377,414	4,192,104
2034	591,912	429,830	401,302	620,205	660,613	4,320,182	534,921	377,407	4,192,115
2035	591,775	429,756	401,180	620,126	660,502	4,319,866	534,802	377,319	4,191,954

TABLE B-11. Minimum OMP&R Costs of Each Aqueduct Reach to Be Reimbursed through Minimum OMP&R Component of Transportation Charge

(in dollars)

Calendar Year	CALIFORNIA AQUEDUCT (continued)								
	SOUTH SAN JOAQUIN DIVISION (continued)		TEHACHAPI DIVISION			MOJAVE DIVISION			
	Reach 16A	Subtotal	Reach 17E	Reach 17F	Subtotal	Reach 18A	Reach 19	Reach 19C	Reach 20A
	[38]	[39]	[40]	[41]	[42]	[43]	[44]	[45]	[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	2,336,666	7,663,017	4,875,217	54,813	4,930,030	116,512	446,283	0	290,802
1981	2,763,269	7,648,136	5,486,230	64,909	5,551,139	316,684	585,378	0	325,394
1982	2,992,113	8,569,272	6,403,866	56,762	6,460,628	451,236	644,523	0	279,335
1983	4,317,963	11,364,629	14,171,986	97,399	14,269,385	346,458	568,916	0	372,136
1984	5,024,399	13,976,269	18,153,115	77,068	18,230,183	266,331	598,939	0	412,025
1985	5,820,506	15,661,920	18,753,270	139,404	18,892,674	297,716	469,428	0	446,166
1986	5,724,836	16,581,281	18,996,400	109,940	19,106,340	699,709	348,328	0	345,802
1987	5,578,063	17,279,369	16,979,457	99,527	17,078,984	1,258,861	577,837	0	833,248
1988	5,278,464	16,445,604	17,807,585	138,908	17,946,493	1,206,425	559,429	0	633,291
1989	5,923,703	18,469,928	18,321,900	173,442	18,495,342	935,664	839,829	0	721,497
1990	6,283,243	19,659,757	18,239,150	206,787	18,445,937	1,351,067	885,893	0	874,261
1991	6,332,460	19,885,871	18,565,418	177,361	18,742,779	1,724,636	935,730	0	987,090
1992	6,286,833	19,702,565	18,414,434	122,296	18,536,730	1,759,857	961,578	0	970,173
1993	6,298,704	19,745,726	18,419,195	122,431	18,541,626	1,764,370	965,155	0	972,940
1994	6,291,230	19,736,108	18,387,380	122,524	18,509,904	1,766,544	962,796	0	972,061
1995	6,315,909	19,824,695	18,426,180	123,306	18,549,486	1,776,211	976,579	0	982,425
1996	6,324,198	19,855,526	18,438,839	123,562	18,562,401	1,779,386	980,912	0	985,746
1997	6,342,031	19,917,919	18,459,303	124,316	18,583,619	1,784,988	1,007,912	0	1,003,090
1998	6,344,214	19,925,466	18,461,526	124,413	18,585,939	1,785,625	1,011,403	0	1,005,334
1999	6,361,610	19,986,303	18,481,527	125,145	18,606,672	1,791,094	1,037,687	0	1,022,222
2000	6,363,660	19,993,658	18,483,674	125,231	18,608,905	1,791,704	1,040,944	0	1,024,312
2001	6,365,012	19,998,352	18,485,111	125,290	18,610,401	1,792,110	1,043,045	0	1,025,664
2002	6,366,495	20,003,662	18,486,653	125,353	18,612,006	1,792,549	1,045,398	0	1,027,173
2003	6,381,869	20,057,191	18,504,228	126,003	18,630,231	1,794,578	1,068,901	0	1,042,275
2004	6,553,486	20,580,178	18,536,654	127,358	18,664,012	1,799,630	1,093,764	0	1,058,158
2005	6,552,595	20,576,897	18,535,508	127,319	18,662,827	1,799,329	1,092,464	0	1,057,324
2006	6,611,257	20,788,097	18,827,798	127,380	18,955,178	1,799,787	1,094,666	0	1,058,738
2007	6,624,973	20,835,713	18,843,647	131,051	18,974,698	1,806,652	1,129,566	0	1,084,428
2008	6,626,007	20,839,505	18,844,828	131,093	18,975,921	1,806,979	1,131,153	0	1,085,446
2009	6,638,958	20,884,795	18,859,631	131,641	18,991,272	1,811,037	1,150,810	0	1,098,073
2010	6,639,538	20,886,779	18,860,405	131,666	18,992,071	1,811,242	1,151,691	0	1,098,641
2011	6,644,742	20,904,824	18,847,773	131,469	18,979,242	1,808,177	1,150,689	0	1,097,359
2012	6,645,413	20,907,106	18,848,570	131,498	18,980,068	1,808,395	1,151,738	0	1,098,032
2013	6,645,691	20,907,798	18,848,875	131,512	18,980,387	1,808,481	1,152,200	0	1,098,330
2014	6,646,373	20,910,066	18,849,707	131,540	18,981,247	1,808,709	1,153,270	0	1,099,018
2015	6,659,352	20,955,775	18,864,646	132,093	18,996,739	1,812,802	1,173,011	0	1,111,701
2016	6,659,444	20,956,081	18,864,833	132,097	18,996,930	1,812,843	1,173,143	0	1,111,784
2017	6,659,231	20,955,129	18,864,509	132,090	18,996,599	1,812,762	1,172,843	0	1,111,592
2018	6,659,092	20,954,532	18,864,413	132,083	18,996,496	1,812,737	1,172,696	0	1,111,498
2019	6,658,756	20,953,087	18,864,279	132,071	18,996,350	1,812,686	1,172,281	0	1,111,229
2020	6,656,563	20,945,038	18,862,060	131,982	18,994,042	1,812,057	1,168,983	0	1,109,111
2021	6,655,962	20,943,240	18,861,696	131,956	18,993,652	1,811,934	1,168,079	0	1,108,529
2022	6,485,813	20,432,006	18,861,634	131,934	18,993,568	1,811,881	1,167,372	0	1,108,076
2023	6,485,829	20,432,177	18,861,805	131,932	18,993,737	1,811,911	1,167,289	0	1,108,022
2024	6,378,380	20,052,675	18,370,899	130,904	18,501,803	1,811,478	1,164,427	0	1,106,314
2025	6,378,286	20,052,418	18,370,925	125,588	18,496,513	1,807,117	1,140,014	0	1,085,014
2026	6,378,295	20,052,439	18,371,071	125,589	18,496,660	1,807,147	1,140,043	0	1,085,032
2027	6,377,864	20,050,945	18,370,626	125,573	18,496,199	1,807,023	1,139,408	0	1,084,624
2028	6,377,934	20,050,844	18,370,771	125,576	18,496,347	1,807,061	1,139,538	0	1,084,708
2029	6,347,438	19,940,704	18,370,814	125,576	18,496,390	1,807,069	1,139,553	0	1,084,718
2030	6,347,258	19,939,489	18,370,719	125,567	18,496,286	1,807,032	1,139,240	0	1,084,518
2031	6,347,095	19,938,271	18,370,689	125,559	18,496,248	1,807,010	1,138,932	0	1,084,320
2032	6,346,666	19,936,528	18,370,455	125,536	18,495,991	1,806,922	1,138,199	0	1,083,850
2033	6,346,676	19,936,773	18,370,624	125,528	18,496,152	1,806,942	1,137,924	0	1,083,670
2034	6,346,621	19,936,732	18,370,704	125,525	18,496,229	1,806,947	1,137,727	0	1,083,545
2035	6,346,131	19,934,770	18,370,286	125,503	18,495,789	1,806,822	1,136,994	0	1,083,076

TABLE B-11. Minimum OMP&R Costs of Each Aqueduct Reach to Be Reimbursed through Minimum OMP&R Component of Transportation Charge

(in dollars)

Calendar Year	CALIFORNIA AQUEDUCT (continued)								
	MOJAVE DIVISION (continued)							SANTA ANA DIVISION	
	Reach 20B	Reach 21	Reach 22A	Reach 22B	Reach 23	Reach 24	Subtotal	Reach 25	Reach 26A
	[47]	[48]	[49]	50]	[51]	[52]	[53]	[54]	[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	237,333	156,843	117,310	2,730,822	147,009	688,537	4,931,451	72,651	1,559,666
1981	292,367	181,228	119,728	3,031,588	134,904	45,559	5,032,830	35,665	1,574,977
1982	334,648	188,479	126,997	3,287,478	302,522	630,826	6,246,044	27,198	1,842,096
1983	330,254	222,257	142,045	3,925,359	223,167	380,747	6,511,339	19,170	1,680,984
1984	328,374	265,993	146,188	4,754,541	59,337	1,089,009	7,920,737	11,319	2,326,559
1985	383,718	796,842	124,110	5,490,726	261,135	988,620	9,258,461	17,764	2,707,332
1986	313,565	240,982	177,969	6,251,554	154,339	510,447	9,042,695	31,012	2,770,584
1987	373,207	307,616	243,339	5,386,500	149,933	754,610	9,885,151	19,341	2,844,478
1988	385,778	317,027	169,949	6,895,972	199,232	846,504	11,213,607	32,065	2,900,277
1989	642,291	457,031	353,248	6,893,012	754,139	1,195,054	12,791,765	37,455	3,497,255
1990	609,317	482,972	359,883	6,885,508	421,655	979,522	12,850,078	42,648	3,868,554
1991	569,970	510,306	380,195	6,436,039	398,487	1,996,165	13,938,618	45,004	3,914,275
1992	585,724	522,509	389,470	7,071,376	317,297	(409,311)	12,168,673	45,415	5,082,857
1993	587,668	523,648	390,459	7,077,872	388,847	1,668,114	14,339,073	45,349	5,086,813
1994	586,093	523,076	389,998	7,067,116	431,397	1,527,979	14,227,060	45,428	5,092,367
1995	594,796	528,763	394,420	7,115,235	403,488	957,190	13,729,107	45,618	5,110,735
1996	597,530	530,579	395,832	7,130,224	404,218	1,820,850	14,625,277	45,684	5,116,914
1997	614,874	540,385	403,526	7,202,284	408,825	1,472,764	14,438,648	45,684	5,123,054
1998	617,118	541,654	404,518	7,211,223	409,325	2,855,470	15,841,670	45,684	5,123,722
1999	634,006	551,197	412,008	7,281,446	413,827	630,454	13,773,941	45,684	5,129,723
2000	636,096	552,381	412,936	7,289,832	414,309	2,511,911	15,674,425	45,684	5,130,366
2001	637,448	553,141	413,534	7,295,292	414,633	589,833	13,764,700	45,684	5,130,798
2002	638,957	553,998	414,204	7,301,391	414,980	1,914,471	15,103,121	45,684	5,131,260
2003	654,059	562,531	420,901	7,363,969	418,936	1,509,877	14,836,027	45,684	5,136,534
2004	669,806	571,566	428,232	7,434,351	423,521	4,799,040	18,278,068	45,907	5,147,315
2005	668,972	571,092	427,862	7,430,902	423,263	(1,479,017)	11,992,191	45,907	5,146,971
2006	670,386	571,892	428,489	7,436,850	423,641	1,287,783	14,772,232	45,907	5,147,474
2007	694,740	584,856	439,192	7,683,148	431,009	2,066,763	15,920,354	47,865	5,196,404
2008	695,758	585,434	439,642	7,687,340	431,275	1,226,076	15,089,103	47,865	5,196,757
2009	708,385	592,569	445,242	7,739,740	434,606	2,862,446	16,842,908	47,865	5,201,199
2010	708,953	592,890	445,495	7,742,174	434,781	980,358	14,966,225	47,865	5,201,432
2011	708,372	592,237	444,997	7,734,793	434,463	4,402,759	18,373,846	47,786	5,194,803
2012	709,045	592,620	445,297	7,737,641	434,643	(334,946)	13,642,465	47,786	5,195,042
2013	709,343	592,788	445,429	7,738,833	434,711	2,232,544	16,212,659	47,786	5,195,133
2014	710,031	593,176	445,731	7,741,725	434,899	1,284,173	15,270,732	47,786	5,195,383
2015	722,714	600,346	451,355	7,794,361	438,261	2,270,298	16,374,849	47,786	5,199,865
2016	722,797	600,391	451,394	7,794,785	438,303	1,477,149	15,582,589	47,786	5,199,921
2017	722,605	600,282	451,307	7,793,903	438,230	4,298,088	18,401,612	47,786	5,199,824
2018	722,511	600,229	451,266	7,793,521	438,209	1,210,156	15,312,823	47,786	5,199,795
2019	722,242	600,080	451,149	7,792,600	438,179	2,291,585	16,392,031	47,786	5,199,755
2020	720,124	598,882	450,209	7,784,087	437,679	1,926,713	16,007,845	47,786	5,199,090
2021	719,542	598,553	449,952	7,781,990	437,597	2,212,476	16,288,652	47,786	5,198,980
2022	719,089	598,297	449,750	7,780,571	437,583	1,605,367	15,677,986	47,786	5,198,962
2023	719,035	598,268	449,727	7,780,572	437,621	2,530,123	16,602,568	47,786	5,199,013
2024	717,522	597,221	448,559	7,767,321	436,654	1,563,679	15,613,175	47,467	5,191,028
2025	698,517	587,857	440,304	7,439,099	430,128	1,378,241	15,006,291	44,102	5,115,125
2026	698,535	587,864	440,312	7,439,305	430,161	2,183,750	15,812,149	44,102	5,115,170
2027	698,127	587,637	440,131	7,437,656	430,060	2,431,066	16,055,732	44,102	5,115,035
2028	698,211	587,684	440,169	7,438,037	430,093	1,517,018	15,142,519	44,102	5,115,079
2029	698,221	587,688	440,174	7,438,138	430,103	1,718,981	15,344,645	44,102	5,115,092
2030	698,021	587,575	440,084	7,437,435	430,082	1,722,665	15,346,652	44,102	5,115,063
2031	697,823	587,464	439,996	7,436,839	430,075	2,424,100	16,046,559	44,102	5,115,055
2032	697,353	587,197	439,788	7,434,964	430,023	2,865,701	16,483,997	44,102	5,114,985
2033	697,173	587,097	439,709	7,434,374	430,060	1,941,584	15,558,533	44,102	5,115,035
2034	697,048	587,025	439,652	7,433,832	430,078	(1,701,587)	11,914,267	44,102	5,115,059
2035	696,579	586,761	439,443	7,431,760	429,984	7,221,217	20,832,636	44,102	5,114,934

TABLE B-11. Minimum OMP&R Costs of Each Aqueduct Reach to Be Reimbursed through Minimum OMP&R Component of Transportation Charge

(in dollars)

Calendar Year	CALIFORNIA AQUEDUCT (continued)								
	SANTA ANA DIVISION (continued)				WEST BRANCH				
	Reach 28G	Reach 28H	Reach 28J	Subtotal	Reach 29A	Reach 29F	Reach 29G	Reach 29H	Reach 29J
	[56]	[57]	[58]	[59]	[60]	[61]	[62]	[63]	[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	1,121,137	3,041,691	1,718,428	224,464	455,620	874,327	288,303
1981	160,064	111,730	296,536	2,178,972	1,782,924	123,230	615,069	2,309,692	8,808
1982	207,789	137,018	1,494,822	3,708,923	1,943,530	193,499	713,831	2,242,024	416,726
1983	246,942	125,746	477,184	2,550,026	2,755,669	151,668	888,415	875,966	582,445
1984	240,497	190,925	758,223	3,527,523	3,444,599	82,763	2,352,738	496,292	719,283
1985	451,600	182,242	819,880	4,178,818	3,945,296	299,471	3,039,295	1,104,072	616,732
1986	439,048	256,526	994,044	4,491,214	3,813,140	457,645	2,885,901	1,476,509	1,024,265
1987	277,611	218,380	1,128,142	4,487,952	3,704,949	223,609	2,920,861	841,788	450,428
1988	271,139	204,641	1,640,120	5,048,242	3,485,422	246,850	2,921,515	965,280	459,573
1989	346,015	239,898	1,255,622	5,376,245	4,184,814	394,844	2,159,891	2,358,519	727,560
1990	396,424	276,334	1,463,004	6,046,964	4,360,176	520,140	2,238,862	2,286,640	716,988
1991	379,288	291,795	1,560,320	6,190,682	4,488,417	612,624	2,229,273	2,413,367	659,370
1992	325,648	295,812	1,821,139	7,570,871	4,506,856	636,900	2,159,749	2,745,786	642,947
1993	325,609	296,105	1,894,444	7,648,320	4,508,296	639,208	2,161,292	2,523,359	642,570
1994	326,180	296,634	1,713,500	7,474,109	4,509,711	635,978	2,162,690	2,512,478	642,956
1995	327,548	297,900	1,871,575	7,653,376	4,526,113	648,633	2,172,989	2,558,200	643,884
1996	328,032	298,348	1,851,721	7,640,699	4,531,694	652,936	2,176,248	2,573,720	644,212
1997	328,032	298,348	2,113,540	7,908,658	4,537,389	681,919	2,184,858	2,672,941	644,212
1998	328,032	298,348	2,139,968	7,935,754	4,538,057	686,022	2,185,836	2,686,841	644,212
1999	328,032	298,348	2,158,030	7,959,817	4,543,619	714,267	2,194,248	2,783,598	644,212
2000	328,032	298,348	2,375,729	8,178,159	4,544,245	717,853	2,195,185	2,796,255	644,212
2001	328,032	298,348	2,284,567	8,087,429	4,544,656	720,081	2,192,342	2,803,836	644,212
2002	328,032	298,348	2,649,663	8,452,987	4,545,099	722,530	2,192,997	2,812,004	644,212
2003	328,032	298,348	2,682,742	8,491,340	4,550,013	747,806	2,200,427	2,899,465	644,212
2004	328,782	298,866	2,944,288	8,765,158	4,708,059	774,441	2,208,860	2,990,296	644,674
2005	328,782	298,866	2,506,140	8,326,666	4,707,757	773,114	2,208,390	2,985,758	644,674
2006	328,782	298,866	2,611,532	8,432,561	4,708,224	775,490	2,209,097	2,993,966	644,674
2007	337,116	301,173	2,815,306	8,697,864	4,764,270	817,867	2,224,012	3,085,746	663,955
2008	337,116	301,173	2,817,405	8,700,316	4,764,594	819,453	2,224,505	3,091,272	663,955
2009	337,116	301,173	2,916,584	8,803,937	4,768,727	840,663	2,230,747	3,163,946	663,955
2010	337,116	301,173	3,001,379	8,888,965	4,768,931	841,554	2,231,062	3,167,015	663,955
2011	336,539	300,638	2,938,555	8,818,321	4,763,038	841,324	2,228,284	3,165,338	663,564
2012	336,539	300,638	2,604,752	8,484,757	4,763,255	842,344	2,228,608	3,168,699	663,564
2013	336,539	300,638	2,840,983	8,721,079	4,763,351	842,996	2,228,750	3,170,866	663,564
2014	336,539	300,638	3,008,817	8,889,163	4,763,567	843,865	2,229,083	3,173,849	663,564
2015	336,539	300,638	2,792,346	8,677,174	4,767,754	865,541	2,235,396	3,248,052	663,564
2016	336,539	300,638	2,763,014	8,647,898	4,767,782	865,412	2,235,454	3,247,565	663,564
2017	336,539	300,638	144,091	6,028,878	4,767,712	865,320	2,235,339	3,247,419	663,564
2018	336,539	300,638	3,511,054	9,395,812	4,767,675	864,973	2,235,283	3,245,960	663,564
2019	336,539	300,638	2,839,355	8,724,073	4,767,609	864,307	2,235,201	3,243,686	663,564
2020	336,539	300,638	2,797,169	8,681,222	4,766,972	860,758	2,234,249	3,231,542	663,564
2021	336,539	300,638	2,532,036	8,415,979	4,766,846	859,810	2,234,075	3,228,303	663,564
2022	336,539	300,638	3,416,753	9,300,678	4,597,060	858,966	2,234,009	3,225,390	663,564
2023	336,539	300,638	2,050,087	7,934,063	4,597,101	859,079	2,234,075	3,225,616	663,564
2024	335,463	299,895	3,172,920	9,046,773	4,586,851	856,677	2,232,478	3,217,071	662,902
2025	321,143	295,931	3,177,354	8,953,655	4,498,112	822,250	2,218,315	3,191,371	629,770
2026	321,143	295,931	2,654,332	8,430,678	4,498,145	822,341	2,218,371	3,191,661	629,770
2027	321,143	295,931	2,299,435	8,075,646	4,498,023	821,732	2,218,185	3,189,563	629,770
2028	321,143	295,931	3,443,599	9,219,854	4,498,039	821,483	2,218,222	3,188,719	629,770
2029	321,143	295,931	2,583,266	8,359,534	4,498,042	821,382	2,218,232	3,188,398	629,770
2030	321,143	295,931	2,967,458	8,743,697	4,497,999	820,972	2,218,179	3,187,005	629,770
2031	321,143	295,931	2,328,903	8,105,134	4,497,977	820,644	2,218,153	3,185,871	629,770
2032	321,143	295,931	3,525,886	9,302,047	4,497,871	819,606	2,218,018	3,182,292	629,770
2033	321,143	295,931	2,728,879	8,505,090	4,497,887	819,222	2,218,058	3,180,954	629,770
2034	321,143	295,931	2,601,878	8,378,113	4,497,870	818,675	2,218,060	3,179,047	629,770
2035	321,143	295,931	3,064,991	8,841,101	4,497,723	817,512	2,217,864	3,175,610	629,770

TABLE B-11. Minimum OMP&R Costs of Each Aqueduct Reach to Be Reimbursed through Minimum OMP&R Component of Transportation Charge

(in dollars)

Calendar Year	CALIFORNIA AQUEDUCT (continued)								GRAND TOTAL
	WEST BRANCH (contd.)		COASTAL BRANCH					Total	
	Reach 30	Subtotal	Reach 31A (a	Reach 33A	Reach 34	Reach 35	Subtotal		
	[65]	[66]	[67]	[68]	[69]	[70]	[71]	[72]	[73]
1961	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	42,918
1963	0	0	0	0	0	0	0	0	168,358
1964	0	0	0	0	0	0	0	0	184,729
1965	0	0	0	0	0	0	0	0	378,874
1966	0	0	0	0	0	0	0	0	408,397
1967	0	0	0	0	0	0	0	0	634,505
1968	0	0	0	0	0	0	0	2,160,548	2,745,160
1969	0	0	509,728	0	0	0	509,728	3,324,718	4,074,939
1970	0	0	609,988	0	0	0	609,988	3,983,062	4,676,282
1971	0	0	699,052	0	0	0	699,052	5,614,013	6,185,714
1972	420,789	1,820,832	697,576	0	0	0	697,576	12,353,356	12,998,869
1973	621,431	2,248,000	641,626	0	0	0	641,626	14,590,688	15,194,233
1974	723,949	2,223,720	669,279	0	0	0	669,279	16,598,762	17,372,561
1975	841,991	3,140,708	806,429	0	0	0	806,429	19,569,999	20,517,423
1976	(650,944)	1,710,546	840,927	0	0	0	840,927	19,002,859	20,027,213
1977	634,581	2,923,325	872,169	0	0	0	872,169	23,272,236	24,217,840
1978	3,088,954	5,306,854	934,119	0	0	0	934,119	24,818,739	26,012,786
1979	958,068	3,897,207	871,688	0	0	0	871,688	23,423,058	24,676,775
1980	219,957	3,781,099	1,086,410	0	0	0	1,086,410	30,580,742	32,533,487
1981	1,083,417	5,923,140	1,037,949	0	0	0	1,037,949	33,838,775	35,470,851
1982	991,973	6,501,583	1,027,600	0	0	0	1,027,600	39,915,577	42,058,192
1983	2,938,828	8,192,991	1,156,327	0	0	0	1,156,327	54,198,306	56,537,803
1984	544,421	7,640,096	1,423,515	0	0	0	1,423,515	63,776,141	66,927,434
1985	(565,031)	8,439,835	1,867,949	0	0	0	1,867,949	70,665,688	74,299,033
1986	1,333,457	10,990,917	1,709,404	0	0	0	1,709,404	73,807,035	77,166,014
1987	1,443,281	9,584,916	1,683,348	0	0	0	1,683,348	72,292,914	76,060,986
1988	798,274	8,876,914	1,907,612	0	0	0	1,907,612	73,928,853	77,619,677
1989	1,663,906	11,489,534	2,150,894	0	0	0	2,150,894	82,383,580	87,210,568
1990	1,332,169	11,454,975	2,363,555	0	0	0	2,363,555	85,026,995	90,424,875
1991	1,904,110	12,307,161	2,463,847	0	0	0	2,463,847	87,851,321	93,369,337
1992	1,405,121	12,097,359	2,504,377	0	0	0	2,504,377	86,764,097	92,017,202
1993	2,328,645	12,803,370	2,518,892	0	0	0	2,518,892	89,799,261	95,055,728
1994	228,808	10,692,621	2,531,160	0	0	0	2,531,160	87,378,982	92,640 879
1995	2,701,363	13,251,182	2,529,098	0	0	0	2,529,098	89,825,432	95,113,495
1996	1,820,750	12,399,560	2,522,665	2,393,110	326,188	328,667	5,570,630	92,970,612	98,267,330
1997	1,823,772	12,545,091	2,528,569	2,396,038	326,609	329,783	5,580,999	93,344,130	98,651,866
1998	1,204,090	11,945,058	2,529,225	2,396,359	326,655	329,907	5,582,146	94,191,396	99,500,359
1999	1,982,982	12,862,926	2,534,993	2,399,221	327,066	330,998	5,592,278	93,208,770	98,528,656
2000	2,587,272	13,485,022	2,535,633	2,399,531	327,112	331,118	5,593,394	95,966,499	101,287,576
2001	2,456,838	13,361,965	2,536,053	2,399,737	327,142	331,197	5,594,129	93,853,621	99,175,480
2002	969,339	11,886,181	2,536,512	2,399,960	327,174	331,283	5,594,929	94,188,834	99,511,546
2003	4,279,479	15,321,402	2,541,575	2,402,473	327,534	332,241	5,603,823	97,521,189	102,977,298
2004	4,840,345	16,166,675	2,551,928	2,405,820	327,897	333,209	5,618,854	102,958,019	108,445,096
2005	(1,125,546)	10,194,147	2,551,601	2,405,656	327,874	333,146	5,618,277	90,253,074	95,739,520
2006	1,590,019	12,921,470	2,580,863	2,412,633	327,950	333,345	5,654,791	96,410,854	101,898,225
2007	2,099,920	13,655,770	2,585,412	2,414,899	328,275	334,204	5,662,790	98,673,916	104,169,927
2008	2,865,049	14,428,828	2,585,760	2,415,067	328,299	334,271	5,663,397	98,627,150	104,123,822
2009	2,605,928	14,273,966	2,590,031	2,417,187	328,604	335,077	5,670,899	100,436,223	105,940,993
2010	2,382,535	14,055,052	2,590,245	2,417,297	328,619	335,118	5,671,279	98,430,531	103,935,715
2011	2,204,211	13,865,759	2,586,140	2,416,284	328,396	334,892	5,665,712	101,550,565	107,046,659
2012	2,475,049	14,141,519	2,586,364	2,416,397	328,413	334,935	5,666,109	96,766,814	102,263,340
2013	2,378,297	14,047,824	2,586,442	2,416,440	328,417	334,951	5,666,250	99,481,544	104,978,250
2014	2,223,096	13,897,024	2,586,674	2,416,559	328,434	334,993	5,666,660	98,562,382	104,059,535
2015	2,739,436	14,519,743	2,590,988	2,418,696	328,742	335,810	5,674,236	100,184,846	105,690,181
2016	2,285,516	14,065,293	2,591,037	2,418,723	328,744	335,818	5,674,322	98,909,883	104,415,324
2017	2,656,092	14,435,446	2,590,940	2,418,676	328,739	335,800	5,674,155	99,477,732	104,982,999
2018	2,337,282	14,114,737	2,590,904	2,418,660	328,735	335,794	5,674,093	99,433,994	104,939,208
2019	2,534,747	14,309,114	2,590,836	2,418,639	328,730	335,782	5,673,987	100,033,107	105,538,230
2020	2,453,470	14,210,555	2,590,166	2,418,318	328,684	335,654	5,672,822	99,376,631	104,880,518
2021	2,416,341	14,168,939	2,590,064	2,418,265	328,676	335,635	5,672,640	99,347,417	104,705,806
2022	2,337,211	13,916,200	2,589,992	2,418,249	328,671	335,623	5,672,535	98,581,740	103,922,734
2023	2,306,014	13,885,449	2,590,031	2,418,273	328,673	335,631	5,672,608	98,109,544	103,450,622
2024	2,427,939	13,983,918	2,535,850	2,406,155	328,593	335,426	5,606,024	97,359,660	102,691,356
2025	2,620,072	13,979,890	2,535,847	2,406,158	328,594	335,426	5,606,025	96,649,835	101,981,533
2026	2,163,387	13,523,675	2,535,877	2,406,177	328,595	335,430	5,606,079	96,476,636	101,808,396
2027	2,423,508	13,780,781	2,535,744	2,406,113	328,586	335,406	5,605,849	96,618,795	101,950,302
2028	2,389,963	13,746,196	2,535,767	2,406,132	328,588	335,411	5,605,898	96,815,009	102,146,567
2029	2,455,242	13,811,066	2,535,764	2,406,135	328,588	335,410	5,605,897	96,111,087	101,442,641
2030	2,519,954	13,873,879	2,535,705	2,406,116	328,583	335,401	5,605,805	96,557,592	101,889,072
2031	2,314,041	13,666,456	2,535,662	2,406,110	328,581	335,394	5,605,747	96,409,251	101,740,689
2032	2,396,675	13,744,232	2,535,571	2,406,071	328,575	335,375	5,605,592	98,118,092	103,449,391
2033	2,362,840	13,708,731	2,535,620	2,406,097	328,577	335,384	5,605,678	96,361,124	101,692,518
2034	2,516,436	13,859,858	2,535,638	2,406,108	328,578	335,390	5,605,714	92,741,148	98,072,579
2035	11,656,129	22,994,608	2,535,499	2,406,046	328,570	335,361	5,605,476	111,252,809	116,583,978

a) Includes 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

(in dollars)

Calendar Year	NORTH BAY AQUEDUCT Reach 1 Barker Slough Pumping Plant	Reach 3A Cordelia Pumping Plant (Solano)	Reach 3B Cordelia Pumping Plant (Napa) (a	Total	SOUTH BAY AQUEDUCT Reach 1 South Bay & Del Valle Pumping Plants (b	CALIFORNIA AQUEDUCT Reach 1 Banks Pumping Plant	Reach 4 Dos Amigos Pumping Plant (c	Reach 14A Buena Vista Pumping Plant	Reach 15A Wheeler Ridge Pumping Plant
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[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	346,214	211,198	0	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	927,369	498,482	234,626	89,516
1973	0	0	14,449	14,449	493,490	685,014	379,305	303,105	275,021
1974	0	0	17,473	17,473	565,575	769,839	438,997	344,632	350,558
1975	0	0	14,779	14,779	349,758	1,330,133	514,241	542,726	585,744
1976	0	0	20,856	20,856	571,361	1,456,742	562,537	609,257	600,780
1977	0	0	22,635	22,635	512,996	801,033	211,120	166,598	173,208
1978	0	0	21,692	21,692	586,355	2,215,828	574,813	658,309	578,337
1979	0	0	16,237	16,237	605,136	3,431,968	973,702	760,080	724,534
1980	0	0	19,945	19,945	523,369	1,883,917	1,011,682	854,615	828,212
1981	0	0	23,848	23,848	567,852	3,905,322	1,913,569	1,294,300	1,274,297
1982	0	0	11,934	11,934	598,394	3,051,665	1,360,547	1,188,583	1,205,227
1983	0	0	2,670	2,670	188,524	939,521	384,205	369,636	337,471
1984	0	0	4,507	4,507	254,046	1,591,381	822,105	617,166	540,467
1985	0	0	9,981	9,981	502,540	3,195,443	1,619,374	1,430,824	1,419,829
1986	0	0	15,406	15,406	843,404	7,070,497	2,614,148	2,401,271	2,427,971
1987	0	0	27,269	27,269	872,737	7,266,396	2,516,568	2,222,556	2,202,351
1988	15,366	18,986	28,677	63,029	940,047	7,528,311	2,631,522	2,674,552	2,671,501
1989	51,950	57,677	33,537	143,164	1,522,615	11,310,618	4,423,716	4,373,776	4,565,506
1990	52,465	51,324	34,627	138,416	1,597,429	12,943,277	5,148,576	5,370,064	5,834,755
1991	70,372	65,650	46,040	182,062	1,798,236	14,340,054	5,714,387	6,002,329	6,585,753
1992	76,900	71,033	56,699	204,632	2,151,156	16,489,325	6,711,610	7,265,968	8,030,119
1993	85,218	74,605	61,823	221,646	2,273,230	17,546,431	7,053,733	7,735,101	8,587,893
1994	93,680	73,628	64,850	232,158	2,214,603	16,893,209	6,716,385	7,274,506	8,051,704
1995	118,600	84,837	78,785	282,222	2,490,210	19,126,209	7,729,159	8,428,324	9,392,070
1996	126,684	89,773	86,048	302,505	2,574,792	19,920,927	8,105,095	8,869,643	9,895,210
1997	164,860	116,084	114,184	395,128	3,249,734	24,245,067	10,087,314	11,087,245	12,406,401
1998	175,398	122,596	123,629	421,623	3,319,886	24,925,897	10,414,443	11,503,634	12,879,547
1999	217,207	150,972	155,643	523,822	3,951,204	29,310,716	12,411,930	13,776,204	15,480,117
2000	229,581	158,761	166,913	555,255	4,018,976	30,366,646	12,926,970	14,446,843	16,280,785
2001	237,077	164,750	176,432	578,259	4,064,345	30,918,823	13,241,525	14,852,631	16,722,641
2002	244,928	171,173	186,476	602,577	4,113,000	31,590,582	13,580,462	15,304,098	17,249,691
2003	283,655	199,313	220,455	703,423	4,667,752	35,885,279	15,466,706	17,718,638	20,022,758
2004	323,795	228,838	256,635	809,268	5,219,327	40,212,929	17,363,219	20,119,629	22,818,640
2005	328,062	232,990	264,850	825,902	5,183,143	39,817,959	17,220,797	19,938,532	22,607,158
2006	335,388	235,371	276,676	847,435	5,236,105	41,093,085	17,767,267	20,857,647	23,660,204
2007	371,643	257,860	313,246	942,749	5,736,388	45,018,154	19,547,364	23,112,040	26,258,518
2008	378,652	259,533	325,408	963,593	5,773,628	45,721,921	19,824,968	23,548,939	26,778,632
2009	414,032	280,538	362,846	1,057,416	6,240,893	49,617,036	21,543,744	25,767,546	29,332,183
2010	420,641	281,637	375,569	1,077,847	6,265,330	50,114,320	21,767,978	26,128,474	29,757,009
2011	427,010	282,086	389,596	1,098,692	6,275,316	50,302,221	21,870,112	26,277,548	29,919,583
2012	434,444	283,217	404,719	1,122,380	6,300,475	50,362,359	21,890,392	26,293,232	29,931,947
2013	441,151	283,648	419,310	1,144,109	6,310,099	50,707,435	21,920,354	26,529,405	30,219,897
2014	448,584	284,830	435,167	1,168,581	6,336,372	50,845,609	21,970,917	26,595,523	30,303,643
2015	488,486	306,025	483,219	1,277,730	6,807,894	54,479,117	23,551,139	28,590,624	32,600,566
2016	494,420	306,291	498,557	1,299,268	6,813,798	54,513,799	23,513,050	28,559,993	32,580,373
2017	499,349	305,831	513,468	1,318,648	6,803,577	54,311,309	23,386,674	28,444,082	32,437,455
2018	504,623	305,694	529,396	1,339,713	6,800,527	54,475,893	23,423,419	28,568,277	32,593,147
2019	510,060	305,505	545,810	1,361,375	6,796,311	54,432,919	23,334,719	28,556,418	32,493,356
2020	510,242	302,357	557,005	1,369,604	6,726,285	53,810,545	23,013,699	28,109,425	32,043,636
2021	509,705	301,840	556,721	1,368,266	6,714,788	53,756,173	22,931,293	27,757,988	31,815,257
2022	509,638	301,751	557,058	1,368,447	6,712,810	53,660,417	22,662,344	27,675,638	31,737,959
2023	510,383	301,995	558,009	1,370,387	6,718,226	53,623,090	22,640,673	27,681,625	31,743,370
2024	510,032	301,786	558,293	1,370,111	6,713,595	53,608,610	22,418,473	27,708,336	31,777,434
2025	510,261	301,823	558,862	1,370,946	6,714,409	53,550,094	22,419,078	27,707,604	31,776,222
2026	510,611	302,031	559,246	1,371,888	6,719,023	53,501,358	22,440,172	27,737,949	31,811,726
2027	509,541	301,397	558,073	1,369,011	6,704,940	53,360,415	22,396,022	27,686,327	31,752,762
2028	509,890	301,604	558,456	1,369,950	6,709,532	53,291,381	22,417,384	27,715,367	31,786,911
2029	509,994	301,666	558,570	1,370,230	6,710,902	53,183,340	22,425,070	27,726,864	31,775,898
2030	509,766	301,531	558,320	1,369,617	6,707,900	53,076,943	22,315,842	27,731,933	31,758,733
2031	509,693	301,487	558,241	1,369,421	6,706,951	52,921,607	22,191,641	27,612,182	31,717,680
2032	509,132	301,156	557,626	1,367,914	6,699,573	52,867,859	22,074,854	27,509,856	31,599,141
2033	509,538	301,395	558,070	1,369,003	6,704,899	52,909,645	22,091,829	27,428,270	31,503,996
2034	509,730	301,509	558,280	1,369,519	6,707,427	52,640,552	21,985,736	27,201,397	31,134,398
2035	508,726	300,915	557,181	1,366,822	6,694,215	52,682,915	22,063,587	27,331,405	31,284,567

a) Costs for period 1968 through 1987 are for an interim facility.

b) The relatively minor costs of Del Valle Pumping Plant have been combined with those of South Bay Pumping Plant to simplify the allocation procedures.

c) Includes extra peaking costs assigned directly to Kern County Water Agency and Tulare Lake Basin Water Storage District. Refer to Appendix B text discussion of Table B-17 under "Project Water Charges."

TABLE B-12. Variable OMP&R Costs to Be Reimbursed through Variable OMP&R Component of Transportation Charge

(in dollars)

Calendar Year	CALIFORNIA AQUEDUCT (continued)								
	Reach 16A Chrisman Pumping Plant	Reach 17E Edmonston Pumping Plant	Reach 18A Alamo Powerplant	Reach 22B Pearblossom Pumping Plant	Reach 23 Mojave Siphon Powerplant	Reach 24 Silverwood Lake (d	Reach 26A Devil Canyon Powerplant	Reach 28J Lake Perris (d	Reach 29A Oso Pumping Plant
	[10]	[11]	[12]	[13]	[14]	[15]	[16]	[17]	[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	165,589	494,616	0	23,387	0	4,216	(3,024)	0	93,212
1973	434,834	1,524,488	0	219,421	0	47,861	(436,769)	0	158,063
1974	589,117	2,058,680	0	315,705	0	98,179	(496,517)	52,549	189,479
1975	1,130,256	3,940,915	0	577,509	0	25,950	(1,033,054)	65,938	349,000
1976	1,222,413	4,235,934	0	869,201	0	122,336	(1,459,978)	104,257	245,397
1977	351,987	1,160,085	0	296,678	0	261,704	(1,115,096)	50,523	18,075
1978	1,034,893	3,636,671	0	1,551,015	0	0	(3,038,194)	0	69,043
1979	1,438,690	4,965,847	0	1,712,620	0	122,803	(3,159,826)	355,442	118,995
1980	1,637,112	5,427,384	0	1,738,296	0	155,005	(3,318,152)	0	44,896
1981	2,737,395	9,011,611	0	2,165,138	0	291,628	(2,377,087)	430,825	443,900
1982	2,418,196	8,258,830	0	1,482,612	0	3,001	(2,734,735)	0	537,619
1983	607,567	1,793,898	0	326,541	0	379,098	(4,530,913)	0	136,073
1984	999,858	3,027,748	0	531,615	0	384,949	(7,342,677)	(11,228)	228,202
1985	2,826,881	9,374,606	0	1,164,841	0	0	(10,048,090)	(43,847)	898,125
1986	4,990,691	16,921,966	(1,009,095)	2,357,866	0	0	(11,484,699)	0	1,265,840
1987	4,412,704	14,540,948	(989,627)	1,786,285	0	133,203	(10,526,109)	66,952	1,327,977
1988	5,372,224	17,698,924	(726,450)	2,468,456	0	0	(14,240,379)	0	1,486,880
1989	9,144,203	30,679,536	(2,349,114)	4,862,681	0	129,106	(18,822,368)	29,841	2,053,329
1990	11,836,670	40,455,568	(672,013)	6,741,547	0	495,162	(22,962,068)	172,624	2,483,686
1991	13,478,664	46,183,809	(902,844)	7,450,255	0	0	(22,810,611)	294,703	2,877,105
1992	16,553,170	57,092,838	(3,051,119)	9,676,365	0	1,937,942	(27,304,516)	63,622	3,244,830
1993	17,760,479	61,489,178	(3,234,757)	10,573,237	(286,823)	0	(28,155,788)	0	3,340,895
1994	16,583,571	57,192,338	(3,149,181)	10,413,578	(4,717,131)	0	(28,889,062)	127,825	2,958,367
1995	19,491,992	67,633,417	(3,325,561)	12,447,203	(5,131,494)	540,261	(29,749,804)	29,419	3,253,934
1996	20,496,938	71,010,684	(3,375,132)	13,069,102	(5,187,471)	0	(30,340,775)	68,624	3,504,293
1997	25,871,018	89,907,437	(3,427,276)	16,579,179	(5,410,909)	78,274	(30,880,058)	0	4,203,837
1998	26,924,308	93,249,515	(3,433,209)	17,282,484	(5,443,836)	0	(31,442,703)	0	4,445,336
1999	32,528,738	112,920,505	(3,466,493)	20,720,200	(5,457,112)	1,028,037	(31,965,323)	75,617	5,277,082
2000	34,269,469	118,759,879	(3,504,982)	21,960,308	(5,579,816)	0	(33,006,875)	0	5,540,610
2001	35,260,223	122,018,104	(3,504,615)	22,548,857	(5,829,519)	1,078,130	(33,661,676)	0	5,690,729
2002	36,332,263	125,626,379	(3,501,632)	23,534,110	(6,050,965)	0	(34,365,763)	0	5,726,049
2003	42,130,683	146,213,416	(3,453,668)	27,257,665	(6,294,337)	178,615	(35,035,384)	0	6,622,569
2004	47,970,577	166,842,540	(3,439,439)	31,245,781	(5,992,920)	0	(36,042,068)	0	7,571,871
2005	47,454,383	164,880,709	(3,429,776)	31,315,065	(5,800,598)	3,356,385	(36,862,916)	39,604	7,328,093
2006	49,703,309	172,738,482	(3,509,732)	32,709,222	(6,469,316)	486,311	(37,357,549)	0	7,797,298
2007	55,265,568	192,484,376	(3,542,556)	36,460,875	(6,660,777)	0	(37,917,343)	0	8,575,334
2008	56,358,067	196,364,352	(3,532,881)	37,229,805	(6,641,239)	629,204	(38,616,141)	0	8,721,632
2009	61,789,257	215,534,167	(3,555,808)	41,021,066	(6,854,178)	0	(39,183,202)	0	9,447,022
2010	62,715,095	218,949,151	(3,594,489)	41,715,712	(6,703,227)	951,862	(39,828,304)	0	9,562,752
2011	63,047,989	220,130,412	(3,605,048)	42,060,206	(6,727,494)	0	(39,941,445)	0	9,614,995
2012	63,056,324	220,264,079	(3,588,995)	41,965,518	(6,714,584)	2,299,519	(40,059,868)	227,687	9,610,663
2013	63,660,902	222,344,473	(3,625,078)	42,558,335	(7,067,275)	0	(40,159,488)	0	9,694,703
2014	63,845,050	223,054,542	(3,599,601)	42,711,080	(7,097,414)	610,186	(40,190,437)	0	9,593,783
2015	68,469,063	240,189,958	(3,625,740)	45,983,339	(7,181,136)	0	(40,198,064)	158,249	10,381,762
2016	68,448,068	240,177,375	(3,616,986)	46,010,003	(7,199,413)	459,688	(40,242,341)	186,042	10,248,363
2017	68,128,825	238,940,428	(3,622,657)	45,597,797	(6,993,594)	0	(40,042,555)	2,861,227	10,346,084
2018	68,496,668	240,262,719	(3,598,322)	46,050,455	(6,821,382)	762,402	(40,485,581)	0	10,271,997
2019	68,554,643	240,643,659	(3,590,233)	46,163,807	(6,987,689)	0	(40,401,748)	47,423	10,181,111
2020	67,869,397	238,203,617	(3,630,844)	45,721,927	(6,945,480)	8,866	(40,430,883)	73,736	10,067,209
2021	67,682,611	237,561,091	(3,627,966)	45,624,920	(6,945,971)	0	(40,399,442)	342,623	10,049,876
2022	67,437,293	237,267,375	(3,627,509)	45,649,371	(6,962,619)	334,782	(40,478,954)	0	9,984,767
2023	67,207,366	236,957,124	(3,619,213)	45,607,768	(6,932,153)	0	(40,432,038)	836,121	10,071,764
2024	67,042,068	237,064,633	(3,628,678)	45,694,501	(6,912,345)	374,778	(40,623,620)	0	10,027,540
2025	66,887,920	236,959,873	(3,673,183)	45,689,791	(6,981,489)	519,098	(40,601,321)	0	10,011,558
2026	66,783,902	237,122,578	(3,676,952)	45,787,509	(6,982,592)	0	(40,583,257)	161,583	10,019,399
2027	66,566,320	236,628,469	(3,686,046)	45,640,869	(6,986,234)	0	(40,613,454)	525,175	10,047,941
2028	66,653,089	236,925,434	(3,673,434)	45,714,531	(7,010,780)	374,952	(40,705,593)	0	9,882,711
2029	66,668,312	236,991,516	(3,674,029)	45,736,789	(6,983,008)	168,926	(40,673,528)	232,181	9,830,689
2030	66,686,439	236,954,265	(3,678,057)	45,767,408	(6,967,965)	166,522	(40,734,176)	0	9,787,461
2031	66,620,265	236,538,718	(3,673,323)	45,720,454	(6,971,128)	0	(40,644,849)	491,641	9,774,840
2032	66,619,343	236,415,759	(3,675,938)	45,667,456	(7,014,439)	0	(40,753,508)	0	9,647,334
2033	66,638,937	236,097,645	(3,675,176)	45,600,079	(7,017,861)	0	(40,742,449)	75,221	9,599,259
2034	66,092,378	234,052,890	(3,645,228)	44,909,570	(6,891,785)	3,689,879	(40,732,010)	205,036	9,437,009
2035	66,502,607	235,533,954	(3,656,312)	45,338,453	(7,030,129)	0	(40,777,132)	0	9,261,894

d) These 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, in acre-feet, 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

(in dollars)

Calendar Year	CALIFORNIA AQUEDUCT (continued) Reach 29G Warne Powerplant	Reach 29H Pyramid Lake (d	Reach 29J Castaic Powerplant	Reach 30 Castaic Lake (d	Reach 31A Las Perillas & Badger Hill Pumping Plants (e	Reach 33A Devil's Den, Bluestone & Polonio PP's San Luis Obispo Pwp	Total	GRAND TOTAL
	[19]	[20]	[21]	[22]	[23]	[24]	[25]	[26]
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	118,676	0	0	774,253	1,117,913
1969	0	0	0	78,350	0	0	507,516	773,646
1970	0	0	0	136,429	0	0	693,841	1,103,797
1971	0	0	0	166,296	0	0	1,121,164	1,513,435
1972	3,578	(193,058)	72,639	237,638	0	0	2,648,786	3,261,922
1973	0	7,344	(1,057,564)	0	120,913	0	2,661,036	3,168,975
1974	0	42,364	(1,540,853)	5,561	118,582	0	3,336,872	3,919,920
1975	0	0	(2,445,397)	10,225	94,848	0	5,689,034	6,053,571
1976	0	60,068	(1,940,099)	1,056,464	141,260	0	7,886,569	8,478,786
1977	0	0	(607,380)	(1,211,050)	71,311	0	628,796	1,164,427
1978	0	1,061,100	(1,542,479)	0	179,925	0	6,979,261	7,587,308
1979	0	0	(2,384,748)	(12,206)	192,126	0	9,240,027	9,861,400
1980	0	464,648	(1,036,267)	52,059	168,458	0	9,911,865	10,455,179
1981	0	0	(4,018,743)	0	169,225	0	17,241,380	17,833,080
1982	(783,626)	0	(3,463,975)	0	166,519	0	12,690,463	13,300,791
1983	(635,693)	131,644	(4,008,049)	(1,340,106)	(10,845)	0	(5,119,952)	(4,928,758)
1984	(2,006,054)	0	(2,048,882)	(2,062,574)	105,354	0	(4,622,570)	(4,364,017)
1985	(5,957,634)	0	(13,032,444)	0	152,422	0	(6,999,670)	(6,487,149)
1986	(5,634,005)	0	(11,168,505)	0	297,313	0	11,051,259	11,910,069
1987	(6,292,715)	70,051	(11,562,308)	(38,963)	245,775	0	7,382,044	8,282,050
1988	(7,024,581)	0	(12,275,778)	(155,968)	227,921	0	8,337,135	9,340,211
1989	(8,004,252)	0	(13,863,000)	0	367,461	0	28,901,039	30,566,818
1990	(8,846,217)	0	(16,157,215)	607,139	416,595	0	43,868,150	45,603,995
1991	(9,578,092)	0	(17,415,199)	0	458,253	0	52,678,566	54,658,864
1992	(10,657,831)	0	(17,196,351)	392,993	528,757	0	69,777,722	72,133,510
1993	(10,951,470)	0	(17,678,341)	0	540,931	0	74,320,699	76,815,575
1994	(9,639,349)	0	(15,568,088)	1,596,445	514,365	0	66,359,482	68,806,243
1995	(10,157,473)	0	(16,385,444)	0	804,500	964,406	85,091,118	87,863,550
1996	(10,321,127)	0	(16,665,019)	17,511	901,125	1,338,109	91,307,737	94,185,034
1997	(10,475,171)	0	(16,831,804)	97,257	1,124,657	1,917,033	130,579,501	134,224,363
1998	(10,464,977)	0	(16,794,763)	754,293	1,148,934	1,979,911	137,928,814	141,670,323
1999	(10,866,120)	0	(17,406,475)	44,512	1,367,419	2,545,762	178,325,316	182,800,342
2000	(11,011,969)	0	(17,683,071)	0	1,390,873	2,606,506	187,762,176	192,336,407
2001	(11,171,366)	0	(17,927,394)	0	1,406,575	2,647,170	194,290,838	198,933,442
2002	(11,101,577)	0	(17,755,953)	1,114,859	1,423,413	2,690,779	201,396,795	206,112,372
2003	(11,390,496)	0	(18,325,355)	0	1,615,398	3,188,004	241,800,491	247,171,666
2004	(11,613,159)	0	(18,581,366)	0	1,806,286	3,682,381	283,964,901	289,993,496
2005	(11,218,016)	0	(17,977,355)	3,443,010	1,793,764	3,649,949	287,556,747	293,565,792
2006	(11,810,401)	0	(18,882,259)	625,173	1,812,093	3,697,419	294,918,253	301,001,793
2007	(11,985,933)	0	(19,203,497)	191,264	1,985,229	4,145,823	333,734,439	340,413,576
2008	(12,150,136)	0	(19,478,762)	0	1,998,117	4,179,200	340,935,678	347,672,899
2009	(12,289,760)	0	(19,707,440)	0	2,159,826	4,598,011	379,219,470	386,517,779
2010	(12,436,284)	0	(19,929,383)	4,185	2,168,283	4,619,914	385,963,048	393,306,225
2011	(12,418,977)	0	(19,895,919)	189,880	2,171,740	4,628,866	387,624,669	394,998,677
2012	(12,458,486)	0	(19,935,451)	0	2,180,446	4,651,415	389,976,197	397,399,052
2013	(12,464,689)	0	(19,935,239)	29,973	2,183,777	4,660,040	391,257,525	398,711,733
2014	(12,443,356)	0	(19,905,957)	185,035	2,192,869	4,683,590	393,355,062	400,860,015
2015	(12,465,022)	0	(19,939,516)	0	2,356,052	5,106,214	428,456,605	436,542,229
2016	(12,449,088)	0	(19,904,627)	197,074	2,358,095	5,111,507	428,950,975	437,064,041
2017	(12,447,763)	0	(19,938,604)	0	2,354,559	5,102,347	428,865,614	436,987,839
2018	(12,469,126)	0	(19,911,262)	131,327	2,353,503	5,099,613	429,203,747	437,343,987
2019	(12,483,042)	0	(19,933,733)	0	2,352,044	5,095,834	428,459,488	436,617,174
2020	(12,483,197)	0	(19,933,972)	0	2,327,809	5,033,067	422,858,557	430,954,446
2021	(12,478,994)	0	(19,927,945)	35,104	2,323,830	5,022,763	421,523,211	429,606,265
2022	(12,473,485)	0	(19,914,192)	114,270	2,323,146	5,020,992	420,411,595	428,492,852
2023	(12,490,127)	0	(19,908,609)	143,804	2,325,021	5,025,846	420,481,432	428,570,045
2024	(12,503,238)	0	(19,932,250)	10,805	2,323,417	5,021,695	419,472,159	427,555,865
2025	(12,508,839)	0	(19,936,654)	0	2,323,699	5,022,425	419,165,876	427,251,231
2026	(12,485,077)	0	(19,896,019)	227,217	2,325,296	5,026,561	419,321,353	427,412,264
2027	(12,512,141)	0	(19,938,186)	0	2,320,422	5,013,937	418,202,598	426,276,549
2028	(12,510,777)	0	(19,937,273)	0	2,322,011	5,018,052	418,263,966	426,343,448
2029	(12,508,847)	0	(19,936,847)	0	2,322,485	5,019,281	418,305,092	426,386,224
2030	(12,506,745)	0	(19,937,440)	0	2,321,446	5,016,590	417,759,199	425,836,716
2031	(12,501,197)	0	(19,924,872)	68,416	2,321,118	5,015,740	417,278,933	425,355,305
2032	(12,511,141)	0	(19,939,077)	0	2,318,564	5,009,125	415,835,188	423,902,675
2033	(12,513,240)	0	(19,938,241)	15,516	2,320,408	5,013,901	415,407,739	423,481,641
2034	(12,520,374)	0	(19,943,489)	0	2,321,283	5,016,167	414,953,409	423,030,355
2035	(12,448,372)	0	(19,952,015)	0	2,316,710	5,004,325	413,456,457	421,517,494

e) Includes extra peaking costs assigned directly to Kern County Water Agency. Refer to Appendix B text discussion of Table B-16A under "Project Water Charges."

TABLE B-13. Capital and Operating Costs of Project Conservation Facilities to Be Reimbursed through Delta Water Charge

(in 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
				Application of Oroville Power Revenues to:			
	Capital Costs (a	Capital Cost Credits (b	Operating Costs (c	Capital Costs (d	Operating Costs (e		
	[1]	[2]	[3]	[4]	[5]	[6]	[7]
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	72,472,985
1964	62,490,522	(751,330)	(14,000)	0	0	107,780	61,832,972
1965	70,913,845	(763,541)	(14,000)	0	0	551,850	70,688,154
1966	125,205,400	(748,649)	(14,000)	0	0	1,081,023	125,523,774
1967	94,296,914	(812,145)	(13,446)	0	0	1,189,212	94,660,535
1968	39,888,442	(431,574)	1,303,821	(951,000)	0	793,399	40,603,088
1969	5,279,787	(259,015)	2,890,772	(11,007,000)	0	601,867	(2,493,589)
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	4,569,025	(196,361)	5,378,401	(14,650,000)	(1,500,000)	287,374	(6,111,561)
1973	3,985,415	(136,997)	6,083,392	(14,650,000)	(1,500,000)	203,384	(6,014,806)
1974	6,659,999	(137,503)	6,873,552	(17,950,000)	(1,500,000)	201,907	(5,852,045)
1975	8,084,449	(234,567)	7,622,422	(14,650,000)	(1,500,000)	146,188	(531,508)
1976	5,870,528	(204,944)	6,956,842	(14,650,000)	(1,500,000)	205,234	(3,322,340)
1977	21,285,846	(150,214)	10,413,892	(14,650,000)	(1,500,000)	857,419	16,256,943
1978	7,713,249	(64,566)	12,750,915	(14,650,000)	(1,500,000)	2,131,286	6,380,884
1979	9,030,800	0	9,467,691	(14,650,000)	(1,500,000)	2,131,884	4,480,375
1980	10,372,762	0	13,334,988	(14,650,000)	(1,500,000)	3,649,798	11,207,548
1981	11,095,672	0	10,184,997	(14,650,000)	(1,500,000)	4,534,684	9,665,353
1982	16,887,845	0	16,164,545	(14,650,000)	(1,500,000)	4,594,682	21,497,072
1983	12,745,733	0	23,251,717	(34,705,000)	(8,735,000)	3,734,801	(3,707,749)
1984	10,211,490	0	23,974,760	(14,650,000)	(10,348,000)	3,743,484	12,931,734
1985	10,965,521	0	24,391,701	(14,650,000)	(8,079,000)	3,675,801	16,304,023
1986	18,527,941	0	26,456,777	(14,650,000)	(9,107,000)	3,104,934	24,332,652
1987	24,305,345	0	23,315,781	(14,650,000)	(9,451,000)	4,288,636	27,808,762
1988	28,807,096	0	25,580,445	(14,650,000)	(8,677,000)	5,867,780	36,928,321
1989	11,793,541	0	36,605,204	(16,116,000)	(8,773,000)	6,789,500	30,299,245
1990	10,178,485	0	38,715,176	(14,650,000)	(8,498,000)	6,135,500	31,881,161
1991	9,675,833	0	41,768,376	(14,650,000)	(8,672,000)	4,847,500	32,969,709
1992	3,169,920	0	41,777,465	(14,650,000)	(8,671,000)	2,695,056	24,321,441
1993	1,289,266	0	38,091,950	(14,650,000)	(8,671,000)	2,695,056	18,755,272
1994	1,196,530	0	35,853,672	(14,650,000)	(8,677,000)	2,695,056	16,418,258
1995	1,196,530	0	37,297,481	(15,276,000)	(8,692,000)	2,695,056	17,221,067
1996	1,110,530	0	37,017,286	(15,427,000)	(8,714,000)	2,695,056	16,681,872
1997	1,024,530	0	38,919,718	(15,427,000)	(8,742,000)	2,695,056	18,470,304
1998	1,024,530	0	38,730,558	(15,427,000)	(8,742,000)	2,695,056	18,281,144
1999	575,340	0	40,189,259	(15,427,000)	(8,792,000)	2,695,056	19,240,655
2000	575,340	0	39,664,123	(15,427,000)	(8,847,000)	2,695,056	18,660,519
2001	0	0	37,411,479	(15,427,000)	(9,032,000)	1,429,500	14,381,979
2002	0	0	37,774,226	(15,427,000)	(9,173,000)	1,429,500	14,603,726
2003	0	0	39,482,442	(15,427,000)	(9,867,000)	1,429,500	15,617,942
2004	0	0	40,276,678	(15,427,000)	(10,023,000)	1,429,500	16,256,178
2005	0	0	41,627,803	(15,427,000)	(9,948,000)	1,429,500	17,682,303
2006	0	0	40,223,771	(15,427,000)	(9,877,000)	1,429,500	16,349,271
2007	0	0	43,942,192	(15,427,000)	(10,024,000)	1,429,500	19,920,692
2008	0	0	42,024,915	(15,427,000)	(10,018,000)	1,429,500	18,009,415
2009	0	0	42,635,077	(15,427,000)	(9,985,000)	1,429,500	18,652,577
2010	0	0	43,384,330	(15,427,000)	(9,941,000)	1,429,500	19,445,830
2011	0	0	42,730,003	(15,427,000)	(9,894,000)	0	17,409,003
2012	0	0	44,131,504	(15,427,000)	(9,846,000)	0	18,858,504
2013	0	0	42,577,771	(15,427,000)	(9,846,000)	0	17,304,771
2014	0	0	43,691,552	(15,427,000)	(9,860,000)	0	18,404,552
2015	0	0	44,066,431	(15,427,000)	(9,871,000)	0	18,768,431
2016	0	0	44,183,525	(15,427,000)	(9,709,000)	0	19,047,525
2017	0	0	43,496,280	(15,427,000)	(9,539,000)	0	18,530,280
2018	0	0	42,067,567	(15,427,000)	(9,112,000)	0	17,528,567
2019	0	0	43,002,367	(15,427,000)	(8,796,000)	0	18,779,367
2020	0	0	43,150,716	(15,427,000)	(8,729,000)	0	18,994,716
2021	0	0	41,713,508	(15,427,000)	(8,134,000)	0	18,152,508
2022	0	0	41,914,751	(15,427,000)	(7,802,000)	0	18,685,751
2023	0	0	42,130,132	(15,427,000)	(7,802,000)	0	18,901,132
2024	0	0	41,018,394	(15,427,000)	(7,756,000)	0	17,835,394
2025	0	0	41,288,066	(15,427,000)	(7,756,000)	0	18,105,066
2026	0	0	41,816,936	(15,427,000)	(7,756,000)	0	18,633,936
2027	0	0	40,598,776	(15,427,000)	(7,691,000)	0	17,480,776
2028	0	0	40,867,630	(15,427,000)	(7,625,000)	0	17,815,630
2029	0	0	40,860,623	(15,427,000)	(7,473,000)	0	17,960,623
2030	0	0	40,374,867	(15,427,000)	(7,320,000)	0	17,627,867
2031	0	0	39,910,536	(15,427,000)	(7,167,000)	0	17,316,536
2032	0	0	39,380,043	(15,427,000)	(7,062,000)	0	16,891,043
2033	0	0	39,210,974	(15,427,000)	(7,062,000)	0	16,721,974
2034	0	0	40,680,933	(15,427,000)	(7,062,000)	0	18,191,933
2035	0	0	42,480,961	(15,427,000)	(7,062,000)	0	19,991,961
TOTAL	804,585,713	(11,528,320)	2,187,931,106	(1,035,385,000)	(484,008,000)	104,932,824	1,566,528,323

a) Reimbursed through the capital cost component of the Delta Water Charge.
b) Negotiated settlements as to the magnitude of SWP planning costs from 1952 through 1978.
c) Reimbursed through the minimum OMP&R component of the Delta Water Charge. Credits for Gianelli power generation are reflected in these net costs.
d) Revenues credited through the capital cost component of the Delta Water Charge.
e) Revenue credits through the minimum OMP&R component of the Delta Water Charge.
f) Under amendments of Articles 22(e) and 22(g), planning and pre-operating costs of additional Project Conservation Facilities incurred through the previous year (1988) are reflected in the Delta Water Charge.

TABLE B-14. Capital Costs of Transportation Facilities Allocated to Each Contractor

(in dollars)

Calendar Year	NORTH BAY AREA			SOUTH BAY AREA				CENTRAL COASTAL AREA		
	Napa County FC&WCD	Solano County FC&WCD(a	Total	Alameda County FC&WCD, Zone 7	Alameda County Water District	Santa Clara Valley Water District	Total	San Luis Obispo County FC&WCD	Santa Barbara County FC&WCD	Total
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]
1952	0	0	0	83	114	410	607	121	224	345
1953	0	0	0	324	479	1,808	2,611	336	619	955
1954	0	0	0	819	1,305	5,150	7,274	422	779	1,201
1955	0	0	0	976	1,570	6,297	8,843	211	388	599
1956	0	0	0	8,844	14,459	63,816	87,119	227	419	646
1957	15,199	11,435	26,634	21,563	35,239	649,598	706,400	290	535	825
1958	33,420	16,591	50,011	67,764	71,717	733,415	872,896	721	1,330	2,051
1959	20,697	6,591	27,288	154,254	143,731	493,049	791,034	25,853	53,921	79,774
1960	9,097	8,830	17,927	296,492	275,611	1,018,661	1,590,764	37,106	77,941	115,047
1961	6,950	7,445	14,395	853,505	802,675	1,914,710	3,570,890	15,637	31,208	46,845
1962	(195)	(925)	(1,120)	545,123	615,142	1,686,044	2,846,309	19,640	37,213	56,853
1963	1,320	1,110	2,430	657,427	1,281,272	3,243,841	5,182,540	73,105	136,569	209,674
1964	38,392	35,467	73,859	712,653	1,747,785	7,251,806	9,712,244	146,715	273,922	420,637
1965	198,833	62,221	261,054	360,783	606,030	3,414,466	4,381,279	261,459	486,434	747,893
1966	461,619	49,917	511,536	592,720	592,603	2,245,228	3,430,551	598,330	1,107,174	1,705,504
1967	1,569,498	40,379	1,609,877	797,000	803,957	2,401,877	4,002,834	947,517	1,751,645	2,699,162
1968	859,613	61,691	921,304	736,474	696,077	1,997,934	3,430,485	359,891	666,475	1,026,366
1969	74,389	59,317	133,706	269,700	293,277	764,957	1,327,934	84,315	157,239	241,554
1970	43,362	67,876	111,238	58,678	61,201	135,572	255,451	54,663	102,458	157,121
1971	26,764	34,051	60,815	12,086	18,227	84,090	114,403	37,649	71,704	109,353
1972	19,643	18,905	38,548	12,291	12,762	63,612	88,665	24,098	45,422	69,520
1973	56,510	30,874	87,384	10,494	12,137	39,380	62,011	27,479	51,710	79,189
1974	165,830	65,832	231,662	15,721	24,402	73,122	113,245	30,087	56,332	86,419
1975	91,825	89,233	181,058	16,730	15,807	41,395	73,932	25,396	50,761	76,157
1976	57,767	83,648	141,415	34,004	34,662	109,615	178,281	54,577	109,506	164,083
1977	64,255	80,045	144,300	46,231	45,118	133,380	224,729	130,052	243,101	373,153
1978	66,079	76,524	142,603	61,469	57,082	153,593	272,144	27,939	53,810	81,749
1979	194,348	279,321	473,669	45,492	42,966	110,696	199,154	52,571	99,595	152,166
1980	287,920	358,915	646,835	135,059	124,857	305,625	565,541	196,357	364,090	560,447
1981	210,756	401,974	612,730	(34,727)	(30,772)	(67,693)	(133,192)	(79,777)	(144,954)	(224,731)
1982	540,927	886,989	1,427,916	14,624	14,194	38,725	67,543	(31,906)	(58,049)	(89,955)
1983	1,261,770	1,424,646	2,686,416	136,645	129,462	332,190	598,297	34,579	64,968	99,547
1984	2,516,851	2,746,036	5,262,887	152,977	140,928	351,639	645,544	36,285	67,981	104,266
1985	7,094,162	6,445,434	13,539,596	17,500	17,026	47,394	81,920	20,496	40,379	60,875
1986	10,517,145	16,940,616	27,457,761	26,673	26,312	73,801	126,786	85,193	180,602	265,795
1987	8,126,267	13,313,535	21,439,802	46,039	44,691	129,033	219,763	468,093	1,019,073	1,487,166
1988	2,039,137	4,073,096	6,112,233	59,798	56,967	152,629	269,394	504,486	1,098,979	1,603,465
1989	987,848	1,702,252	2,690,100	171,311	160,612	392,809	724,732	706,574	1,458,878	2,165,452
1990	255,314	402,686	658,000	175,553	161,317	389,675	726,545	1,244,627	2,582,135	3,826,762
1991	56,797	703	57,500	189,455	176,006	435,691	801,152	3,364,646	7,083,606	10,448,252
1992	5,000	0	5,000	54,474	51,766	133,116	239,356	22,216,237	49,646,821	71,863,058
1993	0	0	0	9,845	9,000	21,461	40,306	27,992,536	63,105,274	91,097,810
1994	0	0	0	9,546	8,728	20,799	39,073	23,828,483	47,794,899	71,623,382
1995	0	0	0	9,546	8,728	20,799	39,073	6,820,289	12,995,442	19,815,731
1996	0	0	0	9,546	8,728	20,799	39,073	252,057	563,104	815,161
1997	0	0	0	9,546	8,728	20,799	39,073	221,215	493,946	715,161
1998	0	0	0	9,546	8,728	20,799	39,073	159,534	355,627	515,161
1999	0	0	0	0	0	0	0	0	0	0
2000	0	0	0	0	0	0	0	0	0	0
TOTAL	37,975,109	49,883,260	87,858,369	7,592,656	9,433,413	31,677,612	48,703,681	91,076,411	194,381,235	285,457,646

a) Costs from Table B-10 allocated to Solano County Flood Control and Water Conservation District 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

(in dollars)

Calendar Year	SAN JOAQUIN VALLEY AREA										
					Kern County Water Agency						
	Devil's Den Water District(b	Dudley Ridge Water District	Empire West Side Irrigation District(c	Future Contractor San Joaquin Valley	Municipal and Industrial	Municipal and (d Industrial	Agri-cultural	County of Kings	Oak Flat Water District	Tulare Lake Basin Water Storage District	Total
	[11]	[12]	[13]	[14]	[15]	[16]	[17]	[18]	[19]	[20]	[21]
1952	87	389	19	59	938	120	9,137	19	13	784	11,565
1953	238	1,076	53	161	2,892	344	27,416	56	33	2,158	34,427
1954	298	1,350	67	200	3,379	416	32,404	70	42	2,719	40,945
1955	150	676	36	100	1,499	198	14,730	36	22	1,371	18,818
1956	160	727	33	107	2,709	272	24,300	34	26	1,417	29,785
1957	205	932	38	139	6,067	496	50,055	38	30	1,707	59,707
1958	511	2,308	100	345	14,412	1,155	119,338	103	61	4,368	142,701
1959	3,700	7,387	363	2,517	26,276	2,599	254,305	372	381	14,758	312,658
1960	5,396	12,942	629	3,666	34,105	4,158	352,574	644	498	25,699	440,311
1961	5,850	21,851	1,063	3,957	51,474	6,503	539,300	1,087	599	43,381	675,065
1962	11,657	49,324	2,410	7,867	95,002	13,840	1,017,765	2,466	1,879	98,151	1,300,361
1963	47,693	208,777	10,688	32,174	364,163	55,723	3,935,959	10,933	5,991	425,371	5,097,472
1964	95,861	328,316	16,963	64,894	600,500	88,923	6,639,524	17,352	11,944	672,079	8,536,356
1965	174,091	538,267	27,484	118,001	1,099,973	152,986	12,008,694	28,118	21,804	1,095,233	15,264,651
1966	411,444	1,107,866	52,591	279,183	2,220,602	339,414	24,873,716	53,793	38,895	2,173,302	31,550,806
1967	653,361	852,622	39,542	445,568	2,015,228	287,218	23,647,648	40,446	34,779	1,653,590	29,670,002
1968	243,377	198,757	9,740	166,270	1,107,258	70,150	11,570,326	9,962	12,239	396,114	13,784,193
1969	52,105	94,447	4,794	35,474	618,548	27,226	6,435,031	4,902	7,302	191,593	7,471,422
1970	31,849	54,350	2,720	21,686	416,140	15,528	4,158,051	2,784	3,999	109,482	4,816,589
1971	17,745	25,466	1,290	12,095	191,239	7,116	1,626,959	1,321	540	51,624	1,935,395
1972	12,235	11,591	589	8,354	83,179	3,412	725,530	601	343	23,528	869,362
1973	14,913	6,657	336	10,202	40,105	1,979	459,546	341	220	13,450	547,749
1974	16,154	9,478	469	11,044	45,558	2,767	484,755	478	326	18,982	590,011
1975	7,706	13,329	678	5,245	36,537	3,710	383,230	692	426	27,051	478,604
1976	18,475	17,505	837	12,616	53,182	5,624	654,897	856	1,152	34,450	799,594
1977	69,751	9,512	428	47,768	36,329	3,715	884,751	437	490	18,172	1,071,353
1978	(8,877)	11,119	(31,049)	3,543	27,772	3,351	303,824	551	802	22,040	333,076
1979	7,224	19,506	1,007	4,906	45,788	5,163	467,188	1,030	1,734	39,915	593,461
1980	37,551	103,245	(6,785)	25,476	261,343	27,239	2,516,667	5,466	6,192	211,559	3,187,953
1981	6,406	25,186	(13,873)	4,333	(476)	6,765	122,739	1,330	2,391	51,505	206,306
1982	16,516	80,095	4,153	11,102	135,348	20,974	1,211,130	4,244	2,422	164,293	1,650,277
1983	15,672	44,476	(35,704)	10,620	100,214	11,766	960,420	2,349	1,247	91,077	1,202,137
1984	20,787	83,714	4,338	14,021	155,497	22,099	1,658,001	4,430	2,653	171,605	2,137,145
1985	9,152	30,602	1,580	6,193	55,838	8,109	591,049	1,616	1,190	62,628	767,957
1986	18,809	55,258	(40,193)	12,744	98,602	14,828	1,098,156	2,905	995	112,836	1,374,940
1987	30,279	114,619	5,930	20,473	195,820	30,452	2,154,921	6,066	1,297	234,789	2,794,646
1988	20,847	60,282	3,097	14,129	115,015	16,605	1,259,590	3,165	4,194	123,034	1,619,958
1989	78,852	335,137	17,349	53,192	652,816	91,849	7,124,142	17,740	25,806	686,733	9,083,616
1990	89,247	387,789	20,088	60,172	681,146	108,162	7,414,984	20,535	26,603	794,886	9,603,612
1991	87,504	325,978	16,837	59,136	566,987	89,142	6,262,436	17,211	22,555	667,168	8,114,954
1992	22,591	50,849	2,568	15,355	97,001	14,218	1,125,754	2,626	4,131	102,901	1,437,994
1993	27,421	17,421	887	18,746	31,615	4,822	523,379	907	1,671	35,389	662,258
1994	40,896	17,076	887	27,980	27,416	4,455	591,854	907	1,671	35,046	748,188
1995	18,508	17,076	887	12,639	27,416	4,455	416,913	907	1,671	35,046	535,518
1996	3,778	17,076	887	2,547	27,416	4,455	301,821	907	1,671	35,046	395,604
1997	3,778	17,076	887	2,547	27,416	4,455	301,821	907	1,671	35,046	395,604
1998	3,778	17,076	887	2,547	27,416	4,455	301,821	907	1,671	35,046	395,604
1999	0	0	0	0	0	0	0	0	0	0	0
2000	0	0	0	0	0	0	0	0	0	0	0
TOTAL	2,445,731	5,406,558	128,625	1,672,093	12,524,700	1,593,411	137,638,551	274,647	258,272	10,848,122	172,790,710

b) Costs from Table B-10 allocated to Devil's Den Water District are reduced herein by $14,088 in 1978 in accordance with a letter of agreement with the district.

c) Costs 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; and $38,004 in 1983 in accordance with letters of agreement with the district.

d) Costs 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

(in dollars)

Calendar Year	SOUTHERN CALIFORNIA AREA									
	Antelope Valley-East Kern Water Agency	Castaic Lake Water Agency	Coachella Valley Water District	Crestline-Lake Arrowhead Water Agency	Desert Water Agency	Littlerock Creek Irrigation District	Mojave Water Agency	Palmdale Water District	San Bernardino Valley Municipal Water District	San Gabriel Valley Municipal Water District
	[22]	[23]	[24]	[25]	[26]	[27]	[28]	[29]	[30]	[31]
1952	3,163	786	851	252	1,406	72	1,697	419	6,086	1,550
1953	10,047	2,522	2,674	801	4,406	222	5,329	1,330	19,079	4,859
1954	12,772	3,183	3,468	1,034	5,721	286	6,922	1,695	24,631	6,296
1955	5,423	1,422	1,380	399	2,270	115	2,757	717	9,239	2,379
1956	9,806	2,733	2,202	616	3,631	193	4,463	1,272	13,162	3,445
1957	26,389	7,121	6,358	1,822	10,488	542	12,802	3,462	40,719	10,556
1958	49,361	13,504	11,610	3,298	19,147	994	23,418	6,434	72,837	18,930
1959	70,442	21,126	15,907	4,625	26,227	1,350	31,831	9,054	98,754	25,564
1960	84,754	27,606	22,105	6,806	36,457	1,550	43,336	10,797	147,332	37,513
1961	126,875	40,281	34,676	12,547	57,185	2,256	63,834	16,480	236,434	57,782
1962	198,861	63,895	43,774	13,875	72,194	3,351	84,823	24,980	253,680	64,395
1963	580,866	185,778	116,929	33,183	192,841	9,842	235,199	73,346	610,869	160,783
1964	1,096,289	355,355	209,810	55,533	346,024	18,471	430,329	138,008	1,027,622	276,545
1965	1,911,872	669,374	386,224	103,929	636,955	32,882	788,408	245,063	1,916,155	513,707
1966	3,968,188	1,501,127	814,084	216,216	1,342,588	69,454	1,667,540	518,255	3,949,958	1,064,169
1967	4,990,835	2,823,458	1,080,013	296,716	1,781,155	88,543	2,187,593	655,042	5,833,249	1,553,415
1968	5,944,187	2,981,439	1,354,311	369,053	2,233,522	107,682	2,745,395	786,414	7,998,770	2,127,321
1969	5,844,553	2,409,562	1,694,216	540,851	2,794,153	121,673	3,264,694	868,198	10,915,869	2,774,503
1970	5,051,804	2,606,250	2,054,203	696,207	3,387,877	106,696	3,879,429	739,143	13,811,071	3,461,296
1971	2,587,829	1,747,033	1,073,393	339,055	1,770,260	48,511	2,091,089	348,354	8,145,412	1,989,414
1972	977,313	312,618	332,460	92,254	548,296	19,199	670,003	134,851	2,694,275	698,820
1973	355,900	789,769	158,851	82,290	262,003	6,329	238,654	46,292	1,761,778	403,916
1974	453,264	234,678	259,509	74,195	427,981	8,174	519,141	59,375	1,618,881	426,335
1975	254,377	195,585	193,804	52,864	319,618	4,969	392,464	34,115	1,534,426	408,124
1976	238,300	192,619	136,888	37,269	225,758	4,259	278,095	31,098	962,897	256,073
1977	200,162	236,962	91,508	25,889	150,918	3,764	183,867	26,911	592,001	155,691
1978	189,097	335,505	54,940	16,253	90,611	3,345	108,917	24,461	323,296	82,755
1979	377,210	726,721	85,801	22,804	141,503	6,291	175,157	46,860	421,435	113,305
1980	1,928,920	1,377,892	438,400	116,738	723,009	33,463	894,255	248,609	2,103,912	565,364
1981	(168,267)	461,493	(51,869)	(10,745)	(85,532)	(2,736)	(111,612)	(20,786)	(177,164)	(52,649)
1982	1,642,923	694,795	314,236	81,538	518,233	27,644	646,952	207,262	1,464,876	400,393
1983	2,056,198	413,733	391,346	106,200	645,408	34,582	801,859	259,075	1,956,449	535,245
1984	1,543,790	238,277	305,864	81,769	504,421	27,697	628,234	191,758	1,480,338	405,254
1985	914,016	123,825	217,417	62,167	358,564	15,260	442,393	114,246	1,103,701	301,730
1986	808,394	80,648	224,312	58,922	369,928	14,769	461,233	106,548	1,062,855	290,021
1987	494,540	138,775	200,082	52,610	329,976	8,595	411,124	63,634	935,718	254,807
1988	420,851	148,837	106,048	30,491	174,896	7,045	214,466	52,007	549,373	147,738
1989	1,376,553	422,502	415,478	114,335	685,201	23,309	851,686	174,203	2,110,863	578,162
1990	957,985	421,183	389,314	116,202	642,059	17,626	790,076	130,741	2,026,844	555,771
1991	727,234	454,359	272,616	114,438	449,598	12,720	522,401	93,435	2,331,214	635,283
1992	156,806	69,338	84,613	66,247	139,543	2,725	133,518	20,098	1,191,700	325,499
1993	37,204	11,324	26,881	52,597	44,335	623	13,941	4,672	930,093	255,188
1994	29,389	8,907	14,780	25,283	24,376	492	11,011	3,691	447,100	122,679
1995	29,389	8,907	6,984	5,625	11,519	492	11,011	3,691	99,481	27,313
1996	29,389	8,907	5,283	1,336	8,713	492	11,011	3,691	23,627	6,503
1997	29,389	8,907	5,283	1,336	8,713	492	11,011	3,691	23,627	6,503
1998	29,389	8,907	5,283	1,336	8,713	492	11,011	3,691	23,627	6,503
1999	0	0	0	0	0	0	0	0	0	0
2000	0	0	0	0	0	0	0	0	0	0
TOTAL	48,664,051	23,589,468	13,614,300	4,179,061	22,452,868	896,797	26,892,767	6,516,383	84,728,151	22,066,748

TABLE B-14. Capital Costs of Transportation Facilities Allocated to Each Contractor

(in dollars)

Calendar Year	SOUTHERN CALIFORNIA AREA (continued)				FEATHER RIVER AREA				South Bay Area Future Contractor	GRAND TOTAL
	San Gorgonio Pass Water Agency	The Metropolitan Water District of Southern California(e	Ventura County Flood Control District	Total	City of Yuba City	County of Butte	Plumas County FC&WCD	Total		
	[32]	[33]	[34]	[35]	[36]	[37]	[38]	[39]	[40]	[41]
1952	963	69,159	373	86,777	0	0	0	0	59	99,353
1953	3,014	218,082	1,191	273,556	0	0	0	0	263	311,812
1954	3,907	280,542	1,499	351,956	0	0	0	0	767	402,143
1955	1,475	111,865	672	140,113	0	0	0	0	969	169,342
1956	2,128	179,874	1,303	224,828	0	0	0	0	9,173	351,551
1957	6,540	517,533	3,381	647,713	0	0	0	0	23,173	1,464,452
1958	11,720	948,401	6,420	1,186,074	0	0	2	2	32,888	2,286,623
1959	15,842	1,368,069	9,934	1,698,725	0	0	14	14	57,919	2,967,412
1960	23,334	1,919,115	12,849	2,373,554	0	0	28	28	123,202	4,660,833
1961	36,199	3,218,434	18,835	3,921,818	0	0	10	10	316,221	8,545,244
1962	40,053	3,551,496	29,158	4,444,535	0	0	32	32	228,201	8,875,171
1963	99,364	11,203,615	87,001	13,589,616	0	0	51	51	528,495	24,610,278
1964	170,271	18,105,750	165,131	22,395,138	0	0	7,791	7,791	590,035	41,736,060
1965	316,599	33,844,559	308,320	41,674,047	0	0	3,139	3,139	332,680	62,664,743
1966	655,265	74,677,453	683,955	91,128,252	0	0	(48)	(48)	783,729	129,110,330
1967	960,354	131,149,091	1,285,557	154,685,021	0	0	47	47	1,479,422	194,146,365
1968	1,317,528	148,176,589	1,368,586	177,510,797	0	0	51,573	51,573	1,254,193	197,978,911
1969	1,729,871	140,617,637	1,090,679	174,666,459	0	0	234,232	234,232	398,183	184,473,490
1970	2,162,695	162,541,445	1,153,880	201,651,996	0	0	16,227	16,227	74,028	207,082,650
1971	1,238,982	134,243,112	742,669	156,365,113	0	0	27,204	27,204	12,456	158,624,739
1972	435,035	43,874,003	65,840	50,854,967	0	0	9	9	13,183	51,934,254
1973	256,915	39,825,525	291,175	44,479,397	0	0	25	25	8,098	45,263,853
1974	264,599	18,919,535	86,528	23,352,215	0	0	45	45	28,569	24,402,166
1975	253,968	16,772,093	84,435	20,500,842	0	0	21	21	8,224	21,318,838
1976	158,951	13,585,680	85,113	16,193,000	0	0	51	51	16,484	17,492,908
1977	96,611	11,862,557	112,068	13,738,909	0	0	28	28	21,172	15,573,644
1978	51,331	14,014,813	158,363	15,453,687	0	0	38	38	25,160	16,308,457
1979	69,859	27,978,690	346,871	30,512,507	0	0	23	23	26,342	31,957,322
1980	348,456	60,707,072	653,604	70,139,634	0	0	26	26	56,828	75,157,264
1981	(31,969)	15,242,353	220,933	15,211,450	0	0	34	34	(5,325)	15,667,272
1982	246,203	32,290,035	332,768	38,867,858	0	0	11	11	19,170	41,942,820
1983	329,263	24,808,563	196,329	32,534,250	0	0	19	19	70,298	37,190,964
1984	249,137	16,394,516	109,023	22,160,078	0	0	26	26	82,945	30,392,891
1985	185,474	10,315,965	58,233	14,212,991	0	0	29	29	15,477	28,678,845
1986	178,334	8,664,606	37,565	12,358,135	0	0	31	31	14,734	41,598,182
1987	156,666	9,936,033	65,480	13,048,040	0	0	32	32	27,178	39,016,627
1988	91,015	8,215,721	70,584	10,229,072	0	0	56	56	23,619	19,857,797
1989	355,442	26,246,584	201,856	33,556,174	0	0	0	0	66,689	48,286,763
1990	341,162	25,979,893	187,916	32,556,772	0	0	0	0	65,137	47,436,828
1991	391,643	28,787,538	206,363	34,998,842	0	0	0	0	80,081	54,500,781
1992	200,187	8,933,583	32,331	11,356,188	0	0	0	0	26,554	84,928,150
1993	156,816	5,376,726	5,451	6,915,851	0	0	0	0	3,696	98,719,921
1994	75,382	2,706,236	4,293	3,473,619	0	0	0	0	3,425	75,887,687
1995	16,773	845,377	4,293	1,070,855	0	0	0	0	3,425	21,464,602
1996	3,984	439,318	4,293	546,547	0	0	0	0	3,425	1,799,810
1997	3,984	439,318	4,293	546,547	0	0	0	0	3,425	1,699,810
1998	3,984	439,318	4,293	546,547	0	0	0	0	3,425	1,499,810
1999	0	0	0	0	0	0	0	0	0	0
2000	0	0	0	0	0	0	0	0	0	0
TOTAL	13,685,309	1,340,543,472	10,601,687	1,618,431,062	0	0	340,806	340,806	6,957,494	2,220,539,768

e) Costs from Table B-10 allocated to MWDSC are reduced herein by $16,428,037 in 1972 under provisions of Amendment No. 7 to its water contract.

TABLE B-15. Capital Cost Component of Transportation Charge for Each Contractor

(in dollars)

Calendar Year	NORTH BAY AREA			SOUTH BAY AREA				CENTRAL COASTAL AREA		
	Napa County FC&WCD	Solano County FC&WCD	Total	Alameda County FC&WCD, Zone 7	Alameda County Water District	Santa Clara Valley Water District	Total	San Luis Obispo County FC&WCD	Santa Barbara County FC&WCD	Total
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]
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	106,865	107,537	372,613	587,015	0	0	0
1964	0	0	0	126,303	173,860	540,525	840,688	9,067	17,954	27,021
1965	0	0	0	159,504	264,332	915,903	1,339,739	14,938	28,953	43,891
1966	18,399	0	18,399	176,312	295,702	1,092,647	1,564,661	24,388	46,598	70,986
1967	42,294	0	42,294	203,925	326,377	1,208,868	1,739,170	43,012	81,129	124,141
1968	123,537	0	123,537	241,055	367,993	1,333,197	1,942,245	57,563	108,161	165,724
1969	168,033	0	168,033	275,366	404,024	1,436,617	2,116,007	61,392	115,354	176,746
1970	171,884	0	171,884	287,930	419,205	1,476,213	2,183,348	63,440	119,220	182,660
1971	174,129	0	174,129	290,664	422,373	1,483,231	2,196,268	64,798	121,808	186,606
1972	175,514	0	175,514	336,763	423,316	1,487,584	2,247,663	65,848	123,862	189,710
1973	176,531	32,062	208,593	337,399	423,977	1,490,877	2,252,253	66,377	124,888	191,265
1974	179,456	33,660	213,116	337,942	424,605	1,492,915	2,255,462	66,802	125,725	192,527
1975	188,040	37,068	225,108	338,756	425,868	1,496,700	2,261,324	67,316	126,716	194,032
1976	192,793	41,687	234,480	339,622	426,687	1,498,843	2,265,152	177,078	329,416	506,494
1977	195,783	46,017	241,800	341,382	428,481	1,504,517	2,274,380	179,903	335,084	514,987
1978	199,109	50,160	249,269	343,775	430,816	1,511,421	2,286,012	186,635	347,668	534,303
1979	202,530	54,121	256,651	346,957	433,771	1,519,372	2,300,100	188,081	350,453	538,534
1980	212,590	68,580	281,170	349,312	435,995	1,525,102	2,310,409	190,803	355,609	546,412
1981	227,494	87,158	314,652	356,303	442,458	1,540,922	2,339,683	200,967	374,455	575,422
1982	238,403	107,966	346,369	354,506	440,865	1,537,418	2,332,789	196,837	366,952	563,789
1983	266,403	153,880	420,283	355,263	441,600	1,539,422	2,336,285	195,186	363,947	559,133
1984	331,717	227,624	559,341	362,336	448,301	1,556,618	2,367,255	196,976	367,310	564,286
1985	461,997	369,768	831,765	370,254	455,596	1,574,820	2,400,670	198,854	370,829	569,683
1986	829,215	703,406	1,532,621	371,160	456,478	1,577,273	2,404,911	199,915	372,919	572,834
1987	1,376,484	1,584,925	2,961,409	372,548	457,847	1,581,113	2,411,508	204,348	382,317	586,665
1988	1,801,685	2,281,546	4,083,231	374,957	460,185	1,587,865	2,423,007	228,840	435,639	664,479
1989	1,909,004	2,495,912	4,404,916	378,104	463,183	1,595,898	2,437,185	255,391	493,478	748,869
1990	1,961,314	2,586,052	4,547,366	387,176	471,688	1,616,698	2,475,562	292,807	570,731	863,538
1991	1,974,921	2,607,514	4,582,435	396,532	480,286	1,637,467	2,514,285	359,141	708,350	1,067,491
1992	1,977,969	2,607,551	4,585,520	406,699	489,731	1,660,846	2,557,276	539,691	1,088,462	1,628,153
1993	1,978,239	2,607,551	4,585,790	409,643	492,528	1,668,041	2,570,212	1,740,425	3,771,754	5,512,179
1994	1,978,239	2,607,551	4,585,790	410,179	493,018	1,669,209	2,572,406	3,264,860	7,208,379	10,473,239
1995	1,978,239	2,607,551	4,585,790	410,703	493,498	1,670,351	2,574,552	4,572,942	9,832,116	14,405,058
1996	1,978,239	2,607,551	4,585,790	411,231	493,981	1,671,503	2,576,715	4,950,521	10,551,557	15,502,078
1997	1,978,239	2,607,551	4,585,790	411,765	494,468	1,672,664	2,578,897	4,964,600	10,583,010	15,547,610
1998	1,978,239	2,607,551	4,585,790	412,303	494,960	1,673,837	2,581,100	4,977,073	10,610,862	15,587,935
1999	1,978,239	2,607,551	4,585,790	412,846	495,458	1,675,022	2,583,326	4,986,158	10,631,115	15,617,273
2000	1,978,239	2,607,551	4,585,790	412,846	495,458	1,675,022	2,583,326	4,986,158	10,631,115	15,617,273
2001	1,978,239	2,607,551	4,585,790	412,846	495,458	1,675,022	2,583,326	4,986,158	10,631,115	15,617,273
2002	1,978,239	2,607,551	4,585,790	412,846	495,458	1,675,022	2,583,326	4,986,158	10,631,115	15,617,273
2003	1,978,239	2,607,551	4,585,790	412,846	495,458	1,675,022	2,583,326	4,986,158	10,631,115	15,617,273
2004	1,978,239	2,607,551	4,585,790	412,846	495,458	1,675,022	2,583,326	4,986,158	10,631,115	15,617,273
2005	1,978,239	2,607,551	4,585,790	412,846	495,458	1,675,022	2,583,326	4,986,158	10,631,115	15,617,273
2006	1,978,239	2,607,551	4,585,790	412,846	495,458	1,675,022	2,583,326	4,986,158	10,631,115	15,617,273
2007	1,978,239	2,607,551	4,585,790	412,846	495,458	1,675,022	2,583,326	4,986,158	10,631,115	15,617,273
2008	1,978,239	2,607,551	4,585,790	412,846	495,458	1,675,022	2,583,326	4,986,158	10,631,115	15,617,273
2009	1,978,239	2,607,551	4,585,790	412,846	495,458	1,675,022	2,583,326	4,986,158	10,631,115	15,617,273
2010	1,978,239	2,607,551	4,585,790	412,846	495,458	1,675,022	2,583,326	4,986,158	10,631,115	15,617,273
2011	1,978,239	2,607,551	4,585,790	412,846	495,458	1,675,022	2,583,326	4,986,158	10,631,115	15,617,273
2012	1,978,239	2,607,551	4,585,790	412,846	495,458	1,675,022	2,583,326	4,986,158	10,631,115	15,617,273
2013	1,978,239	2,607,551	4,585,790	300,108	387,920	1,302,409	1,990,437	4,986,158	10,631,115	15,617,273
2014	1,978,239	2,607,551	4,585,790	264,306	321,597	1,134,497	1,720,400	4,977,091	10,613,160	15,590,251
2015	1,978,239	2,607,551	4,585,790	225,789	231,126	759,119	1,216,034	4,971,221	10,602,162	15,573,383
2016	1,959,840	2,607,551	4,567,391	206,429	199,756	582,375	988,560	4,961,770	10,584,516	15,546,286
2017	1,935,945	2,607,551	4,543,496	174,839	169,080	466,154	810,073	4,943,147	10,549,986	15,493,133
2018	1,854,702	2,607,551	4,462,253	132,635	127,465	341,825	601,925	4,928,595	10,522,954	15,451,549
2019	1,810,206	2,607,551	4,417,757	93,874	91,434	238,405	423,713	4,924,767	10,515,760	15,440,527
2020	1,806,355	2,607,551	4,413,906	79,762	76,253	198,808	354,823	4,922,719	10,511,895	15,434,614
2021	1,804,111	2,607,551	4,411,662	76,709	73,085	191,791	341,585	4,921,361	10,509,306	15,430,667
2022	1,802,725	2,607,551	4,410,276	76,084	72,141	187,438	335,663	4,920,311	10,507,253	15,427,564
2023	1,801,709	2,575,490	4,377,199	75,447	71,481	184,145	331,073	4,919,781	10,506,226	15,426,007
2024	1,798,783	2,573,891	4,372,674	74,904	70,852	182,107	327,863	4,919,357	10,505,390	15,424,747
2025	1,790,200	2,570,484	4,360,684	74,090	69,589	178,322	322,001	4,918,842	10,504,399	15,423,241
2026	1,785,446	2,565,865	4,351,311	73,224	68,771	176,179	318,174	4,809,080	10,301,699	15,110,779
2027	1,782,456	2,561,535	4,343,991	71,464	66,977	170,505	308,946	4,806,255	10,296,030	15,102,285
2028	1,779,130	2,557,391	4,336,521	69,071	64,641	163,601	297,313	4,799,523	10,283,447	15,082,970
2029	1,775,710	2,553,430	4,329,140	65,889	61,687	155,650	283,226	4,798,077	10,280,661	15,078,738
2030	1,765,649	2,538,972	4,304,621	63,534	59,462	149,920	272,916	4,795,356	10,275,506	15,070,862
2031	1,750,746	2,520,393	4,271,139	56,543	52,999	134,100	243,642	4,785,192	10,256,659	15,041,851
2032	1,739,836	2,499,585	4,239,421	58,341	54,592	137,604	250,537	4,789,321	10,264,163	15,053,484
2033	1,711,836	2,453,672	4,165,508	57,584	53,858	135,599	247,041	4,790,973	10,267,167	15,058,140
2034	1,646,523	2,379,927	4,026,450	50,511	47,156	118,404	216,071	4,789,183	10,263,805	15,052,988
2035	1,516,242	2,237,783	3,754,025	42,592	39,861	100,202	182,655	4,787,305	10,260,286	15,047,591
TOTAL	96,894,875	126,991,605	223,886,480	20,135,067	24,573,785	83,258,577	127,967,429	211,038,412	449,960,820	660,999,232

a) Unadjusted for prior overpayments of charges.
b) Determined at the current Project Interest Rate of 4.713 percent per annum.

TABLE B-15. Capital Cost Component of Transportation Charge for Each Contractor

(in dollars)

Calendar Year	SAN JOAQUIN VALLEY AREA										
	Devil's Den Water District(a	Dudley Ridge Water District	Empire West Side Irrigation District(b	Future Contractor San Joaquin Valley	Kern County Water Agency				Oak Flat Water District	Tulare Lake Basin Water Storage District	Total
					Municipal and Industrial	Municipal and (c Industrial	Agri-cultural	County of Kings			
	[11]	[12]	[13]	[14]	[15]	[16]	[17]	[18]	[19]	[20]	[21]
1961	0	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0	0	0
1964	0	0	0	2,772	0	0	0	0	0	0	2,772
1965	0	0	0	6,131	65,456	9,448	0	0	0	0	81,035
1966	0	0	0	12,239	122,394	17,367	0	0	0	0	152,000
1967	0	0	0	26,691	237,340	34,936	0	0	0	0	298,967
1968	34,960	76,770	2,504	49,755	341,655	49,804	425,460	8,657	4,768	65,587	1,059,920
1969	47,244	76,904	7,512	58,362	398,970	53,435	873,746	9,173	5,182	248,159	1,778,687
1970	53,858	84,286	7,512	60,198	430,989	54,844	1,062,738	9,427	5,390	183,643	1,952,885
1971	63,306	96,097	7,512	61,320	452,529	55,648	1,411,506	9,571	5,804	195,422	2,358,715
1972	72,755	107,371	7,512	61,946	462,429	56,016	2,113,607	9,639	11,123	602,863	3,505,261
1973	82,204	118,108	7,512	62,379	466,734	56,193	2,437,723	9,670	6,426	233,178	3,480,127
1974	91,652	179,256	7,512	62,907	468,810	56,295	2,729,885	9,688	7,195	387,037	4,000,237
1975	101,101	217,721	7,512	63,479	471,168	56,439	3,269,654	9,713	7,413	461,827	4,666,027
1976	110,550	166,001	7,512	63,750	473,060	56,631	3,524,656	9,748	8,373	330,381	4,750,662
1977	119,998	163,204	7,512	64,403	475,813	56,922	3,862,011	9,793	7,670	315,887	5,083,213
1978	119,998	174,478	7,512	66,876	477,693	57,114	4,292,950	9,815	8,084	338,909	5,553,429
1979	119,998	206,925	7,512	67,059	479,131	57,288	4,713,845	9,844	8,292	381,426	6,051,320
1980	119,998	220,110	7,512	67,313	481,501	57,555	5,143,870	9,897	11,816	383,883	6,503,455
1981	119,998	220,110	7,512	68,632	495,029	58,965	5,629,589	10,180	8,914	406,906	7,025,835
1982	119,998	220,110	7,512	68,856	495,004	59,315	6,077,874	10,249	9,328	429,392	7,497,638
1983	119,998	230,311	7,512	69,431	502,010	60,401	6,588,244	10,469	9,535	51,120	7,649,031
1984	119,998	242,121	7,512	69,981	507,198	61,010	6,911,448	10,590	9,950	335,221	8,275,029
1985	119,998	253,395	7,512	70,706	515,247	62,154	7,359,733	10,819	10,157	243,870	8,653,591
1986	119,998	264,669	7,512	71,027	518,137	62,573	7,804,367	10,903	10,572	520,411	9,390,169
1987	119,998	275,943	7,512	71,690	523,268	63,345	8,257,217	11,054	10,779	542,898	9,883,704
1988	119,998	287,217	7,512	72,761	533,514	64,938	8,679,939	11,372	11,194	565,385	10,353,830
1989	119,998	298,491	7,512	73,505	539,567	65,812	8,984,882	11,538	11,608	588,407	10,701,320
1990	119,998	309,765	7,512	76,322	574,136	70,676	9,301,695	12,478	11,816	634,451	11,118,849
1991	119,998	309,765	7,512	79,529	610,439	76,441	9,301,695	13,572	11,816	634,451	11,165,218
1992	119,998	309,765	7,512	82,702	640,864	81,224	9,301,695	14,496	11,816	634,451	11,204,523
1993	119,998	309,765	7,512	83,532	646,107	81,993	9,301,695	14,638	11,816	634,451	11,211,507
1994	119,998	309,765	7,512	84,553	647,828	82,255	9,301,695	14,687	11,816	634,451	11,214,560
1995	119,998	309,765	7,512	86,089	649,333	82,500	9,301,695	14,737	11,816	634,451	11,217,896
1996	119,998	309,765	7,512	86,788	650,851	82,746	9,301,695	14,787	11,816	634,451	11,220,409
1997	119,998	309,765	7,512	86,931	652,382	82,995	9,301,695	14,838	11,816	634,451	11,222,383
1998	119,998	309,765	7,512	87,074	653,928	83,246	9,301,695	14,889	11,816	634,451	11,224,374
1999	119,998	309,765	7,512	87,219	655,490	83,500	9,301,695	14,940	11,816	634,451	11,226,386
2000	119,998	309,765	7,512	87,219	655,490	83,500	9,301,695	14,940	11,816	634,451	11,226,386
2001	119,998	309,765	7,512	87,219	655,490	83,500	9,301,695	14,940	11,816	634,451	11,226,386
2002	119,998	309,765	7,512	87,219	655,490	83,500	9,301,695	14,940	11,816	634,451	11,226,386
2003	119,998	309,765	7,512	87,219	655,490	83,500	9,301,695	14,940	11,816	634,451	11,226,386
2004	119,998	309,765	7,512	87,219	655,490	83,500	9,301,695	14,940	11,816	634,451	11,226,386
2005	119,998	309,765	7,512	87,219	655,490	83,500	9,301,695	14,940	11,816	634,451	11,226,386
2006	119,998	309,765	7,512	87,219	655,490	83,500	9,301,695	14,940	11,816	634,451	11,226,386
2007	119,998	309,765	7,512	87,219	655,490	83,500	9,301,695	14,940	11,816	634,451	11,226,386
2008	119,998	309,765	7,512	87,219	655,490	83,500	9,301,695	14,940	11,816	634,451	11,226,386
2009	119,998	309,765	7,512	87,219	655,490	83,500	9,301,695	14,940	11,816	634,451	11,226,386
2010	119,998	309,765	7,512	87,219	655,490	83,500	9,301,695	14,940	11,816	634,451	11,226,386
2011	119,998	309,765	7,512	87,219	655,490	83,500	9,301,695	14,940	11,816	634,451	11,226,386
2012	119,998	309,765	7,512	87,219	655,490	83,500	9,301,695	14,940	11,816	634,451	11,226,386
2013	119,998	309,765	7,512	87,219	655,490	83,500	9,301,695	14,940	11,816	634,451	11,226,386
2014	119,998	309,765	7,512	84,447	655,490	83,500	9,301,695	14,940	11,816	634,451	11,223,614
2015	119,998	309,765	7,512	81,088	590,034	74,052	9,301,695	14,940	11,816	634,451	11,145,351
2016	119,998	309,765	7,512	74,980	533,095	66,133	9,301,695	14,940	11,816	634,451	11,074,385
2017	119,998	309,765	7,512	60,529	418,150	48,564	9,301,695	14,940	11,816	634,451	10,927,420
2018	119,998	309,765	7,512	37,464	313,835	33,696	9,301,695	6,283	11,816	634,451	10,776,515
2019	119,998	309,765	7,512	28,858	256,519	30,065	9,301,695	5,768	11,816	634,451	10,706,447
2020	119,998	309,765	7,512	27,021	224,501	28,656	9,301,695	5,514	11,816	634,451	10,670,929
2021	119,998	309,765	7,512	25,899	202,960	27,852	9,301,695	5,370	11,816	634,451	10,647,318
2022	119,998	309,765	7,512	25,273	193,061	27,484	9,301,695	5,301	11,816	634,451	10,636,356
2023	119,998	309,765	7,512	24,840	188,755	27,307	9,301,695	5,270	11,816	634,451	10,631,409
2024	119,998	309,765	7,512	24,312	186,679	27,205	9,301,695	5,253	11,816	634,451	10,628,686
2025	119,998	309,765	7,512	23,741	184,321	27,061	9,301,695	5,228	11,816	634,451	10,625,588
2026	119,998	309,765	7,512	23,469	182,430	26,869	9,301,695	5,192	11,816	634,451	10,623,197
2027	119,998	309,765	7,512	22,816	179,677	26,578	9,301,695	5,148	11,816	634,451	10,619,456
2028	119,998	309,765	7,512	20,343	177,797	26,386	9,301,695	5,125	11,816	634,451	10,614,888
2029	119,998	309,765	7,512	20,160	176,359	26,213	9,301,695	5,097	11,816	634,451	10,613,066
2030	119,998	309,765	7,512	19,906	173,989	25,945	9,301,695	5,043	11,816	634,451	10,610,120
2031	119,998	309,765	7,512	18,587	160,461	24,535	9,301,695	4,760	11,816	634,451	10,593,580
2032	119,998	309,765	7,512	18,363	160,485	24,185	9,301,695	4,692	11,816	634,451	10,592,962
2033	119,998	309,765	7,512	17,788	153,479	23,099	9,301,695	4,472	11,816	634,451	10,584,075
2034	119,998	309,765	7,512	17,239	148,292	22,490	9,301,695	4,350	11,816	634,451	10,577,608
2035	119,998	309,765	7,512	16,513	140,243	21,346	9,301,695	4,121	11,816	634,451	10,567,460
TOTAL	7,737,512	18,428,788	505,808	4,269,610	32,093,476	4,070,245	530,032,914	726,778	733,109	36,996,558	635,594,798

c) Charges 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

(in dollars)

Calendar Year	SOUTHERN CALIFORNIA AREA									
	Antelope Valley-East Kern Water Agency	Castaic Lake Water Agency	Coachella Valley Water District	Crestline-Lake Arrowhead Water Agency	Desert Water Agency	Littlerock Creek Irrigation District	Mojave Water Agency	Palmdale Water District	San Bernardino Valley Municipal Water District	San Gabriel Valley Municipal Water District
	[22]	[23]	[24]	[25]	[26]	[27]	[28]	[29]	[30]	[31]
1961	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	0	0
1963	34,018	0	0	0	0	0	0	0	52,760	0
1964	64,086	20,513	14,712	4,456	37,901	1,166	29,002	8,369	84,381	35,680
1965	120,833	38,907	25,573	7,330	41,532	2,122	51,277	15,513	137,574	36,001
1966	219,798	73,556	45,565	12,710	74,503	3,824	92,088	28,198	236,760	62,592
1967	425,205	151,260	87,705	23,902	144,000	7,420	178,406	55,025	441,224	117,677
1968	683,548	297,411	143,610	39,261	236,198	12,003	291,643	88,932	743,172	198,087
1969	991,239	451,741	213,714	58,365	351,813	17,577	433,754	129,639	1,157,216	308,205
1970	1,293,773	576,468	301,412	86,361	496,448	23,875	602,745	174,580	1,722,258	451,822
1971	1,555,271	711,376	407,745	122,399	671,816	29,398	803,558	212,841	2,437,166	630,991
1972	1,689,226	801,808	463,307	139,949	763,450	31,909	911,799	230,873	2,858,800	733,970
1973	1,739,815	817,991	480,516	144,725	791,832	32,903	946,481	237,853	2,998,265	770,143
1974	1,758,238	858,872	488,739	148,984	805,394	33,231	958,835	240,249	3,089,460	791,051
1975	1,781,701	871,020	502,172	152,825	827,548	33,654	985,707	243,323	3,173,259	813,120
1976	1,794,869	881,144	512,204	155,561	844,092	33,911	1,006,022	245,089	3,252,686	834,245
1977	1,807,204	891,114	519,290	157,491	855,778	34,131	1,020,418	246,698	3,302,529	847,501
1978	1,817,565	903,380	524,027	158,831	863,590	34,326	1,029,935	248,091	3,333,173	855,560
1979	1,827,353	920,747	526,870	159,672	868,281	34,499	1,035,573	249,358	3,349,908	859,843
1980	1,846,879	958,365	531,312	160,852	875,605	34,825	1,044,640	251,783	3,371,723	865,708
1981	1,946,726	1,029,686	554,005	166,895	913,031	36,557	1,090,929	264,652	3,480,628	894,974
1982	1,938,016	1,053,574	551,320	166,339	908,603	36,415	1,085,152	263,576	3,471,458	892,248
1983	2,023,059	1,089,539	567,586	170,560	935,429	37,846	1,118,640	274,305	3,547,284	912,974
1984	2,129,495	1,110,955	587,843	176,057	968,837	39,637	1,160,147	287,715	3,648,557	940,680
1985	2,209,407	1,123,289	603,676	180,290	994,948	41,070	1,192,667	297,641	3,725,184	961,657
1986	2,256,719	1,129,699	614,930	183,508	1,013,508	41,860	1,215,567	303,555	3,782,315	977,276
1987	2,298,785	1,133,896	626,602	186,574	1,032,758	42,629	1,239,567	309,099	3,837,622	992,367
1988	2,324,661	1,141,157	637,071	189,326	1,050,024	43,078	1,261,079	312,429	3,886,583	1,005,700
1989	2,346,811	1,148,990	642,653	190,931	1,059,228	43,449	1,272,366	315,166	3,915,496	1,013,475
1990	2,419,704	1,171,363	664,654	196,986	1,095,512	44,683	1,317,466	324,391	4,027,274	1,044,091
1991	2,470,761	1,193,811	685,403	203,179	1,129,732	45,623	1,359,574	331,359	4,135,297	1,073,712
1992	2,509,785	1,218,192	700,032	209,320	1,153,857	46,305	1,387,607	336,373	4,260,392	1,107,802
1993	2,518,260	1,221,940	704,605	212,900	1,161,399	46,453	1,394,823	337,459	4,324,801	1,125,394
1994	2,520,286	1,222,556	706,069	215,764	1,163,814	46,487	1,395,582	337,713	4,375,453	1,139,291
1995	2,521,900	1,223,045	706,880	217,152	1,165,152	46,514	1,396,187	337,916	4,399,996	1,146,026
1996	2,523,527	1,223,538	707,267	217,464	1,165,790	46,541	1,396,796	338,120	4,405,504	1,147,538
1997	2,525,168	1,224,036	707,562	217,538	1,166,276	46,568	1,397,411	338,327	4,406,823	1,147,901
1998	2,526,825	1,224,538	707,860	217,614	1,166,768	46,596	1,398,032	338,535	4,408,156	1,148,268
1999	2,528,499	1,225,045	708,160	217,690	1,167,264	46,624	1,398,659	338,745	4,409,501	1,148,638
2000	2,528,499	1,225,045	708,160	217,690	1,167,264	46,624	1,398,659	338,745	4,409,501	1,148,638
2001	2,528,499	1,225,045	708,160	217,690	1,167,264	46,624	1,398,659	338,745	4,409,501	1,148,638
2002	2,528,499	1,225,045	708,160	217,690	1,167,264	46,624	1,398,659	338,745	4,409,501	1,148,638
2003	2,528,499	1,225,045	708,160	217,690	1,167,264	46,624	1,398,659	338,745	4,409,501	1,148,638
2004	2,528,499	1,225,045	708,160	217,690	1,167,264	46,624	1,398,659	338,745	4,409,501	1,148,638
2005	2,528,499	1,225,045	708,160	217,690	1,167,264	46,624	1,398,659	338,745	4,409,501	1,148,638
2006	2,528,499	1,225,045	708,160	217,690	1,167,264	46,624	1,398,659	338,745	4,409,501	1,148,638
2007	2,528,499	1,225,045	708,160	217,690	1,167,264	46,624	1,398,659	338,745	4,409,501	1,148,638
2008	2,528,499	1,225,045	708,160	217,690	1,167,264	46,624	1,398,659	338,745	4,409,501	1,148,638
2009	2,528,499	1,225,045	708,160	217,690	1,167,264	46,624	1,398,659	338,745	4,409,501	1,148,638
2010	2,528,499	1,225,045	708,160	217,690	1,167,264	46,624	1,398,659	338,745	4,409,501	1,148,638
2011	2,528,499	1,225,045	708,160	217,690	1,167,264	46,624	1,398,659	338,745	4,409,501	1,148,638
2012	2,528,499	1,225,045	708,160	217,690	1,167,264	46,624	1,398,659	338,745	4,409,501	1,148,638
2013	2,494,481	1,225,045	708,160	217,690	1,153,626	46,624	1,398,659	338,745	4,356,741	1,135,274
2014	2,464,413	1,204,533	693,448	213,234	1,143,643	45,458	1,369,657	330,376	4,325,121	1,126,952
2015	2,407,666	1,186,138	682,588	210,360	1,125,732	44,502	1,347,382	323,232	4,271,927	1,112,637
2016	2,308,701	1,151,489	662,595	204,980	1,092,761	42,800	1,306,571	310,547	4,172,741	1,086,046
2017	2,103,294	1,073,786	620,456	193,788	1,023,264	39,204	1,220,254	283,720	3,968,278	1,030,961
2018	1,844,951	927,634	564,550	178,429	931,066	34,621	1,107,017	249,813	3,666,329	950,551
2019	1,537,260	773,305	494,447	159,325	815,451	29,047	964,906	209,105	3,252,286	840,433
2020	1,234,726	648,577	406,748	131,329	670,816	22,749	795,914	164,165	2,687,243	696,816
2021	973,228	513,669	300,416	95,291	495,448	17,226	595,102	125,904	1,972,336	517,647
2022	839,273	423,237	244,853	77,740	403,814	14,715	486,860	107,872	1,550,702	414,669
2023	788,684	407,055	227,644	72,965	375,432	13,721	452,178	100,892	1,411,237	378,495
2024	770,261	366,174	219,422	68,705	361,870	13,394	439,825	98,495	1,320,041	357,587
2025	746,798	354,026	205,988	64,865	339,716	12,970	412,952	95,422	1,236,242	335,519
2026	733,630	343,902	195,957	62,128	323,172	12,713	392,637	93,656	1,156,815	314,393
2027	721,295	333,931	188,871	60,199	311,486	12,493	378,242	92,046	1,106,973	301,138
2028	710,934	321,665	184,134	58,859	303,674	12,298	368,724	90,653	1,076,329	293,078
2029	701,146	304,298	181,290	58,018	298,983	12,125	363,086	89,387	1,059,594	288,795
2030	681,620	266,681	176,849	56,837	291,658	11,799	354,020	86,962	1,037,779	282,930
2031	581,773	195,359	154,156	50,795	254,233	10,067	307,730	74,093	928,873	253,665
2032	590,483	171,471	156,841	51,351	258,661	10,209	313,507	75,169	938,044	256,390
2033	505,440	135,506	140,575	47,130	231,835	8,778	280,019	64,440	862,217	235,664
2034	399,004	114,090	120,317	41,633	198,427	6,988	238,512	51,029	760,944	207,958
2035	319,092	101,756	104,485	37,400	172,316	5,554	205,993	41,103	684,317	186,981
TOTAL	125,317,655	60,803,434	35,013,521	10,712,782	57,713,227	2,311,876	69,182,448	16,794,001	217,317,260	56,569,081

TABLE B-15. Capital Cost Component of Transportation Charge for Each Contractor

(in dollars)

Calendar Year	SOUTHERN CALIFORNIA AREA (continued)				FEATHER RIVER AREA				South Bay Area Future Contractor	GRAND TOTAL
	San Gorgonio Pass Water Agency	The Metropolitan Water District of Southern California	Ventura County Flood Control District	Total	City of Yuba City	County of Butte	Plumas County FC&WCD	Total		
	[32]	[33]	[34]	[35]	[36]	[37]	[38]	[39]	[40]	[41]
1961	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	0	0
1963	0	705,285	0	792,063	0	0	0	0	43,889	1,422,967
1964	22,165	1,285,222	9,574	1,617,227	0	0	0	0	71,246	2,558,954
1965	22,272	2,222,437	18,122	2,739,493	0	0	411	411	101,788	4,306,357
1966	38,660	3,974,345	34,082	4,896,681	0	0	574	574	119,009	6,822,310
1967	72,579	7,839,903	69,486	9,613,792	0	0	571	571	159,577	11,978,512
1968	122,290	14,628,623	136,030	17,620,808	0	0	574	574	236,157	21,148,965
1969	190,490	22,298,744	206,873	26,809,370	0	0	3,243	3,243	301,078	31,353,164
1970	280,034	29,577,589	263,330	35,850,695	0	0	15,368	15,368	321,689	40,678,529
1971	391,982	37,991,283	323,059	46,288,885	0	0	16,208	16,208	325,521	51,546,332
1972	456,116	44,940,160	361,502	54,382,869	0	0	17,616	17,616	326,166	60,844,799
1973	478,635	47,211,227	364,910	57,015,296	0	0	17,617	17,617	326,849	63,492,000
1974	491,934	49,272,731	379,982	59,317,700	0	0	17,618	17,618	327,268	66,323,928
1975	505,630	50,252,070	384,461	60,526,490	0	0	17,620	17,620	328,747	68,219,348
1976	518,777	51,120,250	388,832	61,587,682	0	0	17,621	17,621	329,172	69,691,263
1977	527,004	51,823,491	393,238	62,425,887	0	0	17,624	17,624	330,026	70,887,917
1978	532,005	52,437,537	399,039	63,137,059	0	0	17,625	17,625	331,121	72,108,818
1979	534,662	53,162,991	407,236	63,936,993	0	0	17,627	17,627	332,424	73,433,649
1980	538,279	54,611,263	425,191	65,516,425	0	0	17,628	17,628	333,787	75,509,286
1981	556,316	57,753,666	459,024	69,147,089	0	0	17,630	17,630	336,729	79,757,040
1982	554,661	58,542,662	470,460	69,934,484	0	0	17,632	17,632	336,453	81,029,154
1983	567,405	60,214,103	487,686	71,946,416	0	0	17,632	17,632	337,446	83,266,226
1984	584,449	61,498,278	497,848	73,630,498	0	0	17,633	17,633	341,084	85,755,126
1985	597,345	62,346,914	503,492	74,777,580	0	0	17,634	17,634	345,378	87,596,301
1986	606,946	62,880,903	506,506	75,513,292	0	0	17,636	17,636	346,179	89,777,642
1987	616,226	63,331,773	508,461	76,156,359	0	0	17,638	17,638	346,946	92,364,229
1988	624,423	63,851,669	511,887	76,839,087	0	0	17,639	17,639	348,368	94,729,641
1989	629,213	64,284,060	515,602	77,377,440	0	0	17,642	17,642	349,611	96,036,983
1990	648,035	65,673,906	526,291	79,154,356	0	0	17,642	17,642	353,142	98,530,455
1991	666,218	67,058,546	536,306	80,889,521	0	0	17,642	17,642	356,614	100,593,206
1992	687,234	68,603,310	547,380	82,767,589	0	0	17,642	17,642	360,911	103,121,614
1993	698,053	69,086,149	549,127	83,381,363	0	0	17,642	17,642	362,346	107,641,039
1994	706,593	69,378,958	549,424	83,757,990	0	0	17,642	17,642	362,548	112,984,175
1995	710,732	69,527,519	549,660	83,948,679	0	0	17,642	17,642	362,736	117,112,353
1996	711,660	69,574,320	549,897	84,007,962	0	0	17,642	17,642	362,925	118,273,521
1997	711,883	69,598,859	550,137	84,038,489	0	0	17,642	17,642	363,117	118,353,928
1998	712,107	69,623,630	550,379	84,069,308	0	0	17,642	17,642	363,310	118,429,459
1999	712,334	69,648,649	550,624	84,100,432	0	0	17,642	17,642	363,505	118,494,354
2000	712,334	69,648,649	550,624	84,100,432	0	0	17,642	17,642	363,505	118,494,354
2001	712,334	69,648,649	550,624	84,100,432	0	0	17,642	17,642	363,505	118,494,354
2002	712,334	69,648,649	550,624	84,100,432	0	0	17,642	17,642	363,505	118,494,354
2003	712,334	69,648,649	550,624	84,100,432	0	0	17,642	17,642	363,505	118,494,354
2004	712,334	69,648,649	550,624	84,100,432	0	0	17,642	17,642	363,505	118,494,354
2005	712,334	69,648,649	550,624	84,100,432	0	0	17,642	17,642	363,505	118,494,354
2006	712,334	69,648,649	550,624	84,100,432	0	0	17,642	17,642	363,505	118,494,354
2007	712,334	69,648,649	550,624	84,100,432	0	0	17,642	17,642	363,505	118,494,354
2008	712,334	69,648,649	550,624	84,100,432	0	0	17,642	17,642	363,505	118,494,354
2009	712,334	69,648,649	550,624	84,100,432	0	0	17,642	17,642	363,505	118,494,354
2010	712,334	69,648,649	550,624	84,100,432	0	0	17,642	17,642	363,505	118,494,354
2011	712,334	69,648,649	550,624	84,100,432	0	0	17,642	17,642	363,505	118,494,354
2012	712,334	69,648,649	550,624	84,100,432	0	0	17,642	17,642	363,505	118,494,354
2013	704,019	68,943,364	550,624	83,273,052	0	0	17,642	17,642	319,616	117,030,196
2014	698,876	68,363,427	541,049	82,520,187	0	0	17,642	17,642	292,259	115,950,143
2015	690,062	67,426,212	532,501	81,360,939	0	0	17,231	17,231	261,717	114,160,445
2016	673,674	65,674,304	516,542	79,203,751	0	0	17,068	17,068	244,496	111,641,937
2017	639,755	61,808,746	481,138	74,486,644	0	0	17,071	17,071	203,928	106,481,765
2018	590,044	55,020,026	414,593	66,479,624	0	0	17,069	17,069	127,348	97,916,283
2019	521,844	47,349,905	343,750	57,291,064	0	0	14,399	14,399	62,427	88,356,334
2020	432,300	40,071,061	287,293	48,249,737	0	0	2,274	2,274	41,815	79,168,098
2021	320,352	31,657,366	227,564	37,811,549	0	0	1,434	1,434	37,983	68,682,198
2022	256,218	24,708,489	189,121	29,717,563	0	0	26	26	37,339	60,564,787
2023	233,699	22,437,422	185,713	27,085,137	0	0	26	26	36,656	57,887,507
2024	220,400	20,375,918	170,641	24,782,733	0	0	24	24	36,237	55,572,964
2025	206,704	19,396,579	166,162	23,573,943	0	0	22	22	34,758	54,340,237
2026	193,558	18,528,399	161,791	22,512,751	0	0	21	21	34,333	52,950,566
2027	185,330	17,825,158	157,386	21,674,548	0	0	18	18	33,479	52,082,723
2028	180,329	17,211,112	151,585	20,963,374	0	0	17	17	32,383	51,327,466
2029	177,672	16,485,658	143,387	20,163,439	0	0	15	15	31,081	50,498,705
2030	174,056	15,037,386	125,432	18,584,009	0	0	14	14	29,717	48,872,259
2031	156,018	11,894,983	91,599	14,953,344	0	0	12	12	26,776	45,130,344
2032	157,673	11,105,987	80,163	14,165,949	0	0	11	11	27,051	44,329,415
2033	144,929	9,434,546	62,938	12,154,017	0	0	10	10	26,059	42,234,850
2034	127,885	8,150,371	52,775	10,469,933	0	0	9	9	22,420	40,365,479
2035	114,989	7,301,735	47,132	9,322,853	0	0	8	8	18,127	38,892,719
TOTAL	35,086,075	3,449,473,616	27,324,129	4,163,619,105	0	0	882,090	882,090	18,088,432	5,831,037,566

TABLE B-16A. Minimum OMP&R Component of Transportation Charge for Each Contractor

(in dollars)

Calendar Year	NORTH BAY AREA			SOUTH BAY AREA				CENTRAL COASTAL AREA		
	Napa County FC&WCD	Solano County FC&WCD	Total	Alameda County FC&WCD, Zone 7	Alameda County Water District	Santa Clara Valley Water District	Total	San Luis Obispo County FC&WCD	Santa Barbara County FC&WCD	Total
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]
1961	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	9,699	8,868	0	18,567	0	0	0
1963	0	0	0	38,048	34,788	82,896	155,732	0	0	0
1964	0	0	0	41,148	38,323	91,320	170,791	0	0	0
1965	0	0	0	78,529	75,616	195,792	349,937	0	0	0
1966	0	0	0	79,753	78,779	218,544	377,076	0	0	0
1967	0	0	0	127,896	123,665	335,225	586,786	0	0	0
1968	130	0	130	126,058	120,563	333,506	580,127	11,801	21,769	33,570
1969	80,875	0	80,875	145,410	138,051	372,584	656,045	63,112	116,434	179,546
1970	94,872	0	94,872	128,993	120,246	320,663	569,902	74,187	136,867	211,054
1971	45,579	0	45,579	113,071	108,346	296,004	517,421	74,011	136,541	210,552
1972	37,895	0	37,895	122,407	117,483	334,366	574,256	79,195	146,107	225,302
1973	32,993	0	32,993	122,738	116,785	325,727	565,250	75,714	139,685	215,399
1974	46,498	0	46,498	154,434	146,929	403,081	704,444	76,531	141,190	217,721
1975	37,707	0	37,707	189,176	182,087	513,823	885,086	92,605	170,845	263,450
1976	60,786	0	60,786	203,063	193,436	524,814	921,313	94,933	175,142	270,075
1977	78,400	0	78,400	179,911	169,103	500,192	849,206	102,969	189,966	292,935
1978	56,318	0	56,318	239,301	228,854	647,829	1,115,984	103,840	191,575	295,415
1979	73,852	0	73,852	236,986	232,103	666,744	1,135,833	100,757	185,884	286,641
1980	85,264	0	85,264	393,161	375,461	1,018,669	1,787,291	128,794	237,609	366,403
1981	101,347	0	101,347	317,449	302,308	834,360	1,454,117	138,677	255,840	394,517
1982	194,252	0	194,252	394,405	376,878	1,119,140	1,890,423	142,123	262,200	404,323
1983	80,581	0	80,581	446,815	441,604	1,316,107	2,204,526	170,625	314,784	485,409
1984	106,064	0	106,064	593,982	568,244	1,823,628	2,985,854	202,273	373,167	575,440
1985	216,893	0	216,893	692,538	674,605	1,889,673	3,256,816	251,505	463,998	715,503
1986	203,316	0	203,316	626,920	602,411	1,836,618	3,065,949	234,255	432,170	666,425
1987	293,691	0	293,691	693,939	657,660	2,014,608	3,366,207	234,706	470,094	704,800
1988	218,685	0	218,685	677,813	654,676	1,921,302	3,253,791	259,291	560,406	819,697
1989	414,453	735,167	1,149,620	789,209	765,568	2,049,853	3,604,630	288,028	685,382	973,410
1990	451,914	738,004	1,189,918	901,267	870,285	2,320,536	4,092,088	312,190	669,953	982,143
1991	461,042	753,337	1,214,379	917,592	887,517	2,375,274	4,180,383	322,793	595,513	918,306
1992	449,162	767,571	1,216,733	855,435	831,616	2,245,964	3,933,015	326,068	601,559	927,627
1993	450,076	769,611	1,219,687	855,693	831,890	2,246,783	3,934,366	327,592	604,368	931,960
1994	450,393	770,084	1,220,477	856,524	832,735	2,249,254	3,938,513	328,802	606,599	935,401
1995	452,735	774,460	1,227,195	860,445	836,532	2,259,504	3,956,481	349,771	645,287	995,058
1996	453,488	775,837	1,229,325	861,760	837,810	2,262,970	3,962,540	1,330,220	2,711,337	4,041,557
1997	454,955	779,154	1,234,109	863,009	838,969	2,265,818	3,967,796	1,332,487	2,716,191	4,048,678
1998	455,114	779,515	1,234,629	863,148	839,097	2,266,140	3,968,385	1,332,740	2,716,729	4,049,469
1999	456,547	782,756	1,239,303	864,392	840,251	2,268,974	3,973,617	1,334,955	2,721,472	4,056,427
2000	456,702	783,104	1,239,806	864,529	840,377	2,269,285	3,974,191	1,335,200	2,722,000	4,057,200
2001	456,805	783,338	1,240,143	864,617	840,459	2,269,488	3,974,564	1,335,363	2,722,344	4,057,707
2002	456,916	783,590	1,240,506	865,621	841,379	2,271,684	3,978,684	1,336,045	2,723,652	4,059,697
2003	458,175	786,438	1,244,613	891,024	866,481	2,338,631	4,096,136	1,337,989	2,727,817	4,065,806
2004	466,314	798,453	1,264,767	894,259	869,534	2,346,285	4,110,078	1,342,214	2,736,185	4,078,399
2005	466,233	798,268	1,264,501	894,187	869,466	2,346,119	4,109,772	1,342,085	2,735,915	4,078,000
2006	466,355	798,539	1,264,894	894,293	869,563	2,346,360	4,110,216	1,347,785	2,746,551	4,094,336
2007	467,490	801,110	1,268,600	895,276	870,475	2,348,598	4,114,349	1,349,532	2,750,291	4,099,823
2008	467,574	801,302	1,268,876	895,351	870,544	2,348,774	4,114,669	1,349,669	2,750,579	4,100,248
2009	468,636	803,702	1,272,338	896,273	871,400	2,350,875	4,118,548	1,351,311	2,754,092	4,105,403
2010	468,691	803,827	1,272,518	896,320	871,444	2,350,981	4,118,745	1,351,395	2,754,269	4,105,664
2011	467,970	802,588	1,270,558	894,888	870,046	2,347,159	4,112,093	1,350,368	2,752,198	4,102,566
2012	468,028	802,716	1,270,744	894,938	870,092	2,347,270	4,112,300	1,350,455	2,752,382	4,102,837
2013	468,053	802,765	1,270,818	894,958	870,112	2,347,318	4,112,388	1,350,486	2,752,451	4,102,937
2014	468,112	802,900	1,271,012	895,008	870,157	2,347,435	4,112,600	1,350,575	2,752,643	4,103,218
2015	469,182	805,324	1,274,506	895,941	871,021	2,349,559	4,116,521	1,352,234	2,756,194	4,108,428
2016	469,197	805,354	1,274,551	895,952	871,032	2,349,587	4,116,571	1,352,253	2,756,233	4,108,486
2017	469,174	805,302	1,274,476	895,931	871,015	2,349,542	4,116,488	1,352,217	2,756,155	4,108,372
2018	469,169	805,286	1,274,455	895,927	871,008	2,349,528	4,116,463	1,352,203	2,756,124	4,108,327
2019	469,160	805,264	1,274,424	895,915	870,997	2,349,502	4,116,414	1,352,176	2,756,073	4,108,249
2020	469,002	804,906	1,273,908	894,696	869,880	2,346,829	4,111,405	1,351,319	2,754,414	4,105,733
2021	468,975	804,849	1,273,824	866,139	841,587	2,271,124	3,978,850	1,351,281	2,754,328	4,105,609
2022	461,600	794,867	1,256,467	864,963	840,511	2,268,558	3,974,032	1,349,756	2,751,509	4,101,265
2023	461,614	794,894	1,256,508	864,971	840,519	2,268,580	3,974,070	1,349,771	2,751,544	4,101,315
2024	460,823	794,007	1,254,830	863,328	838,901	2,264,289	3,966,518	1,339,413	2,732,307	4,071,720
2025	460,825	794,011	1,254,836	863,329	838,900	2,264,288	3,966,517	1,339,412	2,732,307	4,071,719
2026	460,836	794,035	1,254,871	863,334	838,906	2,264,303	3,966,543	1,339,421	2,732,330	4,071,751
2027	460,803	793,963	1,254,766	863,305	838,879	2,264,233	3,966,417	1,339,373	2,732,219	4,071,592
2028	460,814	793,986	1,254,800	863,309	838,883	2,264,244	3,966,436	1,339,381	2,732,240	4,071,621
2029	460,817	793,993	1,254,810	863,308	838,881	2,264,240	3,966,429	1,339,335	2,732,158	4,071,493
2030	460,811	793,977	1,254,788	863,297	838,872	2,264,219	3,966,388	1,339,316	2,732,111	4,071,427
2031	460,808	793,973	1,254,781	863,292	838,867	2,264,204	3,966,363	1,339,302	2,732,079	4,071,381
2032	460,792	793,935	1,254,727	863,275	838,852	2,264,167	3,966,294	1,339,265	2,732,005	4,071,270
2033	460,803	793,963	1,254,766	863,287	838,862	2,264,192	3,966,341	1,339,284	2,732,045	4,071,329
2034	460,809	793,976	1,254,785	863,290	838,865	2,264,200	3,966,355	1,339,293	2,732,062	4,071,355
2035	460,779	793,907	1,254,686	863,258	838,837	2,264,129	3,966,224	1,339,236	2,731,945	4,071,181
TOTAL	23,804,724	37,131,908	60,936,632	48,323,706	46,875,746	127,798,064	222,997,516	58,713,263	119,108,414	177,821,677

TABLE B-16A. Minimum OMP&R Component of Transportation Charge for Each Contractor

(in dollars)

Calendar Year	SAN JOAQUIN VALLEY AREA									
	Devil's Den Water District	Dudley Ridge Water District	Empire West Side Irrigation District	Future Contractor San Joaquin Valley	Kern County Water Agency		County of Kings	Oak Flat Water District	Tulare Basin Water Storage District	Total
					Municipal and Industrial	Agricultural				
	[11]	[12]	[13]	[14]	[15]	[16]	[17]	[18]	[19]	[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	8,363	37,806	1,963	5,639	60,702	678,085	2,007	2,073	77,592	874,230
1969	44,176	45,479	2,237	30,159	80,553	1,197,126	2,286	2,086	90,772	1,494,874
1970	51,905	46,969	2,292	35,450	96,672	1,381,493	2,345	2,158	93,407	1,712,691
1971	51,785	47,997	2,315	35,365	106,654	1,643,161	2,366	2,288	94,874	1,986,805
1972	55,410	49,867	2,414	37,845	122,312	1,729,170	2,470	2,254	98,776	2,100,518
1973	52,980	50,005	2,386	36,180	125,553	1,719,871	2,439	2,310	98,329	2,090,053
1974	53,560	52,816	2,557	36,571	135,661	1,823,063	2,615	2,529	104,610	2,213,982
1975	64,819	66,962	3,242	44,250	162,739	2,235,242	3,317	3,191	132,663	2,716,425
1976	66,442	66,504	3,327	45,365	159,304	2,215,996	3,404	2,919	133,940	2,697,201
1977	72,081	75,670	3,814	49,203	189,781	2,523,621	3,904	3,716	152,989	3,074,779
1978	72,670	70,688	3,504	49,619	174,899	2,428,048	3,583	3,644	141,673	2,948,328
1979	70,514	68,899	3,437	48,147	173,711	2,378,682	3,516	3,492	138,537	2,888,935
1980	90,160	96,057	4,732	61,544	237,570	3,185,618	4,838	4,781	191,912	3,877,212
1981	97,144	118,460	5,966	66,264	266,400	3,440,774	6,100	5,188	239,346	4,245,642
1982	99,606	135,683	6,790	67,912	315,503	3,893,817	6,944	6,455	273,280	4,805,990
1983	119,666	185,924	9,293	81,531	428,820	5,060,698	9,502	8,547	374,214	6,278,195
1984	141,797	202,863	10,106	96,654	485,849	5,789,427	10,332	9,341	407,611	7,153,980
1985	176,218	227,564	11,300	120,182	543,778	6,635,806	11,555	10,952	456,519	8,193,874
1986	164,143	218,458	10,877	111,937	550,272	6,584,837	11,122	11,360	438,836	8,101,842
1987	164,480	225,622	11,266	112,152	573,979	6,802,939	11,524	12,157	453,924	8,368,043
1988	181,639	228,500	11,429	123,899	571,473	6,908,572	11,689	12,394	460,106	8,509,701
1989	201,761	250,830	12,463	137,635	628,667	7,672,396	12,748	14,445	503,369	9,434,314
1990	218,649	262,215	13,016	149,178	654,489	8,095,329	13,310	15,012	525,943	9,947,141
1991	226,052	265,032	13,126	154,244	663,924	8,246,638	13,427	15,402	531,019	10,128,864
1992	228,330	262,945	13,006	155,810	659,755	8,215,979	13,303	15,199	526,495	10,090,822
1993	229,393	263,312	13,024	156,539	660,827	8,236,077	13,321	15,220	527,211	10,114,924
1994	230,236	263,421	13,030	157,115	660,877	8,245,046	13,327	15,223	527,435	10,125,710
1995	244,865	264,920	13,104	167,137	664,352	8,197,118	13,402	15,288	530,435	10,110,621
1996	244,509	265,444	13,130	166,893	665,575	8,206,273	13,430	15,310	531,482	10,122,046
1997	245,166	266,440	13,178	167,338	668,001	8,234,935	13,478	15,339	533,458	10,157,333
1998	245,239	266,557	13,185	167,386	668,290	8,238,316	13,484	15,344	533,691	10,161,492
1999	245,879	267,529	13,231	167,825	670,655	8,266,302	13,531	15,372	535,621	10,195,945
2000	245,952	267,644	13,237	167,875	670,944	8,269,650	13,541	15,375	535,853	10,200,071
2001	245,997	267,713	13,240	167,905	671,119	8,271,712	13,542	15,378	535,991	10,202,597
2002	246,410	269,419	13,328	168,182	673,926	8,303,189	13,632	15,539	539,482	10,243,107
2003	246,970	270,273	13,371	168,565	676,001	8,327,765	13,675	15,565	541,180	10,273,365
2004	248,930	275,682	13,647	169,894	688,570	8,475,781	13,958	15,829	552,206	10,454,497
2005	248,892	275,625	13,644	169,870	688,436	8,474,181	13,957	15,827	552,092	10,452,524
2006	251,121	275,955	13,650	171,395	691,899	8,520,010	13,962	15,830	552,542	10,506,364
2007	251,624	276,713	13,687	171,739	693,742	8,541,865	14,000	15,853	554,050	10,533,273
2008	251,664	276,777	13,689	171,765	693,898	8,543,667	14,002	15,855	554,175	10,535,492
2009	252,138	277,502	13,724	172,089	695,662	8,564,506	14,039	15,877	555,615	10,561,152
2010	252,160	277,533	13,727	172,103	695,736	8,565,429	14,040	15,878	555,680	10,562,286
2011	251,760	277,082	13,701	171,830	695,189	8,556,989	14,013	15,856	554,726	10,551,146
2012	251,785	277,119	13,704	171,847	695,274	8,558,034	14,015	15,856	554,798	10,552,432
2013	251,792	277,132	13,704	171,852	695,300	8,558,390	14,016	15,858	554,827	10,552,871
2014	251,816	277,168	13,706	171,868	695,390	8,559,434	14,019	15,858	554,898	10,554,157
2015	252,297	277,901	13,743	172,197	697,176	8,580,519	14,057	15,881	556,354	10,580,125
2016	252,302	277,910	13,743	172,200	697,190	8,580,726	14,057	15,881	556,371	10,580,380
2017	252,293	277,894	13,743	172,193	697,150	8,580,252	14,056	15,880	556,341	10,579,802
2018	252,289	277,884	13,743	172,187	697,128	8,580,007	14,056	15,880	556,325	10,579,499
2019	252,277	277,866	13,742	172,184	697,074	8,579,398	14,054	15,880	556,282	10,578,757
2020	251,776	275,813	13,634	171,843	693,670	8,541,240	13,946	15,687	552,082	10,529,691
2021	251,765	275,798	13,633	171,836	693,629	8,540,721	13,945	15,687	552,052	10,529,066
2022	250,691	270,970	13,383	171,112	682,550	8,412,470	13,689	15,432	542,144	10,372,441
2023	250,695	270,973	13,383	171,115	682,555	8,412,561	13,689	15,432	542,150	10,372,553
2024	246,475	269,945	13,350	168,228	675,749	8,321,925	13,655	15,404	540,435	10,265,166
2025	246,475	269,939	13,350	168,228	675,737	8,321,801	13,655	15,403	540,425	10,265,013
2026	246,475	269,938	13,349	168,228	675,735	8,321,776	13,655	15,404	540,421	10,264,981
2027	246,463	269,913	13,348	168,218	675,675	8,321,071	13,654	15,403	540,371	10,264,116
2028	246,462	269,906	13,347	168,217	675,662	8,320,939	13,652	15,403	540,362	10,263,950
2029	246,431	269,767	13,346	168,196	674,222	8,306,382	13,651	15,403	540,190	10,247,588
2030	246,421	269,745	13,346	168,190	674,165	8,305,779	13,649	15,402	540,149	10,246,846
2031	246,414	269,727	13,344	168,185	674,116	8,305,224	13,648	15,402	540,113	10,246,173
2032	246,403	269,704	13,343	168,174	674,051	8,304,544	13,648	15,402	540,069	10,245,338
2033	246,407	269,713	13,344	168,181	674,073	8,304,771	13,648	15,402	540,085	10,245,624
2034	246,409	269,713	13,344	168,181	674,076	8,304,804	13,648	15,402	540,088	10,245,665
2035	246,392	269,679	13,342	168,169	673,991	8,303,850	13,645	15,401	540,021	10,244,490
TOTAL	13,432,260	15,057,473	745,399	9,167,009	37,484,057	463,751,817	762,387	843,694	30,161,014	571,405,110

TABLE B-16A. Minimum OMP&R Component of Transportation Charge for Each Contractor

(in dollars)

Calendar Year	SOUTHERN CALIFORNIA AREA									
	Antelope Valley-East Kern Water Agency	Castaic Lake Water Agency	Coachella Valley Water District	Crestline-Lake Arrowhead Water Agency	Desert Water Agency	Littlerock Creek Irrigation District	Mojave Water Agency	Palmdale Water District	San Bernardino Valley Municipal Water District	San Gabriel Valley Municipal Water District
	[21]	[22]	[23]	[24]	[25]	[26]	[27]	[28]	[29]	[30]
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	65,073	19,721	11,697	2,958	19,290	1,088	24,380	8,171	52,314	14,399
1969	86,340	26,169	15,522	3,924	25,595	1,444	32,346	10,843	69,418	19,106
1970	107,806	32,675	19,391	4,902	31,979	1,802	40,392	13,540	86,726	23,866
1971	178,822	54,193	32,230	8,152	53,149	2,991	66,998	22,459	144,137	39,636
1972	363,554	147,218	106,741	30,966	176,039	6,603	213,029	48,104	548,122	144,113
1973	404,662	169,787	121,341	34,673	200,118	7,347	243,320	53,976	724,532	190,155
1974	434,864	181,966	130,629	37,060	215,431	7,678	262,736	56,382	786,108	207,020
1975	504,790	224,685	151,033	43,179	249,085	9,082	303,109	65,579	905,424	238,842
1976	559,011	195,976	160,688	44,454	265,002	10,030	325,512	73,253	964,525	256,572
1977	675,631	263,725	184,833	47,750	304,832	11,888	381,208	87,370	1,069,549	289,821
1978	600,343	304,126	187,027	54,153	308,449	10,711	373,191	78,304	1,148,279	300,751
1979	661,159	278,576	196,271	52,214	323,690	12,125	401,480	87,130	1,125,481	302,518
1980	874,687	333,825	257,804	73,114	425,174	15,714	518,135	114,941	1,543,539	408,095
1981	1,001,682	413,923	285,031	73,528	470,068	18,051	588,197	132,021	1,548,166	420,513
1982	1,140,183	464,463	324,420	90,530	535,035	20,407	656,246	149,539	1,890,882	503,268
1983	1,751,572	699,608	452,153	119,766	745,684	30,769	926,503	226,704	2,384,597	642,839
1984	2,105,876	794,827	547,709	149,758	903,283	36,805	1,110,336	271,172	3,010,945	801,652
1985	2,262,829	863,305	609,654	165,915	1,005,442	40,703	1,239,322	290,286	3,373,276	896,896
1986	2,312,288	940,869	620,323	163,079	1,023,033	40,051	1,272,243	295,989	3,324,758	894,859
1987	2,388,621	883,463	623,459	166,260	1,028,203	42,200	1,273,670	310,869	3,382,716	908,607
1988	2,376,971	868,388	661,188	177,080	1,090,429	41,830	1,349,332	307,911	3,583,611	962,202
1989	2,550,085	983,753	712,334	197,559	1,174,787	45,600	1,444,156	333,537	4,039,856	1,079,637
1990	2,694,288	1,004,938	736,820	199,163	1,215,159	48,171	1,501,668	352,337	4,126,708	1,106,231
1991	2,786,237	1,035,896	752,750	213,108	1,241,439	49,809	1,513,260	364,111	4,380,708	1,158,209
1992	2,770,191	1,023,118	743,540	186,310	1,226,234	49,576	1,545,678	362,123	4,076,104	1,116,594
1993	2,774,309	1,042,558	766,120	213,164	1,263,485	49,653	1,547,875	362,695	4,553,861	1,211,035
1994	2,772,200	986,300	764,059	211,569	1,260,091	49,613	1,546,306	362,398	4,526,317	1,205,942
1995	2,784,980	1,056,389	762,362	205,267	1,257,284	49,868	1,555,081	364,202	4,417,122	1,186,012
1996	2,789,255	1,034,822	772,593	216,429	1,274,158	49,955	1,557,931	364,800	4,616,447	1,225,460
1997	2,801,066	1,040,375	774,250	213,429	1,276,897	50,229	1,568,707	366,668	4,563,914	1,217,177
1998	2,802,517	1,024,754	789,066	230,902	1,301,342	50,262	1,570,051	366,904	4,874,542	1,278,026
1999	2,814,028	1,050,629	771,364	204,380	1,272,124	50,527	1,580,555	368,717	4,403,890	1,188,122
2000	2,815,408	1,067,233	791,253	228,086	1,304,943	50,558	1,581,819	368,938	4,825,285	1,270,564
2001	2,816,300	1,064,108	771,957	204,130	1,273,108	50,578	1,582,637	369,079	4,399,638	1,187,673
2002	2,820,085	1,026,175	786,475	220,950	1,297,062	50,650	1,584,597	369,587	4,698,620	1,246,346
2003	2,829,923	1,118,238	786,794	217,042	1,297,583	50,880	1,593,808	371,156	4,629,900	1,234,622
2004	2,871,930	1,151,549	830,960	260,891	1,370,442	51,646	1,615,459	376,720	5,410,592	1,390,814
2005	2,871,327	993,949	766,381	182,252	1,263,892	51,631	1,614,924	376,627	4,012,921	1,118,039
2006	2,896,736	1,073,425	799,583	218,109	1,318,672	52,064	1,624,971	379,848	4,650,173	1,244,099
2007	2,909,675	1,094,243	818,316	230,631	1,349,570	52,384	1,647,151	382,005	4,880,467	1,293,390
2008	2,910,376	1,114,734	810,009	220,189	1,335,866	52,400	1,647,787	382,118	4,694,940	1,257,312
2009	2,918,958	1,111,895	830,580	241,657	1,369,798	52,599	1,655,624	383,476	5,077,010	1,333,284
2010	2,919,349	1,106,178	811,470	218,147	1,338,273	52,606	1,655,981	383,533	4,659,213	1,251,841
2011	2,917,975	1,100,964	846,023	260,846	1,395,276	52,583	1,654,919	383,344	5,417,091	1,399,442
2012	2,918,423	1,108,302	797,679	201,604	1,315,519	52,591	1,655,339	383,417	4,364,248	1,194,117
2013	2,918,605	1,105,854	824,071	233,760	1,359,067	52,595	1,655,513	383,447	4,935,734	1,305,642
2014	2,919,058	1,101,938	814,561	221,942	1,343,370	52,605	1,655,937	383,522	4,725,774	1,264,758
2015	2,927,708	1,119,619	828,485	235,279	1,366,346	52,803	1,663,819	384,887	4,963,316	1,312,543
2016	2,927,774	1,107,645	820,390	225,361	1,352,985	52,804	1,663,883	384,896	4,787,040	1,278,162
2017	2,927,621	1,117,381	849,224	260,650	1,400,566	52,802	1,663,746	384,872	5,414,185	1,400,488
2018	2,927,542	1,108,906	817,558	221,994	1,348,316	52,801	1,663,683	384,858	4,727,195	1,266,451
2019	2,927,346	1,114,003	828,558	235,507	1,366,472	52,798	1,663,525	384,829	4,967,380	1,313,281
2020	2,922,589	1,110,188	823,595	230,625	1,358,278	52,709	1,660,986	384,186	4,880,577	1,295,897
2021	2,922,261	1,109,051	826,367	234,162	1,362,855	52,702	1,660,666	384,130	4,943,423	1,308,100
2022	2,888,797	1,092,289	814,134	225,044	1,342,673	52,148	1,648,181	379,981	4,781,471	1,274,360
2023	2,888,809	1,091,489	823,608	236,619	1,358,303	52,151	1,648,179	379,980	4,987,170	1,314,489
2024	2,844,341	1,080,795	805,175	222,359	1,327,892	51,398	1,630,528	374,366	4,732,642	1,261,712
2025	2,837,657	1,080,438	791,682	217,057	1,305,633	51,207	1,606,608	373,114	4,626,203	1,236,044
2026	2,837,671	1,068,407	799,943	227,141	1,319,268	51,207	1,606,628	373,118	4,805,427	1,271,015
2027	2,837,394	1,075,148	802,356	230,202	1,323,248	51,200	1,606,379	373,076	4,859,863	1,281,586
2028	2,837,422	1,074,235	793,007	218,771	1,307,832	51,201	1,606,418	373,077	4,656,655	1,241,951
2029	2,832,480	1,074,446	794,188	221,073	1,309,781	51,118	1,604,573	372,462	4,697,603	1,249,624
2030	2,832,324	1,076,076	794,169	221,103	1,309,740	51,114	1,604,451	372,435	4,698,147	1,249,708
2031	2,832,176	1,070,581	801,296	229,869	1,321,509	51,110	1,604,335	372,413	4,853,915	1,280,075
2032	2,831,889	1,072,593	805,691	235,360	1,328,756	51,103	1,604,062	372,366	4,951,529	1,299,074
2033	2,831,867	1,071,666	796,191	223,785	1,313,079	51,101	1,603,997	372,361	4,745,848	1,258,934
2034	2,831,829	1,075,654	758,831	178,182	1,251,445	51,100	1,603,937	372,351	3,935,372	1,100,806
2035	2,831,497	1,316,494	850,111	289,821	1,402,040	51,095	1,603,634	372,302	5,919,385	1,487,819
TOTAL	154,729,042	58,890,909	43,155,073	12,014,895	71,171,468	2,778,624	87,181,637	20,275,912	253,562,526	67,412,237

TABLE B-16A. Minimum OMP&R Component of Transportation Charge for Each Contractor

(in dollars)

Calendar Year	SOUTHERN CALIFORNIA AREA (continued)				FEATHER RIVER AREA				South Bay Area Future Contractor	GRAND TOTAL
	San Gorgonio Pass Water Agency	The Metropolitan Water District of Southern California	Ventura County Flood Control District	Total	City of Yuba City	County of Butte	Plumas County FC&WCD	Total		
	[31]	[32]	[33]	[34]	[35]	[36]	[37]	[38]	[39]	[40]
1961	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	0	18,567
1963	0	0	0	0	0	0	0	0	12,626	168,358
1964	0	0	0	0	0	0	0	0	13,938	184,729
1965	0	0	0	0	0	0	0	0	27,919	377,856
1966	0	0	0	0	0	0	0	0	29,323	406,399
1967	0	0	0	0	0	0	0	0	45,379	632,165
1968	8,819	972,744	9,504	1,210,158	0	0	0	0	44,745	2,742,960
1969	11,706	1,295,613	12,610	1,610,636	0	0	0	0	51,060	4,073,036
1970	14,621	1,624,573	15,745	2,018,018	0	0	0	0	68,258	4,674,795
1971	24,302	2,716,582	26,120	3,369,771	0	0	54	54	53,391	6,183,573
1972	89,132	8,038,457	68,368	9,980,446	0	0	40	40	77,804	12,996,261
1973	117,781	9,890,314	78,312	12,236,318	0	0	1	1	53,161	15,193,175
1974	128,166	11,581,499	83,451	14,112,990	0	0	143	143	75,588	17,371,366
1975	147,900	13,584,540	101,892	16,529,140	0	0	1,069	1,069	80,581	20,513,458
1976	158,663	12,862,497	94,799	15,970,982	0	0	139	139	102,406	20,022,902
1977	178,791	16,205,614	121,985	19,822,997	0	0	892	892	96,815	24,216,024
1978	186,386	17,811,759	132,438	21,495,917	0	0	39	39	101,935	26,013,936
1979	186,691	16,414,828	126,764	20,168,927	0	0	3,235	3,235	117,761	24,675,184
1980	252,636	21,262,069	156,756	26,236,489	0	0	416	416	176,646	32,529,721
1981	259,231	23,689,019	186,548	29,085,978	0	0	3,847	3,847	181,597	35,467,045
1982	311,298	28,270,255	211,528	34,568,054	0	0	10,956	10,956	179,366	42,053,364
1983	396,468	38,554,639	321,946	47,253,248	0	0	(422)	(422)	221,046	56,522,583
1984	495,705	45,238,030	379,000	55,845,098	0	0	643	643	222,645	66,889,724
1985	554,245	49,797,580	414,289	61,513,742	0	0	2,599	2,599	341,709	74,241,136
1986	552,151	52,911,741	442,550	64,793,934	0	0	2,595	2,595	294,174	77,128,235
1987	561,100	51,012,669	416,775	62,998,612	0	0	2,595	2,595	339,898	76,073,846
1988	594,197	51,988,836	411,688	64,413,663	0	0	2,600	2,600	359,471	77,577,608
1989	667,312	58,124,338	458,619	71,811,573	0	0	2,672	2,672	388,349	87,364,568
1990	683,473	59,725,986	470,445	73,865,387	0	0	2,687	2,687	439,511	90,518,875
1991	717,231	61,777,050	482,567	76,472,375	0	0	2,660	2,660	452,370	93,369,337
1992	688,149	61,155,296	477,220	75,420,133	0	0	2,704	2,704	426,168	92,017,202
1993	749,866	63,408,106	483,643	78,426,370	0	0	2,709	2,709	425,712	95,055,728
1994	746,487	61,095,446	465,132	75,991,860	0	0	2,775	2,775	426,143	92,640,879
1995	733,242	63,531,982	488,657	78,392,448	0	0	2,725	2,725	428,967	95,113,495
1996	759,014	63,336,608	481,800	78,479,272	0	0	2,725	2,725	429,865	98,267,330
1997	753,309	63,699,776	484,094	78,809,891	0	0	2,725	2,725	431,334	98,651,866
1998	793,144	64,091,599	479,044	79,652,153	0	0	2,725	2,725	431,506	99,500,359
1999	733,965	63,701,356	487,979	78,627,636	0	0	2,725	2,725	433,003	98,528,656
2000	787,957	65,794,904	493,467	81,380,415	0	0	2,725	2,725	433,168	101,287,576
2001	733,617	64,319,173	492,471	79,264,469	0	0	2,725	2,725	433,275	99,175,480
2002	772,019	64,200,316	480,226	79,553,108	0	0	2,725	2,725	433,719	99,511,546
2003	764,099	67,443,859	510,770	82,848,674	0	0	2,725	2,725	445,979	102,977,298
2004	865,896	71,365,374	524,200	88,086,473	0	0	2,725	2,725	448,157	108,445,096
2005	687,167	60,972,219	472,599	75,383,928	0	0	2,725	2,725	448,070	95,739,520
2006	769,527	65,944,492	499,793	81,471,492	0	0	2,725	2,725	448,198	101,898,225
2007	801,220	67,735,320	507,406	83,701,778	0	0	2,725	2,725	449,379	104,169,927
2008	777,562	67,934,909	514,138	83,652,340	0	0	2,725	2,725	449,472	104,123,822
2009	827,142	69,114,658	513,561	85,430,242	0	0	2,725	2,725	450,585	105,940,993
2010	773,764	67,741,073	511,709	83,423,137	0	0	2,725	2,725	450,640	103,935,715
2011	870,519	69,748,954	509,929	86,557,865	0	0	2,725	2,725	449,706	107,046,659
2012	735,964	66,532,989	512,346	81,772,538	0	0	2,725	2,725	449,764	102,263,340
2013	809,040	68,391,837	511,555	84,486,720	0	0	2,725	2,725	449,791	104,978,250
2014	782,238	67,789,981	510,289	83,565,973	0	0	2,725	2,725	449,850	104,059,535
2015	813,345	68,972,320	516,430	85,156,900	0	0	2,725	2,725	450,976	105,690,181
2016	790,820	67,977,344	512,516	83,881,620	0	0	2,725	2,725	450,991	104,415,324
2017	870,975	67,591,961	515,697	84,450,168	0	0	2,725	2,725	450,968	104,982,999
2018	783,150	68,591,409	512,917	84,406,780	0	0	2,725	2,725	450,959	104,939,208
2019	813,840	68,824,604	514,574	85,006,717	0	0	2,725	2,725	450,944	105,538,230
2020	802,513	68,371,419	513,112	84,406,674	0	0	2,725	2,725	450,382	104,880,518
2021	810,519	68,251,252	512,728	84,378,216	0	0	2,725	2,725	437,516	104,705,806
2022	788,714	67,985,940	504,986	83,778,718	0	0	2,725	2,725	437,086	103,922,734
2023	815,011	67,205,823	504,725	83,306,356	0	0	2,725	2,725	437,095	103,450,622
2024	780,869	67,082,855	499,107	82,694,039	0	0	2,725	2,725	436,358	102,691,356
2025	764,729	66,595,751	498,244	81,984,367	0	0	2,725	2,725	436,356	101,981,533
2026	787,644	66,169,385	494,311	81,811,165	0	0	2,725	2,725	436,360	101,808,396
2027	794,580	66,222,820	496,507	81,954,359	0	0	2,725	2,725	436,327	101,950,302
2028	768,607	66,725,324	496,206	82,150,706	0	0	2,725	2,725	436,329	102,146,567
2029	773,677	65,986,205	496,044	81,463,274	0	0	2,725	2,725	436,322	101,442,641
2030	773,739	66,431,017	496,567	81,910,590	0	0	2,725	2,725	436,308	101,889,072
2031	793,640	66,057,284	494,765	81,762,968	0	0	2,725	2,725	436,298	101,740,689
2032	806,092	67,618,837	495,409	83,472,761	0	0	2,725	2,725	436,276	103,449,391
2033	779,795	66,171,712	495,107	81,715,443	0	0	2,725	2,725	436,290	101,692,518
2034	676,181	63,763,304	496,407	78,095,399	0	0	2,725	2,725	436,295	98,072,579
2035	929,785	78,979,225	575,211	96,608,419	0	0	2,725	2,725	436,253	116,583,978
TOTAL	41,731,137	3,585,977,250	27,278,297	4,426,159,007	0	0	159,373	159,373	24,024,612	5,483,503,927

TABLE B-16B. Minimum OMP&R Component of Transportation Charge for Each Contractor for Off-Aqueduct Power Facilities

(in dollars)

Calendar Year	NORTH BAY AREA			SOUTH BAY AREA				CENTRAL COASTAL AREA		
	Napa County FC&WCD	Solano County FC&WCD	Total	Alameda County FC&WCD, Zone 7	Alameda County Water District	Santa Clara Valley Water District	Total	San Luis Obispo County FC&WCD	Santa Barbara County FC&WCD	Total
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]
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	113,476	113,358	226,834	617,281	799,717	2,102,077	3,519,075	0	0	0
1989	77,069	180,421	257,490	588,753	691,229	1,671,889	2,951,871	0	0	0
1990	86,219	172,497	258,716	615,406	807,719	1,769,289	3,192,414	0	0	0
1991	92,758	179,857	272,615	656,160	810,551	1,814,090	3,280,801	0	0	0
1992	96,183	184,471	280,654	674,402	786,803	1,798,406	3,259,611	0	0	0
1993	99,440	187,706	287,146	690,856	763,578	1,781,682	3,236,116	0	0	0
1994	104,765	195,631	300,396	695,470	730,243	1,738,676	3,164,389	0	0	0
1995	111,730	206,751	318,481	713,006	713,006	1,697,635	3,123,647	1,144,263	2,081,920	3,226,183
1996	117,114	208,956	326,070	733,429	700,075	1,666,846	3,100,350	1,123,512	2,044,162	3,167,674
1997	122,361	211,174	333,535	753,420	687,905	1,637,871	3,079,196	1,103,981	2,008,627	3,112,608
1998	125,083	209,392	334,475	726,924	663,712	1,580,268	2,970,904	1,065,155	1,937,986	3,003,141
1999	121,621	197,964	319,585	669,209	611,017	1,454,803	2,735,029	980,586	1,784,119	2,764,705
2000	122,413	194,159	316,572	639,555	583,942	1,390,339	2,613,836	937,136	1,705,062	2,642,198
2001	121,151	186,391	307,542	605,581	552,923	1,316,481	2,474,985	887,354	1,614,487	2,501,841
2002	118,450	177,066	295,516	567,532	518,181	1,233,766	2,319,479	831,600	1,513,047	2,344,647
2003	115,288	167,709	282,997	530,392	484,271	1,153,026	2,167,689	777,180	1,414,031	2,191,211
2004	109,467	155,180	264,647	484,329	442,213	1,052,889	1,979,431	709,684	1,291,226	2,000,910
2005	107,661	148,921	256,582	458,775	418,881	997,335	1,874,991	672,238	1,223,098	1,895,336
2006	103,679	138,820	242,499	427,381	390,217	929,090	1,746,688	626,238	1,139,402	1,765,640
2007	99,114	128,594	227,708	395,647	361,242	860,101	1,616,990	579,738	1,054,798	1,634,536
2008	95,668	120,396	216,064	370,188	337,997	804,755	1,512,940	542,432	986,923	1,529,355
2009	88,355	107,956	196,311	331,725	302,879	721,140	1,355,744	486,074	884,381	1,370,455
2010	85,406	101,404	186,810	311,392	284,315	676,940	1,272,647	456,280	830,175	1,286,455
2011	81,413	93,523	174,936	287,010	262,052	623,933	1,172,995	420,553	765,170	1,185,723
2012	77,101	85,788	162,889	263,103	240,224	571,962	1,075,289	385,522	701,435	1,086,957
2013	28,746	31,012	59,758	95,049	86,785	206,629	388,463	139,275	253,403	392,678
2014	50,026	52,377	102,403	160,432	146,481	348,765	655,678	235,079	427,713	662,792
2015	16,475	16,756	33,231	51,290	46,831	111,501	209,622	75,155	136,741	211,896
2016	8,172	8,089	16,261	24,763	22,609	53,832	101,204	36,285	66,017	102,302
2017	3,782	3,647	7,429	11,163	10,193	24,267	45,623	16,358	29,761	46,119
2018	3,883	3,649	7,532	11,171	10,200	24,284	45,655	16,369	29,782	46,151
2019	0	0	0	0	0	0	0	0	0	0
2020	0	0	0	0	0	0	0	0	0	0
2021	0	0	0	0	0	0	0	0	0	0
2022	0	0	0	0	0	0	0	0	0	0
2023	0	0	0	0	0	0	0	0	0	0
2024	0	0	0	0	0	0	0	0	0	0
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	2,935,076	4,169,615	7,104,691	15,758,940	15,998,762	44,316,986	76,074,688	14,248,047	25,923,466	40,171,513

TABLE B-16B. Minimum OMP&R Component of Transportation Charge for Each Contractor for Off-Aqueduct Power Facilities

(in dollars)

Calendar Year	SAN JOAQUIN VALLEY AREA								
	Devil's Den Water District	Dudley Ridge Water District	Empire West Side Irrigation District	Kern County Water Agency		County of Kings	Oak Flat Water District	Tulare Lake Basin Water Storage District	Total
				Municipal and Industrial	Agricultural				
	[11]	[12]	[13]	[14]	[15]	[16]	[17]	[18]	[19]
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	76,956	159,191	0	34,366	2,964,185	13,174	9,673	3,733	3,261,278
1984	180,275	389,518	0	816,103	9,095,509	26,774	33,576	49,601	10,591,356
1985	226,258	527,952	59,324	1,053,957	11,978,046	38,810	42,297	1,253,257	15,179,901
1986	239,447	552,171	12,858	885,988	11,788,715	40,659	38,275	872,009	14,430,122
1987	188,466	450,941	24,936	1,192,388	10,448,063	39,134	37,538	911,938	13,293,404
1988	168,221	427,277	30,937	1,126,853	9,935,775	35,611	26,789	853,468	12,604,931
1989	170,266	464,755	20,819	965,222	9,597,559	27,630	29,559	908,271	12,184,081
1990	149,059	413,381	21,493	1,041,745	9,188,629	28,658	27,852	848,972	11,719,789
1991	149,582	414,830	21,569	1,045,397	9,220,843	28,758	27,950	851,948	11,760,877
1992	145,200	402,676	20,936	1,014,769	8,950,684	27,915	27,131	826,987	11,416,298
1993	140,913	390,790	20,319	984,814	8,686,476	27,091	26,330	802,576	11,079,309
1994	134,761	373,730	19,432	941,821	8,307,267	25,909	25,180	767,540	10,595,640
1995	131,580	364,908	18,973	919,590	8,111,174	25,297	24,586	749,422	10,345,530
1996	129,194	358,290	18,629	902,912	7,964,071	24,838	24,140	735,830	10,157,904
1997	126,948	352,062	18,305	887,217	7,825,627	24,406	23,720	723,039	9,981,324
1998	122,484	339,680	17,661	856,014	7,550,408	23,548	22,886	697,610	9,630,291
1999	112,759	312,711	16,259	788,051	6,950,942	21,679	21,069	642,224	8,865,694
2000	107,763	298,854	15,539	753,131	6,642,937	20,718	20,136	613,766	8,472,844
2001	102,038	282,979	14,713	713,124	6,290,055	19,618	19,066	581,161	8,022,754
2002	95,627	265,199	13,789	668,317	5,894,843	18,385	17,868	544,647	7,518,675
2003	89,369	247,844	12,887	624,582	5,509,076	17,181	16,699	509,004	7,026,642
2004	81,607	226,320	11,767	570,338	5,030,629	15,690	15,248	464,799	6,416,398
2005	77,302	214,378	11,147	540,246	4,765,197	14,861	14,444	440,274	6,077,849
2006	72,012	199,709	10,383	503,278	4,439,122	13,845	13,456	410,147	5,661,952
2007	66,665	184,879	9,613	465,907	4,109,502	12,817	12,456	379,693	5,241,532
2008	62,375	172,983	8,994	435,927	3,845,061	11,992	11,655	355,260	4,904,247
2009	55,894	155,010	8,059	390,634	3,445,557	10,746	10,444	318,348	4,394,692
2010	52,468	145,509	7,565	366,691	3,234,370	10,088	9,803	298,836	4,125,330
2011	48,360	134,116	6,973	337,978	2,981,109	9,297	9,036	275,436	3,802,305
2012	44,332	122,944	6,392	309,826	2,732,794	8,523	8,284	252,493	3,485,588
2013	16,016	44,415	2,309	111,929	987,260	3,079	2,993	91,216	1,259,217
2014	27,032	74,967	3,898	188,922	1,666,372	5,197	5,051	153,962	2,125,401
2015	8,642	23,967	1,246	60,399	532,744	1,662	1,615	49,222	679,497
2016	4,172	11,572	601	29,160	257,205	802	779	23,764	328,055
2017	1,881	5,217	271	13,146	115,949	361	352	10,713	147,890
2018	1,882	5,220	271	13,155	116,030	362	351	10,721	147,992
2019	0	0	0	0	0	0	0	0	0
2020	0	0	0	0	0	0	0	0	0
2021	0	0	0	0	0	0	0	0	0
2022	0	0	0	0	0	0	0	0	0
2023	0	0	0	0	0	0	0	0	0
2024	0	0	0	0	0	0	0	0	0
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	3,607,806	9,510,945	488,867	22,553,897	211,159,785	675,115	658,287	18,281,887	266,936,589

TABLE B-16B. Minimum OMP&R Component of Transportation Charge for Each Contractor for Off-Aqueduct Power Facilities

(in dollars)

Calendar Year	SOUTHERN CALIFORNIA AREA									
	Antelope Valley-East Kern Water Agency	Castaic Lake Water Agency	Coachella Valley Water District	Crestline-Lake Arrowhead Water Agency	Desert Water Agency	Littlerock Creek Irrigation District	Mojave Water Agency	Palmdale Water District	San Bernardino Valley Municipal Water District	San Gabriel Valley Municipal Water District
	[20]	[21]	[22]	[23]	[24]	[25]	[26]	[27]	[28]	[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	1,083,881	334,291	565,798	35,432	894,572	1,250	0	0	233,134	28,548
1984	2,499,848	942,365	1,427,428	102,114	2,263,172	77	0	0	502,967	693,074
1985	3,775,658	1,345,767	2,032,672	170,137	3,230,452	0	0	131,200	884,188	601,582
1986	3,159,858	1,455,040	2,097,407	173,460	3,340,188	15,872	0	301,486	739,563	1,088,902
1987	3,167,759	1,506,232	1,991,841	190,149	3,230,424	95,994	1,786	258,719	1,951,799	1,091,691
1988	2,688,615	1,599,983	1,927,128	187,190	3,172,688	33,057	840	139,642	1,995,620	834,977
1989	3,491,493	1,656,576	1,597,906	182,687	2,672,152	135,158	28,679	537,627	2,636,830	964,749
1990	3,647,409	1,888,025	1,734,655	200,123	2,861,055	0	41,301	662,819	3,439,273	976,212
1991	3,758,949	2,121,563	1,740,737	218,534	2,871,085	146,535	47,475	831,428	3,451,331	979,635
1992	3,958,038	2,308,868	1,689,735	227,127	2,786,966	142,242	65,102	996,312	3,350,211	950,933
1993	4,081,279	2,511,146	1,639,857	232,845	2,704,700	138,043	86,607	1,038,326	3,549,474	922,863
1994	4,247,502	2,555,465	1,568,269	234,426	2,586,625	132,017	107,267	992,997	3,394,522	950,466
1995	4,371,415	2,495,144	1,531,250	240,293	2,525,569	128,900	3,367,425	969,557	3,314,394	994,318
1996	4,534,312	2,449,892	1,503,479	246,545	2,479,764	126,563	3,306,353	951,974	3,254,285	998,414
1997	4,693,292	2,407,304	1,477,344	252,683	2,436,658	124,363	3,248,876	935,426	3,197,713	1,002,803
1998	4,757,883	2,322,641	1,425,387	253,855	2,350,963	119,989	3,134,617	902,527	3,085,253	988,515
1999	4,591,402	2,138,235	1,312,218	242,959	2,164,308	110,463	2,885,744	830,870	2,840,300	929,345
2000	4,589,907	2,043,487	1,254,072	241,042	2,068,405	105,568	2,757,873	794,054	2,714,442	906,623
2001	4,519,972	1,934,934	1,187,455	235,743	1,958,528	99,960	2,611,371	751,872	2,570,247	875,941
2002	4,398,856	1,813,360	1,112,844	227,965	1,835,471	93,680	2,447,295	704,632	2,408,755	837,283
2003	4,263,248	1,694,691	1,040,019	219,620	1,715,355	87,549	2,287,141	658,520	2,251,123	797,798
2004	4,032,032	1,547,512	949,696	206,549	1,566,381	79,946	2,088,509	601,329	2,220,068	742,490
2005	3,950,990	1,465,860	899,587	201,337	1,483,734	75,728	1,978,313	569,601	2,258,704	716,554
2006	3,680,629	1,365,554	838,030	190,679	1,382,205	70,545	1,842,940	530,625	2,249,257	679,856
2007	3,407,329	1,264,157	775,803	179,409	1,279,571	65,308	1,706,095	491,223	2,216,581	640,793
2008	3,188,072	1,182,810	725,882	170,566	1,197,233	61,105	1,596,310	459,614	2,199,640	610,243
2009	2,856,829	1,059,916	650,461	155,267	1,072,839	54,756	1,430,453	411,859	2,083,731	556,412
2010	2,681,727	994,950	610,593	148,023	1,007,082	51,400	1,342,776	386,616	2,061,743	531,296
2011	2,471,720	917,043	562,782	137,407	928,225	47,375	1,237,633	356,343	1,997,755	498,464
2012	2,265,854	840,657	515,905	126,854	850,908	43,428	1,134,544	326,660	1,920,684	464,984
2013	818,572	303,699	186,378	46,150	307,403	15,689	409,869	118,011	726,147	170,887
2014	1,381,647	512,606	314,582	78,441	518,857	26,482	691,808	199,188	1,252,882	293,338
2015	441,716	163,882	100,573	25,252	165,880	8,466	221,173	63,681	409,257	95,349
2016	213,257	79,121	48,555	12,192	80,085	4,088	106,780	30,745	201,790	46,748
2017	96,137	35,669	21,889	5,496	36,103	1,843	48,137	13,860	92,863	21,397
2018	96,204	35,693	21,904	5,500	36,128	1,844	48,171	13,869	94,825	21,734
2019	0	0	0	0	0	0	0	0	0	0
2020	0	0	0	0	0	0	0	0	0	0
2021	0	0	0	0	0	0	0	0	0	0
2022	0	0	0	0	0	0	0	0	0	0
2023	0	0	0	0	0	0	0	0	0	0
2024	0	0	0	0	0	0	0	0	0	0
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	111,863,291	51,294,138	39,080,121	6,004,051	64,061,734	2,445,283	42,309,263	17,963,212	73,751,351	24,505,217

TABLE B-16B. Minimum OMP&R Component of Transportation Charge for Each Contractor for Off-Aqueduct Power Facilities

(in dollars)

Calendar Year	SOUTHERN CALIFORNIA AREA (continued)				FEATHER RIVER AREA				TOTAL STATE WATER PROJECT
	San Gorgonio Pass Water Agency	The Metropolitan Water District of Southern California	Ventura County Flood Control District	Total	City of Yuba City	County of Butte	Plumas County FC&WCD	Total	
	[30]	[31]	[32]	[33]	[34]	[35]	[36]	[37]	[38]
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	15,968,264	0	0	0	0	20,182,468
1984	0	39,229,567	0	47,660,612	0	0	0	0	60,556,781
1985	0	77,446,522	0	89,618,178	0	0	0	0	108,590,343
1986	0	77,581,287	0	89,953,063	0	0	0	0	107,702,921
1987	0	68,939,195	0	82,425,589	0	0	0	0	99,411,597
1988	0	79,985,469	0	92,565,209	0	0	0	0	108,916,049
1989	0	79,151,255	0	93,055,112	0	0	0	0	108,448,554
1990	0	98,296,080	0	113,746,952	0	0	0	0	128,917,871
1991	0	98,640,695	0	114,807,967	0	0	0	0	130,122,260
1992	0	103,870,152	0	120,345,686	0	0	0	0	135,302,249
1993	0	102,791,798	19,960	119,716,898	0	0	0	0	134,319,469
1994	0	98,525,358	939,672	116,234,586	0	0	0	0	130,295,011
1995	0	96,415,411	931,921	117,285,597	0	0	0	0	134,299,438
1996	0	96,731,423	938,633	117,521,637	0	0	0	0	134,273,635
1997	0	97,078,589	945,519	117,800,570	0	0	0	0	134,307,233
1998	0	95,621,787	934,653	115,898,070	0	0	0	0	131,836,881
1999	0	89,831,837	881,056	108,758,737	0	0	0	0	123,443,750
2000	939,197	87,572,294	861,711	106,848,675	0	0	0	0	120,894,125
2001	889,305	84,809,158	831,695	103,276,181	0	0	0	0	116,583,303
2002	833,429	81,250,640	794,208	98,758,418	0	0	0	0	111,236,735
2003	778,888	77,587,799	756,037	94,137,788	0	0	0	0	105,806,327
2004	711,244	72,360,146	702,981	87,808,883	0	0	0	0	98,470,269
2005	673,717	69,973,137	678,181	84,925,443	0	0	0	0	95,030,201
2006	627,616	66,248,017	637,105	80,343,058	0	0	0	0	89,759,837
2007	581,013	62,312,970	594,732	75,514,984	0	0	0	0	84,235,750
2008	543,626	59,223,993	561,080	71,720,174	0	0	0	0	79,882,780
2009	487,142	53,895,687	506,920	65,222,272	0	0	0	0	72,539,474
2010	457,284	51,366,808	479,494	62,119,792	0	0	0	0	68,991,034
2011	421,477	47,344,651	441,948	57,362,823	0	0	0	0	63,698,782
2012	386,370	43,401,026	405,136	52,683,010	0	0	0	0	58,493,733
2013	139,581	15,679,225	146,361	19,067,972	0	0	0	0	21,168,088
2014	235,596	26,464,577	247,039	32,217,043	0	0	0	0	35,763,317
2015	75,320	8,460,800	78,979	10,310,328	0	0	0	0	11,444,574
2016	36,364	4,084,803	38,130	4,982,658	0	0	0	0	5,530,480
2017	16,393	1,841,460	17,189	2,248,436	0	0	0	0	2,495,497
2018	16,404	1,842,734	17,201	2,252,211	0	0	0	0	2,499,541
2019	0	0	0	0	0	0	0	0	0
2020	0	0	0	0	0	0	0	0	0
2021	0	0	0	0	0	0	0	0	0
2022	0	0	0	0	0	0	0	0	0
2023	0	0	0	0	0	0	0	0	0
2024	0	0	0	0	0	0	0	0	0
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	8,849,966	2,328,647,708	14,387,541	2,785,162,876	0	0	0	0	3,175,450,357

TABLE B-17. Unit Variable OMP&R Component of Transportation Charge

(in dollars per acre-foot)

Calendar Year	NORTH BAY AQUEDUCT						SOUTH BAY AQUEDUCT		CALIFORNIA AQUEDUCT	
	Reach 1 Barker Slough Pumping Plant		Reach 3A Cordelia Pumping Plant Solano County FC&WCD		Reach 3B Cordelia Pumping Plant Napa County FC&WCD (a		Reach 1 South Bay and Del Valle Pumping Plants (b		Reach 1 Banks Pumping Plant	
	Unit Rate	Cumulative Unit Rate	Unit Rate	Cumulative Unit Rate	Unit Rate	Cumulative Unit Rate	Unit Rate	Cumulative Unit Rate	Unit Rate	Cumulative Unit Rate
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]
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	5.1337448	1.2030681	1.2030681
1968	0	0	0	0	5.7570016	5.7570016	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	7.0889234	2.1365050	2.1365050
1980	0	0	0	0	2.9737588	2.9737588	4.5186576	5.8875209	1.3688633	1.3688633
1981	0	0	0	0	2.6494834	2.6494834	4.3847205	6.4701082	2.0853877	2.0853877
1982	0	0	0	0	9.8384171	9.8384171	5.6081912	7.3533062	1.7451150	1.7451150
1983	0	0	0	0	1.1674683	1.1674683	1.9916751	2.8632648	0.8715897	0.8715897
1984	0	0	0	0	1.5419090	1.5419090	2.5890830	3.7091844	1.1201014	1.1201014
1985	0	0	0	0	2.4711562	2.4711562	4.1162113	5.7326648	1.6164535	1.6164535
1986	0	0	0	0	4.3779483	4.3779483	7.5990558	11.1462263	3.5471705	3.5471705
1987	0	0	0	0	3.5446510	3.5446510	6.3798430	9.8454116	3.4655686	3.4655686
1988	0.7510998	0.7510998	1.4148595	2.1659593	4.0745951	4.8256949	6.3838036	9.6003392	3.2165356	3.2165356
1989	2.1129911	2.1129911	3.3689836	5.4819747	5.4390204	7.5520115	9.6720025	13.5391382	3.8671357	3.8671357
1990	1.8808030	1.8808030	3.3327273	5.2135303	5.2109857	7.0917887	9.6230663	13.8729588	4.2498925	4.2498925
1991	2.3916531	2.3916531	4.1550633	6.5467164	6.4626614	8.8543145	10.5778588	15.1822824	4.6044236	4.6044236
1992	2.4197609	2.4197609	4.3181155	6.7378764	7.4505913	9.8703522	12.3629655	17.5092969	5.1463314	5.1463314
1993	2.4890615	2.4890615	4.5133091	7.0023706	7.6258789	10.1149404	12.7709551	18.0922318	5.3212767	5.3212767
1994	2.3949279	2.3949279	4.3476823	6.7426102	7.2612249	9.6561528	12.1681484	17.3618158	5.1936674	5.1936674
1995	2.6957609	2.6957609	4.8925606	7.5883215	8.0763711	10.7721320	13.5337500	19.0859136	5.5521636	5.5521636
1996	2.7702602	2.7702602	5.0587738	7.8290340	8.2627233	11.0329835	13.8428933	19.5486880	5.7057947	5.7057947
1997	3.4732961	3.4732961	6.3951080	9.8684041	10.3119299	13.7852260	17.2858191	24.1528048	6.8669857	6.8669857
1998	3.5650000	3.5650000	6.6060998	10.1710998	10.5377600	14.1027600	17.6589681	24.6674992	7.0085311	7.0085311
1999	4.2643958	4.2643958	7.9609787	12.2253745	12.5609717	16.8253675	21.0170426	29.1620123	8.1449697	8.1449697
2000	4.3588570	4.3588570	8.1962313	12.5550883	12.7902682	17.1491252	21.3775319	29.6630518	8.2855199	8.2855199
2001	4.4201096	4.4201096	8.3646426	12.7847522	12.9348974	17.3550070	21.6188564	29.9801175	8.3612611	8.3612611
2002	4.4856965	4.4856965	8.5492458	13.0349423	13.1044273	17.5901238	21.8776596	30.3375901	8.4599305	8.4599305
2003	5.1046466	5.1046466	9.7952133	14.8998599	14.8755061	19.9801527	24.8284681	34.2944294	9.4659613	9.4659613
2004	5.7274384	5.7274384	11.0688788	16.7963172	16.6537962	22.3812346	27.7623777	38.2377627	10.4753850	10.4753850
2005	5.7054261	5.7054261	11.0947619	16.8001880	16.5531250	22.2585511	27.5699096	37.9743524	10.4044428	10.4044428
2006	5.7735927	5.7735927	11.2081429	16.9817356	16.7276904	22.5012831	27.8516223	38.3600916	10.5084693	10.5084693
2007	6.3333845	6.3333845	12.2790476	18.6124321	18.3399297	24.6733142	30.5127021	41.9007569	11.3880548	11.3880548
2008	6.3885946	6.3885946	12.3587143	18.7473089	18.4681044	24.8566990	30.7107872	42.1823673	11.4715801	11.4715801
2009	6.9166722	6.9166722	13.3589524	20.2756246	19.9805066	26.8971788	33.1962394	45.5255118	12.3292724	12.3292724
2010	6.9584946	6.9584946	13.4112857	20.3697803	20.0839037	27.0423983	33.3262234	45.6890213	12.3627979	12.3627979
2011	6.9841348	6.9841348	13.4326667	20.4168015	20.1445708	27.1287056	33.3793404	45.7629742	12.3836338	12.3836338
2012	7.0264273	7.0264273	13.4865238	20.5129511	20.2562062	27.2826335	33.5131649	45.9379949	12.4248300	12.4248300
2013	7.0561580	7.0561580	13.5070476	20.5632056	20.3351115	27.3912695	33.5643564	46.0169074	12.4525510	12.4525510
2014	7.0967252	7.0967252	13.5633333	20.6600585	20.4688147	27.5655399	33.7041064	46.1974561	12.4933497	12.4933497
2015	7.6445383	7.6445383	14.5726190	22.2171573	22.0647945	29.7093328	36.2122021	49.5776371	13.3654350	13.3654350
2016	7.6654264	7.6654264	14.5852857	22.2507121	22.1580889	29.8235153	36.2436064	49.6229071	13.3793007	13.3793007
2017	7.6704916	7.6704916	14.5633810	22.2338726	22.2280519	29.8985435	36.1892394	49.5523055	13.3630661	13.3630661
2018	7.6807154	7.6807154	14.5568571	22.2375725	22.3373840	30.0180994	36.1730160	49.5276214	13.3546054	13.3546054
2019	7.6932127	7.6932127	14.5478571	22.2410698	22.4613169	30.1545296	36.1505904	49.4768499	13.3262595	13.3262595
2020	7.6269357	7.6269357	14.3979524	22.0248881	22.3696787	29.9966144	35.7781117	48.9500475	13.1719358	13.1719358
2021	7.6166318	7.6166318	14.3733333	21.9899651	22.3403291	29.9569609	35.7169574	48.8790052	13.1620478	13.1620478
2022	7.6133552	7.6133552	14.3690952	21.9824504	22.3359262	29.9492814	35.7064362	48.8431441	13.1367079	13.1367079
2023	7.6222073	7.6222073	14.3807143	22.0029216	22.3561298	29.9783371	35.7352447	48.8719061	13.1366614	13.1366614
2024	7.6146910	7.6146910	14.3707619	21.9854529	22.3495997	29.9642907	35.7106117	48.8285444	13.1179327	13.1179327
2025	7.6158358	7.6158358	14.3725238	21.9883596	22.3544800	29.9703158	35.7149415	48.8196908	13.1047493	13.1047493
2026	7.6210597	7.6210597	14.3824286	22.0034883	22.3698400	29.9908997	35.7394840	48.8308937	13.0914097	13.0914097
2027	7.6050896	7.6050896	14.3522381	21.9573277	22.3229200	29.9280096	35.6645745	48.7224008	13.0578263	13.0578263
2028	7.6102985	7.6102985	14.3620952	21.9723937	22.3382400	29.9485385	35.6890000	48.7247365	13.0357365	13.0357365
2029	7.6118507	7.6118507	14.3650476	21.9768983	22.3428000	29.9546507	35.6962872	48.7056368	13.0093496	13.0093496
2030	7.6084478	7.6084478	14.3586190	21.9670668	22.3328000	29.9412478	35.6803191	48.6579031	12.9775840	12.9775840
2031	7.6073582	7.6073582	14.3565238	21.9638820	22.3296400	29.9369982	35.6752713	48.6222886	12.9470173	12.9470173
2032	7.5989851	7.5989851	14.3407619	21.9397470	22.3050400	29.9040251	35.6360266	48.5573957	12.9213691	12.9213691
2033	7.6050448	7.6050448	14.3521429	21.9571877	22.3228000	29.9278448	35.6643564	48.5966653	12.9323089	12.9323089
2034	7.6079104	7.6079104	14.3575714	21.9654818	22.3312000	29.9391104	35.6778032	48.6082640	12.9304608	12.9304608
2035	7.5929254	7.5929254	14.3292857	21.9222111	22.2872400	29.8801654	35.6075266	48.4802958	12.8727692	12.8727692

a) For the period 1968 through 1987, rates are for an interim facility.

b) The 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

(in dollars per acre-foot)

Calendar Year	CALIFORNIA AQUEDUCT (continued)									
	Reach 4 Dos Amigos Pumping Plant		Reach 14A Buena Vista Pumping Plant		Reach 15A Wheeler Ridge Pumping Plant		Reach 16A Chrisman Pumping Plant		Reach 17E Edmonston Pumping Plant	
	Unit Rate	Cumulative Unit Rate	Unit Rate	Cumulative Unit Rate	Unit Rate	Cumulative Unit Rate	Unit Rate	Cumulative Unit Rate	Unit Rate	Cumulative Unit Rate
	[11]	[12]	[13]	[14]	[15]	[16]	[17]	[18]	[19]	[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	0	0	0	0	0	0	0
1971	0.4125312	1.2933749	1.3594550	2.6528299	4.9729730	7.6258029	0	0	0	0
1972	0.5554925	1.4585921	1.0808850	2.5394771	1.1418280	3.6813051	2.2892599	5.9705650	7.3206022	13.2911672
1973	0.5996892	1.5383283	0.9844807	2.5228090	1.2143719	3.7371809	2.1051633	5.8423442	7.4512435	13.2935877
1974	0.5736894	1.4709300	0.9223291	2.3932591	1.0924098	3.4856689	1.9449022	5.4305711	6.9004732	12.3310443
1975	0.4602594	1.5564614	0.8190849	2.3755463	0.9574493	3.3329956	1.9610412	5.2940368	6.9962702	12.2903070
1976	0.5163827	1.7105095	0.9626676	2.6731771	1.0211874	3.6943645	2.2275746	5.9219391	7.9384515	13.8603906
1977	0.6138931	2.3818667	1.0969170	3.4787837	1.3715867	4.8503704	2.9301764	7.7805468	9.9990004	17.7795472
1978	0.4199303	2.0313329	0.9606230	2.9919559	1.0432294	4.0351853	1.9779157	6.0131010	7.0810192	13.0941202
1979	0.6587934	2.7952984	1.1099369	3.9052353	1.2652451	5.1704804	2.6939701	7.8644505	9.6345625	17.4990130
1980	0.8062881	2.1751514	1.3536608	3.5288122	1.5067109	5.0355231	3.1983273	8.2338504	11.0084456	19.2422960
1981	1.1004473	3.1858350	1.2432708	4.4291058	1.3245935	5.7536993	2.9657710	8.7194703	9.9884420	18.7079123
1982	0.8305379	2.5756529	1.1919832	3.7676361	1.3621925	5.1298286	2.8891648	8.0189934	10.0903243	18.1093177
1983	0.3922614	1.2638511	0.7581088	2.0219599	0.8844225	2.9063824	1.7654349	4.6718173	5.5224174	10.1942347
1984	0.6242610	1.7443624	1.0039047	2.7482671	1.1621124	3.9103795	2.4079906	6.3183701	7.7697293	14.0880994
1985	0.8756678	2.4921213	1.4543890	3.9465103	1.6785325	5.6250428	3.5256813	9.1507241	11.9624726	21.1131967
1986	1.3925909	4.9397614	2.3674309	7.3071923	2.7518656	10.0590579	5.9424378	16.0014957	20.5596458	36.5611415
1987	1.2876954	4.7532640	2.2164937	6.9697577	2.5219305	9.4916882	5.2624158	14.7541040	17.5892107	32.3433147
1988	1.2022471	4.4187827	2.2001799	6.6189626	2.4989418	9.1179044	5.2306865	14.3485909	17.4176812	31.7662721
1989	1.6020890	5.4692247	2.8092494	8.2784741	3.3216872	11.6001613	6.8957577	18.4959190	23.4817827	41.9777017
1990	1.7915229	6.0414154	3.0693898	9.1108052	3.6703982	12.7812034	7.6632390	20.4444424	26.5360025	46.9804449
1991	1.9445234	6.5489470	3.3081471	9.8570941	3.9804303	13.8375244	8.3746604	22.2121848	29.0572395	51.2694243
1992	2.2191593	7.3654907	3.8240066	11.1894973	4.6144326	15.8039299	9.7650579	25.5689878	34.0833842	59.6523720
1993	2.2653789	7.5866556	3.8881382	11.4747938	4.6940305	16.1688243	9.9528591	26.1216834	34.8497107	60.9713941
1994	2.1913484	7.3850158	3.7484801	11.1334959	4.5214476	15.6549435	9.5543717	25.2093152	33.3355702	58.5448854
1995	2.3744613	7.9266249	4.0907539	12.0173788	4.9419983	16.9593771	10.5056320	27.4650091	36.8507206	64.3157297
1996	2.4563505	8.1621452	4.2138815	12.3760267	5.0875432	17.4635699	10.7883560	28.2519259	37.7743929	66.0263188
1997	3.0228953	9.8898810	5.1756715	15.0655525	6.2585573	21.3241098	13.3546100	34.6787198	46.8955455	81.5742653
1998	3.0969484	10.1054795	5.3060503	15.4115298	6.4136477	21.8251775	13.7153952	35.5405727	47.9920017	83.5325744
1999	3.6452841	11.7902538	6.2331757	18.0234295	7.5502931	25.5737226	16.2222557	41.7959783	56.8828351	98.6788134
2000	3.7239286	12.0094485	6.3459649	18.3554134	7.6917155	26.0471289	16.5425924	42.5897213	57.8881616	100.4778829
2001	3.7787949	12.1400560	6.4314366	18.5714926	7.7797639	26.3512565	16.7552368	43.1064933	58.5392799	101.6457732
2002	3.8358097	12.2957402	6.5244428	18.8201830	7.8917746	26.7119576	16.9720938	43.6840514	59.2393954	102.9234468
2003	4.2995544	13.7655157	7.3750990	21.1406147	8.9282882	30.0689029	19.1717041	49.2406070	67.1475323	116.3881393
2004	4.7634384	15.2388234	8.2110344	23.4498578	9.9625531	33.4124109	21.3642573	54.7766682	74.9747631	129.7514313
2005	4.7396927	15.1441355	8.1764584	23.3205939	9.9212772	33.2418711	21.2458945	54.4877656	74.4877109	128.9754765
2006	4.7802937	15.2887630	8.2703230	23.5590860	10.0165462	33.5756322	21.4512367	55.0268689	75.2022030	130.2290719
2007	5.1995926	16.5876474	9.0118875	25.5995349	10.9194741	36.5190090	23.4209183	59.9399273	82.2717462	142.2116735
2008	5.2281462	16.6997263	9.0671080	25.7668343	10.9869707	36.7538050	23.5587699	60.3125749	82.7779105	143.0904854
2009	5.6240763	17.9533487	9.7758310	27.7291797	11.8467585	39.5759382	25.4183473	64.9942855	89.4020292	154.3963147
2010	5.6394616	18.0022595	9.8037426	27.8060021	11.8777273	39.6837294	25.4918374	65.1755668	89.7276321	154.9031989
2011	5.6536870	18.0373208	9.8288721	27.8661929	11.9029336	39.7691265	25.5404330	65.3095595	89.9039710	155.2135305
2012	5.6715798	18.0964098	9.8665802	27.9629900	11.9488666	39.9118566	25.6334026	65.5452592	90.2766774	155.8219366
2013	5.6519765	18.1045275	9.8858775	27.9904050	11.9744838	39.9648888	25.6840519	65.6489407	90.4366500	156.0855907
2014	5.6682846	18.1616343	9.9187875	28.0804218	12.0183254	40.0987472	25.7816254	65.8803726	90.8081257	156.6884983
2015	6.0660977	19.4315327	10.6378413	30.0693740	12.8970232	42.9663972	27.5786459	70.5450431	97.5337620	168.0788051
2016	6.0588338	19.4381345	10.6329004	30.0710349	12.8973614	42.9683963	27.5883246	70.5567209	97.5933275	168.1500484
2017	6.0421549	19.4052210	10.6301265	30.0353475	12.8928596	42.9282071	27.5730426	70.5012497	97.4949102	167.9961599
2018	6.0284430	19.3830484	10.6174223	30.0004707	12.8784771	42.8789478	27.5557569	70.4347047	97.4420708	167.8767755
2019	5.9971993	19.3234588	10.5915540	29.9150128	12.8114482	42.7264610	27.5187229	70.2451839	97.3812433	167.6264272
2020	5.9137739	19.0857097	10.4234219	29.5091316	12.6311151	42.1402467	27.2370307	69.3772774	96.3701985	165.7474759
2021	5.8942067	19.0562545	10.2971583	29.3534128	12.5463436	41.8997564	27.1736520	69.0734084	96.1515636	165.2249720
2022	5.8241949	18.9609028	10.2643670	29.2252698	12.5129548	41.7382246	27.0687592	68.8069838	96.0097951	164.8167789
2023	5.8228558	18.9595172	10.2773632	29.2368804	12.5290528	41.7659332	27.0071141	68.7730473	95.9940644	164.7671117
2024	5.7587127	18.8766454	10.2692689	29.1459143	12.5191552	41.6650695	26.8896442	68.5547137	95.8541765	164.4088902
2025	5.7593920	18.8641413	10.2703451	29.1344864	12.5204239	41.6549103	26.8316274	68.4865377	95.8255344	164.3120721
2026	5.7641580	18.8555677	10.2799125	29.1354802	12.5322355	41.6677157	26.7851630	68.4528787	95.8742336	164.3271123
2027	5.7532354	18.8110617	10.2618573	29.0729190	12.5104011	41.5833201	26.7009274	68.2842475	95.6854023	163.9696498
2028	5.7563142	18.7920507	10.2664224	29.0584731	12.5158228	41.5742959	26.7182739	68.2925698	95.7424187	164.0349885
2029	5.7583071	18.7676567	10.2707305	29.0383872	12.5115506	41.5499378	26.7245153	68.2744531	95.7696261	164.0440792
2030	5.7276003	18.7051843	10.2657329	28.9709172	12.4958962	41.4668134	26.7124216	68.1792350	95.6846631	163.8638981
2031	5.6991484	18.6461657	10.2302731	28.8764388	12.4912543	41.3676931	26.7109729	68.0786660	95.6072786	163.6859446
2032	5.6634050	18.5847741	10.1774519	28.7622260	12.4252219	41.1874479	26.6683251	67.8557730	95.4051053	163.2608783
2033	5.6680944	18.6004033	10.1481320	28.7485353	12.3889302	41.1374655	26.6786250	67.8160905	95.2855753	163.1016658
2034	5.6702997	18.6007605	10.1400741	28.7408346	12.3417504	41.0825850	26.6758171	67.7584021	95.2377599	162.9961620
2035	5.6589464	18.5317156	10.1073943	28.6391099	12.2963052	40.9354151	26.6100902	67.5455053	95.0078472	162.5533525

TABLE B-17. Unit Variable OMP&R Component of Transportation Charge

(in dollars per acre-foot)

Calendar Year	CALIFORNIA AQUEDUCT (continued)									
	Reach 18A Alamo Powerplant		Reach 22B Pearblossom Pumping Plant		Reach 23 Mojave Siphon Powerplant		Reach 26A Devil Canyon Powerplant		Reach 29A Oso Pumping Plant	
	Unit Rate	Cumulative Unit Rate	Unit Rate	Cumulative Unit Rate	Unit Rate	Cumulative Unit Rate	Unit Rate	Cumulative Unit Rate	Unit Rate	Cumulative Unit Rate
	[21]	[22]	[23]	[24]	[25]	[26]	[27]	[28]	[29]	[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	0	14.2519509	27.5431181	0	0	(2.3717647)	25.1713534	1.4212193	14.7123865
1973	0	0	4.4326545	17.7262422	0	0	(8.4298618)	9.2963804	1.0210537	14.3146414
1974	0	0	3.4431782	15.7742225	0	0	(5.1043660)	10.6698565	0.9241725	13.2552168
1975	0	0	3.1739313	15.4642383	0	0	(5.6510611)	9.8131772	0.9362286	13.2265356
1976	0	0	3.9391330	17.7995236	0	0	(6.4449941)	11.3545295	0.8622774	14.7226680
1977	0	0	3.4988957	21.2784429	0	0	(11.6274558)	9.6509871	0.9076172	18.6871644
1978	0	0	4.1377503	17.2318705	0	0	(8.1314274)	9.1004431	0.7314697	13.8255899
1979	0	0	5.1961178	22.6951308	0	0	(9.5825772)	13.1125536	0.9504526	18.4494656
1980	0	0	4.4045522	23.6468482	0	0	(8.3797007)	15.2671475	1.7426400	20.9849360
1981	0	0	4.0222148	22.7301271	0	0	(4.3565125)	18.3736146	1.5670894	20.2750017
1982	0	0	3.6399098	21.7492275	0	0	(6.9107654)	14.8384621	1.4897528	19.5990705
1983	0	0	1.6396483	11.8338830	0	0	(19.6759251)	(7.8420421)	1.4680919	11.6623266
1984	0	0	2.3683525	16.4564519	0	0	(29.7599667)	(13.3035148)	1.7215519	15.8096513
1985	0	0	3.4063172	24.5195139	0	0	(29.5060830)	(4.9865691)	2.2280617	23.3412584
1986	(2.3474750)	34.2136665	5.9820629	46.1957294	0	0	(29.2492016)	10.9465278	3.2199040	39.7804455
1987	(2.4574246)	29.8858901	4.9294495	34.8153396	0	0	(28.9086698)	5.9066698	3.1321092	35.4754239
1988	(1.3513639)	30.4149082	4.9241093	35.3390175	0	0	(28.5215438)	6.8174737	3.1068638	34.8731359
1989	(3.1752172)	38.8024845	7.2085853	46.0110698	0	0	(27.9036331)	18.1074367	3.6233278	45.6010295
1990	(0.7539312)	46.2265137	8.1868942	54.4134079	0	0	(27.6871249)	26.7262830	3.9223860	50.9028309
1991	(0.9983145)	50.2711098	8.9760166	59.2471264	0	0	(27.5994460)	31.6476804	4.1999080	55.4693323
1992	(3.0429944)	56.6093776	10.5148165	67.1241941	0	0	(28.8895099)	38.2346842	4.8255793	64.4779513
1993	(3.0200327)	57.9513614	10.7506223	68.7019837	(0.2919972)	68.4099865	(28.7597426)	39.6502439	4.8187607	65.7901548
1994	(2.8377958)	55.7070896	10.2482939	65.9553835	(4.6494900)	61.3058935	(28.5720552)	32.7338383	4.8823813	63.4272667
1995	(2.7844459)	61.5312838	11.3493254	72.8806092	(4.9061306)	67.9744786	(28.3261865)	39.6482921	5.0763401	69.3920698
1996	(2.7484136)	63.2779052	11.6063740	74.8842792	(4.8245316)	70.0597476	(28.3177542)	41.7419934	5.3760515	71.4023703
1997	(2.7299577)	78.8443076	14.4288102	93.2731178	(4.9269924)	88.3461954	(28.1966402)	60.1495552	6.3525776	87.9268429
1998	(2.6759917)	80.8565827	14.7440584	95.6006411	(4.8546469)	90.7459942	(28.1428926)	62.6031016	6.7347956	90.2673700
1999	(2.6681401)	96.0106733	17.4999175	113.5105908	(4.8155932)	108.6949976	(28.0792154)	80.6157822	7.6933804	106.3721938
2000	(2.5894927)	97.8883902	17.7969010	115.6852912	(4.7161080)	110.9691832	(28.0027785)	82.9664047	7.9378367	108.4157196
2001	(2.5458074)	99.0999658	17.9955941	117.0955599	(4.8489577)	112.2466022	(27.8831682)	84.3634340	8.0405011	109.6862743
2002	(2.4678289)	100.4556179	18.2249604	118.6805783	(4.8777964)	113.8027819	(27.8089652)	85.9938167	8.1597400	111.0831868
2003	(2.3814768)	114.0066625	20.6713412	134.6780037	(4.9646887)	129.7133150	(27.7108517)	102.0024633	9.1060164	125.4941557
2004	(2.3110099)	127.4404214	23.0990985	150.5395199	(4.6032673)	145.9362526	(27.7917956)	118.1444570	10.2734630	140.0248943
2005	(2.2841925)	126.6912840	22.9932040	149.6844880	(4.4241314)	145.2603566	(27.7360185)	117.5243381	10.2922362	139.2677127
2006	(2.2690054)	127.9600665	23.2439406	151.2040071	(4.7694222)	146.4345849	(27.5807314)	118.8538535	10.3940140	140.6230859
2007	(2.2488107)	139.9628628	25.3958516	165.3587144	(4.8095656)	160.5491488	(27.4850989)	133.0640499	11.2196333	153.4313068
2008	(2.2127846)	140.8777008	25.5527748	166.4304756	(4.7229041)	161.7075715	(27.4918420)	134.2157295	11.2449259	154.3354113
2009	(2.1873361)	152.2089786	27.6043926	179.8133712	(4.7756519)	175.0377193	(27.4062068)	147.6315125	12.0312350	166.4275497
2010	(2.1845869)	152.7186120	27.7036124	180.4222244	(4.6070734)	175.8151510	(27.3771680)	148.4379830	12.0321452	166.9353441
2011	(2.1780148)	153.0355157	27.7515215	180.7870372	(4.5927731)	176.1942641	(27.3729029)	148.8213612	12.1201434	167.3336739
2012	(2.1816564)	153.6402802	27.8752118	181.5154920	(4.6158562)	176.8996358	(27.4007865)	149.4988493	12.0919263	167.9138629
2013	(2.1785325)	153.9070582	27.9180891	181.8251473	(4.7959249)	177.0292224	(27.3588359)	149.6703865	12.2012557	168.2868464
2014	(2.1645655)	154.5239328	28.0372884	182.5612212	(4.8197561)	177.7414651	(27.3359703)	150.4054948	12.0925818	168.7810801
2015	(2.1739214)	165.9048837	30.0892002	195.9940839	(4.8605459)	191.1335380	(27.3152594)	163.8182786	13.0621062	181.1409113
2016	(2.1689757)	165.9810727	30.1112384	196.0923111	(4.8736855)	191.2186256	(27.3050646)	163.9135610	12.9170030	181.0670514
2017	(2.1875959)	165.8085640	30.0697884	195.8783524	(4.7718329)	191.1065195	(27.4301839)	163.6763356	13.0172169	181.0133768
2018	(2.1523224)	165.7244531	30.0544922	195.7789453	(4.6045866)	191.1743587	(27.3621477)	163.8122110	12.9392073	180.8159828
2019	(2.1416965)	165.4847307	30.0398942	195.5246249	(4.7025063)	190.8221186	(27.2957121)	163.5264065	12.8096515	180.4360787
2020	(2.1651396)	163.5823363	29.7406240	193.3229603	(4.6721955)	188.6507648	(27.3033505)	161.3474143	12.6663425	178.4138184
2021	(2.1644648)	163.0605072	29.6931110	192.7536182	(4.6750638)	188.0785544	(27.2978611)	160.7806933	12.6485921	177.8735641
2022	(2.1626866)	162.6540923	29.6864774	192.3405697	(4.6825909)	187.6579788	(27.2971569)	160.3608219	12.5757964	177.3925753
2023	(2.1611059)	162.6060058	29.7098882	192.3158940	(4.6703052)	187.6455888	(27.3465870)	160.2990018	12.6888047	177.4559164
2024	(2.1619104)	162.2469798	29.6937541	191.9407339	(4.6452089)	187.2955250	(27.3696118)	159.9259132	12.6176862	177.0265764
2025	(2.1889904)	162.1230817	29.6990501	191.8221318	(4.6930401)	187.1290917	(27.3483235)	159.7807682	12.5963236	176.9083957
2026	(2.1884941)	162.1386182	29.7219391	191.8605573	(4.6871560)	187.1734013	(27.3485164)	159.8248849	12.6326044	176.9597167
2027	(2.1964490)	161.7732008	29.6642034	191.4374042	(4.6957313)	186.7416729	(27.4047856)	159.3368873	12.6420999	176.6117497
2028	(2.1868113)	161.8481772	29.6806552	191.5288324	(4.7070758)	186.8217566	(27.3997341)	159.4220225	12.4342111	176.4691996
2029	(2.1871826)	161.8568966	29.6953571	191.5522537	(4.6884700)	186.8637837	(27.3987328)	159.4650509	12.3687582	176.4128374
2030	(2.1872262)	161.6766719	29.6803960	191.3570679	(4.6726982)	186.6843697	(27.4064294)	159.2779403	12.3143697	176.1782678
2031	(2.1868010)	161.4991436	29.6853298	191.1844734	(4.6805884)	186.5038850	(27.3966509)	159.1072341	12.3062934	175.9922380
2032	(2.1838726)	161.0770057	29.5846491	190.6616548	(4.6987842)	185.9628706	(27.4061600)	158.5567106	12.1380649	175.3989432
2033	(2.1835689)	160.9180969	29.5432013	190.4612982	(4.7014385)	185.7598597	(27.4008417)	158.3590180	12.0793256	175.1809914
2034	(2.1922699)	160.8038921	29.4843959	190.2882880	(4.6807618)	185.6075262	(27.4023169)	158.2052093	11.8734386	174.8696006
2035	(2.1708199)	160.3825326	29.3509762	189.7335088	(4.7058900)	185.0276188	(27.4021450)	157.6254738	11.6531127	174.2064652

TABLE B-17. Unit Variable OMP&R Component of Transportation Charge

(in dollars per acre-foot)

Calendar Year	CALIFORNIA AQUEDUCT (continued)							
	Reach 29G Warne Powerplant		Reach 29J Castaic Powerplant		Reach 31A Las Perillas and Badger Hill Pumping Plants		Reach 33A Devil's Den, Bluestone, and Polonio Pass Pumping Plants and San Luis Obispo Powerplant	
	Unit Rate	Cumulative Unit Rate	Unit Rate	Cumulative Unit Rate	Unit Rate	Cumulative Unit Rate	Unit Rate	Cumulative Unit Rate
	[31]	[32]	[33]	[34]	[35]	[36]	[37]	[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	1.2624065	3.0719381	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	0	(2.9350830)	11.7773035	1.7489056	3.2074977	0	0
1973	0	0	(6.8099448)	7.5046966	1.4609575	2.9992858	0	0
1974	0	0	(7.4013274)	5.8538894	1.4255635	2.8964935	0	0
1975	0	0	(6.5604921)	6.6660435	1.0379624	2.5944238	0	0
1976	0	0	(6.7213324)	8.0013356	1.5465478	3.2570573	0	0
1977	0	0	(30.4985994)	(11.8114350)	1.7573375	4.1392042	0	0
1978	0	0	(9.0130187)	4.8125712	1.9022180	3.9335509	0	0
1979	0	0	(19.0478097)	(0.5983441)	1.5336852	4.3289836	0	0
1980	0	0	(20.5438586)	0.4410774	1.5124754	3.6876268	0	0
1981	0	0	(14.1872705)	6.0877312	1.5418572	4.7276922	0	0
1982	(2.1714430)	17.4276275	(9.5987425)	7.8288850	1.7386297	4.3142826	0	0
1983	(6.8584868)	4.8038398	(33.3750951)	(28.5712553)	(0.1078911)	1.1559600	0	0
1984	(15.1336305)	0.6760208	(15.4567275)	(14.7807067)	0.7991110	2.5434734	0	0
1985	(14.7796535)	8.5616049	(32.3307889)	(23.7691840)	1.2470812	3.7392025	0	0
1986	(14.3284894)	25.4519561	(28.4039160)	(2.9519599)	2.2592345	7.1989959	0	0
1987	(14.8417287)	20.6336952	(27.0537384)	(6.4200432)	1.9189179	6.6721819	0	0
1988	(14.6779969)	20.1951390	(25.6504735)	(5.4553345)	1.8841273	6.3029100	0	0
1989	(14.1243945)	31.4766350	(24.4628082)	7.0138268	2.7359984	8.2052231	0	0
1990	(13.9704761)	36.9323548	(25.4382122)	11.4941426	3.1874139	9.2288293	0	0
1991	(13.9817996)	41.4875327	(25.4221637)	16.0653690	3.5061438	10.0550908	0	0
1992	(15.8498911)	48.6280602	(25.5513066)	23.0767536	4.0455777	11.4110684	0	0
1993	(15.7959210)	49.9942338	(25.5098716)	24.4843622	4.1387223	11.7253779	0	0
1994	(15.9084335)	47.5188332	(25.5958905)	21.9229427	3.9354629	11.3204787	0	0
1995	(15.8462917)	53.5457781	(25.5822701)	27.9635080	3.9987872	11.9254121	13.6822348	25.6076469
1996	(15.8339807)	55.5683896	(25.6008580)	29.9675316	4.4790641	12.6412093	18.9840394	31.6252487
1997	(15.8294275)	72.0974154	(25.4824619)	46.6149535	5.5901355	15.4800165	27.1973583	42.6773748
1998	(15.8547038)	74.4126662	(25.4899035)	48.9227627	5.7108049	15.8162844	28.0894220	43.9057064
1999	(15.8415569)	90.5306369	(25.4537195)	65.0769174	6.7967900	18.5870438	36.1172715	54.7043153
2000	(15.7764599)	92.6392597	(25.4249763)	67.2142834	6.9133687	18.9228172	36.9790597	55.9018769
2001	(15.7841607)	93.9021136	(25.4318135)	68.4703001	6.9914159	19.1314719	37.5559686	56.6874405
2002	(15.8199817)	95.2632051	(25.3990887)	69.8641164	7.0751096	19.3708498	38.1746588	57.5455086
2003	(15.6619046)	109.8322511	(25.3196571)	84.5125940	8.0293758	21.7948915	45.2288965	67.0237880
2004	(15.7566551)	124.2682392	(25.3435255)	98.9247137	8.9781893	24.2170127	52.2427291	76.4597418
2005	(15.7555959)	123.5121168	(25.3599785)	98.1521383	8.9159484	24.0600839	51.7826093	75.8426932
2006	(15.7435914)	124.8794945	(25.31[illegible]2667)	99.5682278	9.0070532	24.2958162	52.4560764	76.7518926
2007	(15.6819286)	137.7493782	(25.2730091)	112.4763691	9.8676300	26.4552774	58.8176801	85.2729575
2008	(15.6653455)	138.6700658	(25.2669045)	113.4031613	9.9316901	26.6314164	59.2912068	85.9226232
2009	(15.6515980)	150.7759517	(25.2542929)	125.5216588	10.7354687	28.6888174	65.2329682	93.9217856
2010	(15.6477101)	151.2876340	(25.2344783)	126.0531557	10.7775044	28.7797639	65.5437108	94.3234747
2011	(15.6546917)	151.6789822	(25.2373981)	126.4415841	10.7946875	28.8320083	65.6707148	94.5027231
2012	(15.6749950)	152.2388679	(25.2411383)	126.9977296	10.8379609	28.9343707	65.9906223	94.9249930
2013	(15.6874182)	152.5994282	(25.2481312)	127.3512970	10.8545177	28.9590452	66.1129870	95.0720322
2014	(15.6843558)	153.0967243	(25.2484528)	127.8482715	10.8997097	29.0613440	66.4470959	95.5084399
2015	(15.6832184)	165.4576929	(25.2462851)	140.2114078	11.7108149	31.1423476	72.4429532	103.5853008
2016	(15.6907889)	165.3762625	(25.2455229)	140.1307396	11.7209696	31.1591041	72.5180461	103.6771502
2017	(15.6615035)	165.3518733	(25.2451304)	140.1067429	11.7033939	31.1086149	72.3880913	103.4967062
2018	([illegible].7068395)	165.1091433	(25.2394872)	139.8696561	11.6981450	31.0811934	72.3493034	103.4304968
2019	(15.7058908)	164.7301879	(25.2389630)	139.4912249	11.6908930	31.0143518	72.2956899	103.3100417
2020	(15.7060858)	162.7077326	(25.2392656)	137.4684670	11.5704323	30.6561420	71.4052010	102.0613430
2021	(15.7058367)	162.1677274	(25.2395455)	136.9281819	11.5506546	30.6069091	71.2590160	101.8659251
2022	(15.7103322)	161.6822431	(25.2400646)	136.4421785	11.5472548	30.5081576	71.2338904	101.7420480
2023	(15.7355536)	161.7203628	(25.2396645)	136.4806983	11.5565745	30.5160917	71.3027552	101.8188469
2024	(15.7328649)	161.2937115	(25.2395366)	136.0541749	11.5486018	30.4252472	71.2438640	101.6691112
2025	(15.7383480)	161.1700477	(25.2426614)	135.9273863	11.5500035	30.4141448	71.2542207	101.6683655
2026	(15.7413676)	161.2183491	(25.2427792)	135.9755699	11.5579414	30.4135091	71.3128990	101.7264081
2027	(15.7425025)	160.8692472	(25.2446012)	135.6246460	11.5337151	30.3447768	71.1337996	101.4785764
2028	(15.7407864)	160.7284132	(25.2434452)	135.4849680	11.5416132	30.3336639	71.1921800	101.5258439
2029	(15.7383581)	160.6744793	(25.2429058)	135.4315735	11.5439693	30.3116260	71.2096161	101.5212421
2030	(15.7357134)	160.4425544	(25.2436566)	135.1988978	11.5388049	30.2439892	71.1714383	101.4154275
2031	(15.7387129)	160.2535251	(25.2433819)	135.0101432	11.5371746	30.1833403	71.1593792	101.3427195
2032	(15.7412443)	159.6576989	(25.2457293)	134.4119696	11.5244798	30.1092539	71.0655307	101.1747846
2033	(15.7461638)	159.4348276	(25.2482401)	134.1865875	11.5336455	30.1340488	71.1332889	101.2673377
2034	(15.7528611)	159.1167395	(25.2513155)	133.8654240	11.5379947	30.1387552	71.1654371	101.3041923
2035	(15.6622698)	158.5441954	(25.2621107)	133.2820847	11.5152645	30.0469801	70.9974321	101.0444122

TABLE B-18. Variable OMP&R Component of Transportation Charge for Each Contractor

(in dollars)

Calendar Year	NORTH BAY AREA			SOUTH BAY AREA				CENTRAL COASTAL AREA		
	Napa County FC&WCD	Solano County FC&WCD	Total	Alameda County FC&WCD, Zone 7	Alameda County Water District	Santa Clara Valley Water District	Total	San Luis Obispo County FC&WCD	Santa Barbara County FC&WCD	Total
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]
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	121,140	192,605	0	0	0
1967	0	0	0	19,399	56,949	160,650	236,998	0	0	0
1968	6,989	0	6,989	29,898	120,985	341,769	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	49,688	0	431,442	481,130	0	0	0
1971	10,609	0	10,609	23,842	28,329	416,328	468,499	0	0	0
1972	14,434	0	14,434	54,839	144,669	524,207	723,715	0	0	0
1973	14,449	0	14,449	18,397	15,590	547,808	581,795	0	0	0
1974	17,473	0	17,473	9,499	29	636,187	645,715	0	0	0
1975	14,779	0	14,779	22,317	4,765	425,285	452,367	0	0	0
1976	20,856	0	20,856	97,875	121,693	502,768	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	652,861	767,758	0	0	0
1979	16,237	0	16,237	136,993	77,085	652,117	866,195	0	0	0
1980	19,945	0	19,945	98,851	64,963	518,102	681,916	0	0	0
1981	23,848	0	23,848	126,750	141,805	569,369	837,924	0	0	0
1982	11,934	0	11,934	96,497	46,443	641,657	784,597	0	0	0
1983	2,670	0	2,670	13,646	9,040	248,340	271,026	0	0	0
1984	4,507	0	4,507	25,163	12,381	326,409	363,953	0	0	0
1985	9,981	0	9,981	86,403	109,012	504,474	699,889	0	0	0
1986	15,406	0	15,406	118,250	137,979	980,868	1,237,097	0	0	0
1987	27,269	0	27,269	230,442	249,975	866,396	1,346,813	0	0	0
1988	33,963	29,066	63,029	247,977	321,266	844,455	1,413,698	0	0	0
1989	46,566	96,598	143,164	419,713	493,163	1,218,522	2,131,398	0	0	0
1990	47,125	91,291	138,416	443,935	582,664	1,276,312	2,302,911	0	0	0
1991	63,078	118,984	182,062	516,197	637,656	1,427,135	2,580,988	0	0	0
1992	75,113	129,519	204,632	630,335	735,391	1,680,892	3,046,618	0	0	0
1993	82,002	139,644	221,646	687,505	759,874	1,773,039	3,220,418	0	0	0
1994	86,239	145,919	232,158	694,473	729,196	1,736,182	3,159,851	0	0	0
1995	105,082	177,140	282,222	801,609	801,609	1,908,590	3,511,808	640,192	1,164,790	1,804,982
1996	114,897	187,608	302,505	860,162	821,045	1,954,868	3,636,075	790,632	1,438,507	2,229,139
1997	152,644	242,484	395,128	1,111,029	1,014,417	2,415,281	4,540,727	1,066,934	1,941,223	3,008,157
1998	165,454	256,169	421,623	1,134,705	1,036,035	2,466,749	4,637,489	1,097,643	1,997,095	3,094,738
1999	208,483	315,339	523,822	1,341,453	1,224,805	2,916,201	5,482,459	1,367,608	2,488,280	3,855,888
2000	223,796	331,459	555,255	1,364,500	1,245,848	2,966,306	5,576,654	1,397,546	2,542,753	3,940,299
2001	236,722	341,537	578,259	1,379,085	1,259,165	2,998,012	5,636,262	1,417,186	2,578,485	3,995,671
2002	250,307	352,270	602,577	1,395,529	1,274,179	3,033,759	5,703,467	1,438,637	2,617,515	4,056,152
2003	296,106	407,317	703,423	1,577,544	1,440,366	3,429,442	6,447,352	1,675,594	3,048,645	4,724,239
2004	344,895	464,373	809,268	1,758,937	1,605,986	3,823,777	7,188,700	1,911,494	3,477,848	5,389,342
2005	356,137	469,765	825,902	1,746,820	1,594,923	3,797,435	7,139,178	1,896,067	3,449,781	5,345,848
2006	372,171	475,264	847,435	1,764,565	1,611,124	3,836,009	7,211,698	1,918,797	3,491,136	5,409,933
2007	421,420	521,329	942,749	1,927,435	1,759,831	4,190,076	7,877,342	2,131,824	3,878,726	6,010,550
2008	437,975	525,618	963,593	1,940,389	1,771,659	4,218,237	7,930,285	2,148,066	3,908,276	6,056,342
2009	488,453	568,963	1,057,416	2,094,174	1,912,071	4,552,551	8,558,796	2,348,045	4,272,127	6,620,172
2010	505,693	572,154	1,077,847	2,101,695	1,918,939	4,568,903	8,589,537	2,358,088	4,290,398	6,648,486
2011	524,669	574,023	1,098,692	2,105,097	1,922,045	4,576,297	8,603,439	2,362,568	4,298,551	6,661,119
2012	545,107	577,273	1,122,380	2,113,148	1,929,396	4,593,799	8,636,343	2,373,125	4,317,757	6,690,882
2013	564,808	579,301	1,144,109	2,116,777	1,932,710	4,601,691	8,651,178	2,376,801	4,324,447	6,701,248
2014	586,043	582,538	1,168,581	2,125,083	1,940,293	4,619,746	8,685,122	2,387,711	4,344,298	6,732,009
2015	650,634	627,096	1,277,730	2,280,571	2,082,260	4,957,765	9,320,596	2,589,632	4,711,681	7,301,313
2016	671,029	628,239	1,299,268	2,282,654	2,084,162	4,962,291	9,329,107	2,591,929	4,715,859	7,307,788
2017	690,656	627,992	1,318,648	2,279,406	2,081,197	4,955,231	9,315,834	2,587,418	4,707,651	7,295,069
2018	711,429	628,284	1,339,713	2,278,271	2,080,160	4,952,762	9,311,193	2,585,763	4,704,640	7,290,403
2019	732,755	628,620	1,361,375	2,275,935	2,078,028	4,947,685	9,301,648	2,582,750	4,699,161	7,281,911
2020	746,916	622,688	1,369,604	2,251,702	2,055,902	4,895,005	9,202,609	2,551,533	4,642,363	7,193,896
2021	746,527	621,739	1,368,266	2,248,434	2,052,918	4,887,901	9,189,253	2,546,647	4,633,474	7,180,121
2022	746,935	621,512	1,368,447	2,246,785	2,051,412	4,884,315	9,182,512	2,543,551	4,627,838	7,171,389
2023	748,259	622,128	1,370,387	2,248,107	2,052,620	4,887,191	9,187,918	2,545,471	4,631,331	7,176,802
2024	748,508	621,603	1,370,111	2,246,113	2,050,799	4,882,854	9,179,766	2,541,728	4,624,521	7,166,249
2025	749,258	621,688	1,370,946	2,245,705	2,050,427	4,881,969	9,178,101	2,541,710	4,624,487	7,166,197
2026	749,772	622,116	1,371,888	2,246,221	2,050,897	4,883,090	9,180,208	2,543,160	4,627,128	7,170,288
2027	748,200	620,811	1,369,011	2,241,230	2,046,341	4,872,241	9,159,812	2,536,965	4,615,855	7,152,820
2028	748,713	621,237	1,369,950	2,241,338	2,046,439	4,872,474	9,160,251	2,538,146	4,618,005	7,156,151
2029	748,866	621,364	1,370,230	2,240,459	2,045,637	4,870,564	9,156,660	2,538,031	4,617,795	7,155,826
2030	748,531	621,086	1,369,617	2,238,264	2,043,632	4,865,790	9,147,686	2,535,386	4,612,982	7,148,368
2031	748,425	620,996	1,369,421	2,236,625	2,042,136	4,862,230	9,140,991	2,533,567	4,609,675	7,143,242
2032	747,601	620,313	1,367,914	2,233,640	2,039,411	4,855,740	9,128,791	2,529,369	4,602,036	7,131,405
2033	748,196	620,807	1,369,003	2,235,446	2,041,060	4,859,667	9,136,173	2,531,683	4,606,246	7,137,929
2034	748,478	621,041	1,369,519	2,235,980	2,041,547	4,860,826	9,138,353	2,532,605	4,607,922	7,140,527
2035	747,004	619,818	1,366,822	2,230,093	2,036,172	4,848,030	9,114,295	2,526,111	4,596,106	7,122,217
TOTAL	23,059,502	22,354,123	45,413,625	85,157,077	79,211,272	195,097,750	359,466,099	88,657,713	161,307,394	249,965,107

TABLE B-18. Variable OMP&R Component of Transportation Charge for Each Contractor

(in dollars)

Calendar Year	SAN JOAQUIN VALLEY AREA									
	Devil's Den Water District	Dudley Ridge Water District	Empire West Side Irrigation District	Future Contractor San Joaquin Valley	Kern County Water Agency		County of Kings	Oak Flat Water District	Tulare Lake Basin Water Storage District	Total
					Municipal and Industrial	Agricultural				
	[11]	[12]	[13]	[14]	[15]	[16]	[17]	[18]	[19]	[20]
1960	0	0	0	0	0	0	0	0	0	0
1961	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0	0	0	0
1967	0	0	0	0	0	0	0	0	0	0
1968	30,400	68,978	5,176	0	0	440,923	2,355	4,760	65,680	618,272
1969	30,627	56,774	101	0	0	321,387	181	3,338	17,956	430,364
1970	39,429	69,819	6,811	0	0	470,865	0	5,595	16,550	609,069
1971	34,872	53,097	7,747	0	0	769,054	4,785	6,353	158,419	1,034,327
1972	44,601	61,907	8,452	0	0	1,123,600	2,042	7,375	376,900	1,624,877
1973	28,247	33,931	4,615	0	0	764,825	2,308	3,017	77,630	914,573
1974	28,096	49,114	4,413	0	46,752	671,406	2,207	3,114	106,332	911,434
1975	27,760	63,122	4,670	0	34,574	842,482	2,490	3,920	134,257	1,113,275
1976	38,108	70,851	5,131	0	94,653	965,096	2,737	4,910	100,597	1,282,083
1977	21,006	26,565	1,758	0	84,875	498,624	3,644	2,602	43,067	682,141
1978	44,693	107,201	923	0	188,010	1,594,321	4,248	6,294	24,483	1,970,173
1979	82,848	107,742	4,861	0	193,697	2,365,059	5,591	13,137	433,610	3,206,545
1980	51,192	89,181	1,945	0	122,128	1,738,346	4,785	7,803	150,617	2,165,997
1981	60,042	130,619	18,666	0	261,567	2,404,287	7,327	8,967	265,820	3,157,295
1982	54,792	105,602	930	0	138,515	2,282,243	4,507	6,698	47,781	2,641,068
1983	14,633	54,219	0	0	14,320	935,205	4,487	3,331	1,272	1,027,467
1984	32,406	78,671	0	0	164,840	1,806,524	5,407	6,385	10,018	2,104,251
1985	45,240	115,264	12,952	0	229,605	2,582,364	8,473	8,782	273,612	3,276,292
1986	95,754	248,218	5,779	0	395,391	5,064,365	18,278	18,115	391,995	6,237,895
1987	78,872	220,019	12,002	0	574,997	4,828,251	19,013	19,494	442,453	6,195,101
1988	72,699	212,075	16,680	0	555,231	4,739,940	17,675	14,191	423,611	6,052,102
1989	120,986	357,808	16,407	0	336,316	7,787,065	21,877	23,833	746,822	9,411,114
1990	117,206	348,590	18,125	0	362,916	8,064,664	24,166	24,224	715,907	9,675,798
1991	127,699	377,874	19,647	0	393,499	8,745,252	26,196	26,245	776,050	10,492,462
1992	144,920	424,988	22,096	0	443,937	9,885,503	29,462	29,334	872,810	11,853,050
1993	148,912	437,750	22,760	0	456,753	10,162,150	30,347	30,331	899,018	12,188,021
1994	143,770	426,116	22,155	0	444,104	9,867,591	29,540	29,604	875,125	11,838,005
1995	151,453	457,366	23,779	0	477,623	10,589,706	31,707	31,647	939,305	12,702,586
1996	160,544	470,955	24,486	0	491,753	10,946,751	32,648	32,523	967,215	13,126,875
1997	196,597	570,646	29,670	0	596,883	13,309,616	39,560	39,142	1,171,951	15,954,065
1998	200,866	583,086	30,317	0	610,142	13,605,937	40,422	39,949	1,197,499	16,308,218
1999	236,055	680,298	35,371	0	712,625	15,907,708	47,161	46,426	1,397,145	19,062,789
2000	240,320	692,945	36,029	0	725,908	16,202,012	48,038	47,227	1,423,120	19,415,599
2001	242,970	700,481	36,420	0	733,933	16,383,068	48,560	47,659	1,438,596	19,631,687
2002	246,010	709,464	36,887	0	743,408	16,595,603	49,183	48,222	1,457,045	19,885,822
2003	276,795	794,270	41,297	0	833,065	18,616,793	55,062	53,956	1,631,213	22,302,451
2004	307,556	879,280	45,716	0	922,848	20,637,685	60,956	59,710	1,805,800	24,719,551
2005	305,563	873,816	45,432	0	917,241	20,513,892	60,577	59,305	1,794,580	24,570,406
2006	308,558	882,162	45,866	0	926,055	20,714,085	61,155	59,898	1,811,719	24,809,498
2007	335,982	957,107	49,763	0	1,005,285	22,499,682	66,350	64,912	1,965,636	26,944,717
2008	338,218	963,574	50,099	0	1,012,000	22,649,382	66,799	65,388	1,978,917	27,124,377
2009	364,348	1,035,908	53,860	0	1,088,331	24,366,564	71,813	70,277	2,127,472	29,178,573
2010	365,503	1,038,730	54,006	0	1,091,307	24,434,735	72,009	70,468	2,133,268	29,260,026
2011	366,167	1,040,754	54,112	0	1,093,453	24,483,327	72,150	70,587	2,137,423	29,317,973
2012	367,466	1,044,163	54,289	0	1,097,087	24,566,292	72,385	70,822	2,144,424	29,416,928
2013	367,779	1,044,631	54,314	0	1,097,756	24,583,965	72,418	70,980	2,145,386	29,437,229
2014	369,079	1,047,926	54,485	0	1,101,272	24,663,864	72,646	71,212	2,152,154	29,532,638
2015	395,507	1,121,200	58,294	0	1,178,424	26,402,168	77,726	76,183	2,302,637	31,612,139
2016	395,720	1,121,581	58,315	0	1,178,791	26,409,718	77,752	76,262	2,303,419	31,621,558
2017	395,079	1,119,681	58,215	0	1,176,947	26,370,299	77,621	76,169	2,299,518	31,573,529
2018	394,730	1,118,402	58,149	0	1,175,634	26,341,279	77,532	76,121	2,296,891	31,538,738
2019	393,881	1,114,963	57,971	0	1,172,084	26,264,315	77,294	75,960	2,289,830	31,446,298
2020	389,333	1,101,246	57,257	0	1,157,624	25,935,118	76,343	75,080	2,261,656	31,053,657
2021	388,707	1,099,546	57,169	0	1,155,317	25,865,918	76,225	75,024	2,258,166	30,976,072
2022	387,453	1,094,044	56,883	0	1,149,726	25,749,474	75,844	74,879	2,246,867	30,835,170
2023	387,554	1,093,964	56,879	0	1,149,589	25,751,850	75,838	74,879	2,246,702	30,837,255
2024	386,401	1,089,183	56,630	0	1,144,774	25,655,317	75,507	74,772	2,236,882	30,719,466
2025	386,259	1,088,461	56,592	0	1,143,972	25,641,025	75,457	74,697	2,235,401	30,701,864
2026	386,252	1,087,966	56,566	0	1,143,458	25,634,574	75,423	74,621	2,234,385	30,693,245
2027	385,378	1,085,399	56,433	0	1,140,749	25,575,920	75,244	74,430	2,229,110	30,622,663
2028	385,237	1,084,301	56,376	0	1,139,778	25,557,624	75,168	74,304	2,226,858	30,599,646
2029	384,958	1,082,893	56,303	0	1,138,467	25,531,892	75,070	74,153	2,223,967	30,567,703
2030	384,099	1,079,290	56,116	0	1,134,991	25,460,316	74,820	73,972	2,216,565	30,480,169
2031	383,328	1,075,884	55,938	0	1,131,661	25,387,074	74,585	73,798	2,209,571	30,391,839
2032	382,387	1,072,341	55,754	0	1,127,921	25,301,465	74,339	73,652	2,202,295	30,290,154
2033	382,702	1,073,243	55,801	0	1,128,627	25,311,113	74,401	73,714	2,204,148	30,303,749
2034	382,763	1,073,264	55,802	0	1,128,513	25,307,211	74,403	73,704	2,204,191	30,299,851
2035	381,597	1,069,280	55,595	0	1,124,412	25,217,363	74,127	73,375	2,196,008	30,191,757
TOTAL	15,646,964	43,809,789	2,294,038	0	46,936,114	1,018,663,092	3,016,446	3,011,811	89,393,327	1,222,771,581

TABLE B-18. Variable OMP&R Component of Transportation Charge for Each Contractor

(in dollars)

Calendar Year	SOUTHERN CALIFORNIA AREA									
	Antelope Valley-East Kern Water Agency	Castaic Lake Water Agency	Coachella Valley Water District	Crestline-Lake Arrowhead Water Agency	Desert Water Agency	Littlerock Creek Irrigation District	Mojave Water Agency	Palmdale Water District	San Bernardino Valley Municipal Water District	San Gabriel Valley Municipal Water District
	[21]	[22]	[23]	[24]	[25]	[26]	[27]	[28]	[29]	[30]
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	779	0	0	12,781	0	4,492	1,516	0	32,093	0
1973	286	0	102,811	6,895	159,535	3,854	0	0	301,444	0
1974	15,558	0	100,954	9,891	157,742	4,932	221	0	177,172	6,529
1975	99,182	0	108,250	12,758	170,106	6,391	0	0	136,060	53,482
1976	385,090	0	135,276	17,835	213,595	8,163	0	0	139,356	68,933
1977	199,168	0	0	23,598	0	1,973	1,702	0	239,663	86,821
1978	580,256	0	173,766	20,833	263,648	2,723	0	0	36,902	70,719
1979	1,058,567	(3)	228,381	28,596	340,428	2,327	90,780	0	236	3,803
1980	1,393,277	154	257,373	29,298	401,997	3,676	94,587	0	0	16,565
1981	1,484,942	35,071	275,149	33,754	431,871	23,759	90,921	0	294,363	66,494
1982	910,736	74,500	289,830	26,925	456,733	0	228,367	0	124,777	186,950
1983	336,010	(270,741)	172,148	10,781	272,181	388	0	0	(47,006)	(5,756)
1984	460,147	(169,638)	259,485	18,562	411,413	14	0	0	(73,913)	(101,852)
1985	782,539	(294,761)	416,563	34,868	662,027	0	0	32,557	(36,850)	(25,072)
1986	1,110,199	(41,115)	731,963	60,534	1,165,676	5,577	0	105,926	70,287	103,489
1987	1,019,986	(103,793)	676,497	64,373	1,096,683	32,277	592	160,757	110,757	62,787
1988	1,036,509	(103,129)	729,822	70,891	1,201,526	12,745	318	53,833	145,798	61,003
1989	2,134,137	171,697	1,006,399	113,417	1,679,404	80,320	16,563	317,793	630,139	235,397
1990	2,655,712	318,617	1,256,950	145,012	2,073,151	0	29,927	482,604	1,224,064	347,442
1991	2,965,995	498,669	1,368,608	171,817	2,257,315	115,624	37,326	656,038	1,449,464	411,421
1992	3,623,000	803,071	1,550,569	208,422	2,557,433	130,202	59,740	911,977	1,751,149	497,051
1993	3,940,692	954,891	1,587,014	224,383	2,617,547	133,288	83,818	1,002,558	1,982,513	515,453
1994	4,122,325	909,802	1,523,570	211,690	2,512,900	128,126	104,209	963,732	1,636,691	458,273
1995	4,799,440	1,160,486	1,683,541	246,407	2,776,751	141,523	3,702,336	1,064,490	1,982,415	594,723
1996	5,214,163	1,243,652	1,729,827	265,387	2,853,090	145,539	3,804,121	1,094,707	2,087,100	640,322
1997	6,843,606	1,934,520	2,154,609	349,055	3,553,706	181,343	4,738,275	1,364,007	3,007,479	943,145
1998	7,374,202	2,030,294	2,208,376	373,329	3,642,386	185,970	4,856,512	1,398,819	3,130,155	1,002,904
1999	9,178,621	2,700,692	2,622,094	464,889	4,324,753	220,824	5,766,337	1,660,984	4,030,789	1,318,875
2000	9,788,839	2,789,393	2,672,332	492,702	4,407,609	225,144	5,876,814	1,693,469	4,148,320	1,385,539
2001	10,306,495	2,841,517	2,704,907	514,765	4,461,342	227,929	5,948,454	1,714,431	4,218,173	1,437,553
2002	10,849,206	2,899,361	2,741,521	538,515	4,521,730	231,048	6,028,972	1,737,884	4,299,692	1,494,573
2003	12,768,747	3,507,274	3,111,062	632,742	5,131,232	262,216	6,841,643	1,972,313	5,100,123	1,807,484
2004	14,783,090	4,105,377	3,477,462	733,183	5,735,555	293,113	7,647,409	2,204,719	6,379,801	2,133,688
2005	15,202,953	4,073,314	3,457,712	750,995	5,702,979	291,390	7,603,972	2,191,759	6,816,412	2,162,448
2006	15,355,207	4,132,080	3,492,813	769,661	5,760,872	294,308	7,681,164	2,213,709	7,368,940	2,227,321
2007	16,795,545	4,667,768	3,819,786	857,655	6,300,167	321,915	8,400,222	2,421,358	8,782,227	2,538,862
2008	16,905,324	4,706,230	3,844,545	877,747	6,341,001	324,019	8,454,669	2,437,185	9,395,102	2,606,469
2009	18,265,079	5,209,148	4,153,689	965,159	6,850,887	350,080	9,134,518	2,633,215	10,924,732	2,917,198
2010	18,326,233	5,231,206	4,167,753	984,564	6,874,087	351,253	9,165,450	2,642,033	11,578,162	2,983,603
2011	18,364,109	5,247,326	4,176,181	993,737	6,887,985	351,981	9,183,982	2,647,514	12,203,354	3,044,884
2012	18,436,834	5,270,406	4,193,008	1,004,791	6,915,741	353,372	9,220,986	2,657,977	12,856,901	3,112,565
2013	18,468,846	5,285,079	4,200,163	1,012,607	6,927,537	353,986	9,236,719	2,662,592	13,470,337	3,170,019
2014	18,542,872	5,305,703	4,217,164	1,023,791	6,955,584	355,405	9,274,110	2,673,264	13,837,306	3,239,734
2015	19,908,586	5,818,772	4,527,464	1,108,574	7,467,375	381,582	9,956,499	2,870,155	15,398,919	3,587,620
2016	19,917,728	5,815,425	4,529,733	1,109,068	7,471,117	381,756	9,961,489	2,871,473	15,735,701	3,645,437
2017	19,897,027	5,814,430	4,524,790	1,108,418	7,462,966	381,360	9,950,619	2,868,488	16,040,279	3,695,811
2018	19,886,934	5,804,590	4,522,493	1,108,811	7,459,178	381,166	9,945,570	2,867,034	16,381,221	3,754,577
2019	19,858,167	5,788,887	4,516,619	1,106,767	7,449,486	380,615	9,932,652	2,862,887	16,431,133	3,803,625
2020	19,629,881	5,704,940	4,465,760	1,094,174	7,365,605	376,239	9,820,807	2,829,973	16,289,636	3,807,800
2021	19,567,261	5,682,521	4,452,608	1,090,856	7,343,914	375,040	9,791,884	2,820,947	16,309,594	3,849,088
2022	19,518,491	5,662,350	4,443,067	1,088,416	7,328,177	374,105	9,770,902	2,813,917	16,343,974	3,893,561
2023	19,512,721	5,663,950	4,442,496	1,088,346	7,327,237	373,993	9,769,646	2,813,083	16,414,617	3,946,562
2024	19,469,638	5,646,248	4,433,830	1,086,315	7,312,941	373,168	9,750,590	2,806,872	16,408,399	3,991,751
2025	19,454,769	5,640,988	4,431,092	1,085,347	7,308,423	372,884	9,744,565	2,804,728	16,393,507	4,042,454
2026	19,456,635	5,642,987	4,431,980	1,085,605	7,309,887	372,919	9,746,517	2,804,997	16,398,034	4,097,911
2027	19,412,783	5,628,422	4,422,204	1,083,101	7,293,764	372,077	9,725,019	2,798,675	16,347,964	4,139,572
2028	19,421,782	5,622,626	4,424,317	1,083,566	7,297,249	372,251	9,729,664	2,799,973	16,356,699	4,195,987
2029	19,422,828	5,620,408	4,424,857	1,083,809	7,298,141	372,271	9,730,854	2,800,126	16,361,114	4,251,338
2030	19,401,202	5,610,754	4,420,348	1,082,768	7,290,705	371,856	9,720,939	2,797,006	16,341,916	4,300,504
2031	19,379,898	5,602,920	4,416,360	1,081,724	7,284,128	371,448	9,712,172	2,793,935	16,324,404	4,353,174
2032	19,329,241	5,578,096	4,404,285	1,078,585	7,264,209	370,477	9,685,612	2,786,632	16,267,919	4,395,192
2033	19,310,172	5,568,743	4,399,656	1,077,407	7,256,575	370,113	9,675,434	2,783,882	16,247,634	4,446,721
2034	19,296,467	5,555,414	4,395,660	1,076,524	7,249,985	369,849	9,666,645	2,781,907	16,231,855	4,499,355
2035	19,245,905	5,531,207	4,382,845	1,073,162	7,228,847	368,880	9,638,463	2,774,619	16,172,374	4,539,614
TOTAL	707,182,619	196,128,796	171,192,387	38,290,938	282,097,814	14,027,258	348,833,794	104,925,513	497,139,572	129,119,495

TABLE B-18. Variable OMP&R Component of Transportation Charge for Each Contractor

(in dollars)

Calendar Year	SOUTHERN CALIFORNIA AREA (continued)				FEATHER RIVER AREA					
	San Gorgonio Pass Water Agency	The Metropolitan Water District of Southern California	Ventura County Flood Control District	Total	City of Yuba City	County of Butte	Plumas County FC&WCD	Total	South Bay Area Future Contractor	GRAND TOTAL
	[31]	[32]	[33]	[34]	[35]	[36]	[37]	[38]	[39]	[40]
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	192,605
1967	0	0	0	0	0	0	0	0	0	236,998
1968	0	0	0	0	0	0	0	0	0	1,117,913
1969	0	0	0	0	0	0	0	0	0	773,646
1970	0	0	0	0	0	0	0	0	0	1,103,797
1971	0	0	0	0	0	0	0	0	0	1,513,435
1972	0	847,235	0	898,896	0	0	0	0	0	3,261,922
1973	0	1,083,333	0	1,658,158	0	0	0	0	0	3,168,975
1974	0	1,872,299	0	2,345,298	0	0	0	0	0	3,919,920
1975	0	3,886,921	0	4,473,150	0	0	0	0	0	6,053,571
1976	0	5,485,263	0	6,453,511	0	0	0	0	0	8,478,786
1977	0	(796,688)	0	(243,763)	0	0	0	0	0	1,164,427
1978	0	3,678,838	0	4,827,685	0	0	0	0	0	7,587,308
1979	0	4,019,308	0	5,772,423	0	0	0	0	0	9,861,400
1980	0	5,390,394	0	7,587,321	0	0	0	0	0	10,455,179
1981	0	11,077,689	0	13,814,013	0	0	0	0	0	17,833,080
1982	0	7,564,374	0	9,863,192	0	0	0	0	0	13,300,791
1983	0	(6,697,926)	0	(6,229,921)	0	0	0	0	0	(4,928,758)
1984	0	(7,640,946)	0	(6,836,728)	0	0	0	0	0	(4,364,017)
1985	0	(12,045,182)	0	(10,473,311)	0	0	0	0	0	(6,487,149)
1986	0	1,107,135	0	4,419,671	0	0	0	0	0	11,910,069
1987	0	(2,408,049)	0	712,867	0	0	0	0	0	8,282,050
1988	0	(1,397,934)	0	1,811,382	0	0	0	0	0	9,340,211
1989	0	12,495,876	0	18,881,142	0	0	0	0	0	30,566,818
1990	0	24,953,391	0	33,486,870	0	0	0	0	0	45,603,995
1991	0	31,471,075	0	41,403,352	0	0	0	0	0	54,658,864
1992	0	44,936,596	0	57,029,210	0	0	0	0	0	72,133,510
1993	0	48,127,836	15,497	61,185,490	0	0	0	0	0	76,815,575
1994	0	40,663,712	341,199	53,576,229	0	0	0	0	0	68,806,243
1995	0	50,963,615	446,225	69,561,952	0	0	0	0	0	87,863,550
1996	0	55,313,007	499,525	74,890,440	0	0	0	0	0	94,185,034
1997	0	84,463,592	792,949	110,326,286	0	0	0	0	0	134,224,363
1998	0	90,144,967	860,341	117,208,255	0	0	0	0	0	141,670,323
1999	0	120,420,259	1,166,267	153,875,384	0	0	0	0	0	182,800,342
2000	1,435,318	126,693,309	1,239,812	162,848,600	0	0	0	0	0	192,336,407
2001	1,459,489	131,962,960	1,293,548	169,091,563	0	0	0	0	0	198,933,442
2002	1,487,695	137,683,639	1,350,518	175,864,354	0	0	0	0	0	206,112,372
2003	1,764,640	168,441,086	1,653,639	212,994,201	0	0	0	0	0	247,171,666
2004	2,043,898	200,386,789	1,962,551	251,886,635	0	0	0	0	0	289,993,496
2005	2,033,171	203,406,320	1,991,033	255,684,458	0	0	0	0	0	293,565,792
2006	2,056,171	209,332,735	2,038,248	262,723,229	0	0	0	0	0	301,001,793
2007	2,302,009	239,120,380	2,310,324	298,638,218	0	0	0	0	0	340,413,576
2008	2,321,933	245,033,222	2,350,856	305,598,302	0	0	0	0	0	347,672,899
2009	2,554,025	274,531,306	2,613,786	341,102,822	0	0	0	0	0	386,517,779
2010	2,567,978	280,210,770	2,647,237	347,730,329	0	0	0	0	0	393,306,225
2011	2,574,609	280,986,773	2,655,019	349,317,454	0	0	0	0	0	394,998,677
2012	2,586,330	282,257,446	2,666,162	351,532,519	0	0	0	0	0	397,399,052
2013	2,589,297	282,727,519	2,673,268	352,777,969	0	0	0	0	0	398,711,733
2014	2,602,015	284,031,507	2,683,210	354,741,665	0	0	0	0	0	400,860,015
2015	2,834,057	310,240,388	2,930,460	387,030,451	0	0	0	0	0	436,542,229
2016	2,835,704	310,302,847	2,928,842	387,506,320	0	0	0	0	0	437,064,041
2017	2,831,600	309,980,611	2,928,360	387,484,759	0	0	0	0	0	436,987,839
2018	2,833,953	309,994,823	2,923,590	387,863,940	0	0	0	0	0	437,343,987
2019	2,829,008	309,350,077	2,916,019	387,225,942	0	0	0	0	0	436,617,174
2020	2,791,309	305,082,991	2,875,565	382,134,680	0	0	0	0	0	430,954,446
2021	2,781,506	303,962,573	2,864,761	380,892,553	0	0	0	0	0	429,606,265
2022	2,774,243	303,069,088	2,855,043	379,935,334	0	0	0	0	0	428,492,852
2023	2,773,172	303,016,049	2,855,811	379,997,683	0	0	0	0	0	428,570,045
2024	2,766,718	302,226,521	2,847,282	379,120,273	0	0	0	0	0	427,555,865
2025	2,764,206	301,946,399	2,844,761	378,834,123	0	0	0	0	0	427,251,231
2026	2,764,970	302,038,468	2,845,725	378,996,635	0	0	0	0	0	427,412,264
2027	2,756,527	301,153,418	2,838,717	377,972,243	0	0	0	0	0	426,276,549
2028	2,758,001	301,159,421	2,835,914	378,057,450	0	0	0	0	0	426,343,448
2029	2,758,747	301,176,466	2,834,846	378,135,805	0	0	0	0	0	426,386,224
2030	2,755,508	300,767,174	2,830,196	377,690,876	0	0	0	0	0	425,836,716
2031	2,752,555	300,410,675	2,826,419	377,309,812	0	0	0	0	0	425,355,305
2032	2,743,030	299,266,666	2,814,467	375,984,411	0	0	0	0	0	423,902,675
2033	2,739,609	298,848,866	2,809,975	375,534,787	0	0	0	0	0	423,481,641
2034	2,736,950	298,417,930	2,803,564	375,082,105	0	0	0	0	0	423,030,355
2035	2,726,922	297,247,613	2,791,952	373,722,403	0	0	0	0	0	421,517,494
TOTAL	90,686,873	10,335,444,815	96,253,483	13,011,323,357	0	0	0	0	0	14,888,939,769

TABLE B-19. Total Transportation Charge for Each Contractor

(in dollars)

Calendar Year	NORTH BAY AREA			SOUTH BAY AREA				CENTRAL COASTAL AREA		
	Napa County FC&WCD	Solano County FC&WCD	Total	Alameda County FC&WCD, Zone 7	Alameda County Water District	Santa Clara Valley Water District	Total	San Luis Obispo County FC&WCD	Santa Barbara County FC&WCD	Total
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]
1961	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	11,750	43,787	0	55,537	0	0	0
1963	0	0	0	152,813	192,136	455,509	800,458	0	0	0
1964	0	0	0	173,382	280,386	631,845	1,085,613	9,067	17,954	27,021
1965	0	0	0	248,951	408,713	1,174,621	1,832,285	14,938	28,953	43,891
1966	18,399	0	18,399	275,395	426,616	1,432,331	2,134,342	24,388	46,598	70,986
1967	42,294	0	42,294	351,220	506,991	1,704,743	2,562,954	43,012	81,129	124,141
1968	130,656	0	130,656	397,011	609,541	2,008,472	3,015,024	69,364	129,930	199,294
1969	257,459	0	257,459	452,635	545,979	2,108,169	3,106,783	124,504	231,788	356,292
1970	280,354	0	280,354	466,611	539,451	2,228,318	3,234,380	137,627	256,087	393,714
1971	230,317	0	230,317	427,577	559,048	2,195,563	3,182,188	138,809	258,349	397,158
1972	227,843	0	227,843	514,009	685,468	2,346,157	3,545,634	145,043	269,969	415,012
1973	223,973	32,062	256,035	478,534	556,352	2,364,412	3,399,298	142,091	264,573	406,664
1974	243,427	33,660	277,087	501,875	571,563	2,532,183	3,605,621	143,333	266,915	410,248
1975	240,526	37,068	277,594	550,249	612,720	2,435,808	3,598,777	159,921	297,561	457,482
1976	274,435	41,687	316,122	640,560	741,816	2,526,425	3,908,801	272,011	504,558	776,569
1977	296,818	46,017	342,835	603,871	720,628	2,502,501	3,827,000	282,872	525,050	807,922
1978	277,119	50,160	327,279	657,987	699,656	2,812,111	4,169,754	290,475	539,243	829,718
1979	292,619	54,121	346,740	720,936	742,959	2,838,233	4,302,128	288,838	536,337	825,175
1980	317,799	68,580	386,379	841,324	876,419	3,061,873	4,779,616	319,597	593,218	912,815
1981	352,689	87,158	439,847	800,502	886,571	2,944,651	4,631,724	339,644	630,295	969,939
1982	444,589	107,966	552,555	845,408	864,186	3,298,215	5,007,809	338,960	629,152	968,112
1983	359,724	153,880	513,604	863,197	923,690	3,967,806	5,754,693	365,811	678,731	1,044,542
1984	472,245	227,624	699,869	1,138,761	1,106,314	5,746,843	7,991,918	399,249	740,477	1,139,726
1985	743,580	369,768	1,113,348	1,607,622	1,821,892	6,665,416	10,094,930	450,359	834,827	1,285,186
1986	1,093,823	703,406	1,797,229	1,429,267	1,562,015	6,990,525	9,981,807	434,170	805,089	1,239,259
1987	1,787,829	1,584,925	3,372,754	1,918,958	2,039,593	6,768,196	10,726,747	439,054	852,411	1,291,465
1988	2,167,809	2,423,970	4,591,779	1,918,028	2,235,844	6,455,699	10,609,571	488,131	996,045	1,484,176
1989	2,447,092	3,508,098	5,955,190	2,175,779	2,413,143	6,536,162	11,125,084	543,419	1,178,860	1,722,279
1990	2,546,572	3,587,844	6,134,416	2,347,784	2,732,356	6,982,835	12,062,975	604,997	1,240,684	1,845,681
1991	2,591,799	3,659,692	6,251,491	2,486,481	2,816,010	7,253,966	12,556,457	681,934	1,303,863	1,985,797
1992	2,598,427	3,689,112	6,287,539	2,566,871	2,843,541	7,386,108	12,796,520	865,759	1,690,021	2,555,780
1993	2,609,757	3,704,512	6,314,269	2,643,697	2,847,870	7,469,545	12,961,112	2,068,017	4,376,122	6,444,139
1994	2,619,636	3,719,185	6,338,821	2,656,646	2,785,192	7,393,321	12,835,159	3,593,662	7,814,978	11,408,640
1995	2,647,786	3,765,902	6,413,688	2,785,763	2,844,645	7,536,080	13,166,488	6,707,168	13,724,113	20,431,281
1996	2,663,738	3,779,952	6,443,690	2,866,582	2,852,911	7,556,187	13,275,680	8,194,885	16,745,563	24,940,448
1997	2,708,199	3,840,363	6,548,562	3,139,223	3,035,759	7,991,634	14,166,616	8,468,002	17,249,051	25,717,053
1998	2,723,890	3,852,627	6,576,517	3,137,080	3,033,804	7,986,994	14,157,878	8,472,611	17,262,672	25,735,283
1999	2,764,890	3,903,610	6,668,500	3,287,900	3,171,531	8,315,000	14,774,431	8,669,307	17,624,986	26,294,293
2000	2,781,150	3,916,273	6,697,423	3,281,430	3,165,625	8,300,952	14,748,007	8,656,040	17,600,930	26,256,970
2001	2,792,917	3,918,817	6,711,734	3,262,129	3,148,005	8,259,003	14,669,137	8,626,061	17,546,431	26,172,492
2002	2,803,912	3,920,477	6,724,389	3,241,528	3,129,197	8,214,231	14,584,956	8,592,440	17,485,329	26,077,769
2003	2,847,808	3,969,015	6,816,823	3,411,806	3,286,576	8,596,121	15,294,503	8,776,921	17,821,608	26,598,529
2004	2,898,915	4,025,557	6,924,472	3,550,371	3,413,191	8,897,973	15,861,535	8,949,550	18,136,374	27,085,924
2005	2,908,270	4,024,505	6,932,775	3,512,628	3,378,728	8,815,911	15,707,267	8,896,548	18,039,909	26,936,457
2006	2,920,444	4,020,174	6,940,618	3,499,085	3,366,362	8,786,481	15,651,928	8,878,978	18,008,204	26,887,182
2007	2,966,263	4,058,584	7,024,847	3,631,204	3,487,006	9,073,797	16,192,007	9,047,252	18,314,930	27,362,182
2008	2,979,456	4,054,867	7,034,323	3,618,774	3,475,658	9,046,788	16,141,220	9,026,325	18,276,893	27,303,218
2009	3,023,683	4,088,172	7,111,855	3,735,018	3,581,808	9,299,588	16,616,414	9,171,588	18,541,715	27,713,303
2010	3,038,029	4,084,936	7,122,965	3,722,253	3,570,156	9,271,846	16,564,255	9,151,921	18,505,957	27,657,878
2011	3,052,291	4,077,685	7,129,976	3,699,841	3,549,601	9,222,411	16,471,853	9,119,647	18,447,034	27,566,681
2012	3,068,475	4,073,328	7,141,803	3,684,035	3,535,170	9,188,053	16,407,258	9,095,260	18,402,689	27,497,949
2013	3,039,846	4,020,629	7,060,475	3,406,892	3,277,527	8,458,047	15,142,466	8,852,720	17,961,416	26,814,136
2014	3,082,420	4,045,366	7,127,786	3,444,829	3,278,528	8,450,443	15,173,800	8,950,456	18,137,814	27,088,270
2015	3,114,530	4,056,727	7,171,257	3,453,591	3,231,238	8,177,944	14,862,773	8,988,242	18,206,778	27,195,020
2016	3,108,238	4,049,233	7,157,471	3,409,798	3,177,559	7,948,085	14,535,442	8,942,237	18,122,625	27,064,862
2017	3,099,557	4,044,492	7,144,049	3,361,339	3,131,485	7,795,194	14,288,018	8,899,140	18,043,553	26,942,693
2018	3,039,183	4,044,770	7,083,953	3,318,004	3,088,833	7,668,399	14,075,236	8,882,930	18,013,500	26,896,430
2019	3,012,121	4,041,435	7,053,556	3,265,724	3,040,459	7,535,592	13,841,775	8,859,693	17,970,994	26,830,687
2020	3,022,273	4,035,145	7,057,418	3,226,160	3,002,035	7,440,642	13,668,837	8,825,571	17,908,672	26,734,243
2021	3,019,613	4,034,139	7,053,752	3,191,282	2,967,590	7,350,816	13,509,688	8,819,289	17,897,108	26,716,397
2022	3,011,260	4,023,930	7,035,190	3,187,832	2,964,064	7,340,311	13,492,207	8,813,618	17,886,600	26,700,218
2023	3,011,582	3,992,512	7,004,094	3,188,525	2,964,620	7,339,916	13,493,061	8,815,023	17,889,101	26,704,124
2024	3,008,114	3,989,501	6,997,615	3,184,345	2,960,552	7,329,250	13,474,147	8,800,498	17,862,218	26,662,716
2025	3,000,283	3,986,183	6,986,466	3,183,124	2,958,916	7,324,579	13,466,619	8,799,964	17,861,193	26,661,157
2026	2,996,054	3,982,016	6,978,070	3,182,779	2,958,574	7,323,572	13,464,925	8,691,661	17,661,157	26,352,818
2027	2,991,459	3,976,309	6,967,768	3,175,999	2,952,197	7,306,979	13,435,175	8,682,593	17,644,104	26,326,697
2028	2,988,657	3,972,614	6,961,271	3,173,718	2,949,963	7,300,319	13,424,000	8,677,050	17,633,692	26,310,742
2029	2,985,393	3,968,787	6,954,180	3,169,656	2,946,205	7,290,454	13,406,315	8,675,443	17,630,614	26,306,057
2030	2,974,991	3,954,035	6,929,026	3,165,095	2,941,966	7,279,929	13,386,990	8,670,058	17,620,599	26,290,657
2031	2,959,979	3,935,362	6,895,341	3,156,460	2,934,002	7,260,534	13,350,996	8,658,061	17,598,413	26,256,474
2032	2,948,229	3,913,833	6,862,062	3,155,256	2,932,855	7,257,511	13,345,622	8,657,955	17,598,204	26,256,159
2033	2,920,835	3,868,442	6,789,277	3,156,317	2,933,780	7,259,458	13,349,555	8,661,940	17,605,458	26,267,398
2034	2,855,810	3,794,944	6,650,754	3,149,781	2,927,568	7,243,430	13,320,779	8,661,081	17,603,789	26,264,870
2035	2,724,025	3,651,508	6,375,533	3,135,943	2,914,870	7,212,361	13,263,174	8,652,652	17,588,337	26,240,989
TOTAL	146,694,177	190,647,251	337,341,428	169,374,790	166,659,565	450,471,377	786,505,732	372,657,435	756,300,094	1,128,957,529

TABLE B-19. Total Transportation Charge for Each Contractor

(in dollars)

Calendar Year	SAN JOAQUIN VALLEY AREA									
	Devil's Den Water District	Dudley Ridge Water District	Empire West Side Irrigation District	Future Contractor San Joaquin Valley	Kern County Water Agency		County of Kings	Oak Flat Water District	Tulare Lake Basin Water Storage District	Total
					Municipal and Industrial	Agri-cultural				
	[11]	[12]	[13]	[14]	[15]	[16]	[17]	[18]	[19]	[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	2,772	0	0	0	0	0	2,772
1965	0	0	0	6,131	74,904	0	0	0	0	81,035
1966	0	0	0	12,239	139,761	0	0	0	0	152,000
1967	0	0	0	26,691	272,276	0	0	0	0	298,967
1968	73,723	183,554	9,643	55,394	452,161	1,544,468	13,019	11,601	208,859	2,552,422
1969	122,047	179,157	9,850	88,521	532,958	2,392,259	11,640	10,606	356,887	3,703,925
1970	145,192	201,074	16,615	95,648	582,505	2,915,096	11,772	13,143	293,600	4,274,645
1971	149,963	197,191	17,574	96,685	614,831	3,823,721	16,722	14,445	448,715	5,379,847
1972	172,766	219,145	18,378	99,791	640,757	4,966,377	14,151	20,752	1,078,539	7,230,656
1973	163,431	202,044	14,513	98,559	648,480	4,922,419	14,417	11,753	409,137	6,484,753
1974	173,308	281,186	14,482	99,478	707,518	5,224,354	14,510	12,838	597,979	7,125,653
1975	193,680	347,805	15,424	107,729	724,920	6,347,378	15,520	14,524	728,747	8,495,727
1976	215,100	303,356	15,970	109,115	783,648	6,705,748	15,889	16,202	564,918	8,729,946
1977	213,085	265,439	13,084	113,606	807,391	6,884,256	17,341	13,988	511,943	8,840,133
1978	237,361	352,367	11,939	116,495	897,716	8,315,319	17,646	18,022	505,065	10,471,930
1979	273,360	383,566	15,810	115,206	903,827	9,457,586	18,951	24,921	953,573	12,146,800
1980	261,350	405,348	14,189	128,857	898,754	10,067,834	19,520	24,400	726,412	12,546,664
1981	277,184	469,189	32,144	134,896	1,081,961	11,474,650	23,607	23,069	912,072	14,428,772
1982	274,396	461,395	15,232	136,768	1,008,337	12,253,934	21,700	22,481	750,453	14,944,696
1983	331,253	629,645	16,805	150,962	1,039,917	15,548,332	37,632	31,086	430,339	18,215,971
1984	474,476	913,173	17,618	166,635	2,035,000	23,602,908	53,103	59,252	802,451	28,124,616
1985	567,714	1,124,175	91,088	190,888	2,404,741	28,555,949	69,657	72,188	2,227,258	35,303,658
1986	619,342	1,283,516	37,026	182,964	2,412,361	31,242,284	80,962	78,322	2,223,251	38,160,028
1987	551,816	1,172,525	55,716	183,842	2,927,977	30,336,470	80,725	79,968	2,351,213	37,740,252
1988	542,557	1,155,069	66,558	196,660	2,852,009	30,264,226	76,347	64,568	2,302,570	37,520,564
1989	613,011	1,371,884	57,201	211,140	2,535,584	34,041,902	73,793	79,445	2,746,869	41,730,829
1990	604,912	1,333,951	60,146	225,500	2,703,962	34,650,317	78,612	78,904	2,725,273	42,461,577
1991	623,331	1,367,501	61,854	233,773	2,789,700	35,514,428	81,953	81,413	2,793,468	43,547,421
1992	638,448	1,400,374	63,550	238,512	2,840,549	36,353,861	85,176	83,480	2,860,743	44,564,693
1993	639,216	1,401,617	63,615	240,071	2,830,494	36,386,398	85,397	83,697	2,863,256	44,593,761
1994	628,765	1,373,032	62,129	241,668	2,776,885	35,721,599	83,463	81,823	2,804,551	43,773,915
1995	647,896	1,396,959	63,368	253,226	2,793,398	36,199,693	85,143	83,337	2,853,613	44,376,633
1996	654,245	1,404,454	63,757	253,681	2,793,837	36,418,790	85,703	83,789	2,868,978	44,627,234
1997	688,709	1,498,913	68,665	254,269	2,887,478	38,671,873	92,282	90,017	3,062,899	47,315,105
1998	688,587	1,499,088	68,675	254,460	2,871,620	38,696,356	92,343	89,995	3,063,251	47,324,375
1999	714,691	1,570,303	72,373	255,044	2,910,321	40,426,647	97,311	94,683	3,209,441	49,350,814
2000	714,033	1,569,208	72,317	255,094	2,888,973	40,416,294	97,237	94,554	3,207,190	49,314,900
2001	711,003	1,560,938	71,885	255,124	2,857,166	40,246,530	96,660	93,919	3,190,199	49,083,424
2002	708,045	1,553,847	71,516	255,401	2,824,641	40,095,330	96,140	93,445	3,175,625	48,873,990
2003	733,132	1,622,152	75,067	255,784	2,872,638	41,755,329	100,858	98,036	3,315,848	50,828,844
2004	758,091	1,691,047	78,642	257,113	2,920,746	43,445,790	105,544	102,603	3,457,256	52,816,832
2005	751,755	1,673,584	77,735	257,089	2,884,913	43,054,965	104,335	101,392	3,421,397	52,327,165
2006	751,689	1,667,591	77,411	258,614	2,860,222	42,974,912	103,902	101,000	3,408,859	52,204,200
2007	774,269	1,728,464	80,575	258,958	2,903,924	44,452,744	108,107	105,037	3,533,830	53,945,908
2008	772,255	1,723,099	80,294	258,984	2,880,815	44,339,805	107,733	104,714	3,522,803	53,790,502
2009	792,378	1,778,185	83,155	259,308	2,913,617	45,678,322	111,538	108,414	3,635,886	55,360,803
2010	790,129	1,771,537	82,810	259,322	2,892,724	45,536,229	111,077	107,965	3,622,235	55,174,028
2011	786,285	1,761,717	82,298	259,049	2,865,610	45,323,120	110,400	107,295	3,602,036	54,897,810
2012	783,581	1,753,991	81,897	259,066	2,841,177	45,158,815	109,863	106,778	3,586,166	54,681,334
2013	755,585	1,675,943	77,839	259,071	2,643,975	43,431,310	104,453	101,647	3,425,880	52,475,703
2014	767,925	1,709,826	79,601	256,315	2,724,574	44,191,365	106,802	103,937	3,495,465	53,435,810
2015	776,444	1,732,833	80,795	253,285	2,600,085	44,817,126	108,385	105,495	3,542,664	54,017,112
2016	772,192	1,720,828	80,171	247,180	2,504,369	44,549,344	107,551	104,738	3,518,005	53,604,378
2017	769,251	1,712,557	79,741	232,722	2,353,957	44,368,195	106,978	104,217	3,501,023	53,228,641
2018	768,899	1,711,271	79,675	209,651	2,233,448	44,339,011	98,233	104,168	3,498,388	53,042,744
2019	766,156	1,702,594	79,225	201,042	2,155,742	44,145,408	97,116	103,656	3,480,563	52,731,502
2020	761,107	1,686,824	78,403	198,864	2,104,451	43,778,053	95,803	102,583	3,448,189	52,254,277
2021	760,470	1,685,109	78,314	197,735	2,079,758	43,708,334	95,540	102,527	3,444,669	52,152,456
2022	758,142	1,674,779	77,778	196,385	2,052,821	43,463,639	94,834	102,127	3,423,462	51,843,967
2023	758,247	1,674,702	77,774	195,955	2,048,206	43,466,106	94,797	102,127	3,423,303	51,841,217
2024	752,874	1,668,893	77,492	192,540	2,034,407	43,278,937	94,415	101,992	3,411,768	51,613,318
2025	752,732	1,668,165	77,454	191,969	2,031,091	43,264,521	94,340	101,916	3,410,277	51,592,465
2026	752,725	1,667,669	77,427	191,697	2,028,492	43,258,045	94,270	101,841	3,409,257	51,581,423
2027	751,839	1,665,077	77,293	191,034	2,022,679	43,198,686	94,046	101,649	3,403,932	51,506,235
2028	751,697	1,663,972	77,235	188,560	2,019,623	43,180,258	93,945	101,523	3,401,671	51,478,484
2029	751,387	1,662,425	77,161	188,356	2,015,261	43,139,969	93,818	101,372	3,398,608	51,428,357
2030	750,518	1,658,800	76,974	188,096	2,009,090	43,067,790	93,512	101,190	3,391,165	51,337,135
2031	749,740	1,655,376	76,794	186,772	1,990,773	42,993,993	92,993	101,016	3,384,135	51,231,592
2032	748,788	1,651,810	76,609	186,537	1,986,642	42,907,704	92,679	100,870	3,376,815	51,128,454
2033	749,107	1,652,721	76,657	185,969	1,979,278	42,917,579	92,521	100,932	3,378,684	51,133,448
2034	749,170	1,652,742	76,658	185,420	1,973,371	42,913,710	92,401	100,922	3,378,730	51,123,124
2035	747,987	1,648,724	76,449	184,682	1,959,992	42,822,908	91,893	100,592	3,370,480	51,003,707
TOTAL	40,424,542	86,806,995	4,034,112	13,436,619	143,137,789	2,223,607,608	5,180,726	5,246,901	174,832,786	2,696,708,078

TABLE B-19. Total Transportation Charge for Each Contractor

(in dollars)

Calendar Year	SOUTHERN CALIFORNIA AREA									
	Antelope Valley-East Kern Water Agency	Castaic Lake Water Agency	Coachella Valley Water District	Crestline - Lake Arrowheead Water Agency	Desert Water Agency	Littlerock Creek Irrigation District	Mojave Water Agency	Palmdale Water District	San Bernardino Valley Municipal Water District	San Gabriel Valley Municipal Water District
	[21]	[22]	[23]	[24]	[25]	[26]	[27]	[28]	[29]	[30]
1961	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	0	0
1963	34,018	0	0	0	0	0	0	0	52,760	0
1964	64,086	20,513	14,712	4,456	37,901	1,166	29,002	8,369	84,381	35,680
1965	120,833	38,907	25,573	7,330	41,532	2,122	51,277	15,513	137,574	36,001
1966	219,798	73,556	45,565	12,710	74,503	3,824	92,088	28,198	236,760	62,592
1967	425,205	151,260	87,705	23,902	144,000	7,420	178,406	55,025	441,224	117,677
1968	748,621	317,132	155,307	42,219	255,488	13,091	316,023	97,103	795,486	212,486
1969	1,077,579	477,910	229,236	62,289	377,408	19,021	466,100	140,482	1,226,634	327,311
1970	1,401,579	609,143	320,803	91,263	528,427	25,677	643,137	188,120	1,808,984	475,688
1971	1,734,093	765,569	439,975	130,551	724,965	32,389	870,556	235,300	2,581,303	670,627
1972	2,053,559	949,026	570,048	183,696	939,489	43,004	1,126,344	278,977	3,439,015	878,083
1973	2,144,763	987,778	704,668	186,293	1,151,485	44,104	1,189,801	291,829	4,024,241	960,298
1974	2,208,660	1,040,838	720,322	195,935	1,178,567	45,841	1,221,792	296,631	4,052,740	1,004,600
1975	2,385,673	1,095,705	761,455	208,762	1,246,739	49,127	1,288,816	308,902	4,214,743	1,105,444
1976	2,738,970	1,077,120	808,168	217,850	1,322,689	52,104	1,331,534	318,342	4,356,567	1,159,750
1977	2,682,003	1,154,839	704,123	228,839	1,160,610	47,992	1,403,328	334,068	4,611,741	1,224,143
1978	2,998,164	1,207,506	884,820	233,817	1,435,687	47,760	1,403,126	326,395	4,518,354	1,227,030
1979	3,547,079	1,199,320	951,522	240,482	1,532,399	48,951	1,527,833	336,488	4,475,625	1,166,164
1980	4,114,843	1,292,344	1,046,489	263,264	1,702,776	54,215	1,657,362	366,724	4,915,262	1,290,368
1981	4,433,350	1,478,680	1,114,185	274,177	1,814,970	78,367	1,770,047	396,673	5,323,157	1,381,981
1982	3,988,935	1,592,537	1,165,570	283,794	1,900,371	56,822	1,969,765	413,115	5,487,117	1,582,466
1983	5,194,522	1,852,697	1,757,685	336,539	2,847,866	70,253	2,045,143	501,009	6,118,009	1,578,605
1984	7,195,366	2,678,509	2,822,465	446,491	4,546,705	76,533	2,270,483	558,887	7,088,556	2,333,554
1985	9,030,433	3,037,600	3,662,565	551,210	5,892,869	81,773	2,431,989	751,684	7,945,798	2,435,063
1986	8,839,064	3,484,493	4,064,623	580,581	6,542,405	103,360	2,487,810	1,006,956	7,916,923	3,064,526
1987	8,875,151	3,419,798	3,918,399	607,356	6,388,068	213,100	2,515,615	1,039,444	9,282,894	3,055,452
1988	8,426,756	3,506,399	3,955,209	624,487	6,514,667	130,710	2,611,569	813,815	9,611,612	2,863,882
1989	10,522,526	3,961,016	3,959,292	684,594	6,585,571	304,527	2,761,764	1,504,123	11,222,321	3,293,258
1990	11,417,113	4,382,943	4,393,079	741,284	7,244,877	92,854	2,890,362	1,822,151	12,817,319	3,473,976
1991	11,981,942	4,849,939	4,547,498	806,638	7,499,571	357,591	2,957,635	2,182,936	13,416,800	3,622,977
1992	12,861,014	5,353,249	4,683,876	831,179	7,724,490	368,325	3,058,127	2,606,785	13,437,856	3,672,380
1993	13,314,540	5,730,535	4,697,596	883,292	7,747,131	367,437	3,113,123	2,741,038	14,410,649	3,774,745
1994	13,662,313	5,674,123	4,561,967	873,449	7,523,430	356,243	3,153,364	2,656,840	13,932,983	3,753,972
1995	14,477,735	5,935,064	4,684,033	909,119	7,724,756	366,805	10,021,029	2,736,165	14,113,927	3,921,079
1996	15,061,257	5,951,904	4,713,166	945,825	7,772,802	368,598	10,065,201	2,749,601	14,363,336	4,011,734
1997	16,863,132	6,606,235	5,113,765	1,032,705	8,433,537	402,503	10,953,269	3,004,428	15,175,929	4,311,026
1998	17,461,427	6,602,227	5,130,689	1,075,700	8,461,459	402,817	10,959,212	3,006,785	15,498,106	4,417,713
1999	19,112,550	7,114,601	5,413,836	1,129,918	8,928,449	428,438	11,631,295	3,199,316	15,684,480	4,584,980
2000	19,722,653	7,125,158	5,425,817	1,179,520	8,948,221	427,894	11,615,165	3,195,206	16,097,548	4,711,364
2001	20,171,266	7,065,604	5,372,479	1,172,328	8,860,242	425,091	11,541,121	3,174,127	15,597,559	4,649,805
2002	20,596,646	6,963,941	5,349,000	1,205,120	8,821,527	422,002	11,459,523	3,150,848	15,816,568	4,726,840
2003	22,390,417	7,545,248	5,646,035	1,287,094	9,311,434	447,269	12,121,251	3,340,734	16,390,647	4,988,542
2004	24,215,551	8,029,483	5,966,278	1,418,313	9,839,642	471,329	12,750,036	3,521,513	18,419,962	5,415,630
2005	24,553,769	7,758,168	5,831,840	1,352,274	9,617,869	465,373	12,595,868	3,476,732	17,497,538	5,145,679
2006	24,461,071	7,796,104	5,838,586	1,396,139	9,629,013	463,541	12,547,734	3,462,927	18,677,871	5,299,914
2007	25,641,048	8,251,213	6,122,065	1,485,385	10,096,572	486,231	13,152,127	3,633,331	20,288,776	5,621,683
2008	25,532,271	8,228,819	6,088,596	1,486,192	10,041,364	484,148	13,097,425	3,617,662	20,699,183	5,622,662
2009	26,569,365	8,606,004	6,342,890	1,579,773	10,460,788	504,059	13,619,254	3,767,295	22,494,974	5,955,532
2010	26,455,808	8,557,379	6,297,976	1,568,424	10,386,706	501,883	13,562,866	3,750,927	22,708,619	5,915,378
2011	26,282,303	8,490,378	6,293,146	1,609,680	10,378,750	498,563	13,475,193	3,725,946	24,027,701	6,091,428
2012	26,149,610	8,444,410	6,214,752	1,550,939	10,249,432	496,015	13,409,528	3,706,799	23,551,334	5,920,304
2013	24,700,504	7,919,677	5,918,772	1,510,207	9,747,633	468,894	12,700,760	3,502,795	23,488,959	5,781,822
2014	25,307,990	8,124,780	6,039,755	1,537,408	9,961,454	479,950	12,991,512	3,586,350	24,141,083	5,924,782
2015	25,685,676	8,288,411	6,139,110	1,579,465	10,125,333	487,353	13,188,873	3,641,955	25,043,419	6,108,149
2016	25,367,460	8,153,680	6,061,273	1,551,601	9,996,948	481,448	13,038,723	3,597,661	24,897,272	6,056,393
2017	25,024,079	8,041,266	6,016,359	1,568,352	9,922,899	475,209	12,882,756	3,550,940	25,515,605	6,148,657
2018	24,755,631	7,876,823	5,926,505	1,514,734	9,774,688	470,432	12,764,441	3,515,574	24,869,570	5,993,313
2019	24,322,773	7,676,195	5,839,624	1,501,599	9,631,409	462,460	12,561,083	3,456,821	24,650,799	5,957,339
2020	23,787,196	7,463,705	5,696,103	1,456,128	9,394,699	451,697	12,277,707	3,378,324	23,857,456	5,800,513
2021	23,462,750	7,305,241	5,579,391	1,420,309	9,202,217	444,968	12,047,652	3,330,981	23,225,353	5,674,835
2022	23,246,561	7,177,876	5,502,054	1,391,200	9,074,664	440,968	11,905,943	3,301,770	22,676,147	5,582,590
2023	23,190,214	7,162,494	5,493,748	1,397,930	9,060,972	439,865	11,870,003	3,293,955	22,813,024	5,639,546
2024	23,084,240	7,093,217	5,458,427	1,377,379	9,002,703	437,960	11,820,943	3,279,733	22,461,082	5,611,050
2025	23,039,224	7,075,452	5,428,762	1,367,269	8,953,772	437,061	11,764,125	3,273,264	22,255,952	5,614,017
2026	23,027,936	7,055,296	5,427,880	1,374,874	8,952,327	436,839	11,745,782	3,271,771	22,360,276	5,683,319
2027	22,971,472	7,037,501	5,413,431	1,373,502	8,928,498	435,770	11,709,640	3,263,797	22,314,800	5,722,296
2028	22,970,138	7,018,526	5,401,458	1,361,196	8,908,755	435,750	11,704,806	3,263,703	22,089,683	5,731,016
2029	22,956,454	6,999,152	5,400,335	1,362,900	8,906,905	435,514	11,698,513	3,261,975	22,118,311	5,789,757
2030	22,915,146	6,953,511	5,391,366	1,360,708	8,892,103	434,769	11,679,410	3,256,403	22,077,842	5,833,142
2031	22,793,847	6,868,860	5,371,812	1,362,388	8,859,870	432,625	11,624,237	3,240,441	22,107,192	5,886,914
2032	22,751,613	6,822,160	5,366,817	1,365,296	8,851,626	431,789	11,603,181	3,234,167	22,157,492	5,950,656
2033	22,647,479	6,775,915	5,336,422	1,348,322	8,801,489	429,992	11,559,450	3,220,683	21,855,699	5,941,319
2034	22,527,300	6,745,158	5,274,808	1,296,339	8,699,857	427,937	11,509,094	3,205,287	20,928,171	5,808,119
2035	22,396,494	6,949,457	5,337,441	1,400,383	8,803,203	425,529	11,448,090	3,188,024	22,776,076	6,214,414
TOTAL	1,099,092,607	367,117,277	288,441,102	67,022,666	475,044,243	21,563,041	547,507,142	159,958,638	1,041,770,709	277,606,030

TABLE B-19. Total Transportation Charge for Each Contractor

(in dollars)

Calendar Year	SOUTHERN CALIFORNIA AREA (continued)				FEATHER RIVER AREA				South Bay Area Future Contractor	GRAND TOTAL
	San Gorgonio Pass Water Agency	The Metropolitan Water District of Southern California	Ventura County Flood Control District	Total	City of Yuba City	County of Butte	Plumas County FC&WCD	Total		
	[31]	[32]	[33]	[34]	[35]	[36]	[37]	[38]	[39]	[40]
1961	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	0	55,537
1963	0	705,285	0	792,063	0	0	0	0	56,515	1,649,036
1964	22,165	1,285,222	9,574	1,617,227	0	0	0	0	85,184	2,817,817
1965	22,272	2,222,437	18,122	2,739,493	0	0	411	411	129,707	4,826,822
1966	38,660	3,974,345	34,082	4,896,681	0	0	574	574	148,332	7,421,314
1967	72,579	7,839,903	69,486	9,613,792	0	0	571	571	204,956	12,847,675
1968	131,109	15,601,367	145,534	18,830,966	0	0	574	574	280,902	25,009,838
1969	202,196	23,594,357	219,483	28,420,006	0	0	3,243	3,243	352,138	36,199,846
1970	294,655	31,202,162	279,075	37,868,713	0	0	15,368	15,368	389,947	46,457,121
1971	416,284	40,707,865	349,179	49,658,656	0	0	16,262	16,262	378,912	59,243,340
1972	545,248	53,825,852	429,870	65,262,211	0	0	17,656	17,656	403,970	77,102,982
1973	596,416	58,184,874	443,222	70,909,772	0	0	17,618	17,618	380,010	81,854,150
1974	620,100	62,726,529	463,433	75,775,988	0	0	17,761	17,761	402,856	87,615,214
1975	653,530	67,723,531	486,353	81,528,780	0	0	18,689	18,689	409,328	94,786,377
1976	677,440	69,468,010	483,631	84,012,175	0	0	17,760	17,760	431,578	98,192,951
1977	705,795	67,232,417	515,223	82,005,121	0	0	18,516	18,516	426,841	96,268,368
1978	718,391	73,928,134	531,477	89,460,661	0	0	17,664	17,664	433,056	105,710,062
1979	721,353	73,597,127	534,000	89,878,343	0	0	20,862	20,862	450,185	107,970,233
1980	790,915	81,263,726	581,947	99,340,235	0	0	18,044	18,044	510,433	118,494,186
1981	815,547	92,520,374	645,572	112,047,080	0	0	21,477	21,477	518,326	133,057,165
1982	865,959	94,377,291	681,988	114,365,730	0	0	28,588	28,588	515,819	136,383,309
1983	963,873	104,862,174	809,632	128,938,007	0	0	17,210	17,210	558,492	155,042,519
1984	1,080,154	138,324,929	876,848	170,299,480	0	0	18,276	18,276	563,729	208,837,614
1985	1,151,590	177,545,834	917,781	215,436,189	0	0	20,233	20,233	687,087	263,940,631
1986	1,159,097	194,481,066	949,056	234,679,960	0	0	20,231	20,231	640,353	286,518,867
1987	1,177,326	180,875,588	925,236	222,293,427	0	0	20,233	20,233	686,844	276,131,722
1988	1,218,620	194,428,040	923,575	235,629,341	0	0	20,239	20,239	707,839	290,563,509
1989	1,296,525	214,055,529	974,221	261,125,267	0	0	20,314	20,314	737,960	322,416,923
1990	1,331,508	248,649,363	996,736	300,253,565	0	0	20,329	20,329	792,653	363,571,196
1991	1,383,449	258,947,366	1,018,873	313,573,215	0	0	20,302	20,302	808,984	378,743,667
1992	1,375,383	278,565,354	1,024,600	335,562,618	0	0	20,346	20,346	787,079	402,574,575
1993	1,447,919	283,413,889	1,068,227	342,710,121	0	0	20,351	20,351	788,058	413,831,811
1994	1,453,080	269,663,474	2,295,427	329,560,665	0	0	20,417	20,417	788,691	404,726,308
1995	1,443,974	280,438,527	2,416,463	349,188,676	0	0	20,367	20,367	791,703	434,388,836
1996	1,470,674	284,955,358	2,469,855	354,899,311	0	0	20,367	20,367	792,790	444,999,520
1997	1,465,192	314,840,816	2,772,699	390,975,236	0	0	20,367	20,367	794,451	485,537,390
1998	1,505,251	319,481,983	2,824,417	396,827,786	0	0	20,367	20,367	794,816	491,437,022
1999	1,446,299	343,602,101	3,085,926	425,362,189	0	0	20,367	20,367	796,508	523,267,102
2000	3,874,806	349,709,156	3,145,614	435,178,122	0	0	20,367	20,367	796,673	533,012,462
2001	3,794,745	350,739,940	3,168,338	435,732,645	0	0	20,367	20,367	796,780	533,186,579
2002	3,805,477	352,783,244	3,175,576	438,276,312	0	0	20,367	20,367	797,224	535,355,007
2003	4,019,961	383,121,393	3,471,070	474,081,095	0	0	20,367	20,367	809,484	574,449,645
2004	4,333,372	413,760,958	3,740,356	511,882,423	0	0	20,367	20,367	811,662	615,403,215
2005	4,106,389	404,000,325	3,692,437	500,094,261	0	0	20,367	20,367	811,575	602,829,867
2006	4,165,648	411,173,893	3,725,770	508,638,211	0	0	20,367	20,367	811,703	611,154,209
2007	4,396,576	438,817,319	3,963,086	541,955,412	0	0	20,367	20,367	812,884	647,313,607
2008	4,355,455	441,840,773	3,976,698	545,071,248	0	0	20,367	20,367	812,977	650,173,855
2009	4,580,643	467,190,300	4,184,891	575,855,768	0	0	20,367	20,367	814,090	683,492,600
2010	4,511,360	468,967,300	4,189,064	577,373,690	0	0	20,367	20,367	814,145	684,727,328
2011	4,578,939	467,729,027	4,157,520	577,338,574	0	0	20,367	20,367	813,211	684,238,472
2012	4,420,998	461,840,110	4,134,268	570,088,499	0	0	20,367	20,367	813,269	676,650,479
2013	4,241,937	435,741,945	3,881,808	539,605,713	0	0	20,367	20,367	769,407	641,888,267
2014	4,318,725	446,649,492	3,981,587	553,044,868	0	0	20,367	20,367	742,109	656,633,010
2015	4,412,784	455,099,720	4,058,370	563,858,618	0	0	19,956	19,956	712,693	667,837,429
2016	4,336,562	448,039,298	3,996,030	555,574,349	0	0	19,793	19,793	695,487	658,651,782
2017	4,358,723	441,222,778	3,942,384	548,670,007	0	0	19,796	19,796	654,896	650,948,100
2018	4,223,551	435,448,992	3,868,301	541,002,555	0	0	19,794	19,794	578,307	642,699,019
2019	4,164,692	425,524,586	3,774,343	529,523,723	0	0	17,124	17,124	513,371	630,511,738
2020	4,026,122	413,525,471	3,675,970	514,791,091	0	0	4,999	4,999	492,197	615,003,062
2021	3,912,377	403,871,191	3,605,053	503,082,318	0	0	4,159	4,159	475,499	602,994,269
2022	3,819,175	395,763,517	3,549,150	493,431,615	0	0	2,751	2,751	474,425	592,980,373
2023	3,821,882	392,659,294	3,546,249	490,389,176	0	0	2,751	2,751	473,751	589,908,174
2024	3,767,987	389,685,294	3,517,030	486,597,045	0	0	2,749	2,749	472,595	585,820,185
2025	3,735,639	387,938,729	3,509,167	484,392,433	0	0	2,747	2,747	471,114	583,573,001
2026	3,746,172	386,736,252	3,501,827	483,320,551	0	0	2,746	2,746	470,693	582,171,226
2027	3,736,437	385,201,396	3,492,610	481,601,150	0	0	2,743	2,743	469,806	580,309,574
2028	3,706,937	385,095,857	3,483,705	481,171,530	0	0	2,742	2,742	468,712	579,817,481
2029	3,710,096	383,648,329	3,474,277	479,762,518	0	0	2,740	2,740	467,403	578,327,570
2030	3,703,303	382,235,577	3,452,195	478,185,475	0	0	2,739	2,739	466,025	576,598,047
2031	3,702,213	378,362,942	3,412,783	474,026,124	0	0	2,737	2,737	463,074	572,226,338
2032	3,706,795	377,991,490	3,390,039	473,623,121	0	0	2,736	2,736	463,327	571,681,481
2033	3,664,333	374,455,124	3,368,020	469,404,247	0	0	2,735	2,735	462,349	567,409,009
2034	3,541,016	370,331,605	3,352,746	463,647,437	0	0	2,734	2,734	458,715	561,468,413
2035	3,771,696	383,528,573	3,414,295	479,653,675	0	0	2,733	2,733	454,380	576,994,191
TOTAL	176,354,051	19,699,543,389	165,243,450	24,386,264,345	0	0	1,041,463	1,041,463	42,113,044	29,378,931,619

TABLE B-20A. Calculation of Delta Water Rates

(in millions of dollars [$] or millions of acre-feet [AF] discounted to 1989)

Procedure	Capital Cost Component		Minimum Operation, Maintenance, Power and Replacement Component (a		Total Delta Water Rate	
	[1]		[2]		[3]	
	Calculation at 4.713 Percent per Annum for All Contractors Except the City of Yuba City					
Commencing in 1990						
Total Costs of "Initial" Project Conservation Facilities to be Reimbursed and Project Water Entitlements during the Project Repayment Period	$ 2,097.00 (b	138.38 AF	$ 1,175.54 (c	138.38 AF	$ 3,272.54	138.38 AF
Less, Project Power Revenues to be Realized During the Project Repayment Period	-856.20		-275.96		-1132.16	
Less, Delta Water Charges Paid and Project Water Entitlements, Prior to 1990	-508.84 (d	-60.06 AF	-262.58	-60.06 AF	-771.42	-60.06 AF
TOTAL	731.96	78.32 AF	$ 637.00	78.32 AF	$ 1,368.96	78.32 AF
Rate Applicable 1990 through 2035	9.35 per acre-foot		$ 8.13 per acre-foot		$ 17.48 per acre-foot	
	Calculation at 5.027 Percent per Annum for the City of Yuba City					
Commencing in 1990						
Total Costs of "Initial" Project Conservation Facilities to be Reimbursed and Project Water Entitlements during the Project Repayment Period	2,234.62 (b	136.24 AF	$ 1,150.33 (c	136.24 AF	$ 3,384.95	136.24 AF
Less, Project Power Revenues to be Realized during the Project Repayment Period	-864.58		-270.59		-1135.17	
Less, Delta Water Charges Paid and Project Water Entitlements, Prior to 1990	-520.56	-61.53 AF	-266.94	-61.53 AF	-787.50	-61.53 AF
TOTAL	849.48	74.71 AF	$ 612.80	74.71 AF	$ 1,462.28	74.71 AF
Rate Applicable 1990 through 2035	$11.37 per acre-foot		$8.20 per acre-foot		$19.57 per acre-foot	

a) Considering that all operating costs of Project Conservation Facilities will not vary with annual amounts of Project water delivered, and therefore are properly classified as "Minimum" OMP&R Costs.

b) Including net credits of $4,850,000 for settlements as to the magnitude of Project Capital costs incurred prior to December 31, 1960, and net credits of $6,678,320 for settlement as to the magnitude of Project Capital costs incurred during the 1961 through 1978 period.

c) Includes conservation power costs and credits at San Luis facilities.

d) Applying 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

(in dollars per acre-foot)

Item	Capital Cost Component	Minimum Operation, Maintenance, Power and Replacement Component	Total Delta Water Rate
	[1]	[2]	[3]
Initial Conservation Facilities			
Oroville Division			
Water Supply and Power Costs (a	17.35	8.22	25.57
Less, Oroville Power Revenues	-10.46	-3.52	-13.98
Subtotal	6.89	4.70	11.59
Delta Facilities (b	2.82	1.93	4.75
California Aqueduct, Portion			
Reach 1	1.12	1.36	2.48
Reach 2A	0.66	0.25	0.91
Reach 2B	0.36	0.08	0.44
Reach 3	0.22	0.08	0.30
Subtotal	2.36	1.77	4.13
San Luis Facilities	3.33	3.09	6.42
Planning and Preoperating Costs			
through 1988	0.91	0.00	0.91
Less, Capital Cost Credits	-0.48	0.00	-0.48
Less, Delta Water Charges Paid Prior to 1990	-6.50	-3.35	-9.85
Rate Applicable 1990 through 2035	9.33	8.14	17.47

a) Includes revenue received from non-contractors.

b) Includes: (1) Delta Facility planning costs,
(2) Delta Studies costs, and
(3) Suisun Marsh Facility costs.

TABLE B-21. Total Delta Water Charge for Each Contractor

(in dollars)

Calendar Year	NORTH BAY AREA			SOUTH BAY AREA				CENTRAL COASTAL AREA		
	Napa County FC&WCD	Solano County FC&WCD	Total	Alameda County FC&WCD, Zone 7	Alameda County Water District	Santa Clara Valley Water District	Total	San Luis Obispo County	Santa Barbara County	Total
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[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	117,882	371,385	489,267	559,262	644,899	1,607,877	2,812,038	436,923	794,955	1,231,878
1991	127,407	389,735	517,142	594,215	671,114	1,642,831	2,908,160	436,923	794,955	1,231,878
1992	137,019	422,417	559,436	629,169	697,329	1,677,785	3,004,283	436,923	794,955	1,231,878
1993	148,379	456,672	605,051	664,123	723,545	1,712,739	3,100,407	436,923	794,955	1,231,878
1994	159,652	490,752	650,404	699,077	734,031	1,747,693	3,180,801	436,923	794,955	1,231,878
1995	170,924	598,585	769,509	734,031	734,031	1,747,693	3,215,755	436,923	794,955	1,231,878
1996	182,197	660,628	842,825	768,985	734,031	1,747,693	3,250,709	436,923	794,955	1,231,878
1997	193,382	668,492	861,874	803,939	734,031	1,747,693	3,285,663	436,923	794,955	1,231,878
1998	204,655	676,532	881,187	803,939	734,031	1,747,693	3,285,663	436,923	794,955	1,231,878
1999	215,490	684,571	900,061	803,939	734,031	1,747,693	3,285,663	436,923	794,955	1,231,878
2000	228,074	692,436	920,510	803,939	734,031	1,747,693	3,285,663	436,923	794,955	1,231,878
2001	238,822	700,475	939,297	803,939	734,031	1,747,693	3,285,663	436,923	794,955	1,231,878
2002	247,910	708,515	956,425	803,939	734,031	1,747,693	3,285,663	436,923	794,955	1,231,878
2003	258,659	716,554	975,213	803,939	734,031	1,747,693	3,285,663	436,923	794,955	1,231,878
2004	269,145	724,419	993,564	803,939	734,031	1,747,693	3,285,663	436,923	794,955	1,231,878
2005	279,631	725,292	1,004,923	803,939	734,031	1,747,693	3,285,663	436,923	794,955	1,231,878
2006	287,495	726,166	1,013,661	803,939	734,031	1,747,693	3,285,663	436,923	794,955	1,231,878
2007	297,108	727,040	1,024,148	803,939	734,031	1,747,693	3,285,663	436,923	794,955	1,231,878
2008	308,468	727,914	1,036,382	803,939	734,031	1,747,693	3,285,663	436,923	794,955	1,231,878
2009	318,080	728,788	1,046,868	803,939	734,031	1,747,693	3,285,663	436,923	794,955	1,231,878
2010	327,692	729,662	1,057,354	803,939	734,031	1,747,693	3,285,663	436,923	794,955	1,231,878
2011	339,052	730,536	1,069,588	803,939	734,031	1,747,693	3,285,663	436,923	794,955	1,231,878
2012	348,665	731,409	1,080,074	803,939	734,031	1,747,693	3,285,663	436,923	794,955	1,231,878
2013	360,025	732,283	1,092,308	803,939	734,031	1,747,693	3,285,663	436,923	794,955	1,231,878
2014	371,385	733,157	1,104,542	803,939	734,031	1,747,693	3,285,663	436,923	794,955	1,231,878
2015	382,745	734,031	1,116,776	803,939	734,031	1,747,693	3,285,663	436,923	794,955	1,231,878
2016	393,231	734,031	1,127,262	803,939	734,031	1,747,693	3,285,663	436,923	794,955	1,231,878
2017	403,717	734,031	1,137,748	803,939	734,031	1,747,693	3,285,663	436,923	794,955	1,231,878
2018	414,203	734,031	1,148,234	803,939	734,031	1,747,693	3,285,663	436,923	794,955	1,231,878
2019	424,689	734,031	1,158,720	803,939	734,031	1,747,693	3,285,663	436,923	794,955	1,231,878
2020	435,175	734,031	1,169,206	803,939	734,031	1,747,693	3,285,663	436,923	794,955	1,231,878
2021	436,923	734,031	1,170,954	803,939	734,031	1,747,693	3,285,663	436,923	794,955	1,231,878
2022	436,923	734,031	1,170,954	803,939	734,031	1,747,693	3,285,663	436,923	794,955	1,231,878
2023	436,923	734,031	1,170,954	803,939	734,031	1,747,693	3,285,663	436,923	794,955	1,231,878
2024	436,923	734,031	1,170,954	803,939	734,031	1,747,693	3,285,663	436,923	794,955	1,231,878
2025	436,923	734,031	1,170,954	803,939	734,031	1,747,693	3,285,663	436,923	794,955	1,231,878
2026	436,923	734,031	1,170,954	803,939	734,031	1,747,693	3,285,663	436,923	794,955	1,231,878
2027	436,923	734,031	1,170,954	803,939	734,031	1,747,693	3,285,663	436,923	794,955	1,231,878
2028	436,923	734,031	1,170,954	803,939	734,031	1,747,693	3,285,663	436,923	794,955	1,231,878
2029	436,923	734,031	1,170,954	803,939	734,031	1,747,693	3,285,663	436,923	794,955	1,231,878
2030	436,923	734,031	1,170,954	803,939	734,031	1,747,693	3,285,663	436,923	794,955	1,231,878
2031	436,923	734,031	1,170,954	803,939	734,031	1,747,693	3,285,663	436,923	794,955	1,231,878
2032	436,923	734,031	1,170,954	803,939	734,031	1,747,693	3,285,663	436,923	794,955	1,231,878
2033	436,923	734,031	1,170,954	803,939	734,031	1,747,693	3,285,663	436,923	794,955	1,231,878
2034	436,923	734,031	1,170,954	803,939	734,031	1,747,693	3,285,663	436,923	794,955	1,231,878
2035	436,923	734,031	1,170,954	803,939	734,031	1,747,693	3,285,663	436,923	794,955	1,231,878
TOTAL	15,371,727	32,304,782	47,676,509	41,505,094	40,112,534	101,927,485	183,545,113	21,276,975	38,699,968	59,976,943

TABLE B-21. Total Delta Water Charge for Each Contractor

(in dollars)

Calendar Year	SAN JOAQUIN VALLEY AREA									
	Devil's Den Water District	Dudley Ridge Water District	Empire West Side Irrigation District	Future Contractor San Joaquin Valley	Kern County Water Agency		County of Kings	Oak Flat Water District	Tulare Lake Basin Water Storage District	Total
					Municipal and Industrial	Agri-cultural				
	[11]	[12]	[13]	[14]	[15]	[16]	[17]	[18]	[19]	[20]
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	13,060	40,695	10,469	0	0	165,522	3,177	8,073	98,608	339,604
1969	17,804	61,267	3,281	0	0	337,686	4,200	8,805	102,478	535,521
1970	37,905	104,405	19,950	0	0	964,915	8,645	17,290	228,095	1,381,205
1971	48,508	129,596	21,720	0	0	1,377,772	9,412	20,272	264,260	1,871,540
1972	61,891	160,756	24,113	0	0	2,175,835	11,253	43,131	905,057	3,382,036
1973	77,328	195,541	26,664	0	386,638	2,373,167	13,333	27,553	373,307	3,473,531
1974	90,239	224,202	27,909	0	446,545	2,781,595	13,954	29,770	445,138	4,059,352
1975	97,774	329,688	27,413	0	481,560	3,041,048	14,620	33,702	827,591	4,853,396
1976	114,612	414,245	29,388	0	549,549	3,931,785	15,673	35,966	877,151	5,968,369
1977	119,360	312,532	28,195	0	569,545	4,071,218	15,977	40,289	626,210	5,783,326
1978	133,724	342,208	31,588	0	674,939	4,950,959	20,006	41,065	666,516	6,861,005
1979	145,178	395,523	34,294	0	772,757	5,901,986	22,863	45,725	771,613	8,089,939
1980	157,432	555,341	37,679	0	881,371	6,984,026	27,272	70,658	933,481	9,647,260
1981	229,464	740,789	54,204	0	1,351,487	11,140,730	41,556	77,692	1,373,168	15,009,090
1982	242,352	782,396	57,248	0	1,518,993	12,703,436	47,707	85,873	1,530,443	16,968,448
1983	160,885	543,462	38,004	0	1,057,789	9,141,315	35,471	58,273	78,506	11,113,705
1984	163,433	580,379	114,290	0	1,333,200	9,741,623	39,893	61,770	756,132	12,790,720
1985	179,667	667,740	42,441	0	1,540,611	11,403,920	48,100	69,320	644,383	14,596,182
1986	192,032	745,447	45,362	0	1,714,679	12,925,113	55,946	77,115	1,469,725	17,225,419
1987	188,321	762,180	44,485	0	1,766,064	13,410,817	59,314	77,108	1,503,601	17,811,890
1988	196,475	827,669	46,411	0	1,916,790	14,707,763	61,882	83,540	1,633,680	19,474,210
1989	210,514	921,621	49,728	0	2,125,033	16,312,362	66,304	92,825	1,821,693	21,600,080
1990	221,957	1,008,419	52,431	0	2,090,240	18,067,646	69,908	99,618	2,071,016	23,681,235
1991	221,957	1,008,419	52,431	0	2,090,240	18,067,646	69,908	99,618	2,071,016	23,681,235
1992	221,957	1,008,419	52,431	0	2,090,240	18,067,646	69,908	99,618	2,071,016	23,681,235
1993	221,957	1,008,419	52,431	0	2,090,240	18,067,646	69,908	99,618	2,071,016	23,681,235
1994	221,957	1,008,419	52,431	0	2,090,240	18,067,646	69,908	99,618	2,071,016	23,681,235
1995	221,957	1,008,419	52,431	0	2,090,240	18,067,646	69,908	99,618	2,071,016	23,681,235
1996	221,957	1,008,419	52,431	0	2,090,240	18,067,646	69,908	99,618	2,071,016	23,681,235
1997	221,957	1,008,419	52,431	0	2,090,240	18,067,646	69,908	99,618	2,071,016	23,681,235
1998	221,957	1,008,419	52,431	0	2,090,240	18,067,646	69,908	99,618	2,071,016	23,681,235
1999	221,957	1,008,419	52,431	0	2,090,240	18,067,646	69,908	99,618	2,071,016	23,681,235
2000	221,957	1,008,419	52,431	0	2,090,240	18,067,646	69,908	99,618	2,071,016	23,681,235
2001	221,957	1,008,419	52,431	0	2,090,240	18,067,646	69,908	99,618	2,071,016	23,681,235
2002	221,957	1,008,419	52,431	0	2,090,240	18,067,646	69,908	99,618	2,071,016	23,681,235
2003	221,957	1,008,419	52,431	0	2,090,240	18,067,646	69,908	99,618	2,071,016	23,681,235
2004	221,957	1,008,419	52,431	0	2,090,240	18,067,646	69,908	99,618	2,071,016	23,681,235
2005	221,957	1,008,419	52,431	0	2,090,240	18,067,646	69,908	99,618	2,071,016	23,681,235
2006	221,957	1,008,419	52,431	0	2,090,240	18,067,646	69,908	99,618	2,071,016	23,681,235
2007	221,957	1,008,419	52,431	0	2,090,240	18,067,646	69,908	99,618	2,071,016	23,681,235
2008	221,957	1,008,419	52,431	0	2,090,240	18,067,646	69,908	99,618	2,071,016	23,681,235
2009	221,957	1,008,419	52,431	0	2,090,240	18,067,646	69,908	99,618	2,071,016	23,681,235
2010	221,957	1,008,419	52,431	0	2,090,240	18,067,646	69,908	99,618	2,071,016	23,681,235
2011	221,957	1,008,419	52,431	0	2,090,240	18,067,646	69,908	99,618	2,071,016	23,681,235
2012	221,957	1,008,419	52,431	0	2,090,240	18,067,646	69,908	99,618	2,071,016	23,681,235
2013	221,957	1,008,419	52,431	0	2,090,240	18,067,646	69,908	99,618	2,071,016	23,681,235
2014	221,957	1,008,419	52,431	0	2,090,240	18,067,646	69,908	99,618	2,071,016	23,681,235
2015	221,957	1,008,419	52,431	0	2,090,240	18,067,646	69,908	99,618	2,071,016	23,681,235
2016	221,957	1,008,419	52,431	0	2,090,240	18,067,646	69,908	99,618	2,071,016	23,681,235
2017	221,957	1,008,419	52,431	0	2,090,240	18,067,646	69,908	99,618	2,071,016	23,681,235
2018	221,957	1,008,419	52,431	0	2,090,240	18,067,646	69,908	99,618	2,071,016	23,681,235
2019	221,957	1,008,419	52,431	0	2,090,240	18,067,646	69,908	99,618	2,071,016	23,681,235
2020	221,957	1,008,419	52,431	0	2,090,240	18,067,646	69,908	99,618	2,071,016	23,681,235
2021	221,957	1,008,419	52,431	0	2,090,240	18,067,646	69,908	99,618	2,071,016	23,681,235
2022	221,957	1,008,419	52,431	0	2,090,240	18,067,646	69,908	99,618	2,071,016	23,681,235
2023	221,957	1,008,419	52,431	0	2,090,240	18,067,646	69,908	99,618	2,071,016	23,681,235
2024	221,957	1,008,419	52,431	0	2,090,240	18,067,646	69,908	99,618	2,071,016	23,681,235
2025	221,957	1,008,419	52,431	0	2,090,240	18,067,646	69,908	99,618	2,071,016	23,681,235
2026	221,957	1,008,419	52,431	0	2,090,240	18,067,646	69,908	99,618	2,071,016	23,681,235
2027	221,957	1,008,419	52,431	0	2,090,240	18,067,646	69,908	99,618	2,071,016	23,681,235
2028	221,957	1,008,419	52,431	0	2,090,240	18,067,646	69,908	99,618	2,071,016	23,681,235
2029	221,957	1,008,419	52,431	0	2,090,240	18,067,646	69,908	99,618	2,071,016	23,681,235
2030	221,957	1,008,419	52,431	0	2,090,240	18,067,646	69,908	99,618	2,071,016	23,681,235
2031	221,957	1,008,419	52,431	0	2,090,240	18,067,646	69,908	99,618	2,071,016	23,681,235
2032	221,957	1,008,419	52,431	0	2,090,240	18,067,646	69,908	99,618	2,071,016	23,681,235
2033	221,957	1,008,419	52,431	0	2,090,240	18,067,646	69,908	99,618	2,071,016	23,681,235
2034	221,957	1,008,419	52,431	0	2,090,240	18,067,646	69,908	99,618	2,071,016	23,681,235
2035	221,957	1,008,419	52,431	0	2,090,240	18,067,646	69,908	99,618	2,071,016	23,681,235
TOTAL	13,087,980	56,224,956	3,226,662	0	115,238,590	981,656,309	3,852,326	5,688,243	113,197,572	1,292,172,638

TABLE B-21. Total Delta Water Charge for Each Contractor

(in dollars)

Calendar Year	SOUTHERN CALIFORNIA AREA									
	Antelope Valley-East Kern Water Agency	Castaic Lake Water Agency	Coachella Valley Water District	Crestline-Lake Arrowhead Water Agency	Desert Water Agency	Littlerock Creek Irrigation District	Mojave Water Agency	Palmdale Water District	San Bernardino Valley Municipal Water District	San Gabriel Valley Municipal Water District
	[21]	[22]	[23]	[24]	[25]	[26]	[27]	[28]	[29]	[30]
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	160,756	12,860	41,797	4,662	64,303	1,367	67,518	13,021	369,739	85,202
1973	222,207	29,835	51,552	7,279	79,994	2,577	95,104	26,131	54,908	14,338
1974	279,090	53,027	59,539	10,791	93,030	3,721	121,869	39,631	465,150	114,427
1975	319,822	68,533	63,964	13,250	100,515	4,752	140,722	50,989	479,733	119,705
1976	431,018	93,061	74,449	17,045	117,550	6,269	174,366	67,591	538,772	137,142
1977	469,922	107,142	79,144	19,079	122,180	6,861	189,848	77,255	540,410	139,097
1978	600,180	141,095	97,313	24,428	147,413	9,687	236,913	98,345	631,768	165,313
1979	720,173	174,899	115,033	29,836	171,470	11,889	284,640	117,285	714,457	189,760
1980	857,818	219,413	134,920	35,949	210,736	14,256	337,177	138,590	811,952	215,694
1981	1,355,100	363,167	218,713	57,637	343,292	22,946	534,813	211,396	1,237,658	330,644
1982	1,551,434	421,730	254,298	66,408	400,739	26,335	372,710	235,100	1,341,923	364,482
1983	1,110,994	311,636	184,283	47,759	291,367	19,002	434,517	163,925	943,775	252,096
1984	450,405	346,169	202,914	52,247	321,718	20,719	472,282	174,500	1,003,760	266,383
1985	565,881	411,679	240,344	61,540	381,970	24,474	551,734	200,605	1,152,983	308,405
1986	635,066	467,227	275,347	70,160	438,498	27,822	625,994	223,785	1,285,253	350,799
1987	652,450	487,855	288,131	73,104	467,095	29,064	648,002	228,654	1,319,729	364,779
1988	711,641	546,107	319,496	80,756	525,996	32,024	711,641	248,146	1,438,752	402,232
1989	2,083,593	619,939	362,565	91,333	605,021	36,301	803,932	276,155	1,607,864	454,180
1990	2,308,702	686,843	403,717	101,366	665,871	40,197	887,828	302,351	1,773,908	503,335
1991	2,418,807	725,292	403,717	101,366	665,871	40,197	887,828	302,351	1,793,133	503,335
1992	2,418,807	725,292	403,717	101,366	665,871	40,197	887,828	302,351	1,793,133	503,335
1993	2,418,807	725,292	403,717	101,366	665,871	40,197	887,828	302,351	1,793,133	503,335
1994	2,418,807	725,292	403,717	101,366	665,871	40,197	887,828	302,351	1,793,133	503,335
1995	2,418,807	725,292	403,717	101,366	665,871	40,197	887,828	302,351	1,793,133	503,335
1996	2,418,807	725,292	403,717	101,366	665,871	40,197	887,828	302,351	1,793,133	503,335
1997	2,418,807	725,292	403,717	101,366	665,871	40,197	887,828	302,351	1,793,133	503,335
1998	2,418,807	725,292	403,717	101,366	665,871	40,197	887,828	302,351	1,793,133	503,335
1999	2,418,807	725,292	403,717	101,366	665,871	40,197	887,828	302,351	1,793,133	503,335
2000	2,418,807	725,292	403,717	101,366	665,871	40,197	887,828	302,351	1,793,133	503,335
2001	2,418,807	725,292	403,717	101,366	665,871	40,197	887,828	302,351	1,793,133	503,335
2002	2,418,807	725,292	403,717	101,366	665,871	40,197	887,828	302,351	1,793,133	503,335
2003	2,418,807	725,292	403,717	101,366	665,871	40,197	887,828	302,351	1,793,133	503,335
2004	2,418,807	725,292	403,717	101,366	665,871	40,197	887,828	302,351	1,793,133	503,335
2005	2,418,807	725,292	403,717	101,366	665,871	40,197	887,828	302,351	1,793,133	503,335
2006	2,418,807	725,292	403,717	101,366	665,871	40,197	887,828	302,351	1,793,133	503,335
2007	2,418,807	725,292	403,717	101,366	665,871	40,197	887,828	302,351	1,793,133	503,335
2008	2,418,807	725,292	403,717	101,366	665,871	40,197	887,828	302,351	1,793,133	503,335
2009	2,418,807	725,292	403,717	101,366	665,871	40,197	887,828	302,351	1,793,133	503,335
2010	2,418,807	725,292	403,717	101,366	665,871	40,197	887,828	302,351	1,793,133	503,335
2011	2,418,807	725,292	403,717	101,366	665,871	40,197	887,828	302,351	1,793,133	503,335
2012	2,418,807	725,292	403,717	101,366	665,871	40,197	887,828	302,351	1,793,133	503,335
2013	2,418,807	725,292	403,717	101,366	665,871	40,197	887,828	302,351	1,793,133	503,335
2014	2,418,807	725,292	403,717	101,366	665,871	40,197	887,828	302,351	1,793,133	503,335
2015	2,418,807	725,292	403,717	101,366	665,871	40,197	887,828	302,351	1,793,133	503,335
2016	2,418,807	725,292	403,717	101,366	665,871	40,197	887,828	302,351	1,793,133	503,335
2017	2,418,807	725,292	403,717	101,366	665,871	40,197	887,828	302,351	1,793,133	503,335
2018	2,418,807	725,292	403,717	101,366	665,871	40,197	887,828	302,351	1,793,133	503,335
2019	2,418,807	725,292	403,717	101,366	665,871	40,197	887,828	302,351	1,793,133	503,335
2020	2,418,807	725,292	403,717	101,366	665,871	40,197	887,828	302,351	1,793,133	503,335
2021	2,418,807	725,292	403,717	101,366	665,871	40,197	887,828	302,351	1,793,133	503,335
2022	2,418,807	725,292	403,717	101,366	665,871	40,197	887,828	302,351	1,793,133	503,335
2023	2,418,807	725,292	403,717	101,366	665,871	40,197	887,828	302,351	1,793,133	503,335
2024	2,418,807	725,292	403,717	101,366	665,871	40,197	887,828	302,351	1,793,133	503,335
2025	2,418,807	725,292	403,717	101,366	665,871	40,197	887,828	302,351	1,793,133	503,335
2026	2,418,807	725,292	403,717	101,366	665,871	40,197	887,828	302,351	1,793,133	503,335
2027	2,418,807	725,292	403,717	101,366	665,871	40,197	887,828	302,351	1,793,133	503,335
2028	2,418,807	725,292	403,717	101,366	665,871	40,197	887,828	302,351	1,793,133	503,335
2029	2,418,807	725,292	403,717	101,366	665,871	40,197	887,828	302,351	1,793,133	503,335
2030	2,418,807	725,292	403,717	101,366	665,871	40,197	887,828	302,351	1,793,133	503,335
2031	2,418,807	725,292	403,717	101,366	665,871	40,197	887,828	302,351	1,793,133	503,335
2032	2,418,807	725,292	403,717	101,366	665,871	40,197	887,828	302,351	1,793,133	503,335
2033	2,418,807	725,292	403,717	101,366	665,871	40,197	887,828	302,351	1,793,133	503,335
2034	2,418,807	725,292	403,717	101,366	665,871	40,197	887,828	302,351	1,793,133	503,335
2035	2,418,807	725,292	403,717	101,366	665,871	40,197	887,828	302,351	1,793,133	503,335
TOTAL	124,332,567	38,200,357	21,634,784	5,426,099	35,512,953	2,149,128	47,643,870	16,499,250	98,403,479	27,428,088

TABLE B-21. Total Delta Water Charge for Each Contractor

(in dollars)

Calendar Year	SOUTHERN CALIFORNIA AREA (continued)				FEATHER RIVER AREA				South Bay Area Future Contractor	GRAND TOTAL
	San Gorgonio Pass Water Agency	The Metropolitan Water District of Southern California	Ventura County Flood Control District	Total	City of Yuba City	County of Butte	Plumas County FC&WCD	Total		
	[31]	[32]	[33]	[34]	[35]	[36]	[37]	[38]	[39]	[40]
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	0	0	1,050	875	1,925	0	583,631
1969	0	0	0	0	0	1,225	929	2,154	0	827,578
1970	0	0	0	0	0	3,848	1,995	5,843	0	2,160,886
1971	0	0	0	0	0	4,546	3,186	7,732	0	2,696,792
1972	0	2,043,211	0	2,864,436	0	4,929	3,778	8,707	0	7,206,052
1973	0	2,317,893	0	2,901,818	0	7,059	4,444	11,503	0	7,456,998
1974	0	4,231,933	0	5,472,208	0	8,336	4,931	13,267	0	10,683,514
1975	0	5,073,286	0	6,435,271	0	9,416	5,117	14,533	0	12,440,851
1976	0	6,422,167	0	8,079,430	0	7,004	5,780	12,784	0	15,299,760
1977	0	7,104,278	0	8,855,216	0	16,917	5,827	22,744	0	15,869,924
1978	0	9,016,389	0	11,168,844	0	12,635	6,844	19,479	0	19,425,531
1979	0	10,935,192	0	13,464,634	0	16,575	7,773	24,348	0	23,095,855
1980	84,294	13,102,796	12,396	16,175,991	0	19,834	8,801	28,635	0	27,557,096
1981	140,930	20,910,099	36,136	25,762,531	0	21,682	13,370	35,052	0	43,335,911
1982	167,929	23,998,560	57,248	29,258,896	0	16,117	14,694	30,811	0	49,087,356
1983	124,148	17,203,307	50,672	21,137,481	0	15,202	10,134	25,336	0	34,186,736
1984	138,982	18,766,458	64,344	22,280,881	20,590	15,442	10,681	46,713	0	37,152,123
1985	166,935	22,050,974	84,882	26,202,406	24,050	16,976	12,166	53,192	0	43,235,458
1986	195,056	25,089,658	120,965	29,805,630	31,753	18,145	13,457	63,355	0	49,817,447
1987	207,598	26,095,043	148,284	31,009,788	37,071	17,794	13,642	68,507	0	51,663,898
1988	233,604	28,781,238	201,116	34,232,749	46,722	18,565	14,852	80,139	0	57,062,086
1989	268,530	32,505,376	265,215	39,980,004	61,184	19,891	16,576	97,651	0	65,617,117
1990	302,351	35,154,837	349,539	43,480,845	74,381	20,972	18,176	113,529	0	71,808,792
1991	302,351	35,154,837	349,539	43,648,624	187,910	480,615	18,875	687,400	0	72,674,439
1992	302,351	35,154,837	349,539	43,648,624	187,910	480,615	19,574	688,099	0	72,813,555
1993	302,351	35,154,837	349,539	43,648,624	187,910	480,615	20,273	688,798	0	72,955,993
1994	302,351	35,154,837	349,539	43,648,624	187,910	480,615	20,972	689,497	0	73,082,439
1995	302,351	35,154,837	349,539	43,648,624	187,910	480,615	21,846	690,371	0	73,237,372
1996	302,351	35,154,837	349,539	43,648,624	187,910	480,615	22,720	691,245	0	73,346,516
1997	302,351	35,154,837	349,539	43,648,624	187,910	480,615	23,594	692,119	0	73,401,393
1998	302,351	35,154,837	349,539	43,648,624	187,910	480,615	24,468	692,993	0	73,421,580
1999	302,351	35,154,837	349,539	43,648,624	187,910	480,615	25,342	693,867	0	73,441,328
2000	302,351	35,154,837	349,539	43,648,624	187,910	480,615	26,390	694,915	0	73,462,825
2001	302,351	35,154,837	349,539	43,648,624	187,910	480,615	27,439	695,964	0	73,482,661
2002	302,351	35,154,837	349,539	43,648,624	187,910	480,615	28,487	697,012	0	73,500,837
2003	302,351	35,154,837	349,539	43,648,624	187,910	480,615	29,536	698,061	0	73,520,674
2004	302,351	35,154,837	349,539	43,648,624	187,910	480,615	30,585	699,110	0	73,540,074
2005	302,351	35,154,837	349,539	43,648,624	187,910	480,615	31,633	700,158	0	73,552,481
2006	302,351	35,154,837	349,539	43,648,624	187,910	480,615	32,857	701,382	0	73,562,443
2007	302,351	35,154,837	349,539	43,648,624	187,910	480,615	34,080	702,605	0	73,574,153
2008	302,351	35,154,837	349,539	43,648,624	187,910	480,615	35,303	703,828	0	73,587,610
2009	302,351	35,154,837	349,539	43,648,624	187,910	480,615	36,527	705,052	0	73,599,320
2010	302,351	35,154,837	349,539	43,648,624	187,910	480,615	37,750	706,275	0	73,611,029
2011	302,351	35,154,837	349,539	43,648,624	187,910	480,615	39,148	707,673	0	73,624,661
2012	302,351	35,154,837	349,539	43,648,624	187,910	480,615	40,546	709,071	0	73,636,545
2013	302,351	35,154,837	349,539	43,648,624	187,910	480,615	42,119	710,644	0	73,650,352
2014	302,351	35,154,837	349,539	43,648,624	187,910	480,615	43,692	712,217	0	73,664,159
2015	302,351	35,154,837	349,539	43,648,624	187,910	480,615	45,440	713,965	0	73,678,141
2016	302,351	35,154,837	349,539	43,648,624	187,910	480,615	47,188	715,713	0	73,690,375
2017	302,351	35,154,837	349,539	43,648,624	187,910	480,615	47,188	715,713	0	73,700,861
2018	302,351	35,154,837	349,539	43,648,624	187,910	480,615	47,188	715,713	0	73,711,347
2019	302,351	35,154,837	349,539	43,648,624	187,910	480,615	47,188	715,713	0	73,721,833
2020	302,351	35,154,837	349,539	43,648,624	187,910	480,615	47,188	715,713	0	73,732,319
2021	302,351	35,154,837	349,539	43,648,624	187,910	480,615	47,188	715,713	0	73,734,067
2022	302,351	35,154,837	349,539	43,648,624	187,910	480,615	47,188	715,713	0	73,734,067
2023	302,351	35,154,837	349,539	43,648,624	187,910	480,615	47,188	715,713	0	73,734,067
2024	302,351	35,154,837	349,539	43,648,624	187,910	480,615	47,188	715,713	0	73,734,067
2025	302,351	35,154,837	349,539	43,648,624	187,910	480,615	47,188	715,713	0	73,734,067
2026	302,351	35,154,837	349,539	43,648,624	187,910	480,615	47,188	715,713	0	73,734,067
2027	302,351	35,154,837	349,539	43,648,624	187,910	480,615	47,188	715,713	0	73,734,067
2028	302,351	35,154,837	349,539	43,648,624	187,910	480,615	47,188	715,713	0	73,734,067
2029	302,351	35,154,837	349,539	43,648,624	187,910	480,615	47,188	715,713	0	73,734,067
2030	302,351	35,154,837	349,539	43,648,624	187,910	480,615	47,188	715,713	0	73,734,067
2031	302,351	35,154,837	349,539	43,648,624	187,910	480,615	47,188	715,713	0	73,734,067
2032	302,351	35,154,837	349,539	43,648,624	187,910	480,615	47,188	715,713	0	73,734,067
2033	302,351	35,154,837	349,539	43,648,624	187,910	480,615	47,188	715,713	0	73,734,067
2034	302,351	35,154,837	349,539	43,648,624	187,910	480,615	47,188	715,713	0	73,734,067
2035	302,351	35,154,837	349,539	43,648,624	187,910	480,615	47,188	715,713	0	73,734,067
TOTAL	15,636,152	1,892,770,360	17,120,052	2,342,757,139	8,751,701	21,921,835	1,900,984	32,574,520	0	3,958,702,862

TABLE B-22. Water System Revenue Bond Surcharge for Each Contractor

(in dollars)

Calendar Year	NORTH BAY AREA			SOUTH BAY AREA				CENTRAL COASTAL AREA		
	Napa County FC&WCD	Solano County FC&WCD	Total	Alameda County FC&WCD, Zone 7	Alameda County Water District	Santa Clara Valley Water District	Total	San Luis Obispo County	Santa Barbara County	Total
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[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	36,888	51,291	88,179	32,209	38,210	126,672	197,091	16,621	30,887	47,508
1989	73,556	104,930	178,486	65,325	77,891	256,675	399,891	40,433	74,806	115,239
1990	64,899	95,350	160,249	60,547	80,692	235,586	376,825	44,069	81,653	125,722
1991	64,102	94,476	158,578	62,980	82,664	237,544	383,188	45,066	83,709	128,775
1992	64,244	94,686	158,930	63,120	82,848	238,071	384,039	45,166	83;895	129,061
1993	64,325	94,804	159,129	63,199	82,951	238,369	384,519	45,222	84,000	129,222
1994	64,437	94,970	159,407	63,309	83,096	238,786	385,191	45,302	84,147	129,449
1995	63,143	106,631	169,774	72,994	86,985	243,496	403,475	120,632	248,015	368,647
1996	63,972	107,856	171,828	73,637	87,024	243,589	404,250	121,412	249,544	370,956
1997	64,782	109,049	173,831	74,258	87,036	243,608	404,902	122,155	250,999	373,154
1998	65,571	110,206	175,777	74,854	87,019	243,545	405,418	122,858	252,370	375,228
1999	66,326	111,305	177,631	75,411	86,957	243,356	405,724	123,497	253,609	377,106
2000	67,086	112,415	179,501	75,976	86,905	243,192	406,073	124,148	254,874	379,022
2001	67,918	113,644	181,562	76,620	86,944	243,285	406,849	124,930	256,408	381,338
2002	68,760	114,891	183,651	77,277	86,995	243,414	407,686	125,732	257,982	383,714
2003	69,537	116,028	185,565	77,860	86,963	243,307	408,130	126,412	259,307	385,719
2004	70,287	117,121	187,408	78,413	86,898	243,111	408,422	127,045	260,535	387,580
2005	71,029	118,199	189,228	78,957	86,824	242,887	408,668	127,663	261,732	389,395
2006	72,311	118,275	190,586	78,832	86,657	242,295	407,784	127,677	261,768	389,445
2007	73,646	118,432	192,078	78,761	86,548	241,866	407,175	127,778	261,983	389,761
2008	74,915	118,473	193,388	78,612	86,355	241,199	406,166	127,754	261,943	389,697
2009	76,166	118,485	194,651	78,442	86,138	240,468	405,048	127,698	261,835	389,533
2010	77,424	118,502	195,926	78,277	85,926	239,749	403,952	127,648	261,740	389,388
2011	78,643	118,457	197,100	78,070	85,669	238,904	402,643	127,531	261,509	389,040
2012	79,888	118,450	198,338	77,888	85,439	238,133	401,460	127,455	261,360	388,815
2013	81,104	118,397	199,501	77,675	85,175	237,269	400,119	127,329	261,109	388,438
2014	82,305	118,323	200,628	77,448	84,895	236,361	398,704	127,179	260,811	387,990
2015	83,535	118,287	201,822	77,247	84,644	235,531	397,422	127,072	260,599	387,671
2016	84,698	118,157	202,855	76,984	84,324	234,513	395,821	126,864	260,179	387,043
2017	85,743	117,866	203,609	76,616	83,890	233,176	393,682	126,482	259,404	385,886
2018	86,727	117,497	204,224	76,199	83,402	231,688	391,289	126,017	258,459	384,476
2019	87,722	117,151	204,873	75,796	82,931	230,249	388,976	125,577	257,564	383,141
2020	88,690	116,777	205,467	75,377	82,441	228,758	386,576	125,107	256,608	381,715
2021	153,085	200,829	353,914	129,861	142,035	394,165	666,061	215,204	441,389	656,593
2022	120,888	158,803	279,691	102,619	112,238	311,461	526,318	170,156	348,999	519,155
2023	185,283	242,855	428,138	157,103	171,832	476,868	805,803	260,253	533,780	794,033
2024	56,492	74,751	131,243	48,135	52,644	146,055	246,834	80,058	164,217	244,275
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	2,900,127	4,316,619	7,216,746	2,846,888	3,238,085	9,127,201	15,212,174	4,279,202	8,723,728	13,002,930

TABLE B-22. Water System Revenue Bond Surcharge for Each Contractor

(in dollars)

Calendar Year	SAN JOAQUIN VALLEY AREA									
					Kern County Water Agency					
	Devil's Den Water District	Dudley Ridge Water District	Empire West Side Irrigation District	Future Contractor San Joaquin Valley	Municipal and Industrial	Agri-cultural	County of Kings	Oak Flat Water District	Tulare Lake Basin Water Storage District	Total
	[11]	[12]	[13]	[14]	[15]	[16]	[17]	[18]	[19]	[20]
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	12,830	43,035	2,098	0	84,892	916,572	2,822	3,611	84,520	1,150,380
1989	25,628	89,334	4,199	0	175,229	1,879,267	5,626	7,427	175,939	2,362,649
1990	23,259	84,104	3,811	0	453,721	1,493,460	5,122	6,883	172,020	2,242,380
1991	22,980	83,026	3,764	0	172,810	1,750,806	5,089	6,819	169,808	2,215,102
1992	23,031	83,210	3,772	0	173,194	1,754,694	5,100	6,834	170,185	2,220,020
1993	23,060	83,314	3,777	0	173,410	1,756,885	5,107	6,843	170,398	2,222,794
1994	23,100	83,460	3,784	0	173,714	1,759,962	5,116	6,855	170,696	2,226,687
1995	22,392	80,948	3,669	0	168,034	1,706,675	4,979	6,649	165,569	2,158,915
1996	22,403	80,993	3,671	0	167,932	1,707,603	4,982	6,653	165,663	2,159,900
1996	22,408	81,014	3,672	0	167,780	1,708,016	4,984	6,655	165,706	2,160,235
1998	22,405	81,007	3,671	0	167,571	1,707,853	4,984	6,655	165,694	2,159,840
1999	22,391	80,959	3,669	0	167,275	1,706,808	4,982	6,652	165,596	2,158,332
2000	22,379	80,919	3,667	0	166,997	1,705,936	4,980	6,649	165,516	2,157,043
2001	22,390	80,964	3,668	0	166,895	1,706,870	4,983	6,653	165,610	2,158,033
2002	22,405	81,021	3,671	0	166,817	1,708,054	4,987	6,658	165,728	2,159,341
2003	22,398	81,000	3,670	0	166,578	1,707,586	4,987	6,657	165,687	2,158,563
2004	22,383	80,949	3,667	0	166,278	1,706,487	4,984	6,653	165,584	2,156,985
2005	22,365	80,889	3,664	0	165,959	1,705,196	4,981	6,649	165,462	2,155,165
2006	22,362	80,879	3,663	0	165,694	1,705,004	4,977	6,648	165,442	2,154,669
2007	22,375	80,925	3,665	0	165,541	1,705,975	4,977	6,652	165,536	2,155,646
2008	22,366	80,892	3,663	0	165,226	1,705,282	4,972	6,649	165,468	2,154,518
2009	22,351	80,837	3,661	0	164,867	1,704,148	4,966	6,645	165,357	2,152,832
2010	22,337	80,787	3,658	0	164,517	1,703,103	4,960	6,641	165,255	2,151,258
2011	22,312	80,695	3,654	0	164,080	1,701,163	4,951	6,633	165,066	2,148,554
2012	22,293	80,627	3,651	0	163,694	1,699,760	4,944	6,627	164,929	2,146,525
2013	22,266	80,529	3,646	0	163,245	1,697,697	4,934	6,619	164,728	2,143,664
2014	22,235	80,416	3,641	0	162,765	1,695,321	4,924	6,610	164,496	2,140,408
2015	22,211	80,329	3,637	0	162,339	1,693,512	4,916	6,603	164,320	2,137,867
2016	22,169	80,179	3,629	0	161,784	1,690,344	4,904	6,590	164,011	2,133,610
2017	22,097	79,919	3,618	0	161,008	1,684,874	4,885	6,569	163,480	2,126,450
2018	22,011	79,606	3,603	0	160,128	1,678,298	4,863	6,543	162,841	2,117,893
2019	21,929	79,310	3,589	0	159,280	1,672,053	4,841	6,519	162,234	2,109,755
2020	21,842	78,994	3,575	0	158,396	1,665,413	4,819	6,493	161,589	2,101,121
2021	37,626	136,088	6,168	0	272,429	2,868,912	8,302	11,186	278,363	3,619,074
2022	29,734	107,541	4,871	0	215,412	2,267,163	6,561	8,839	219,976	2,860,097
2023	45,518	164,635	7,464	0	329,445	3,470,662	10,044	13,532	336,750	4,378,050
2024	13,950	50,447	2,279	0	101,380	1,063,663	3,077	4,147	103,202	1,342,145
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	860,191	3,103,781	140,899	0	6,606,316	65,161,077	190,612	255,200	6,338,424	82,656,500

TABLE B-22. Water System Revenue Bond Surcharge for Each Contractor

(in dollars)

Calendar Year	SOUTHERN CALIFORNIA AREA									
	Antelope Valley-East Kern Water Agency	Castaic Lake Water Agency	Coachella Valley Water District	Crestline Lake Arrowhead Water Agency	Desert Water Agency	Littlerock Creek Irrigation District	Mojave Water Agency	Palmdale Water District	San Bernardino Valley Municipal Water District	San Gabriel Valley Municipal Water District
	[21]	[22]	[23]	[24]	[25]	[26]	[27]	[28]	[29]	[30]
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	81,377	59,488	34,229	9,695	56,339	2,728	70,906	20,564	191,436	50,534
1989	309,973	123,158	70,827	19,989	117,714	5,671	146,402	42,172	391,651	104,150
1990	291,660	115,164	66,920	18,767	110,308	5,335	137,665	39,341	365,186	97,504
1991	300,193	119,032	66,650	18,705	109,862	5,295	137,094	39,064	366,362	97,099
1992	300,860	119,296	66,798	18,747	110,106	5,307	137,398	39,151	367,175	97,315
1993	301,235	119,445	66,881	18,770	110,243	5,313	137,570	39,200	367,634	97,436
1994	301,763	119,654	66,999	18,803	110,437	5,323	137,811	39,268	368,278	97,607
1995	293,341	116,490	65,321	18,484	107,674	5,175	134,224	38,171	361,827	95,942
1996	293,502	116,551	65,356	18,494	107,731	5,178	134,296	38,192	362,020	95,994
1996	293,574	116,577	65,371	18,498	107,756	5,179	134,327	38,201	362,103	96,016
1998	293,547	116,563	65,364	18,496	107,744	5,178	134,313	38,197	362,065	96,007
1999	293,368	116,489	65,323	18,484	107,677	5,174	134,229	38,173	361,839	95,948
2000	293,219	116,427	65,289	18,475	107,621	5,172	134,159	38,154	361,650	95,898
2001	293,381	116,488	65,324	18,484	107,678	5,174	134,231	38,174	361,844	95,950
2002	293,585	116,567	65,369	18,497	107,751	5,177	134,323	38,200	362,091	96,016
2003	293,506	116,532	65,350	18,491	107,721	5,176	134,285	38,190	361,988	95,989
2004	293,318	116,455	65,307	18,479	107,650	5,172	134,197	38,165	361,751	95,927
2005	293,097	116,364	65,257	18,465	107,567	5,168	134,094	38,136	361,473	95,854
2006	292,690	116,188	65,164	18,439	107,414	5,161	133,908	38,082	360,952	95,717
2007	292,482	116,091	65,116	18,426	107,335	5,157	133,813	38,053	360,677	95,645
2008	291,987	115,879	65,003	18,394	107,150	5,149	133,587	37,987	360,047	95,480
2009	291,415	115,638	64,874	18,358	106,937	5,139	133,326	37,912	359,324	95,289
2010	290,859	115,402	64,748	18,322	106,730	5,129	133,072	37,838	358,618	95,103
2011	290,149	115,105	64,587	18,277	106,466	5,117	132,748	37,744	357,724	94,867
2012	289,529	114,845	64,447	18,238	106,235	5,106	132,465	37,662	356,941	94,661
2013	288,798	114,540	64,282	18,191	105,964	5,093	132,131	37,565	356,020	94,418
2014	288,012	114,213	64,105	18,141	105,672	5,079	131,772	37,462	355,032	94,157
2015	287,323	113,925	63,949	18,098	105,416	5,067	131,457	37,371	354,163	93,928
2016	286,403	113,545	63,742	18,039	105,075	5,051	131,037	37,250	353,010	93,624
2017	285,094	113,011	63,449	17,956	104,592	5,028	130,438	37,078	351,377	93,192
2018	283,599	112,403	63,114	17,862	104,040	5,002	129,755	36,882	349,515	92,699
2019	282,162	111,818	62,792	17,771	103,509	4,976	129,098	36,694	347,725	92,226
2020	280,660	111,208	62,455	17,676	102,955	4,950	128,411	36,497	345,854	91,731
2021	481,554	190,519	106,810	30,191	176,068	8,483	219,705	62,592	590,209	156,630
2022	381,107	150,864	84,632	23,934	139,512	6,716	174,058	49,544	468,032	124,180
2023	582,001	230,175	128,987	36,449	212,625	10,249	265,352	75,639	712,387	189,079
2024	180,213	71,552	40,278	11,418	66,398	3,184	82,764	23,450	223,676	59,282
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	11,060,536	4,413,661	2,480,469	701,003	4,089,672	196,731	5,100,421	1,452,015	13,719,656	3,639,094

TABLE B-22. Water System Revenue Bond Surcharge for Each Contractor

(in dollars)

Calendar Year	SOUTHERN CALIFORNIA AREA (continued)				FEATHER RIVER AREA				South Bay Area Future Contractor	GRAND TOTAL
	San Gorgonio Pass Water Agency	The Metropolitan Water District of Southern California	Ventura County Flood Control District	Total	City of Yuba City	County of Butte	Plumas County FC&WCD	Total		
	[31]	[32]	[33]	[34]	[35]	[36]	[37]	[38]	[39]	[40]
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	30,414	3,345,930	22,943	3,976,583	0	699	1,081	1,780	0	5,461,521
1989	63,360	6,914,298	52,095	8,361,460	0	1,385	2,190	3,575	0	11,421,300
1990	59,945	6,365,707	55,166	7,728,668	0	1,261	2,024	3,285	0	10,637,129
1991	59,696	6,328,821	54,796	7,702,669	0	28,654	2,046	30,700	0	10,619,012
1992	59,829	6,342,872	54,918	7,719,772	0	28,718	2,051	30,769	0	10,642,591
1993	59,903	6,350,794	54,986	7,729,410	0	28,753	2,053	30,806	0	10,655,880
1994	60,008	6,361,917	55,083	7,742,951	0	28,804	2,057	30,861	0	10,674,546
1995	58,985	6,210,812	53,625	7,560,071	0	27,958	2,168	30,126	0	10,691,008
1996	59,017	6,221,273	53,653	7,571,257	0	27,976	2,234	30,210	0	10,708,401
1996	59,031	6,229,865	53,665	7,580,163	0	27,985	2,299	30,284	0	10,722,569
1998	59,025	6,236,359	53,659	7,586,517	0	27,985	2,363	30,348	0	10,733,128
1999	58,988	6,239,624	53,626	7,588,942	0	27,970	2,427	30,397	0	10,738,132
2000	58,958	6,243,518	53,598	7,592,138	0	27,958	2,490	30,448	0	10,744,225
2001	58,989	6,239,614	53,626	7,588,957	0	27,976	2,556	30,532	0	10,747,271
2002	59,030	6,236,612	53,662	7,586,880	0	27,998	2,623	30,621	0	10,751,893
2003	59,013	6,227,578	53,647	7,577,466	0	27,992	2,686	30,678	0	10,746,121
2004	58,975	6,216,243	53,611	7,565,250	0	27,977	2,749	30,726	0	10,736,371
2005	58,930	6,204,220	53,570	7,552,195	0	27,958	2,812	30,770	0	10,725,421
2006	58,845	6,195,178	53,489	7,541,227	0	27,955	2,884	30,839	0	10,714,550
2007	58,800	6,190,336	53,445	7,535,376	0	27,970	2,957	30,927	0	10,710,963
2008	58,698	6,179,425	53,348	7,522,134	0	27,959	3,029	30,988	0	10,696,891
2009	58,580	6,166,898	53,238	7,506,928	0	27,940	3,099	31,039	0	10,680,031
2010	58,465	6,154,682	53,130	7,492,098	0	27,923	3,170	31,093	0	10,663,715
2011	58,319	6,139,217	52,994	7,473,314	0	27,891	3,239	31,130	0	10,641,781
2012	58,192	6,125,680	52,874	7,456,875	0	27,868	3,310	31,178	0	10,623,191
2013	58,042	6,109,755	52,734	7,437,533	0	27,834	3,379	31,213	0	10,600,468
2014	57,881	6,092,697	52,584	7,416,807	0	27,794	3,448	31,242	0	10,575,779
2015	57,739	6,077,676	52,452	7,398,564	0	27,765	3,517	31,282	0	10,554,628
2016	57,551	6,057,773	52,278	7,374,378	0	27,712	3,585	31,297	0	10,525,004
2017	57,285	6,029,638	52,032	7,340,170	0	27,623	3,646	31,269	0	10,481,066
2018	56,982	5,997,576	51,753	7,301,182	0	27,515	3,706	31,221	0	10,430,285
2019	56,690	5,966,738	51,485	7,263,684	0	27,412	3,766	31,178	0	10,381,607
2020	56,385	5,934,527	51,204	7,224,513	0	27,303	3,824	31,127	0	10,330,519
2021	96,268	2,714,447	87,762	4,921,238	0	47,035	6,576	53,611	0	10,270,491
2022	76,327	4,231,341	69,483	5,979,730	0	37,169	5,200	42,369	0	10,207,360
2023	116,210	12,253,217	106,041	14,918,411	0	56,901	7,952	64,853	0	21,389,288
2024	36,443	4,990,620	32,925	5,822,203	0	17,437	2,448	19,885	0	7,806,585
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	2,235,798	226,123,478	2,025,180	277,237,714	0	1,001,013	113,644	1,114,657	0	396,440,721

TABLE B-23. Total Transportation and Delta Water Charge for Each Contractor

(in dollars)

Calendar Year	NORTH BAY AREA			SOUTH BAY AREA				CENTERAL COASTAL AREA		
	Napa County FC&WCD	Solano County FC&WCD	Total	Alameda County FC&WCD, Zone 7	Alameda County Water District	Santa Clara Valley Water District	Total	San Luis Obispo County FC&WCD	Santa Barbara County FC&WCD	Total
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]
1961	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	11,750	43,787	0	55,537	0	0	0
1963	0	0	0	152,813	192,136	455,509	800,458	0	0	0
1964	0	0	0	173,382	280,386	631,845	1,085,613	9,067	17,954	27,021
1965	0	0	0	248,951	408,713	1,174,621	1,832,285	14,938	28,953	43,891
1966	18,399	0	18,399	275,395	426,616	1,432,331	2,134,342	24,388	46,598	70,986
1967	42,294	0	42,294	365,220	557,041	1,881,843	2,804,104	43,012	81,129	124,141
1968	130,656	0	130,656	416,167	639,242	2,201,717	3,257,126	69,364	129,930	199,294
1969	257,459	0	257,459	482,959	590,075	2,323,652	3,396,686	124,504	231,788	356,292
1970	280,354	0	280,354	547,519	647,181	2,813,518	4,008,218	137,627	256,087	393,714
1971	230,317	0	230,317	484,897	682,128	2,832,683	3,999,708	138,809	258,349	397,158
1972	227,843	0	227,843	613,677	829,345	3,053,485	4,496,507	145,043	269,969	415,012
1973	223,973	32,062	256,035	599,414	723,451	3,146,579	4,469,444	142,091	264,573	406,664
1974	243,427	33,660	277,087	639,559	753,902	3,350,847	4,744,308	143,333	266,915	410,248
1975	240,526	37,068	277,594	696,453	800,044	3,239,931	4,736,428	159,921	297,561	457,482
1976	274,435	41,687	316,122	809,049	950,468	3,388,461	5,147,978	272,011	504,558	776,569
1977	296,818	46,017	342,835	776,802	929,273	3,329,563	5,035,638	282,872	525,050	807,922
1978	277,119	50,160	327,279	864,365	942,887	3,738,705	5,545,957	290,475	539,243	829,718
1979	292,619	54,121	346,740	958,707	1,016,167	3,844,188	5,819,062	288,838	536,337	825,175
1980	317,799	86,905	404,704	1,114,041	1,183,845	4,152,740	6,450,626	331,993	596,697	928,690
1981	352,689	112,598	465,287	1,216,066	1,356,339	4,534,635	7,107,040	357,712	640,709	998,421
1982	444,589	142,883	587,472	1,303,396	1,383,239	4,977,504	7,664,139	377,126	728,940	1,106,066
1983	359,724	165,915	525,639	1,179,900	1,283,465	5,082,601	7,545,966	403,815	747,633	1,151,448
1984	472,245	250,077	722,322	1,473,348	1,487,228	6,879,291	9,839,867	457,158	845,975	1,303,133
1985	743,580	391,769	1,135,349	1,989,592	2,257,620	7,910,355	12,157,567	556,462	1,027,764	1,584,226
1986	1,129,181	725,173	1,854,354	1,852,645	2,047,387	8,321,140	12,221,172	585,376	1,080,436	1,665,812
1987	1,787,829	1,607,909	3,395,738	2,348,982	2,533,379	8,073,096	12,955,457	624,409	1,189,075	1,813,484
1988	2,293,575	2,625,727	4,919,302	2,414,351	2,807,785	7,943,771	13,165,907	744,544	1,463,539	2,208,083
1989	2,623,336	3,918,356	6,541,692	2,754,957	3,082,794	8,284,670	14,122,421	915,370	1,856,068	2,771,438
1990	2,729,353	4,054,579	6,783,932	2,967,593	3,457,947	8,826,298	15,251,838	1,085,989	2,117,292	3,203,281
1991	2,783,308	4,143,903	6,927,211	3,143,676	3,569,788	9,134,341	15,847,805	1,163,923	2,182,527	3,346,450
1992	2,799,690	4,206,215	7,005,905	3,259,160	3,623,718	9,301,964	16,184,842	1,347,848	2,568,871	3,916,719
1993	2,822,461	4,255,988	7,078,449	3,371,019	3,654,366	9,420,653	16,446,038	2,550,162	5,255,077	7,805,239
1994	2,843,725	4,304,907	7,148,632	3,419,032	3,602,319	9,379,800	16,401,151	4,075,887	8,694,080	12,769,967
1995	2,881,853	4,471,118	7,352,971	3,592,788	3,665,661	9,527,269	16,785,718	7,264,723	14,767,083	22,031,806
1996	2,909,907	4,548,436	7,458,343	3,709,204	3,673,966	9,547,469	16,930,639	8,753,220	17,790,062	26,543,282
1996	2,966,363	4,617,904	7,584,267	4,017,420	3,856,826	9,982,935	17,857,181	9,027,080	18,295,005	27,322,085
1998	2,994,116	4,639,365	7,633,481	4,015,873	3,854,854	9,978,232	17,848,959	9,032,392	18,309,997	27,342,389
1999	3,046,706	4,699,486	7,746,192	4,167,250	3,992,519	10,306,049	18,465,818	9,229,727	18,673,550	27,903,277
2000	3,076,310	4,721,124	7,797,434	4,161,345	3,986,561	10,291,837	18,439,743	9,217,111	18,650,759	27,867,870
2001	3,099,657	4,732,936	7,832,593	4,142,688	3,968,980	10,249,981	18,361,649	9,187,914	18,597,794	27,785,708
2002	3,120,582	4,743,883	7,864,465	4,122,744	3,950,223	10,205,338	18,278,305	9,155,095	18,538,266	27,693,361
2003	3,176,004	4,801,597	7,977,601	4,293,605	4,107,570	10,587,121	18,988,296	9,340,256	18,875,870	28,216,126
2004	3,238,347	4,867,097	8,105,444	4,432,723	4,234,120	10,888,777	19,555,620	9,513,518	19,191,864	28,705,382
2005	3,258,930	4,867,996	8,126,926	4,395,524	4,199,583	10,806,491	19,401,598	9,461,134	19,096,596	28,557,730
2006	3,280,250	4,864,615	8,144,865	4,381,856	4,187,050	10,776,469	19,345,375	9,443,578	19,064,927	28,508,505
2007	3,337,017	4,904,056	8,241,073	4,513,904	4,307,585	11,063,356	19,884,845	9,611,953	19,371,868	28,983,821
2008	3,362,839	4,901,254	8,264,093	4,501,325	4,296,044	11,035,680	19,833,049	9,591,002	19,333,791	28,924,793
2009	3,417,929	4,935,445	8,353,374	4,617,399	4,401,977	11,287,749	20,307,125	9,736,209	19,598,505	29,334,714
2010	3,443,145	4,933,100	8,376,245	4,604,469	4,390,113	11,259,288	20,253,870	9,716,492	19,562,652	29,279,144
2011	3,469,986	4,926,678	8,396,664	4,581,850	4,369,301	11,209,008	20,160,159	9,684,101	19,503,498	29,187,599
2012	3,497,028	4,923,187	8,420,215	4,565,862	4,354,640	11,173,879	20,094,381	9,659,638	19,459,004	29,118,642
2013	3,480,975	4,871,309	8,352,284	4,288,506	4,096,733	10,443,009	18,828,248	9,416,972	19,017,480	28,434,452
2014	3,536,110	4,896,846	8,432,956	4,326,216	4,097,454	10,434,497	18,858,167	9,514,558	19,193,580	28,708,138
2015	3,580,810	4,909,045	8,489,855	4,334,777	4,049,913	10,161,168	18,545,858	9,552,237	19,262,332	28,814,569
2016	3,586,167	4,901,421	8,487,588	4,290,721	3,995,914	9,930,291	18,216,926	9,506,024	19,177,759	28,683,783
2017	3,589,017	4,896,389	8,485,406	4,241,894	3,949,406	9,776,063	17,967,363	9,462,545	19,097,912	28,560,457
2018	3,540,113	4,896,298	8,436,411	4,198,142	3,906,266	9,647,780	17,752,188	9,445,870	19,066,914	28,512,784
2019	3,524,532	4,892,617	8,417,149	4,145,459	3,857,421	9,513,534	17,516,414	9,422,193	19,023,513	28,445,706
2020	3,546,138	4,885,953	8,432,091	4,105,476	3,818,507	9,417,093	17,341,076	9,387,601	18,960,235	28,347,836
2021	3,609,621	4,968,999	8,578,620	4,125,082	3,843,656	9,492,674	17,461,412	9,471,416	19,133,452	28,604,868
2022	3,569,071	4,916,764	8,485,835	4,094,390	3,810,333	9,399,465	17,304,188	9,420,697	19,030,554	28,451,251
2023	3,633,788	4,969,398	8,603,186	4,149,567	3,870,483	9,564,477	17,584,527	9,512,199	19,217,836	28,730,035
2024	3,501,529	4,798,283	8,299,812	4,036,419	3,747,227	9,222,998	17,006,644	9,317,479	18,821,390	28,138,869
2025	3,437,206	4,720,214	8,157,420	3,987,063	3,692,947	9,072,272	16,752,282	9,236,887	18,656,148	27,893,035
2026	3,432,977	4,716,047	8,149,024	3,986,718	3,692,605	9,071,265	16,750,588	9,128,584	18,456,112	27,584,696
2027	3,428,382	4,710,340	8,138,722	3,979,938	3,686,228	9,054,672	16,720,838	9,119,516	18,439,059	27,558,575
2028	3,425,580	4,706,645	8,132,225	3,977,657	3,683,994	9,048,012	16,709,663	9,113,973	18,428,647	27,542,620
2029	3,422,316	4,702,818	8,125,134	3,973,595	3,680,236	9,038,147	16,691,978	9,112,366	18,425,569	27,537,935
2030	3,411,914	4,688,066	8,099,980	3,969,034	3,675,997	9,027,622	16,672,653	9,106,981	18,415,554	27,522,535
2031	3,396,902	4,669,393	8,066,295	3,960,399	3,668,033	9,008,227	16,636,659	9,094,984	18,393,368	27,488,352
2032	3,385,152	4,647,864	8,033,016	3,959,195	3,666,886	9,005,204	16,631,285	9,094,878	18,393,159	27,488,037
2033	3,357,758	4,602,473	7,960,231	3,960,256	3,667,811	9,007,151	16,635,218	9,098,863	18,400,413	27,499,276
2034	3,292,733	4,528,975	7,821,708	3,953,720	3,661,599	8,991,123	16,606,442	9,098,004	18,398,744	27,496,748
2035	3,160,948	4,385,539	7,546,487	3,939,882	3,648,901	8,960,054	16,548,837	9,089,575	18,383,292	27,472,867
TOTAL	164,966,031	227,268,652	392,234,683	213,726,772	210,010,184	561,526,063	985,263,019	398,213,612	803,723,790	1,201,937,402

TABLE B-23. Total Transportation and Delta Water Charge for Each Contractor

(in dollars)

Calendar Year	SAN JOAQUIN VALLEY AREA									
	Devil's Den Water District	Dudley Ridge Water District	Empire West Side Irrigation District	Future Contractor San Joaquin Valley	Kern County Water Agency		County of Kings	Oak Flat Water District	Tulare Lake Basin Water Storage District	Total
					Municipal and Industrial	Agri-cultural				
	[11]	[12]	[13]	[14]	[15]	[16]	[17]	[18]	[19]	[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	2,772	0	0	0	0	0	2,772
1965	0	0	0	6,131	74,904	0	0	0	0	81,035
1966	0	0	0	12,239	139,761	0	0	0	0	152,000
1967	0	0	0	26,691	272,276	0	0	0	0	298,967
1968	86,783	224,249	20,112	55,394	452,161	1,709,990	16,196	19,674	307,467	2,892,026
1969	139,851	240,424	13,131	88,521	532,958	2,729,945	15,840	19,411	459,365	4,239,446
1970	183,097	305,479	36,565	95,648	582,505	3,880,011	20,417	30,433	521,695	5,655,850
1971	198,471	326,787	39,294	96,685	614,831	5,201,493	26,134	34,717	712,975	7,251,387
1972	234,657	379,901	42,491	99,791	640,757	7,142,212	25,404	63,883	1,983,596	10,612,692
1973	240,759	397,585	41,177	98,559	1,035,118	7,295,586	27,750	39,306	782,444	9,958,284
1974	263,547	505,388	42,391	99,478	1,154,063	8,005,949	28,464	42,608	1,043,117	11,185,005
1975	291,454	677,493	42,837	107,729	1,206,480	9,388,426	30,140	48,226	1,556,338	13,349,123
1976	329,712	717,601	45,358	109,115	1,333,197	10,637,533	31,562	52,168	1,442,069	14,698,315
1977	332,445	577,971	41,279	113,606	1,376,936	10,955,474	33,318	54,277	1,138,153	14,623,459
1978	371,085	694,575	43,527	116,495	1,572,655	13,266,278	37,652	59,087	1,171,581	17,332,935
1979	418,538	779,089	50,104	115,206	1,676,584	15,359,572	41,814	70,646	1,725,186	20,236,739
1980	418,782	960,689	51,868	128,857	1,780,125	17,051,860	46,792	95,058	1,659,893	22,193,924
1981	506,648	1,209,978	86,348	134,896	2,433,448	22,615,380	65,163	100,761	2,285,240	29,437,862
1982	516,748	1,243,791	72,480	136,768	2,527,330	24,957,370	69,407	108,354	2,280,896	31,913,144
1983	492,138	1,173,107	54,809	150,962	2,097,706	24,689,647	73,103	89,359	508,845	29,329,676
1984	637,909	1,493,552	131,908	166,635	3,368,200	33,344,531	92,996	121,022	1,558,583	40,915,336
1985	747,381	1,791,915	133,529	190,888	3,945,352	39,959,869	117,757	141,508	2,871,641	49,899,840
1986	811,374	2,028,963	82,388	182,964	4,127,040	44,167,397	136,908	155,437	3,692,976	55,385,447
1987	740,137	1,934,705	100,201	183,842	4,694,041	43,747,287	140,039	157,076	3,854,814	55,552,142
1988	751,862	2,025,773	115,067	196,660	4,853,691	45,888,561	141,051	151,719	4,020,770	58,145,154
1989	849,153	2,382,839	111,128	211,140	4,835,846	52,233,531	145,723	179,697	4,744,501	65,693,558
1990	850,128	2,426,474	116,388	225,500	5,247,923	54,211,423	153,642	185,405	4,968,309	68,385,192
1991	868,268	2,458,946	118,049	233,773	5,052,750	55,332,880	156,950	187,850	5,034,292	69,443,758
1992	883,436	2,492,003	119,753	238,512	5,103,983	56,176,201	160,184	189,932	5,101,944	70,465,948
1993	884,233	2,493,350	119,823	240,071	5,094,144	56,210,929	160,412	190,158	5,104,670	70,497,790
1994	873,822	2,464,911	118,344	241,668	5,040,839	55,549,207	158,487	188,296	5,046,263	69,681,837
1995	892,245	2,486,326	119,468	253,226	5,051,672	55,974,014	160,030	189,604	5,090,198	70,216,783
1996	898,605	2,493,866	119,859	253,681	5,052,009	56,194,039	160,593	190,060	5,105,657	70,468,369
1996	933,074	2,588,346	124,768	254,269	5,145,498	58,447,535	167,174	196,290	5,299,621	73,156,575
1998	932,949	2,588,514	124,777	254,460	5,129,431	58,471,855	167,235	196,268	5,299,961	73,165,450
1999	959,039	2,659,681	128,473	255,044	5,167,836	60,201,101	172,201	200,953	5,446,053	75,190,381
2000	958,369	2,658,546	128,415	255,094	5,146,210	60,189,876	172,125	200,821	5,443,722	75,153,178
2001	955,350	2,650,321	127,984	255,124	5,114,301	60,021,046	171,551	200,190	5,426,825	74,922,692
2002	952,407	2,643,287	127,618	255,401	5,081,698	59,871,030	171,035	199,721	5,412,369	74,714,566
2003	977,487	2,711,571	131,168	255,784	5,129,456	61,530,561	175,753	204,311	5,552,551	76,668,642
2004	1,002,431	2,780,415	134,740	257,113	5,177,264	63,219,923	180,436	208,874	5,693,856	78,655,052
2005	996,077	2,762,892	133,830	257,089	5,141,112	62,827,807	179,224	207,659	5,657,875	78,163,565
2006	996,008	2,756,889	133,505	258,614	5,116,156	62,747,562	178,787	207,266	5,645,317	78,040,104
2007	1,018,601	2,817,808	136,671	258,958	5,159,705	64,226,365	182,992	211,307	5,770,382	79,782,789
2008	1,016,578	2,812,410	136,388	258,984	5,136,281	64,112,733	182,613	210,981	5,759,287	79,626,255
2009	1,036,686	2,867,441	139,247	259,308	5,168,724	65,450,116	186,412	214,677	5,872,259	81,194,870
2010	1,034,423	2,860,743	138,899	259,322	5,147,481	65,306,978	185,945	214,224	5,858,506	81,006,521
2011	1,030,554	2,850,831	138,383	259,049	5,119,930	65,091,929	185,259	213,546	5,838,118	80,727,599
2012	1,027,831	2,843,037	137,979	259,066	5,095,111	64,926,221	184,715	213,023	5,822,111	80,509,094
2013	999,808	2,764,891	133,916	259,071	4,897,460	63,196,653	179,295	207,884	5,661,624	78,300,602
2014	1,012,117	2,798,661	135,673	256,315	4,977,579	63,954,332	181,634	210,165	5,730,977	79,257,453
2015	1,020,612	2,821,581	136,863	253,285	4,852,664	64,578,284	183,209	211,716	5,778,000	79,836,214
2016	1,016,318	2,809,426	136,231	247,180	4,756,393	64,307,334	182,363	210,946	5,753,032	79,419,223
2017	1,013,305	2,800,895	135,790	232,722	4,605,205	64,120,715	181,771	210,404	5,735,519	79,036,326
2018	1,012,867	2,799,296	135,709	209,651	4,483,816	64,084,955	173,004	210,329	5,732,245	78,841,872
2019	1,010,042	2,790,323	135,245	201,042	4,405,262	63,885,107	171,865	209,793	5,713,813	78,522,492
2020	1,004,906	2,774,237	134,409	198,864	4,353,087	63,511,112	170,530	208,694	5,680,794	78,036,633
2021	1,020,053	2,829,616	136,913	197,735	4,442,427	64,644,892	173,750	213,331	5,794,048	79,452,765
2022	1,009,833	2,790,739	135,080	196,385	4,358,473	63,798,448	171,303	210,584	5,714,454	78,385,299
2023	1,025,722	2,847,756	137,669	195,955	4,467,891	65,004,414	174,749	215,277	5,831,069	79,900,502
2024	988,781	2,727,759	132,202	192,540	4,226,027	62,410,246	167,400	205,757	5,585,986	76,636,698
2025	974,689	2,676,584	129,885	191,969	4,121,331	61,332,167	164,248	201,534	5,481,293	75,273,700
2026	974,682	2,676,088	129,858	191,697	4,118,732	61,325,691	164,178	201,459	5,480,273	75,262,658
2027	973,796	2,673,496	129,724	191,034	4,112,919	61,266,332	163,954	201,267	5,474,948	75,187,470
2028	973,654	2,672,391	129,666	188,560	4,109,863	61,247,904	163,853	201,141	5,472,687	75,159,719
2029	973,344	2,670,844	129,592	188,356	4,105,501	61,207,615	163,726	200,990	5,469,624	75,109,592
2030	972,475	2,667,219	129,405	188,096	4,099,330	61,135,436	163,420	200,808	5,462,181	75,018,370
2031	971,697	2,663,795	129,225	186,772	4,081,013	61,061,639	162,901	200,634	5,455,151	74,912,827
2032	970,745	2,660,229	129,040	186,537	4,076,882	60,975,350	162,587	200,488	5,447,831	74,809,689
2033	971,064	2,661,140	129,088	185,969	4,069,518	60,985,225	162,429	200,550	5,449,700	74,814,683
2034	971,127	2,661,161	129,089	185,420	4,063,611	60,981,356	162,309	200,540	5,449,746	74,804,359
2035	969,944	2,657,143	128,880	184,682	4,050,232	60,890,554	161,801	200,210	5,441,496	74,684,942
TOTAL	54,372,713	146,135,732	7,401,673	13,436,619	264,982,695	3,270,424,994	9,223,664	11,190,344	294,368,782	4,071,537,216

TABLE B-23. Total Transportation and Delta Water Charge for Each Contractor

(in dollars)

Calendar Year	SOUTHERN CALIFORNIA AREA									
	Antelope Valley - East Kern Water Agency	Castaic Lake Water Agency	Coachella Valley Water District	Crestline - Lake Arrowhead Water Agency	Desert Water Agency	Littlerock Creek Irrigation District	Mojave Water Agency	Palmdale Water District	San Bernardino Valley Municipal Water District	San Gabriel Valley Municipal Water District
	[21]	[22]	[23]	[24]	[25]	[26]	[27]	[28]	[29]	[30]
1961	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	0	0
1963	34,018	0	0	0	0	0	0	0	52,760	0
1964	64,086	20,513	14,712	4,456	37,901	1,166	29,002	8,369	84,381	35,680
1965	120,833	38,907	25,573	7,330	41,532	2,122	51,277	15,513	137,574	36,001
1966	219,798	73,556	45,565	12,710	74,503	3,824	92,088	28,198	236,760	62,592
1967	425,205	151,260	87,705	23,902	144,000	7,420	178,406	55,025	441,224	117,677
1968	748,621	317,132	155,307	42,219	255,488	13,091	316,023	97,103	795,486	212,486
1969	1,077,579	477,910	229,236	62,289	377,408	19,021	466,100	140,482	1,226,634	327,311
1970	1,401,579	609,143	320,803	91,263	528,427	25,677	643,137	188,120	1,808,984	475,688
1971	1,734,093	765,569	439,975	130,551	724,965	32,389	870,556	235,300	2,581,303	670,627
1972	2,214,315	961,886	611,845	188,358	1,003,792	44,371	1,193,862	291,998	3,808,754	963,285
1973	2,366,970	1,017,613	756,220	193,572	1,231,479	46,681	1,284,905	317,960	4,079,149	974,636
1974	2,487,750	1,093,865	779,861	206,726	1,271,597	49,562	1,343,661	336,262	4,517,890	1,119,027
1975	2,705,495	1,164,238	825,419	222,012	1,347,254	53,879	1,429,538	359,891	4,694,476	1,225,149
1976	3,169,988	1,170,181	882,617	234,895	1,440,239	58,373	1,505,900	385,933	4,895,339	1,296,892
1977	3,151,925	1,261,981	783,267	247,918	1,282,790	54,853	1,593,176	411,323	5,152,151	1,363,240
1978	3,598,344	1,348,601	982,133	258,245	1,583,100	57,447	1,640,039	424,740	5,150,122	1,392,343
1979	4,267,252	1,374,219	1,066,555	270,318	1,703,869	60,840	1,812,473	453,773	5,190,082	1,355,924
1980	4,972,661	1,511,757	1,181,409	299,213	1,913,512	68,471	1,994,539	505,314	5,727,214	1,506,062
1981	5,788,450	1,841,847	1,332,898	331,814	2,158,262	101,313	2,304,860	608,069	6,560,815	1,712,625
1982	5,540,369	2,014,267	1,419,868	350,202	2,301,110	83,157	2,342,475	648,215	6,829,040	1,946,948
1983	6,305,516	2,164,333	1,941,968	384,298	3,139,233	89,255	2,479,660	664,934	7,061,784	1,830,701
1984	7,645,771	3,024,678	3,025,379	498,738	4,868,423	97,252	2,742,765	733,387	8,092,316	2,599,937
1985	9,596,314	3,449,279	3,902,909	612,750	6,274,839	106,247	2,983,723	952,289	9,098,781	2,743,468
1986	9,474,130	3,951,720	4,339,970	650,741	6,980,903	131,182	3,113,804	1,230,741	9,202,176	3,415,325
1987	9,527,601	3,907,653	4,206,530	680,460	6,855,163	242,164	3,163,617	1,268,098	10,602,623	3,420,231
1988	9,219,774	4,111,994	4,308,934	714,938	7,097,002	165,462	3,394,116	1,082,525	11,241,800	3,316,648
1989	12,916,092	4,704,113	4,392,684	795,916	7,308,306	346,499	3,712,098	1,822,450	13,221,836	3,851,588
1990	14,017,475	5,184,950	4,863,716	861,417	8,021,056	138,386	3,915,855	2,163,843	14,956,413	4,074,815
1991	14,700,942	5,694,263	5,017,865	926,709	8,275,304	403,083	3,982,557	2,524,351	15,576,295	4,223,411
1992	15,580,681	6,197,837	5,154,391	951,292	8,500,467	413,829	4,083,353	2,948,287	15,598,164	4,273,030
1993	16,034,582	6,575,272	5,168,194	1,003,428	8,523,245	412,947	4,138,521	3,082,589	16,571,416	4,375,516
1994	16,382,883	6,519,069	5,032,683	993,618	8,299,738	401,763	4,179,003	2,998,459	16,094,394	4,354,914
1995	17,189,883	6,776,846	5,153,071	1,028,969	8,498,301	412,177	11,043,081	3,076,687	16,268,887	4,520,356
1996	17,773,566	6,793,747	5,182,239	1,065,685	8,546,404	413,973	11,087,325	3,090,144	16,518,489	4,611,063
1996	19,575,513	7,448,104	5,582,853	1,152,569	9,207,164	447,879	11,975,424	3,344,980	17,331,165	4,910,377
1998	20,173,781	7,444,082	5,599,770	1,195,562	9,235,074	448,192	11,981,353	3,347,333	17,653,304	5,017,055
1999	21,824,725	7,956,382	5,882,876	1,249,768	9,701,997	473,809	12,653,352	3,539,840	17,839,452	5,184,263
2000	22,434,679	7,966,877	5,894,823	1,299,361	9,721,713	473,263	12,637,152	3,535,711	18,252,331	5,310,597
2001	22,883,454	7,907,384	5,841,520	1,292,178	9,633,791	470,462	12,563,180	3,514,652	17,752,536	5,249,090
2002	23,309,038	7,805,800	5,818,086	1,324,983	9,595,149	467,376	12,481,674	3,491,399	17,971,792	5,326,191
2003	25,102,730	8,387,072	6,115,102	1,406,951	10,085,026	492,642	13,143,364	3,681,275	18,545,768	5,587,866
2004	26,927,676	8,871,230	6,435,302	1,538,158	10,613,163	516,698	13,772,061	3,862,029	20,574,846	6,014,892
2005	27,265,673	8,599,824	6,300,814	1,472,105	10,391,307	510,738	13,617,790	3,817,219	19,652,144	5,744,868
2006	27,172,568	8,637,584	6,307,467	1,515,944	10,402,298	508,899	13,569,470	3,803,360	20,831,956	5,898,966
2007	28,352,337	9,092,596	6,590,898	1,605,177	10,869,778	531,585	14,173,768	3,973,735	22,442,586	6,220,663
2008	28,243,065	9,069,990	6,557,316	1,605,952	10,814,385	529,494	14,118,840	3,958,000	22,852,363	6,221,477
2009	29,279,587	9,446,934	6,811,481	1,699,497	11,233,596	549,395	14,640,408	4,107,558	24,647,431	6,554,156
2010	29,165,474	9,398,073	6,766,441	1,688,112	11,159,307	547,209	14,583,766	4,091,116	24,860,370	6,513,816
2011	28,991,259	9,330,775	6,761,450	1,729,323	11,151,087	543,877	14,495,769	4,066,041	26,178,558	6,689,630
2012	28,857,946	9,284,547	6,682,916	1,670,543	11,021,538	541,318	14,429,821	4,046,812	25,701,408	6,518,300
2013	27,408,109	8,759,509	6,386,771	1,629,764	10,519,468	514,184	13,720,719	3,842,711	25,638,112	6,379,575
2014	28,014,809	8,964,285	6,507,577	1,656,915	10,732,997	525,226	14,011,112	3,926,163	26,289,248	6,522,274
2015	28,391,806	9,127,628	6,606,776	1,698,929	10,896,620	532,617	14,208,158	3,981,677	27,190,715	6,705,412
2016	28,072,670	8,992,517	6,528,732	1,671,006	10,767,894	526,696	14,057,588	3,937,262	27,043,415	6,653,352
2017	27,727,980	8,879,569	6,483,525	1,687,674	10,693,362	520,434	13,901,022	3,890,369	27,660,115	6,745,184
2018	27,458,037	8,714,518	6,393,336	1,633,962	10,544,599	515,631	13,782,024	3,854,807	27,012,218	6,589,347
2019	27,023,742	8,513,305	6,306,133	1,620,736	10,400,789	507,633	13,578,009	3,795,866	26,791,657	6,552,900
2020	26,486,663	8,300,205	6,162,275	1,575,170	10,163,525	496,844	13,293,946	3,717,172	25,996,443	6,395,579
2021	26,363,111	8,221,052	6,089,918	1,551,866	10,044,156	493,648	13,155,185	3,695,924	25,608,695	6,334,800
2022	26,046,475	8,054,032	5,990,403	1,516,500	9,880,047	487,881	12,967,829	3,653,665	24,937,312	6,210,105
2023	26,191,022	8,117,961	6,026,452	1,535,745	9,939,468	490,311	13,023,183	3,671,945	25,318,544	6,331,960
2024	25,683,260	7,890,061	5,902,422	1,490,163	9,734,972	481,341	12,791,535	3,605,534	24,477,891	6,173,667
2025	25,458,031	7,800,744	5,832,479	1,468,635	9,619,643	477,258	12,651,953	3,575,615	24,049,085	6,117,352
2026	25,446,743	7,780,588	5,831,597	1,476,240	9,618,198	477,036	12,633,610	3,574,122	24,153,409	6,186,654
2027	25,390,279	7,762,793	5,817,148	1,474,868	9,594,369	475,967	12,597,468	3,566,148	24,107,933	6,225,631
2028	25,388,945	7,743,818	5,805,175	1,462,562	9,574,626	475,947	12,592,634	3,566,054	23,882,816	6,234,351
2029	25,375,261	7,724,444	5,804,052	1,464,266	9,572,776	475,711	12,586,341	3,564,326	23,911,444	6,293,092
2030	25,333,953	7,678,803	5,795,083	1,462,074	9,557,974	474,966	12,567,238	3,558,754	23,870,975	6,336,477
2031	25,212,654	7,594,152	5,775,529	1,463,754	9,525,741	472,822	12,512,065	3,542,792	23,900,325	6,390,249
2032	25,170,420	7,547,452	5,770,534	1,466,662	9,517,497	471,986	12,491,009	3,536,518	23,950,625	6,453,991
2033	25,066,286	7,501,207	5,740,139	1,449,688	9,467,360	470,189	12,447,278	3,523,034	23,648,832	6,444,654
2034	24,946,107	7,470,450	5,678,525	1,397,705	9,365,728	468,134	12,396,922	3,507,638	22,721,304	6,311,454
2035	24,815,301	7,674,749	5,741,158	1,501,749	9,469,074	465,726	12,335,918	3,490,375	24,569,209	6,717,749
TOTAL	1,234,485,710	409,731,295	312,556,355	73,149,768	514,646,868	23,908,900	600,251,433	177,909,903	1,153,893,844	308,673,212

TABLE B-23. Total Transportation and Delta Water Charge for Each Contractor

(in dollars)

Calendar Year	SOUTHERN CALIFORNIA AREA (continued)				FEATHER RIVER AREA				South Bay Area Future Contractor	GRAND TOTAL
	San Gorgonio Pass Water Agency	The Metropolitan Water District of Southern California	Ventura County Flood Control District	Total	City of Yuba City	County of Butte	Plumas County FC&WCD	Total		
	[31]	[32]	[33]	[34]	[35]	[36]	[37]	[38]	[39]	[40]
1961	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	0	55,537
1963	0	705,285	0	792,063	0	0	0	0	56,515	1,649,036
1964	22,165	1,285,222	9,574	1,617,227	0	0	0	0	85,184	2,817,817
1965	22,272	2,222,437	18,122	2,739,493	0	0	411	411	129,707	4,826,822
1966	38,660	3,974,345	34,082	4,896,681	0	0	574	574	148,332	7,421,314
1967	72,579	7,839,903	69,486	9,613,792	0	0	571	571	204,956	13,088,825
1968	131,109	15,601,367	145,534	18,830,966	0	1,050	1,449	2,499	280,902	25,593,469
1969	202,196	23,594,357	219,483	28,420,006	0	1,225	4,172	5,397	352,138	37,027,424
1970	294,655	31,202,162	279,075	37,868,713	0	3,848	17,363	21,211	389,947	48,618,007
1971	416,284	40,707,865	349,179	49,658,656	0	4,546	19,448	23,994	378,912	61,940,132
1972	545,248	55,869,063	429,870	68,126,647	0	4,929	21,434	26,363	403,970	84,309,034
1973	596,416	60,502,767	443,222	73,811,590	0	7,059	22,062	29,121	380,010	89,311,148
1974	620,100	66,958,462	463,433	81,248,196	0	8,336	22,692	31,028	402,856	98,298,728
1975	653,530	72,796,817	486,353	87,964,051	0	9,416	23,806	33,222	409,328	107,227,228
1976	677,440	75,890,177	483,631	92,091,605	0	7,004	23,540	30,544	431,578	113,492,711
1977	705,795	74,336,695	515,223	90,860,337	0	16,917	24,343	41,260	426,841	112,138,292
1978	718,391	82,944,523	531,477	100,629,505	0	12,635	24,508	37,143	433,056	125,135,593
1979	721,353	84,532,319	534,000	103,342,977	0	16,575	28,635	45,210	450,185	131,066,088
1980	875,209	94,366,522	594,343	115,516,226	0	19,834	26,845	46,679	510,433	146,051,282
1981	956,477	113,430,473	681,708	137,809,611	0	21,682	34,847	56,529	518,326	176,393,076
1982	1,033,888	118,375,851	739,236	143,624,626	0	16,117	43,282	59,399	515,819	185,470,665
1983	1,088,021	122,065,481	860,304	150,075,488	0	15,202	27,344	42,546	558,492	189,229,255
1984	1,219,136	157,091,387	941,192	192,580,361	20,590	15,442	28,957	64,989	563,729	245,989,737
1985	1,318,525	199,596,808	1,002,663	241,638,595	24,050	16,976	32,399	73,425	687,087	307,176,089
1986	1,354,153	219,570,724	1,070,021	264,485,590	31,753	18,145	33,688	83,586	640,353	336,336,314
1987	1,384,924	206,970,631	1,073,520	253,303,215	37,071	17,794	33,875	88,740	686,844	327,795,620
1988	1,482,638	226,555,208	1,147,634	273,838,673	46,722	19,264	36,172	102,158	707,839	353,087,116
1989	1,628,415	253,475,203	1,291,531	309,466,731	61,184	21,276	39,080	121,540	737,960	399,455,340
1990	1,693,804	290,169,907	1,401,441	351,463,078	74,381	22,233	40,529	137,143	792,653	446,017,117
1991	1,745,496	300,431,024	1,423,208	364,924,508	187,910	509,269	41,223	738,402	808,984	462,037,118
1992	1,737,563	320,063,063	1,429,057	386,931,014	187,910	509,333	41,971	739,214	787,079	486,030,721
1993	1,810,173	324,919,520	1,472,752	394,088,155	187,910	509,368	42,677	739,955	788,058	497,443,684
1994	1,815,439	311,180,228	2,700,049	380,952,240	187,910	509,419	43,446	740,775	788,691	488,483,293
1995	1,805,310	321,804,176	2,819,627	400,397,371	187,910	508,573	44,381	740,864	791,703	518,317,216
1996	1,832,042	326,331,468	2,873,047	406,119,192	187,910	508,591	45,321	741,822	792,790	529,054,437
1996	1,826,574	356,225,518	3,175,903	442,204,023	187,910	508,600	46,260	742,770	794,451	569,661,352
1998	1,866,627	360,873,179	3,227,615	448,062,927	187,910	508,600	47,198	743,708	794,816	575,591,730
1999	1,807,638	384,996,562	3,489,091	476,599,755	187,910	508,585	48,136	744,631	796,508	607,446,562
2000	4,236,115	391,107,511	3,548,751	486,418,884	187,910	508,573	49,247	745,730	796,673	617,219,512
2001	4,156,085	392,134,391	3,571,503	486,970,226	187,910	508,591	50,362	746,863	796,780	617,416,511
2002	4,166,858	394,174,693	3,578,777	489,511,816	187,910	508,613	51,477	748,000	797,224	619,607,737
2003	4,381,325	424,503,808	3,874,256	525,307,185	187,910	508,607	52,589	749,106	809,484	658,716,440
2004	4,694,698	455,132,038	4,143,506	563,096,297	187,910	508,592	53,701	750,203	811,662	699,679,660
2005	4,467,670	445,359,382	4,095,546	551,295,080	187,910	508,573	54,812	751,295	811,575	687,107,769
2006	4,526,844	452,523,908	4,128,798	559,828,062	187,910	508,570	56,108	752,588	811,703	695,431,202
2007	4,757,727	480,162,492	4,366,070	593,139,412	187,910	508,585	57,404	753,899	812,884	731,598,723
2008	4,716,504	483,175,035	4,379,585	596,242,006	187,910	508,574	58,699	755,183	812,977	734,458,356
2009	4,941,574	508,512,035	4,587,668	627,011,320	187,910	508,555	59,993	756,458	814,090	767,771,951
2010	4,872,176	510,276,819	4,591,733	628,514,412	187,910	508,538	61,287	757,735	814,145	769,002,072
2011	4,939,609	509,023,081	4,560,053	628,460,512	187,910	508,506	62,754	759,170	813,211	768,504,914
2012	4,781,541	503,120,627	4,536,681	621,193,998	187,910	508,483	64,223	760,616	813,269	760,910,215
2013	4,602,330	477,006,537	4,284,081	590,691,870	187,910	508,449	65,865	762,224	769,407	726,139,087
2014	4,678,957	487,897,026	4,383,710	604,110,299	187,910	508,409	67,507	763,826	742,109	740,872,948
2015	4,772,874	496,332,233	4,460,361	614,905,806	187,910	508,380	68,913	765,203	712,693	752,070,198
2016	4,696,464	489,251,908	4,397,847	606,597,351	187,910	508,327	70,566	766,803	695,487	742,867,161
2017	4,718,359	482,407,253	4,343,955	599,658,801	187,910	508,238	70,630	766,778	654,896	735,130,027
2018	4,582,884	476,601,405	4,269,593	591,952,361	187,910	508,130	70,688	766,728	578,307	726,840,651
2019	4,523,733	466,646,161	4,175,367	580,436,031	187,910	508,027	68,078	764,015	513,371	714,615,178
2020	4,384,858	454,614,835	4,076,713	565,664,228	187,910	507,918	56,011	751,839	492,197	699,065,900
2021	4,310,996	441,740,475	4,042,354	551,652,180	187,910	527,650	57,923	773,483	475,499	686,998,827
2022	4,197,853	435,149,695	3,968,172	543,059,969	187,910	517,784	55,139	760,833	474,425	676,921,800
2023	4,240,443	440,067,348	4,001,829	548,956,211	187,910	537,516	57,891	783,317	473,751	685,091,529
2024	4,106,781	429,830,751	3,899,494	536,067,872	187,910	498,052	52,385	738,347	472,595	667,360,837
2025	4,037,990	423,093,566	3,858,706	528,041,057	187,910	480,615	49,935	718,460	471,114	657,307,068
2026	4,048,523	421,891,089	3,851,366	526,969,175	187,910	480,615	49,934	718,459	470,693	655,905,293
2027	4,038,788	420,356,233	3,842,149	525,249,774	187,910	480,615	49,931	718,456	469,806	654,043,641
2028	4,009,288	420,250,694	3,833,244	524,820,154	187,910	480,615	49,930	718,455	468,712	653,551,548
2029	4,012,447	418,803,166	3,823,816	523,411,142	187,910	480,615	49,928	718,453	467,403	652,061,637
2030	4,005,654	417,390,414	3,801,734	521,834,099	187,910	480,615	49,927	718,452	466,025	650,332,114
2031	4,004,564	413,517,779	3,762,322	517,674,748	187,910	480,615	49,925	718,450	463,074	645,960,405
2032	4,009,146	413,146,327	3,739,578	517,271,745	187,910	480,615	49,924	718,449	463,327	645,415,548
2033	3,966,684	409,609,961	3,717,559	513,052,871	187,910	480,615	49,923	718,448	462,349	641,143,076
2034	3,843,367	405,486,442	3,702,285	507,296,061	187,910	480,615	49,922	718,447	458,715	635,202,480
2035	4,074,047	418,683,410	3,763,834	523,302,299	187,910	480,615	49,921	718,446	454,380	650,728,258
TOTAL	194,226,001	21,818,437,227	184,388,682	27,006,259,198	8,751,701	22,922,848	3,056,091	34,730,640	42,113,044	33,734,075,202

TABLE B-24. Equivalent Unit Charge for Water Supply for Each Contractor

(in dollars per acre-foot)

Project Service Area and Water Supply Contractor	Transportation Charge					Delta Water Charge	Total Equivalent Unit Charge
	Capital Cost Component	Minimum OMP&R Component	Off-Aqueduct Component	Variable OMP&R Component	Total		
	[1]	[2]	[3]	[4]	[5]	[6]	[7]
FEATHER RIVER AREA							
City of Yuba City	0.00	0.00	0.00	0.00	0.00	29.29	29.29
County of Butte	0.00	0.00	0.00	0.00	0.00	17.83	17.83
Plumas County Flood Control and Water Conservation District	18.12	2.05	0.00	0.00	20.17	17.90	38.07
Feather River Area	1.27	0.14	0.00	0.00	1.41	19.95	21.36
NORTH BAY AREA							
Napa County Flood Control and Water Conservation District	108.00	26.57	4.29	15.37	154.23	11.40	165.63
Solano County Flood Control and Water Conservation District	80.75	21.51	3.81	10.10	116.17	17.73	133.90
North Bay Area	91.37	23.48	4.00	12.15	131.00	15.27	146.27
SOUTH BAY AREA							
Alameda County Flood Control and Water Conservation District, Zone 7	16.44	22.19	8.94	24.05	71.62	17.25	88.87
Alameda County Water District	18.05	18.31	8.00	20.14	64.50	15.43	79.93
Santa Clara Valley Water District	17.65	14.23	6.81	15.55	54.24	12.47	66.71
South Bay Area	17.54	16.25	7.37	17.74	58.90	13.77	72.67
SAN JOAQUIN VALLEY AREA							
County of Kings	4.10	2.95	3.69	7.89	18.63	14.67	33.30
Devil's Den Water District	8.58	11.37	4.46	9.89	34.30	12.51	46.81
Dudley Ridge Water District	4.83	3.45	3.05	7.00	18.33	13.01	31.34
Empire West Side Irrigation District	2.66	2.80	2.54	6.22	14.22	14.35	28.57
Kern County Water Agency	8.66	7.09	4.63	10.15	30.53	14.92	45.45
Oak Flat Water District	1.87	1.68	1.93	4.42	9.90	12.44	22.34
Tulare Lake Basin Water Storage District	5.03	3.61	2.95	7.33	18.92	13.46	32.38
San Joaquin Valley Area	8.22	6.68	4.43	9.80	29.13	14.75	43.88
CENTRAL COASTAL AREA							
San Luis Obispo County Flood Control and Water Conservation District	226.11	67.68	22.28	75.41	391.48	26.47	417.95
Santa Barbara County Flood Control and Water Conservation District	263.31	74.60	22.28	75.41	435.60	26.43	462.03
Central Coastal Area	250.12	72.15	22.28	75.41	419.96	26.45	446.41
SOUTHERN CALIFORNIA AREA							
Antelope Valley-East Kern Water Agency	39.97	31.22	29.27	87.74	188.20	23.47	211.67
Castaic Lake Water Agency	58.83	36.16	41.86	67.41	204.26	22.25	226.51
Coachella Valley Water District	40.24	32.57	43.70	87.78	204.29	161.66	365.95
Crestline-Lake Arrowhead Water Agency	76.38	55.00	36.20	107.18	274.76	238.56	513.32
Desert Water Agency	41.96	33.09	43.99	88.85	207.89	16.27	224.16
Littlerock Creek Irrigation District	38.53	29.03	32.27	93.09	192.92	22.01	214.93
Mojave Water Agency	76.20	61.64	31.11	142.91	311.86	33.41	345.27
Palmdale Water District	43.49	32.98	36.46	106.14	219.07	27.25	246.32
San Bernardino Valley Municipal Water District	115.40	85.21	31.87	89.80	322.28	34.97	357.25
San Gabriel Valley Municipal Water District	98.66	74.94	37.61	79.69	290.90	31.74	322.64
San Gorgonio Pass Water Agency	156.04	118.12	22.45	135.74	432.35	41.13	473.48
The Metropolitan Water District of Southern California	63.65	41.83	36.55	68.65	210.68	22.03	232.71
Ventura County Flood Control District	83.79	53.38	29.09	101.66	267.92	27.58	295.50
Southern California Area	64.15	42.20	36.45	69.12	211.92	22.14	234.06
ALL AREAS	37.44	24.24	19.25	37.79	118.72	18.16	136.88

TABLE B-25. Equivalent Unit Transportation Costs of Water Delivered from or through Each Aqueduct Reach

(in dollars per acre-foot)

Aqueduct Reach	Unit Costs of Reach(a					Cumulative Unit Costs from the Delta				
	Capital Costs	Minimum OMP&R	Off-Aqueduct Costs	Variable OMP&R	Total	Capital Costs	Minimum OMP&R	Off-Aqueduct Costs	Variable OMP&R	Total
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]
North Bay Aqueduct										
1	41.83	9.87	1.60	4.54	57.84	41.83	9.87	1.60	4.54	57.84
2	45.25	3.51	0.00	0.00	48.76	87.08	13.38	1.60	4.54	106.60
3A	7.89	9.67	2.47	6.49	26.52	94.97	23.05	4.07	11.03	133.12
3B	44.74	17.69	3.26	11.74	77.43	139.71	40.74	4.86	22.77	208.08
South Bay Aqueduct										
1	6.03	10.49	5.51	12.99	35.02	7.74	12.57	7.94	19.47	47.72
2	0.57	1.24	0.00	0.00	1.81	8.31	13.81	7.94	19.47	49.53
4	1.89	2.02	0.00	0.00	3.91	10.20	15.83	7.94	19.47	53.44
5	4.10	1.48	0.00	0.00	5.58	14.30	17.31	7.94	19.47	59.02
6	0.23	0.20	0.00	0.00	0.43	14.53	17.51	7.94	19.47	59.45
7	1.86	0.27	0.00	0.00	2.13	16.39	17.78	7.94	19.47	61.58
8	2.54	0.33	0.00	0.00	2.87	18.93	18.11	7.94	19.47	64.45
9	5.25	1.80	0.00	0.00	7.05	24.18	19.91	7.94	19.47	71.50
California Aqueduct										
1	1.71	2.08	2.43	6.48	12.70	1.71	2.08	2.43	6.48	12.70
2A	1.10	0.41	0.00	0.00	1.51	2.81	2.49	2.43	6.48	14.21
2B	0.59	0.12	0.00	0.00	0.71	3.40	2.61	2.43	6.48	14.92
3	0.44	0.15	0.00	0.00	0.59	3.84	2.76	2.43	6.48	15.51
4	0.73	0.96	1.15	2.93	5.77	4.57	3.72	3.58	9.41	21.28
5	0.60	0.21	0.00	0.00	0.81	5.17	3.93	3.58	9.41	22.09
6	0.16	0.09	0.00	0.00	0.25	5.33	4.02	3.58	9.41	22.34
7	0.65	0.27	0.00	0.00	0.92	5.98	4.29	3.58	9.41	23.26
8C	0.02	0.05	0.00	0.00	0.07	6.00	4.34	3.58	9.41	23.33
8D	0.35	0.22	0.00	0.00	0.57	6.35	4.56	3.58	9.41	23.90
9	0.26	0.19	0.00	0.00	0.45	6.61	4.75	3.58	9.41	24.35
10A	0.30	0.22	0.00	0.00	0.52	6.91	4.97	3.58	9.41	24.87
11B	0.44	0.16	0.00	0.00	0.60	7.35	5.13	3.58	9.41	25.47
12D	0.42	0.16	0.00	0.00	0.58	7.77	5.29	3.58	9.41	26.05
12E	0.28	0.25	0.00	0.00	0.53	8.05	5.54	3.58	9.41	26.58
13B	0.63	0.29	0.00	0.00	0.92	8.68	5.83	3.58	9.41	27.50
14A	2.37	2.14	2.03	5.53	12.07	11.05	7.97	5.61	14.94	39.57
14B	0.37	0.26	0.00	0.00	0.63	11.42	8.23	5.61	14.94	40.20
14C	0.32	0.20	0.00	0.00	0.52	11.74	8.43	5.61	14.94	40.72
15A	1.73	2.28	2.47	6.83	13.31	13.47	10.71	8.08	21.77	54.03
16A	2.87	3.53	5.35	14.73	26.48	16.34	14.24	13.43	36.50	80.51
17E	9.85	9.94	18.71	52.00	90.50	26.19	24.18	32.14	88.50	171.01
17F	2.59	0.08	0.00	0.00	2.67	28.78	24.26	32.14	88.50	173.68
18A	1.97	1.19	0.00	-1.90	1.26	30.75	25.45	32.14	86.60	174.94
19	1.59	0.85	0.00	0.00	2.44	32.34	26.30	32.14	86.60	177.38
19C	0.00	0.00	0.00	0.00	0.00	32.34	26.30	32.14	86.60	177.38
20A	1.20	0.83	0.00	0.00	2.03	33.54	27.13	32.14	86.60	179.41
20B	1.55	0.58	0.00	0.00	2.13	35.09	27.71	32.14	86.60	181.54
21	0.82	0.50	0.00	0.00	1.32	35.91	28.21	32.14	86.60	182.86
22A	0.62	0.35	0.00	0.00	0.97	36.53	28.56	32.14	86.60	183.83
22B	6.86	7.00	5.74	17.21	36.81	43.39	35.56	37.88	103.81	220.64
23	1.18	0.39	0.00	-3.08	-1.51	44.57	35.95	37.88	100.73	219.13
24	3.93	1.45	0.00	0.00	5.38	48.50	37.40	37.88	100.73	224.51
25	2.07	0.06	0.00	0.00	2.13	50.57	37.46	37.88	100.73	226.64
26A	2.90	4.44	0.00	-24.78	-17.44	53.47	41.90	37.88	75.95	209.20
28G	5.19	1.07	0.00	0.00	6.26	58.66	42.97	37.88	75.95	215.46
28H	5.02	0.80	0.00	0.00	5.82	63.68	43.77	37.88	75.95	221.28
28J	65.30	34.19	0.00	0.00	99.49	128.98	77.96	37.88	75.95	320.77
West Branch										
29A	3.76	6.59	2.45	6.44	19.24	32.54	30.85	34.59	94.94	192.92
29F	2.70	0.95	0.00	0.00	3.65	35.24	31.80	34.59	94.94	196.57
29G	9.14	3.16	0.00	-12.24	0.06	44.38	34.96	34.59	82.70	196.63
29H	5.53	3.73	0.00	0.00	9.26	49.91	38.69	34.59	82.70	205.89
29J	9.80	0.93	0.00	-22.51	-11.78	59.71	39.62	34.59	60.19	194.11
30	15.78	3.08	0.00	0.00	18.86	75.49	42.70	34.59	60.19	212.97
Coastal Branch										
31A	5.95	11.55	1.94	4.71	24.15	12.30	16.11	5.52	14.12	48.05
33A	178.71	32.35	17.28	51.50	279.84	191.01	48.46	22.80	65.62	327.89
34	16.12	5.13	0.00	0.00	21.25	207.13	53.59	22.80	65.62	349.14
35	46.95	5.69	0.00	0.00	52.64	254.08	59.28	22.80	65.62	401.78

a) Hypothetical charges which, if assessed on all entitlement water delivered to date, all surplus water delivered prior to May 1, 1983, and all entitlement water now estimated to be delivered during the remainder of the Project repayment period(Table B-5B), would provide asum at the end of the period financially equivalent to all Transportation Charges required under the water supply contract, considering interest at the Project Interest Rate of 4.713 percent per annum.

TABLE B-26. Capital Costs of Each Aqueduct Reach to Be Reimbursed through the Capital Cost Component of the East Branch Enlargement Transportation Charge

(in dollars)

Calendar Year	CALIFORNIA AQUEDUCT MOJAVE DIVISION							
	Reach 18A	Reach 19	Reach 20A	Reach 20B	Reach 21	Reach 22A	Reach 22B	Reach 23B
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[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	0	0	0	0	0	0	0	0
1980	0	0	0	0	0	0	0	74,000
1981	9,000	0	0	0	0	0	0	385,000
1982	1,644,000	0	0	0	0	0	0	1,586,000
1983	2,486,000	0	0	0	0	0	0	2,965,000
1984	809,000	0	0	0	0	0	796,000	1,380,000
1985	95,000	435,000	75,000	544,000	861,000	704,000	971,000	146,000
1986	785,000	4,477,000	3,142,000	2,234,000	1,569,000	1,203,000	1,810,000	34,000
1987	11,000	951,000	1,077,000	667,000	399,000	47,000	16,412,000	43,000
1988	0	124,000	1,680,000	1,728,000	2,024,000	39,000	13,333,000	70,000
1989	0	381,000	2,266,000	2,244,000	2,682,000	124,000	20,261,000	25,000
1990	0	431,000	1,135,000	1,030,000	1,267,000	141,000	22,834,000	14,000
1991	0	125,000	162,000	125,000	162,000	41,000	8,932,000	108,000
1992	0	0	0	0	0	0	5,267,000	2,481,000
1993	0	0	0	0	0	0	2,058,000	9,950,000
1994	0	0	0	0	0	0	0	3,743,000
1995	0	0	0	0	0	0	0	0
1996	0	0	0	0	0	0	0	0
1997	0	0	0	0	0	0	0	0
1998	0	0	0	0	0	0	0	0
1999	0	0	0	0	0	0	0	0
2000	0	0	0	0	0	0	0	0
TOTAL	5,839,000	6,924,000	9,537,000	8,572,000	8,964,000	2,299,000	92,674,000	23,004,000

TABLE B-26. Capital Costs of Each Aqueduct Reach to Be Reimbursed through the Capital Cost Component of the East Branch Enlargement Transportation Charge

(in dollars)

Calendar Year	CALIFORNIA AQUEDUCT							GRAND TOTAL
	MOJAVE DIVISION (continued)			SANTA ANA DIVISION				
	Reach 23C	Reach 24	Total	Reach 25	Reach 26A	Reach 26B	Total	
	[9]	[10]	[11]	[12]	[13]	[14]	[15]	[16]
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	0	0	0	0	0	0
1980	18,000	0	202,000	0	0	0	0	92,000
1981	92,000	0	1,055,000	0	0	0	0	486,000
1982	162,000	0	5,302,000	0	0	0	0	3,392,000
1983	1,117,000	0	11,767,000	0	0	0	0	6,568,000
1984	538,000	0	6,775,000	0	0	50,000	50,000	3,573,000
1985	57,000	0	7,228,000	0	617,000	39,000	656,000	4,544,000
1986	32,000	0	22,200,000	0	1,926,000	154,000	2,080,000	17,366,000
1987	178,000	0	37,709,000	0	3,699,000	437,000	4,136,000	23,921,000
1988	632,000	0	38,088,000	0	5,736,000	3,329,000	9,065,000	28,695,000
1989	1,720,000	0	58,479,000	0	18,433,000	1,650,000	20,083,000	49,786,000
1990	3,225,000	0	61,813,000	0	52,699,000	1,650,000	54,349,000	84,426,000
1991	8,134,000	0	43,425,000	0	45,672,000	999,000	46,671,000	64,460,000
1992	8,361,000	0	40,579,000	0	29,979,000	299,000	30,278,000	46,387,000
1993	8,296,000	0	48,904,000	0	3,943,000	0	3,943,000	24,247,000
1994	4,636,000	0	21,394,000	0	0	0	0	8,379,000
1995	0	0	0	0	0	0	0	0
1996	0	0	0	0	0	0	0	0
1997	0	0	0	0	0	0	0	0
1998	0	0	0	0	0	0	0	0
1999	0	0	0	0	0	0	0	0
2000	0	0	0	0	0	0	0	0
TOTAL	37,198,000	0	195,011,000	0	162,704,000	8,607,000	171,311,000	366,322,000

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

(in dollars)

Calendar Year	CALIFORNIA AQUEDUCT							
	MOJAVE DIVISION							
	Reach 18A	Reach 19	Reach 20A	Reach 20B	Reach 21	Reach 22A	Reach 22B	Reach 23B
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[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	162,747	0
1992	0	0	0	0	0	0	339,500	0
1993	0	0	0	0	0	0	556,998	0
1994	0	0	0	0	0	0	556,998	0
1995	0	0	0	0	0	0	556,998	0
1996	0	0	0	0	0	0	556,998	0
1997	0	0	0	0	0	0	556,998	0
1998	0	0	0	0	0	0	556,998	0
1999	0	0	0	0	0	0	556,998	0
2000	0	0	0	0	0	0	556,998	0
2001	0	0	0	0	0	0	556,998	0
2002	0	0	0	0	0	0	556,998	0
2003	0	0	0	0	0	0	556,998	0
2004	0	0	0	0	0	0	556,998	0
2005	0	0	0	0	0	0	556,998	0
2006	0	0	0	0	0	0	556,998	0
2007	0	0	0	0	0	0	556,998	0
2008	0	0	0	0	0	0	556,998	0
2009	0	0	0	0	0	0	556,998	0
2010	0	0	0	0	0	0	556,998	0
2011	0	0	0	0	0	0	556,998	0
2012	0	0	0	0	0	0	556,998	0
2013	0	0	0	0	0	0	556,998	0
2014	0	0	0	0	0	0	556,998	0
2015	0	0	0	0	0	0	556,998	0
2016	0	0	0	0	0	0	556,998	0
2017	0	0	0	0	0	0	556,998	0
2018	0	0	0	0	0	0	556,998	0
2019	0	0	0	0	0	0	556,998	0
2020	0	0	0	0	0	0	556,998	0
2021	0	0	0	0	0	0	556,998	0
2022	0	0	0	0	0	0	556,998	0
2023	0	0	0	0	0	0	556,998	0
2024	0	0	0	0	0	0	556,998	0
2025	0	0	0	0	0	0	556,998	0
2026	0	0	0	0	0	0	556,998	0
2027	0	0	0	0	0	0	556,998	0
2028	0	0	0	0	0	0	556,998	0
2029	0	0	0	0	0	0	556,998	0
2030	0	0	0	0	0	0	556,998	0
2031	0	0	0	0	0	0	556,998	0
2032	0	0	0	0	0	0	556,998	0
2033	0	0	0	0	0	0	556,998	0
2034	0	0	0	0	0	0	556,998	0
2035	0	0	0	0	0	0	556,998	0
TOTAL	0	0	0	0	0	0	24,453,161	0

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

(in dollars)

Calendar Year	CALIFORNIA AQUEDUCT (continued)							TOTAL
	MOJAVE DIVISION (continued)			SANTA ANA DIVISION				
	Reach 23C	Reach 24	Subtotal	Reach 25	Reach 26A	Reach 26B	Subtotal	
	[9]	[10]	[11]	[12]	[13]	[14]	[15]	[16]
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	162,747	0	99,778	0	99,778	262,525
1992	0	0	339,500	0	92,486	0	92,486	431,986
1993	41,439	0	598,437	0	556,998	0	556,998	1,155,435
1994	352,234	0	909,232	0	556,998	0	558,998	1,466,230
1995	941,758	0	1,498,756	0	556,998	0	556,998	2,055,754
1996	941,758	0	1,498,756	0	556,998	0	556,998	2,055,754
1997	941,758	0	1,498,756	0	556,998	0	556,998	2,055,754
1998	941,758	0	1,498,756	0	556,998	0	556,998	2,055,754
1999	941,758	0	1,498,756	0	556,998	0	556,998	2,055,754
2000	941,758	0	1,498,756	0	556,998	0	556,998	2,055,754
2001	941,758	0	1,498,756	0	556,998	0	556,998	2,055,754
2002	941,758	0	1,498,756	0	556,998	0	556,998	2,055,754
2003	941,758	0	1,498,756	0	556,998	0	556,998	2,055,754
2004	941,758	0	1,498,756	0	556,998	0	556,998	2,055,754
2005	941,758	0	1,498,756	0	556,998	0	556,998	2,055,754
2006	941,758	0	1,498,756	0	556,998	0	556,998	2,055,754
2007	941,758	0	1,498,756	0	556,998	0	556,998	2,055,754
2008	941,758	0	1,498,756	0	556,998	0	556,998	2,055,754
2009	941,758	0	1,498,756	0	556,998	0	556,998	2,055,754
2010	941,758	0	1,498,756	0	556,998	0	556,998	2,055,754
2011	941,758	0	1,498,756	0	556,998	0	556,998	2,055,754
2012	941,758	0	1,498,756	0	556,998	0	556,998	2,055,754
2013	941,758	0	1,498,756	0	556,998	0	556,998	2,055,754
2014	941,758	0	1,498,756	0	556,998	0	556,998	2,055,754
2015	941,758	0	1,498,756	0	556,998	0	556,998	2,055,754
2016	941,758	0	1,498,756	0	556,998	0	556,998	2,055,754
2017	941,758	0	1,498,756	0	556,998	0	556,998	2,055,754
2018	941,758	0	1,498,756	0	556,998	0	556,998	2,055,754
2019	941,758	0	1,498,756	0	556,998	0	556,998	2,055,754
2020	941,758	0	1,498,756	0	556,998	0	556,998	2,055,754
2021	941,758	0	1,498,756	0	556,998	0	556,998	2,055,754
2022	941,758	0	1,498,756	0	556,998	0	556,998	2,055,754
2023	941,758	0	1,498,756	0	556,998	0	556,998	2,055,754
2024	941,758	0	1,498,756	0	556,998	0	556,998	2,055,754
2025	941,758	0	1,498,756	0	556,998	0	556,998	2,055,754
2026	941,758	0	1,498,756	0	556,998	0	556,998	2,055,754
2027	941,758	0	1,498,756	0	556,998	0	556,998	2,055,754
2028	941,758	0	1,498,756	0	556,998	0	556,998	2,055,754
2029	941,758	0	1,498,756	0	556,998	0	556,998	2,055,754
2030	941,758	0	1,498,756	0	556,998	0	556,998	2,055,754
2031	941,758	0	1,498,756	0	556,998	0	556,998	2,055,754
2032	941,758	0	1,498,756	0	556,998	0	556,998	2,055,754
2033	941,758	0	1,498,756	0	556,998	0	556,998	2,055,754
2034	941,758	0	1,498,756	0	556,998	0	556,998	2,055,754
2035	941,758	0	1,498,756	0	556,998	0	556,998	2,055,754
TOTAL	39,005,751	0	63,458,912	0	24,143,178	0	24,143,178	87,602,090

TABLE B-28. Capital Costs of East Branch Enlargement Transportation Facilities Allocated to Each Contractor

(in dollars)

Calendar Year	SOUTHERN CALIFORNIA AREA							Total
	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	The Metropolitan Water District of Southern California	
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[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	10,470	3,813	9,434	0	0	68,283	92,000
1981	0	55,167	19,837	49,893	36	0	361,067	486,000
1982	0	360,860	85,569	350,646	6,550	0	2,588,375	3,392,000
1983	0	718,964	192,493	602,479	9,904	0	5,044,160	6,568,000
1984	0	382,157	94,323	321,151	3,223	0	2,772,146	3,573,000
1985	49,743	466,252	73,256	347,799	4,522	25,257	3,577,171	4,544,000
1986	185,308	1,758,627	236,656	1,363,681	41,896	78,842	13,700,990	17,366,000
1987	49,780	2,454,569	378,474	1,773,808	10,623	151,421	19,102,325	23,921,000
1988	124,443	2,698,724	504,197	1,712,532	13,763	234,807	23,406,534	28,695,000
1989	166,414	5,328,254	1,315,236	2,521,228	19,078	754,567	39,681,223	49,786,000
1990	81,277	9,711,774	3,223,399	2,426,808	10,147	2,157,269	66,815,326	84,426,000
1991	11,147	7,730,742	2,925,711	878,205	1,615	1,869,614	51,042,966	64,460,000
1992	0	5,624,518	2,148,474	793,820	0	1,227,211	36,592,977	46,387,000
1993	0	2,854,559	1,014,427	1,455,023	0	161,409	18,761,582	24,247,000
1994	0	1,002,025	364,868	477,159	0	0	6,534,948	8,379,000
1995	0	0	0	0	0	0	0	0
1996	0	0	0	0	0	0	0	0
1997	0	0	0	0	0	0	0	0
1998	0	0	0	0	0	0	0	0
1999	0	0	0	0	0	0	0	0
2000	0	0	0	0	0	0	0	0
TOTAL	668,112	41,157,662	12,580,733	15,083,666	121,357	6,660,397	290,050,073	366,322,000

TABLE B-29. Capital Cost Component of East Branch Enlargement Facilities Transportation Charge for Each Contractor

(in dollars)

Calendar Year	SOUTHERN CALIFORNIA AREA							Total
	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 (a	The Metropolitan Water District of Southern California	
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[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	20,202	1,244,508	380,411	456,093	3,670	0	8,770,411	10,875,295
1989	20,775	1,279,775	391,191	469,018	3,774	0	9,018,945	11,183,478
1990	25,972	1,599,931	489,054	586,351	4,718	0	11,275,181	13,981,207
1991	25,973	1,600,032	489,084	586,388	4,718	0	11,275,894	13,982,089
1992	25,973	1,600,006	489,076	586,378	4,718	0	11,275,708	13,981,859
1993	25,981	1,600,494	489,226	586,557	4,719	0	11,279,153	13,986,130
1994	25,985	1,600,742	489,302	586,648	4,720	0	11,280,899	13,988,296
1995	25,994	1,601,327	489,480	586,862	4,722	0	11,285,019	13,993,404
1996	25,995	1,601,346	489,486	586,869	4,722	0	11,285,155	13,993,573
1997	25,997	1,601,500	489,533	586,926	4,722	0	11,286,241	13,994,919
1998	26,002	1,601,824	489,632	587,044	4,723	0	11,288,520	13,997,745
1999	26,008	1,602,191	489,744	587,179	4,724	0	11,291,109	14,000,955
2000	26,013	1,602,466	489,828	587,280	4,725	0	11,293,043	14,003,355
2001	26,026	1,603,263	490,072	587,572	4,727	0	11,298,663	14,010,323
2002	26,021	1,602,953	489,977	587,458	4,726	0	11,296,476	14,007,611
2003	26,021	1,602,987	489,988	587,471	4,727	0	11,296,717	14,007,911
2004	26,028	1,603,412	490,118	587,626	4,728	0	11,299,711	14,011,623
2005	26,036	1,603,871	490,258	587,795	4,729	0	11,302,947	14,015,636
2006	26,044	1,604,389	490,416	587,984	4,731	0	11,306,596	14,020,160
2007	26,044	1,604,382	490,414	587,982	4,731	0	11,306,547	14,020,100
2008	26,043	1,604,306	490,391	587,954	4,730	0	11,306,013	14,019,437
2009	26,056	1,605,125	490,641	588,254	4,733	0	11,311,786	14,026,595
2010	26,056	1,605,123	490,641	588,253	4,733	0	11,311,769	14,026,575
2011	26,052	1,604,868	490,563	588,160	4,732	0	11,309,974	14,024,349
2012	26,052	1,604,894	490,571	588,170	4,732	0	11,310,159	14,024,578
2013	26,052	1,604,878	490,566	588,164	4,732	0	11,310,042	14,024,434
2014	26,059	1,605,298	490,694	588,318	4,733	0	11,313,007	14,028,109
2015	26,056	1,605,125	490,641	588,254	4,733	0	11,311,786	14,026,595
2016	26,062	1,605,483	490,751	588,385	4,734	0	11,314,310	14,029,725
2017	26,059	1,605,311	490,698	588,322	4,733	0	11,313,096	14,028,219
2018	26,078	1,606,459	491,049	588,743	4,737	0	11,321,189	14,038,255
2019	26,098	1,607,710	491,431	589,201	4,740	0	11,330,000	14,049,180
2020	26,124	1,609,329	491,926	589,795	4,745	0	11,341,412	14,063,331
2021	26,137	1,610,142	492,175	590,093	4,748	0	11,347,140	14,070,435
2022	26,165	1,611,842	492,694	590,716	4,753	0	11,359,120	14,085,290
2023	1,306	80,438	24,587	29,479	237	0	566,867	702,914
2024	2,562	157,842	48,248	57,847	465	0	1,112,356	1,379,320
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	904,107	55,695,572	17,024,557	20,411,589	164,224	0	392,502,961	486,703,010

a) Under 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 Series A Water System Revenue Bonds. This election made via a letter of agreement signed June 1, 1987, calls for payment of $1,479,000 on January 1, 1988, $463,000 on July 1, 1988, and $231,000 on January 1, 1989. San Bernardino Valley Municipal Water District will consider similar advance payments in lieu of participating in subsequent revenue bond financing of remaining East Branch Enlargement costs.

TABLE B-30. Minimum OMP&R Component of East Branch Enlargement Facilities Transportation Charge for Each Contractor

(in dollars)

Calendar Year	SOUTHERN CALIFORNIA AREA							Total
	Antelope Valley-East Kern Water Agency	Coachella Valley Water District	Desert Water Agency	Mojave Water Agency	Palmdale Water District	San (a Bernardino Valley Municipal Water District	The Metropolitan Water District of Southern California	
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[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	28,896	6,792	14,756	0	4,084	207,997	262,525
1992	0	45,775	7,930	30,781	0	3,786	343,714	431,986
1993	0	131,177	36,780	50,501	0	22,801	914,176	1,155,435
1994	0	170,589	51,131	50,501	0	22,801	1,171,208	1,466,230
1995	0	245,346	78,353	50,501	0	22,801	1,658,753	2,055,754
1996	0	245,346	78,353	50,501	0	22,801	1,658,753	2,055,754
1997	0	245,346	78,353	50,501	0	22,801	1,658,753	2,055,754
1998	0	245,346	78,353	50,501	0	22,801	1,658,753	2,055,754
1999	0	245,346	78,353	50,501	0	22,801	1,658,753	2,055,754
2000	0	245,346	78,353	50,501	0	22,801	1,658,753	2,055,754
2001	0	245,346	78,353	50,501	0	22,801	1,658,753	2,055,754
2002	0	245,346	78,353	50,501	0	22,801	1,658,753	2,055,754
2003	0	245,346	78,353	50,501	0	22,801	1,658,753	2,055,754
2004	0	245,346	78,353	50,501	0	22,801	1,658,753	2,055,754
2005	0	245,346	78,353	50,501	0	22,801	1,658,753	2,055,754
2006	0	245,346	78,353	50,501	0	22,801	1,658,753	2,055,754
2007	0	245,346	78,353	50,501	0	22,801	1,658,753	2,055,754
2008	0	245,346	78,353	50,501	0	22,801	1,658,753	2,055,754
2009	0	245,346	78,353	50,501	0	22,801	1,658,753	2,055,754
2010	0	245,346	78,353	50,501	0	22,801	1,658,753	2,055,754
2011	0	245,346	78,353	50,501	0	22,801	1,658,753	2,055,754
2012	0	245,346	78,353	50,501	0	22,801	1,658,753	2,055,754
2013	0	245,346	78,353	50,501	0	22,801	1,658,753	2,055,754
2014	0	245,346	78,353	50,501	0	22,801	1,658,753	2,055,754
2015	0	245,346	78,353	50,501	0	22,801	1,658,753	2,055,754
2016	0	245,346	78,353	50,501	0	22,801	1,658,753	2,055,754
2017	0	245,346	78,353	50,501	0	22,801	1,658,753	2,055,754
2018	0	245,346	78,353	50,501	0	22,801	1,658,753	2,055,754
2019	0	245,346	78,353	50,501	0	22,801	1,658,753	2,055,754
2020	0	245,346	78,353	50,501	0	22,801	1,658,753	2,055,754
2021	0	245,346	78,353	50,501	0	22,801	1,658,753	2,055,754
2022	0	245,346	78,353	50,501	0	22,801	1,658,753	2,055,754
2023	0	245,346	78,353	50,501	0	22,801	1,658,753	2,055,754
2024	0	245,346	78,353	50,501	0	22,801	1,658,753	2,055,754
2025	0	245,346	78,353	50,501	0	22,801	1,658,753	2,055,754
2026	0	245,346	78,353	50,501	0	22,801	1,658,753	2,055,754
2027	0	245,346	78,353	50,501	0	22,801	1,658,753	2,055,754
2028	0	245,346	78,353	50,501	0	22,801	1,658,753	2,055,754
2029	0	245,346	78,353	50,501	0	22,801	1,658,753	2,055,754
2030	0	245,346	78,353	50,501	0	22,801	1,658,753	2,055,754
2031	0	245,346	78,353	50,501	0	22,801	1,658,753	2,055,754
2032	0	245,346	78,353	50,501	0	22,801	1,658,753	2,055,754
2033	0	245,346	78,353	50,501	0	22,801	1,658,753	2,055,754
2034	0	245,346	78,353	50,501	0	22,801	1,658,753	2,055,754
2035	0	245,346	78,353	50,501	0	22,801	1,658,753	2,055,754
TOTAL	0	10,435,623	3,315,106	2,217,080	0	988,313	70,645,968	87,602,090

TABLE B-31. Total East Branch Enlargement Facilities Transportation Charge for Each Contractor

(in dollars)

Calendar Year	SOUTHERN CALIFORNIA AREA							Total
	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	The Metropolitan Water District of Southern California	
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[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	20,202	1,244,508	380,411	456,093	3,670	0	8,770,411	10,875,295
1989	20,775	1,279,775	391,191	469,018	3,774	0	9,018,945	11,183,478
1990	25,972	1,599,931	489,054	586,351	4,718	0	11,275,181	13,981,207
1991	25,973	1,628,928	495,876	601,144	4,718	4,084	11,483,891	14,244,614
1992	25,973	1,645,781	497,006	617,159	4,718	3,786	11,619,422	14,413,845
1993	25,981	1,731,671	526,006	637,058	4,719	22,801	12,193,329	15,141,565
1994	25,985	1,771,331	540,433	637,149	4,720	22,801	12,452,107	15,454,526
1995	25,994	1,846,673	567,833	637,363	4,722	22,801	12,943,772	16,049,158
1996	25,995	1,846,692	567,839	637,370	4,722	22,801	12,943,908	16,049,327
1997	25,997	1,846,846	567,886	637,427	4,722	22,801	12,944,994	16,050,673
1998	26,002	1,847,170	567,985	637,545	4,723	22,801	12,947,273	16,053,499
1999	26,008	1,847,537	568,097	637,680	4,724	22,801	12,949,862	16,056,709
2000	26,013	1,847,812	568,181	637,781	4,725	22,801	12,951,796	16,059,109
2001	26,026	1,848,609	568,425	638,073	4,727	22,801	12,957,416	16,066,077
2002	26,021	1,848,299	568,330	637,959	4,726	22,801	12,955,229	16,063,365
2003	26,021	1,848,333	568,341	637,972	4,727	22,801	12,955,470	16,063,665
2004	26,028	1,848,758	568,471	638,127	4,728	22,801	12,958,464	16,067,377
2005	26,036	1,849,217	568,611	638,296	4,729	22,801	12,961,700	16,071,390
2006	26,044	1,849,735	568,769	638,485	4,731	22,801	12,965,349	16,075,914
2007	26,044	1,849,728	568,767	638,483	4,731	22,801	12,965,300	16,075,854
2008	26,043	1,849,652	568,744	638,455	4,730	22,801	12,964,766	16,075,191
2009	26,056	1,850,471	568,994	638,755	4,733	22,801	12,970,539	16,082,349
2010	26,056	1,850,469	568,994	638,754	4,733	22,801	12,970,522	16,082,329
2011	26,052	1,850,214	568,916	638,661	4,732	22,801	12,968,727	16,080,103
2012	26,052	1,850,240	568,924	638,671	4,732	22,801	12,968,912	16,080,332
2013	26,052	1,850,224	568,919	638,665	4,732	22,801	12,968,795	16,080,188
2014	26,059	1,850,644	569,047	638,819	4,733	22,801	12,971,760	16,083,863
2015	26,056	1,850,471	568,994	638,755	4,733	22,801	12,970,539	16,082,349
2016	26,062	1,850,829	569,104	638,886	4,734	22,801	12,973,063	16,085,479
2017	26,059	1,850,657	569,051	638,823	4,733	22,801	12,971,849	16,083,973
2018	26,078	1,851,805	569,402	639,244	4,737	22,801	12,979,942	16,094,009
2019	26,098	1,853,056	569,784	639,702	4,740	22,801	12,988,753	16,104,934
2020	26,124	1,854,675	570,279	640,296	4,745	22,801	13,000,165	16,119,085
2021	26,137	1,855,488	570,528	640,594	4,748	22,801	13,005,893	16,126,189
2022	26,165	1,857,188	571,047	641,217	4,753	22,801	13,017,873	16,141,044
2023	1,306	325,784	102,940	79,980	237	22,801	2,225,620	2,758,668
2024	2,562	403,188	126,601	108,348	465	22,801	2,771,109	3,435,074
2025	0	245,346	78,353	50,501	0	22,801	1,658,753	2,055,754
2026	0	245,346	78,353	50,501	0	22,801	1,658,753	2,055,754
2027	0	245,346	78,353	50,501	0	22,801	1,658,753	2,055,754
2028	0	245,346	78,353	50,501	0	22,801	1,658,753	2,055,754
2029	0	245,346	78,353	50,501	0	22,801	1,658,753	2,055,754
2030	0	245,346	78,353	50,501	0	22,801	1,658,753	2,055,754
2031	0	245,346	78,353	50,501	0	22,801	1,658,753	2,055,754
2032	0	245,346	78,353	50,501	0	22,801	1,658,753	2,055,754
2033	0	245,346	78,353	50,501	0	22,801	1,658,753	2,055,754
2034	0	245,346	78,353	50,501	0	22,801	1,658,753	2,055,754
2035	0	245,346	78,353	50,501	0	22,801	1,658,753	2,055,754
TOTAL	904,107	66,131,195	20,339,663	22,628,669	164,224	988,313	463,148,929	574,305,100

TABLE B-32. Annual Surplus and Unscheduled Water Deliveries

(acre-feet)

Calendar Year(a	SOUTH BAY AREA				SAN JOAQUIN VALLEY AREA		
	ACFC & WCD, ZONE 7	ACWD	SCVWD	Area Total	DDWD	DRWD	EWSID
	[1]	[2]	[3]	[4]	[5]	[6]	[7]
1973	0	0	2,499	2,499	4,104	13,192	2,814
1974	0	0	2,934	2,934	4,128	33,391	1,539
1975	0	0	18,470	18,470	7,495	40,555	3,448
1976	3,636	4,147	24,705	32,488	5,727	30,922	3,457
1977	0	0	0	0	0	0	0
1978	0	0	0	0	0	7,586	0
1979	0	0	15,998	15,998	0	38,545	0
1980(b	0	0	14,278	14,278	6,092	39,079	0
1981(b	0	0	18,920	18,920	10,647	32,327	2,992
1982(b	0	0	1,303	1,303	6,359	14,463	926
1983	0	0	0	0	0	13,019	0
1984	0	0	3,663	3,663	7,419	19,500	0
1985	0	0	9,638	9,638	6,095	7,636	0
1986(c	0	0	2,595	2,595	3,970	903	1,130
1987(d	0	0	6,949	6,949	2,573	0	1,876
1988	0	0	0	0	0	0	0
TOTAL	3,636	4,147	121,952	129,735	64,609	291,118	18,182

Calendar Year(a	SAN JOAQUIN VALLEY AREA (continued)					SOUTHERN CALIFORNIA AREA	TOTAL ALL AREAS
	HWD(e	KCWA	OFWD	TLBWSD	Area Total	LCID	
	[8]	[9]	[10]	[11]	[12]	[13]	[14]
1973	5,600	163,744	1,013	63,988	254,455	80	257,034
1974	1,972	299,433	3,471	68,989	412,923	67	415,924
1975	3,759	410,820	3,576	132,206	601,859	356	620,685
1976	3,720	442,150	3,840	57806	547,622	0	580,110
1977	0	0	0	0	0	0	0
1978	0	8,623	6	0	16,215	0	16,215
1979	1,000	524,247	698	66,342	630,832	0	646,830
1980(b	0	327,233	718	14,817	387,939	0	402,217
1981(b	-	624,581	2,788	215926	889,261	247	908,428
1982(b	-	124,736	721	67365	214,570	0	215,873
1983	-	0	0	0	13,019	0	13,019
1984	-	230,691	1,644	0	259,254	0	262,917
1985	-	186,486	764	96,887	297,868	0	307,506
1986(c	-	14,987	247	12,788	34,025	0	36,620
1987(d	-	52,048	255	51,206	107,958	0	114,907
1988	0	0	0	0	0	0	0
TOTAL	16,051	3,409,779	19,741	848,320	4,667,800	750	4,798,285

a) All deliveries are surplus water deliveries unless otherwise indicated.

b) Includes surplus and unscheduled water.

c) Includes 12,270 acre-feet of 1985 surplus water carried over and delivered during January and February 1986. Also includes 22,034 acre-feet of unscheduled water.

d) Unscheduled water only.

e) District merged with Tulare Lake Basin Water Storage District affective January 1, 1981.

TABLE B-33. Power Costs for Pumping Surplus Water

(in dollars)

Calendar Year	SOUTH BAY AQUEDUCT Reach 1 South Bay and Del Valle Pumping Plants	CALIFORNIA AQUEDUCT Reach 1 Banks Pumping Plant	Reach 4 Dos Amigos Pumping Plant	Reach 14A Buena Vista Pumping Plant	Reach 15A Wheeler Ridge Pumping Plant	Reach 16A Chrisman Pumping Plant	Reach 17E Edmonston Pumping Plant	Reach 31A Las Perillas and Badger Hill Pumping Plants	Combined Total
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]
1973(a									
Capacity	5,290	0	37,033	25,622	29,816	0	0	15,588	113,349
Energy	6,302	231,691	102,725	53,375	12,819	1,697	526	24,245	433,380
Total	11,592	231,691	139,758	78,997	42,635	1,697	526	39,833	546,729
1974									
Capacity	21,773	0	81,328	69,381	62,301	0	0	31,511	266,294
Energy	7,561	374,506	181,827	95,596	22,550	5,599	450	33,406	721,495
Total	29,334	374,506	263,155	164,977	84,851	5,599	450	64,917	987,789
1975									
Capacity	32,288	298,709	126,806	99,676	30,049	0	0	32,231	619,759
Energy	47,597	617,396	264,000	99,745	313	661	2,391	49,501	1,081,604
Total	79,885	916,105	390,806	199,421	30,362	661	2,391	81,732	1,701,363
1976									
Capacity	41,897	60,502	63,788	85,415	8,579	0	0	30,449	290,630
Energy	83,722	597,636	225,126	103,213	4,885	5,385	0	45,101	1,065,068
Total	125,619	658,138	288,914	188,628	13,464	5,385	0	75,550	1,355,698
1977									
Capacity	0	0	0	0	0	0	0	0	0
Energy	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0
1978									
Capacity	0	144,188	51,403	0	0	0	0	0	195,591
Energy	0	15,039	6,591	0	0	0	0	0	21,630
Total	0	159,227	57,994	0	0	0	0	0	217,221
1979									
Capacity	27,116	382,070	232,001	35,743	6,771	3,165	0	8,769	695,635
Energy	39,517	599,886	256,188	51,045	8,205	4,194	0	11,808	970,843
Total	66,633	981,956	488,189	86,788	14,976	7,359	0	20,577	1,666,478
1980									
Capacity	30,319	530,982	227,837	28,682	3,559	5,146	0	3,228	829,753
Energy	35,268	373,023	162,404	73,422	11,451	9,753	0	22,755	688,076
Total	65,587	904,005	390,241	102,104	15,010	14,899	0	25,983	1,517,829
1981									
Capacity	36,749	625,106	281,362	69,202	22,262	24,138	1,054	26,168	1,086,041
Energy	44,229	806,574	366,945	85,341	27,489	29,847	1,629	34,020	1,396,074
Total	80,978	1,431,680	648,307	154,543	49,751	53,985	2,683	60,188	2,482,115
1982									
Capacity	40,355	1,704,800	578,744	176,362	16,932	2,612	0	6,148	2,525,953
Energy	3,225	192,415	88,494	19,390	2,109	296	0	5,278	311,207
Total	43,580	1,897,215	667,238	195,752	19,041	2,908	0	11,426	2,837,160
1983									
Capacity	0	40,303	16,941	0	0	0	0	0	57,244
Energy	0	43,045	20,026	0	0	0	0	0	63,071
Total	0	83,348	36,967	0	0	0	0	0	120,315
1984									
Capacity	0	0	0	0	0	0	0	0	0
Energy	51,632	1,865,605	769,718	0	0	0	0	37,407	2,724,362
Total	51,632	1,865,605	769,718	0	0	0	0	37,407	2,724,362
1985									
Capacity	0	0	0	0	0	0	0	0	0
Energy	301,663	2,835,778	1,180,255	0	0	0	0	46,140	4,363,836
Total	301,663	2,835,778	1,180,255	0	0	0	0	46,140	4,363,836
1986									
Capacity	0	0	0	0	0	0	0	0	0
Energy	43,007	227,832	99,593	0	0	0	0	20,176	390,608
Total	43,007	227,832	99,593	0	0	0	0	20,176	390,608
1987									
Capacity	0	0	0	0	0	0	0	0	0
Energy	98,970	610,046	273,559	59,496	15,365	6,776	0	12,700	1,076,912
Total	98,970	610,046	273,559	59,496	15,365	6,776	0	12,700	1,076,912
1988									
Capacity	0	0	0	0	0	0	0	0	0
Energy	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0
GRAND TOTAL	998,480	13,177,132	5,694,694	1,230,706	285,455	99,269	6,050	496,629	21,988,415

a) May through Deccember only.

TABLE B-34. Power, Replacement, and Administrative Charge for Surplus Water Delivery

(in dollars)

Calendar	SOUTH BAY AREA		SAN JOAQUIN VALLEY AREA						SOUTHERN CALIFORNIA AREA				
Year	ACWD	SCVWD	DDWD	DRWD	EWSID	KCWA(a	OFWD	TLBWSD	AVEK	LCID	CVWD	DWA	Total
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]
1978													
Capacity	0	3,275	0	14,642	0	154,051	4	23,619	0	0	0	0	195,591
Energy	0	0	0	10,119	0	11,505	6	0	0	0	0	0	21,630
Replacement	0	0	0	248	0	281	0	0	0	0	0	0	529
Administrative	0	0	0	3,793	0	4,312	3	0	0	0	0	0	8,108
Total	0	3,275	0	28,802	0	170,149	13	23,619	0	0	0	0	225,858
1979													
Capacity	0	37,413	0	37,615	0	547,875	417	72,315	0	0	0	0	695,635
Energy	0	54,354	0	51,418	0	774,587	651	89,833	0	0	0	0	970,843
Replacement	0	413	0	886	0	7,633	5	2,042	0	0	0	0	10,979
Administrative	0	4,005	0	20,051	0	116,977	176	46,075	0	0	0	0	187,284
Total	0	96,185	0	109,970	0	1,447,072	1,249	210,265	0	0	0	0	1,864,741
1980													
Capacity	0	41,641	8,485	40,160	0	636,135	432	102,900	0	0	0	0	829,753
Energy	0	48,510	13,101	52,131	0	553,902	666	19,766	0	0	0	0	688,076
Replacement	0	533	3,332	1,255	0	149,588	134	5,705	0	0	0	0	160,547
Administrative	0	5,638	3,815	21,859	0	281,776	666	22,258	0	0	0	0	336,012
Total	0	96,322	28,733	115,405	0	1,621,401	1,898	150,629	0	0	0	0	2,014,388
1981													
Capacity	0	50,706	14,608	40,674	2,520	784,875	1,601	189,238	0	1,819	0	0	1,086,041
Energy	0	61,028	22,575	42,078	3,897	980,142	2,475	281,071	0	2,808	0	0	1,396,074
Replacement	0	3,538	4,099	12,446	1,152	275,232	521	83,132	0	431	0	0	380,551
Administrative	725	11,192	6,160	19,221	1,869	348,397	1,950	146,357	0	123	0	0	535,994
Total	725	126,464	47,442	114,419	9,438	2,388,646	6,547	699,798	0	5,181	0	0	3,398,660
1982													
Capacity	0	55,431	20,739	74,514	6,103	1,658,571	434	339,639	370,522	0	0	0	2,525,953
Energy	0	4,386	13,578	18,876	1,208	184,594	643	87,922	0	0	0	0	311,207
Replacement	0	105	2,462	5,596	361	54,018	135	26,070	0	0	0	0	88,747
Administrative	0	7,328	3,710	5,487	698	185,494	676	50,524	0	0	0	0	253,917
Total	0	67,250	40,489	104,473	8,370	2,082,677	1,888	504,155	370,522	0	0	0	3,179,824
1983													
Capacity	0	1,698	187	3,850	60	48,348	0	3,101	0	0	0	0	57,244
Energy	0	0	0	62,996	0	0	75	0	0	0	0	0	63,071
Replacement	0	0	0	5,851	0	0	6	0	0	0	0	0	5,857
Administrative	0	0	0	6,510	0	0	14	0	0	0	0	0	6,524
Total	0	1,698	187	79,207	60	48,348	95	3,101	0	0	0	0	132,696
1984													
Capacity	0	0	0	0	0	0	0	0	0	0	0	0	0
Energy	0	70,885	98,169	222,456	0	2,322,714	10,138	0	0	0	0	0	2,724,362
Replacement	0	782	3,334	8,763	0	103,670	351	0	0	0	0	0	116,900
Administrative	2,450	7,160	6,800	9,380	0	36,460	6,340	0	0	0	0	0	68,590
Total	2,450	78,827	108,303	240,599	0	2,462,844	16,829	0	0	0	0	0	2,909,852
1985													
Capacity	0	0	0	0	0	0	0	0	0	0	0	0	0
Energy	0	414,281	124,603	107,436	0	2,444,591	6,373	1,266,552	0	0	0	0	4,363,836
Replacement	0	2,053	2,737	3,429	0	83,732	163	43,502	0	0	0	0	135,616
Administrative	0	4,811	4,596	5,227	0	18,251	4,245	11,883	0	0	0	0	49,013
Total	0	421,145	131,936	116,092	0	2,546,574	10,781	1,321,937	0	0	0	0	4,548,465
1986													
Capacity	0	0	0	0	0	0	0	0	0	0	0	0	0
Energy	0	58,939	52,904	7,658	12,104	113,630	1,267	144,106	0	0	0	0	390,608
Replacement	0	553	1,783	405	507	6,729	53	5,742	0	0	0	0	15,772
Administrative	2263	3468	6051	3995	1550	7533	3545	5470	0	0	0	0	33,875
Total	2,263	62,960	60,738	12,058	14,161	127,892	4,865	155,318	0	0	0	0	440,255
1987													
Capacity	0	0	0	0	0	0	0	0	0	0	0	0	0
Energy	0	135,461	32,558	0	14,941	500,919	1,367	391,666	0	0	0	0	1,076,912
Replacement	0	1,974	1,508	0	1,099	37,897	72	30,007	0	0	0	0	72,557
Administrative	0	1392	1240	711	1298	4135	1252	2769	0	0	0	0	12,797
Total	0	138,827	35,306	711	17,338	542,951	2,691	424,442	0	0	0	0	1,162,266
1988													
Capacity	0	0	0	0	0	0	0	0	0	0	0	0	0
Energy	0	0	0	0	0	0	0	0	0	0	0	0	0
Replacement	0	0	0	0	0	0	0	0	0	0	0	0	0
Administrative	0	839	838	839	838	839	838	839	0	0	839	839	7,548
Total	0	839	838	839	838	839	838	839	0	0	839	839	7,548
GRAND TOTAL	5,438	1,093,792	453,972	922,575	50,205	13,439,393	47,694	3,494,103	370,522	5,181	839	839	19,884,553

a) 1982 costs are preliminary and may change when 1982 exchange is taken into consideration.

Index to Tables in Bulletin Text

Subject	Main Text (with Allowance for Future Capital Price Escalation, for Financial Planning Purposes)		Corresponding Table, Figure, Exhibit or Page Number in Previous Bulletin 132												
	Table No.	Title	1988	1987	1985-1986	1984	1983	1982	1981	1980	1979	1978	1977	1976	1975
Operations For Prior Year	1	SWP Accomplishments through 1988	1	1	1	1	17	20	Ex. 25	p.132	p.125	p. 88	p. 73	p. 39	p. 36
	2	Water Quality at Selected Stations in 1988	2	2	2	2	16	19	5	5	5	5	5	5	5
	3	Historical Summary of Entitlements, Deliveries, and Water Conveyed	3	3	3	3	11	14	2	1	1	1	1	1	1
	4	Summary of 1988 Deliveries and Credits to Long-Term Contractors	4	4	4	4	12	15	3	2	2	2	2	2	2
	5	Monthly Water Deliveries in 1988	5	5	5	5	13	16	4	3	3	3	3	3	3
	6	Monthly Power Operations in 1988	6	6	6	6	18	21	6	6	6	6	6	5	6
	6A	Reconciliation of 1988 SWP and CVP Energy Use at SWP Plants and Joint-Use Facilities	6A	6A	6A	none	none	none	none	none	none	none	none	none	none
	7	SWP Power and Transmission Service Purchases in 1988	7	7	7	7	none	none	none	none	none	none	none	none	none
	8	SWP Power Sales in 1988	8	8	8	8	none	none	none	none	none	none	none	none	none
	9	Recreation Use at SWP Facilities in 1988	9	9	9	9	19	22	Ex. 26	p. 138	p. 133	p. 95	p. 81	p. 66	none
	10	Fish Planted at SWP Facilities in 1988	10	10	10	10	20	23	Ex. 27	none	none	none	none	none	none
Contract Amendments	11	Water Supply Contract Amendments as of June 30, 1989	11	11	11	11	Fig. 18	Fig. 19	Fig. 6	Fig. 6	Fig. 6	Fig. 6	Fig. 6	Fig. 7	Fig. 7
Design and Construction Activities	12	SWP Design Activity in Progress, July 1988-June 1989	12	12	12	12	8	10	Ex. 10	none	none	none	none	none	none
	13	SWP Construction Activity in Progress, July 1988-June 1989	13	13	13	13	10	12	Ex. 14	none	none	none	none	none	none
Future Operations	14	Water Contractors' Requests for Entitlement Water, 1988 through 1993	14	14	14	14	14	17	Ex. 17	p. 89	p. 94	p. 66	p. 57	p. 28	p. 26
	none	Alternative Formulations of the Los Banos Grandes Reservoir Plan	15	none	none	none	none	none	none	none	none	none	none	none	none
	15	Projected Water Deliveries and Energy Requirements	16	15	15	15	none	none	none	none	none	none	none	none	none
	16	Projected Electrical Capacity Requirements	17	16	16	16	none	none	none	none	none	none	none	none	none
	17	Summary of Major SWP Power Contracts	18	17	17	17	Fig. 17	Fig. 20	Fig. 19	p. 102	none	none	none	none	none
	18	Projected Energy Resources and Costs	19	18	18	18	7	9	Ex. 29	p.104	none	none	none	none	none
Future Costs and Financing	19	SWP Financial Analysis, June 30, 1989	20	19	19	19	21	24	7	7	7	7	none	7	7
	20	SWP Capital Expenditures	21	20	20	20	22	25	8	8	8	8	7	8	8
	21	Application of Revenue Bond Proceeds	22	21	21	21	23	26	none	none	none	none	none	none	none
	22	Revenue Bond Proceeds Affecting the Project Interest Rate	23	22	23	23	24	27	none	none	none	none	none	none	none
	none	Projected Bond Sales	none	none	22	22	26	29	9A	9A	9A	none	none	none	none
	23	Actual Bond Sales and Project Interest Rates	24	23	24	24	25	28	9	9	9	9	none	9	9
	24	SWP Operation, Maintenance, Power, and Replacement Costs	25	24	25	25	27	30	10	10	10	10	8	10	10
	25	Annual Service on Bonds Sold through June 30, 1989	26	25	26	26	28	31	11	11	11	11	none	11	11
	26	Estimated Future Unit Water Charges	27	26	27	27	6	7	Ex. 2	p. 19	Fig. 1	none	none	none	none

Index to Tables in Appendix B

Subject	Table No.	Title	1988	1987	1983 thru 1986	1982*	1981	1980	1979	1978	1977	1976	1975	1974
	Appendix B (no Allowance for Future Price Escalation, for Billing Purposes)		Corresponding Table or Exhibit Number in Previous Bulletin 132											
Aqueduct Reaches	B-1	Factors for Distributing Reach Capital Costs among Contractors	B-1	B-1	B-1	none	B-1	B-1	B-1	B-1	B-1	B-1	B-1	B-1
	B-2	Factors for Distributing Reach Minimum OMP&R Costs among Contractors	B-2	B-2	B-2	none	B-2	B-2	B-2	B-2	B-2	B-2	B-2	B-2
Variable Costs	B-3	Power Costs and Credits and Annual Replacement Deposits for Each Aqueduct Pumping and Power Recovery Plant	B-3	B-3	B-3	none	B-3	B-3	B-3	B-3	B-3	B-3	B-3	B-3
Annual Delivery Quantities	B-4	Annual Entitlements to Project Water	B-4	B-4	B-4	none	B-4	B-4	B-4	B-4	B-4	B-4	B-4	B-4
	B-5A	Annual Water Quantities Delivered from Each Aqueduct Reach to Each Contractor	B-5A	B-5A	B-5A	none	B-5A	B-5A	B-5A	B-5A	B-5A	B-5A	B-5	B-5
	B-5B	Annual Water Quantities Delivered to Each Contractor	B-5B	B-5B	B-5B	none	B-5B	B-5B	B-5B	B-5B	B-5B	B-5B	B-5	none
	B-6	Annual Water Quantities Conveyed through Each Pumping and Power Recovery Plant of Project Transportation Facilities	B-6	B-6	B-6	none	B-6	B-6	B-6	B-6	B-6	B-6	B-6	B-6
Reconciliation of Capital Expenditures	B-7	Reconciliation of Capital Costs Allocated to Water Supply and Power Generation	B-7	B-7	B-7	none	B-7	B-7	B-7	B-7	B-7	B-7	B-7	B-7
	B-8	SWP Capital Costs of Requested Delivery Structures	B-8	B-8	B-8	none	B-8	B-8	B-8	B-8	B-8	B-8	B-8	B-8
	B-9	Capital Costs of Requested Excess Peaking Capacity	B-9	B-9	B-9	none	B-9	B-9	B-9	B-9	B-9	B-9	B-9	B-9
Costs Paid through: Transportation Charge	B-10	Capital Costs of Each Aqueduct Reach to Be Reimbursed through Capital Cost Component of Transportation Charge	B-10	B-10	B-10	none	B-10	B-10	B-10	B-10	B-10	B-10	B-10	B-10
	B-11	Minimum OMP&R Costs of Each Aqueduct Reach to Be Reimbursed through Minimum OMP&R Component of Transportation Charge	B-11	B-11	B-11	none	B-11	B-11	B-11	B-11	B-11	B-11	B-11	B-11
	B-12	Variable OMP&R Costs to Be Reimbursed through Variable OMP&R Component of Transportation Charge	B-12	B-12	B-12	none	B-12	B-12	B-12	B-12	B-12	B-12	B-12	B-12
Costs Paid through: Delta Water Charge	B-13	Capital and Operating Costs of Project Conservation Facilities to Be Reimbursed through Delta Water Charge	B-13	B-13	B-13	32	B-13	B-13	B-13	B-13	B-13	B-13	B-13	B-13
Redetermined Annual Transportation Charge for Each Contractor	B-14	Capital Costs of Transportation Facilities Allocated to Each Contractor	B-14	B-14	B-14	none	B-14	B-14	B-14	B-14	B-14	B-14	B-14	B-14
	B-15	Capital Cost Component of Transportation Charge for Each Contractor	B-15	B-15	B-15	none	B-15	B-15	B-15	B-15	B-15	B-15	B-15	B-15
	B-16A	Minimum OMP&R Component of Transportation Charge for Each Contractor	B-16A	B-16A	B-16A	none	B-16	B-16	B-16	B-16	B-16	B-16	B-16	B-16
	B-16B	Off-Aqueduct Component of Transportation Charge for Each Contractor	B-16B	B-16B	B-16B	none	none	none	none	none	none	none	none	none
	B-17	Unit Variable OMP&R Component of Transportation Charge	B-17	B-17	B-17	none	B-17	B-17	B-17	B-17	B-17	B-17	B-17	B-17
	B-18	Variable OMP&R Component of Transportation Charge for Each Contractor	B-18	B-18	B-18	none	B-18	B-18	B-18	B-18	B-18	B-18	B-18	B-18
	B-19	Total Transportation Charge for Each Contractor	B-19	B-19	B-19	none	B-19	B-19	B-19	B-19	B-19	B-19	B-19	B-19
Future Delta Water Rates	B-20A	Calculation of Delta Water Rates	B-20A	B-20A	B-20A	33	B-20A	B-20	B-20	B-20	B-20	B-20	B-20	B-20
	B-20B	Delta Water Rates by Facility	B-20B	B-20B	B-20B	none	B-20	none	none	none	none	none	none	none
Total Charge	B-21	Total Delta Water Charge for Each Contractor	B-21	B-21	B-21	none	B-21	B-21	B-21	B-21	B-21	B-21	none	none
	B-22	Water System Revenue Bond Surcharge for Each Contractor	B-22	B-22	none	none	none	none	none	none	none	none	none	none
	B-23	Total Transportation and Delta Water Charge for Each Contractor	B-23	B-23	B-22	none	B-22	B-22	B-22	B-22	B-22	B-22	none	none
Equivalent Costs of Water	B-24	Equivalent Unit Charge for Water Supply for Each Contractor	B-24	B-24	B-23	none	B-23	B-23	B-23	B-23	B-23	B-23	B-21	B-21
	B-25	Equivalent Unit Transportation Costs of Water Delivered from or through Each Aqueduct Reach	B-25	B-25	B-24	34	B-24	B-24	B-24	B-24	B-24	B-24	B-22	B-22
East Branch Enlargement Costs and Charges	B-26	Capital Costs of Each Aqueduct Reach to Be Reimbursed through Capital Cost Component of EBE Transportation Charge	B-26	B-26	none	none	none	none	none	none	none	none	none	none
	B-27	Minimum OMP&R Costs of Each Aqueduct Reach to Be Reimbursed through Minimum OMP&R Component of EBE Transportation Charge	B-27	B-27	none	none	none	none	none	none	none	none	none	none
	B-28	Capital Costs of EBE Transportation Facilities Allocated to Each Contractor	B-28	B-28	none	none	none	none	none	none	none	none	none	none
	B-29	Capital Cost Component of EBE Transportation Facilities Charge for Each Contractor	B-29	B-29	none	none	none	none	none	none	none	none	none	none
	B-30	Minimum OMP&R Component of EBE Facilities Transportation Charge for Each Contractor	B-30	B-30	none	none	none	none	none	none	none	none	none	none
	B-31	Total EBE Facilities Transportation Charge for Each Contractor	B-31	B-31	none	none	none	none	none	none	none	none	none	none
Surplus Water Service and Charges	B-32	Annual Surplus Water Deliveries	B-32	B-32	B-25	none	B-25	B-25	B-25	B-25	B-25	B-25	none	none
	B-33	Power Costs for Pumping Surplus Water	B-33	B-33	B-26	none	B-26	B-26	B-26	B-26	B-26	B-26	none	none
	B-34	Power, Replacement and Administrative Charge for Surplus Water Deliveries	B-34	B-34	B-27	none	B-27	B-27	B-27	B-27	B-27	B-27	none	none

* Appendix B tables for Bulletin 132-82 are published under separate cover.

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CONVERSION FACTORS

Quantity	To Convert from Metric Unit	To Customary Unit	Multiply Metric Unit By	To Convert to Metric Unit Multiply Customary Unit By
Length	millimetres (mm)	inches (in)	0.03937	25.4
	centimetres (cm) for snow depth	inches (in)	0.3937	2.54
	metres (m)	feet (ft)	3.2808	0.3048
	kilometres (km)	miles (mi)	0.62139	1.6093
Area	square millimetres (mm^2)	square inches (in^2)	0.00155	645.16
	square metres (m^2)	square feet (ft^2)	10.764	0.092903
	hectares (ha)	acres (ac)	2.4710	0.40469
	square kilometres (km^2)	square miles (mi^2)	0.3861	2.590
Volume	litres (L)	gallons (gal)	0.26417	3.7854
	megalitres	million gallons (10^6 gal)	0.26417	3.7854
	cubic metres (m^3)	cubic feet (ft^3)	35.315	0.028317
	cubic metres (m^3)	cubic yards (yd^3)	1.308	0.76455
	cubic dekametres (dam^3)	acre-feet (ac-ft)	0.8107	1.2335
Flow	cubic metres per second (m^3/s)	cubic feet per second (ft^3/s)	35.315	0.028317
	litres per minute (L/min)	gallons per minute (gal/min)	0.26417	3.7854
	litres per day (L/day)	gallons per day (gal/day)	0.26417	3.7854
	megalitres per day (ML/day)	million gallons per day (mgd)	0.26417	3.7854
	cubic dekametres per day (dam^3/day)	acre-feet per day (ac-ft/day)	0.8107	1.2335
Mass	kilograms (kg)	pounds (lb)	2.2046	0.45359
	megagrams (Mg)	tons (short, 2,000 lb)	1.1023	0.90718
Velocity	metres per second (m/s)	feet per second (ft/s)	3.2808	0.3048
Power	kilowatts (kW)	horsepower (hp)	1.3405	0.746
Pressure	kilopascals (kPa)	pounds per square inch (psi)	0.14505	6.8948
	kilopascals (kPa)	feet head of water	0.33456	2.989
Specific Capacity	litres per minute per metre drawdown	gallons per minute per foot drawdown	0.08052	12.419
Concentration	milligrams per litre (mg/L)	parts per million (ppm)	1.0	1.0
Electrical Conductivity	microsiemens per centimetre (uS/cm)	micromhos per centimetre	1.0	1.0
Temperature	degrees Celsius (°C)	degrees Fahrenheit (°F)	(1.8 × °C)+32	(°F−32)/1.8

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